PRELIMINARY SITE ASSESSMENT

FOR

PARCEL #907
CAROLINA GAS PARTNERS, LLC PROPERTY
FORMER SUNOCO
1709 N. MARINE BLVD
JACKSONVILLE, ONSLOW COUNTY, NORTH CAROLINA

STATE PROJECT: U-4007B
WBS ELEMENT: 35008.1.1
DESCRIPTION: Jacksonville – US 17 from SR 1403 (Country Club Road) to Western Blvd

PREPARED FOR:

NCDOT GEOTECHNICAL ENGINEERING UNIT-GEOENVIRONMENTAL SECTION
1589 MSC
RALEIGH, NORTH CAROLINA 27699-1589

OCTOBER 8, 2008

PREPARED BY:

CATLIN ENGINEERS AND SCIENTISTS
P. O. BOX 10279
WILMINGTON, NORTH CAROLINA 28404-0279
(910) 452-5861

CATLIN PROJECT NO. 208-055

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1.0 INTRODUCTION

1.1 PURPOSE OF INVESTIGATION AND DESCRIPTION

CATLIN Engineers and Scientists (CATLIN) was retained by the North Carolina Department of Transportation (NCDOT) Geotechnical Engineering Unit to provide a field investigation concluding with a Preliminary Site Assessment (PSA) for the above referenced property. In response to a Request for Technical and Cost Proposal (RFP) dated August 29, 2008, CATLIN submitted a proposal for conducting an investigation at the above referenced parcel in Jacksonville, North Carolina. Figure 1 illustrates the project vicinity.

According to the RFP:

> Advanced acquisition of the right-of-way (ROW) is necessary for the improvements of NC 17/ Jacksonville Bypass. A PSA is to be performed only within the proposed right-of-way and/or easement unless an uneconomic remnant will be left after acquisition.

The work scope as requested includes:

- Locate all underground storage tanks (USTs) and determine approximate size and contents (if any).
- Determine if contaminated soils are present.
- If contamination is evident, estimate the quantity of impacted soils and indicate the approximate area of soil contamination on a site map.

- Prepare and submit a report including field activities, findings, and recommendations in triplicate and electronically to the NCDOT GeoEnvironmental Section.

CATLIN coordinated and conducted site reconnaissance beginning on September 3, 2008. This report documents our activities and findings.

1.2 BACKGROUND INFORMATION

The subject site contains a retail fuel facility and convenience that is not currently in use. The last date of operation is unknown. An old sign observed at the site indicated Sunoco® fuel was previously sold at the site. Files reviewed at the North Carolina Department of Environment and Natural Resources (NCDENR) revealed a previous leaking UST system was detected during UST system upgrades in September 1994. Following various stages of assessment and groundwater monitoring, the NCDENR granted No Further Action Status on March 10, 2008, however, groundwater contamination greater than the North Carolina Administrative Code (NCAC) T15A:02L Groundwater Quality Standards (2L GWQS) remains at the site.

According to the NCDENR UST registry, there are three (3) 10,000-gallon USTs at the subject site (Facility ID# 0-020629). No other known USTs are at the site and a geophysical investigation conducted prior to this PSA did not reveal any USTs within the proposed roadway construction control area. The complete geophysical investigation report is provided in Appendix A.

2.0 METHODS

2.1 FIELD METHODS

CATLIN personnel performed site reconnaissance and marked proposed boring locations. Proposed borings were located adjacent to the USTs and dispensers. One proposed boring was located behind the building adjacent to a 55-gallon drum.

Underground utility locating was coordinated by CATLIN personnel. The North Carolina One Call Center (NC-1-Call) was contacted for underground utility location. The NC-1-Call service does not provide utility locating for water and sewer lines in the area or private utilities within the property. The City of Jacksonville Utility Maintenance personnel were subsequently contacted for water and sewer line locating. Private utilities were located within the site by Professional Locating Services (PLS). The City of Jacksonville and PLS personnel were met on site by CATLIN personnel and the areas around the proposed boring locations were checked and found to be clear of any underground utilities.

Ten (10) soil boring/sample locations (DPT-01 through DPT-10) were initially established across the site. Site photographs taken during sampling activities are provided in Appendix B. Following initial boring installation/sample collection and review of the soil sample analytical results, additional boring locations were advanced for soil sample collection. Seven (7) additional soil borings (DPT-12 through DPT-18) were advanced for soil sample collection in an attempt to delineate soil contamination. There is no boring DPT-11.

Soil boring coordinates were collected utilizing a Trimble® Global Positioning System (GPS) unit. A North Carolina certified well driller advanced and properly abandoned all borings. CATLIN personnel gathered subsurface soil data at the site by Direct Push Technology (DPT) boring advancement using an AMS PowerProbe™ 9600D (PowerProbe). The borings were advanced to depth by static force and a 90-pound hydraulic percussion hammer. Two and one-quarter inch diameter by four-foot length steel is used as casing. Soil samples were continuously collected in four-foot long and one and one-half inch diameter clear liners. Liners are removed from the casing and then cut in half longitudinally to allow for visual/manual classification utilizing the Unified Soil Classification System (USCS). Soil boring information was recorded on a field log and is summarized on the boring logs provided in Appendix C. Soil samples were collected continuously from near the surface to four feet below land surface (BLS) except DPT-02 was advanced to eight (8) feet BLS.

Depth to water (DTW) was estimated based on saturated soils. No wells were installed and no groundwater samples were collected during this investigation.

Soil samples were collected for laboratory analysis above the water table at approximately two to three (2-3) feet BLS or three to four (3-4) feet BLS, except at borings DPT-08, DPT-16, and DPT-17, which were collected at one to two (1-2) feet BLS. New disposable nitrile gloves were worn during sampling activities. All samples were placed into laboratory provided glassware and packed on ice in an insulated cooler for transportation to the laboratory. Sample integrity was maintained by following proper Chain of Custody procedures. A copy of the Chain of Custody is provided following the analytical report in Appendix D.

Boreholes were abandoned to the surface using three-eighth inch bentonite chips. Bentonite and water were poured into the borehole simultaneously to facilitate hydration. Final borehole and sample locations were surveyed utilizing a Trimble® GPS survey instrument. Borehole locations and site features are illustrated on Figure 2.

2.2 LABORATORY TESTING

Following boring advancement, soils were removed from the liners and placed in the appropriately labeled glassware. In an attempt to provide information regarding petroleum impacts to soils with reasonable analytical expense, soil samples were analyzed for total petroleum hydrocarbon (TPH) diesel and gasoline range organics (DRO and GRO) by Environmental Protection Agency (EPA) Methods 5030 and 3550 with analysis by modified 8015.

A total of seventeen (17) soil samples were submitted to SGS Environmental Services, Inc., NC Certification # 481 for analysis per EPA Methods 3550 and 5030 by modified 8015. Chain of Custody documentation is included in Appendix D.

3.0 RESULTS

In the event a cut is required for roadway construction, any detectable petroleum contamination will be considered impacted for handling and disposal purposes. Because this is an advanced ROW acquisition PSA, it is not certain what area may be included as a cut or fill section. For that reason, any soil samples revealing detectable TPH laboratory concentrations are considered petroleum impacted.

Sandy soils with varying amounts of silt and/or clay were encountered across the project location. Some thin clay layers were encountered at borings DPT-02 and DPT-06 and. Saturated soils were encountered near three to four feet BLS at each boring indicating an assumed DTW of three to four feet BLS across the site. A variety of petroleum odors were noted during boring advancement including, gasoline, fuel oil, degraded or "old" gasoline, and generic hydrocarbon odors. Complete boring logs are provided in Appendix C.

Summarized soil sample analytical results are provided on Table 1. Sample locations and summarized results are illustrated on Figure 2. The complete analytical report is provided in Appendix D.

There were six (6) boring/sample locations that did not reveal any detectable concentrations of TPH DRO or GRO. Total petroleum hydrocarbon GRO concentrations were detected at five (5) borings; DPT-01, DPT-02, DPT-05, and DPT-06 which were located around the tank basin and at boring DPT-04 which is adjacent to the southeast dispenser island. The GRO concentrations ranged from below reporting limits (BRL) to 1,200 milligrams per kilogram (mg/Kg). Diesel range organic concentrations were detected in borings across the site except for DPT-07, DPT-08, DPT-10, DPT-12, DPT-15 and the DPT-18 boring which was advanced on the adjacent property to the west (see Figure 2). The DRO concentrations ranged from BRL to 587 mg/Kg.

As illustrated on Figure 2, the estimated extent of petroleum (mainly TPH DRO) impacted soils covers about half of the paved portion of the site. Based on the lateral limits illustrated, approximately 9,400 square feet of impacted soil are across the site. Assuming a depth to water of four (4) feet BLS, 1,390 cubic yards of impacted soil may be encountered above the water table across the site.

4.0 SUMMARY AND DISCUSSION

A preliminary site assessment was conducted at the subject site as requested by NCDOT in conjunction with advanced right-of-way acquisition for the US 17 Jacksonville Bypass construction. A total of 17 soil borings were advanced across the site in two (2) mobilizations and a soil sample was collected from each boring for laboratory analysis. Sandy soils with varying silts and clays were encountered during boring advancement. Total petroleum hydrocarbon DRO was revealed in 11 of the 17 soil samples and TPH GRO was detected in five (5) of the 17 soil samples.

The GRO contamination is likely a result of historical retail operations and has previously been reported and documented with the NCDENR. The source of the TPH DRO impacted soils is unknown. There are no known sources of diesel contamination at the subject site. According to the SGS project manager, the site sample chromatograms are not indicative of diesel. Based on information provided within the analytical report in Appendix D, the TPH DRO chromatogram results are not necessarily representative of a diesel release. The TPH DRO results revealed at borings DPT-03, 13, 14, 16, and 17 are more indicative of oil range organics and the DPT-01, 02, 04, and 09 chromatograms resemble GRO. The laboratory report provided in Appendix D includes a Case Narrative and analytical chromatograms for site soil samples and the standard diesel chromatogram.

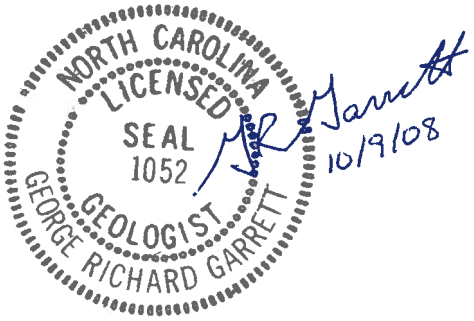
Based on the TPH results, the majority of the soil shown in the presumed cut section across the site may have to be managed as petroleum impacted waste if disturbed during roadway construction. For volume estimate purposes, only soils above the approximate, current, DTW (four feet BLS) were included in the impacted soil volume. Any soils disturbed (including those soils below the water table) within the estimated lateral extent illustrated on Figure 2, may be petroleum impacted. According to information provided by NCDOT, a majority of the Carolina Gas Partners property (former Sunoco®), will not be disturbed during construction. Actual impacted soil volume requiring management will be determined by final design criteria.

5.0 LIMITATIONS

This report is based on the agreed work scope and a review of available data from limited sampling. It is possible that this investigation may have failed to reveal the presence of contamination in the project area where such contamination may exist. Although CATLIN has used accepted methods appropriate for soil sampling, CATLIN cannot guarantee that additional soil and/or groundwater contamination does not exist.

6.0 SIGNATURES

Benjamin J. Ashba
Project Manager



G. Richard Garrett, P.G.
Contract Manager

TABLES

TABLE 1
SUMMARY OF SOIL LABORATORY RESULTS –
TOTAL PETROLEUM HYDROCARBONS –
DIESEL AND GASOLINE RANGE ORGANICS

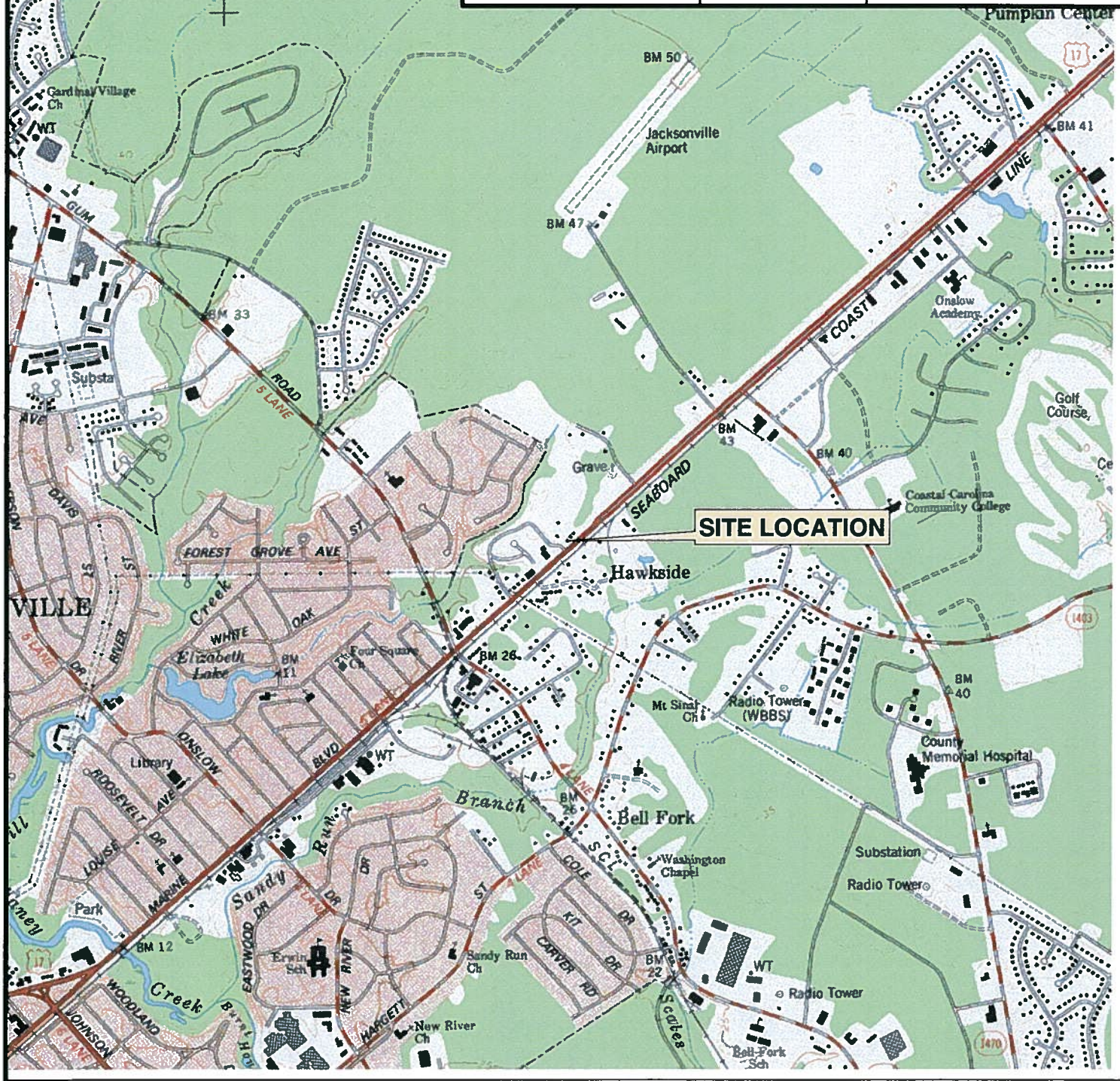
Parcel # 907, Carolina Gas Partners, LLC Property
Former SUNOCO
1709 N. Marine Blvd.

Sample ID	Contaminant of Concern →		Diesel Range Organics	Gasoline Range Organics
	Date Collected	Sample Depth (ft. BLS)		
DPT-01 3-4'	9/18/2008	3 - 4	**84.4**	**827**
DPT-02 3-4'	9/18/2008	3 - 4	**62.4**	**100**
DPT-03 2-3'	9/18/2008	2 - 3	**212**	BRL
DPT-04 2-3'	9/18/2008	2 - 3	**487**	**835**
DPT-05 3-4'	9/18/2008	3 - 4	**21.8**	**19.7**
DPT-06 3-4'	9/18/2008	3 - 4	**587**	**1,200**
DPT-07 2-3'	9/18/2008	2 - 3	BRL	BRL
DPT-08 1-2'	9/18/2008	1 - 2	BRL	BRL
DPT-09 2-3'	9/18/2008	2 - 3	**139**	BRL
DPT-10 2-3'	9/18/2008	2 - 3	BRL	BRL
DPT-12 1.5-2.5'	9/22/2008	1.5 - 2.5	BRL	BRL
DPT-13 2-3'	9/22/2008	2 - 3	**43.8**	BRL
DPT-14 2.5-3.5'	9/22/2008	2.5 - 3.5	**80.0**	BRL
DPT-15 2-3'	9/22/2008	2 - 3	BRL	BRL
DPT-16 1-2'	9/22/2008	1 - 2	**13.4**	BRL
DPT-17 1-2'	9/22/2008	1 - 2	**9.14**	BRL
DPT-18 1.5-2.5'	9/22/2008	1.5 - 2.5	BRL	BRL

All results in milligrams per Kilogram (mg/Kg).
ft. BLS = Feet Below Land Surface
BRL = Below Reporting Limit
Refer to analytical report for a complete list of reporting limits.
Note: There is no DPT-11 boring or sample.

FIGURES

DESCRIPTION: FORMER SUNOCO 1709 N MARINE BLVD JACKSONVILLE	ENGLISH	WBS ELEM: 35008.1.1	FIGURE No: 1
		ST PROJ: U-4007B	TOTAL FIGURES: 2
		FA No: N/A	
		COUNTY: ONSLOW	
PREPARED BY: CATLIN Engineers and Scientists 208-055	SCALE: AS SHOWN	TITLE: **USGS TOPOGRAPHIC GENERAL LOCATION MAP**	



Source: Topozone.com download USGS Topographic Quadrangle, (Jacksonville North, NC)

2,000 1,000 0 2,000 4,000 Feet

SCALE

N W E S

DESCRIPTION: FORMER SUNOCO 1709 N. MARINE BLVD JACKSONVILLE	ENGLISH	WBS ELEM.: 35008.1.1	FIGURE NO. 2
		TIP NO.: U-4007B	TOTAL FIGURES: 2
		F.A. NO.: N/A	
		COUNTY: ONSLOW	
PREPARED BY: CATLIN Engineers and Scientists, 220 Old Dairy Road, Wilmington, NC 28405	SCALE: AS SHOWN	TITLE: SITE MAP WITH SOIL SAMPLE LOCATIONS AND SUMMARIZED RESULTS	

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SCALE IN FEET

Sample ID	Contaminant of Concern → Date Collected	Sample Depth (ft. BLS)	Diesel Range Organics	Gasoline Range Organics
DPT-01 3-4'	9/18/2008	3 - 4	**84.4**	**827**
DPT-02 3-4'	9/18/2008	3 - 4	**62.4**	**100**
DPT-03 2-3'	9/18/2008	2 - 3	**212**	BRL
DPT-04 2-3'	9/18/2008	2 - 3	**487**	**835**
DPT-05 3-4'	9/18/2008	3 - 4	**21.8**	**19.7**
DPT-06 3-4'	9/18/2008	3 - 4	**587**	**1,200**
DPT-07 2-3'	9/18/2008	2 - 3	BRL	BRL
DPT-08 1-2'	9/18/2008	1 - 2	BRL	BRL
DPT-09 2-3'	9/18/2008	2 - 3	**139**	BRL
DPT-10 2-3'	9/18/2008	2 - 3	BRL	BRL
DPT-12 1.5-2.5'	9/22/2008	1.5 - 2.5	BRL	BRL
DPT-13 2-3'	9/22/2008	2 - 3	**43.8**	BRL
DPT-14 2.5-3.5'	9/22/2008	2.5 - 3.5	**80.0**	BRL
DPT-15 2-3'	9/22/2008	2 - 3	BRL	BRL
DPT-16 1-2'	9/22/2008	1 - 2	**13.4**	BRL
DPT-17 1-2'	9/22/2008	1 - 2	**9.14**	BRL
DPT-18 1.5-2.5'	9/22/2008	1.5 - 2.5	BRL	BRL

All results in milligrams per Kilogram (mg/Kg).
ft. BLS = Feet Below Land Surface
BRL = Below Reporting Limit
Refer to analytical report for a complete list of reporting limits.
Note: There is no DPT-11 boring or sample

LEGEND

SOIL BORING & SOIL SAMPLE

NOTE: MAP ADAPTED FROM PLAN SHEETS PROVIDED BY NCDOT.

APPENDICES

APPENDIX A

GEOPHYSICAL REPORT

Schnabel Engineering South

11-A Oak Branch Drive
Greensboro, NC 27407
Phone (336) 274-9456
Fax (336) 274-9486
www.schnabel-eng.com

October 2, 2008

Mr. Richard Garrett, LG
Catlin Engineers and Scientists, Inc
P.O. Box 10279
Wilmington, NC 28404-0279

Via email (pdf)

cc: Mr. Cyrus Parker, Mr. Terry Fox, NCDOT
Mr. Ben Ashba, Catlin Engineers and Scientists

State Project: U-4007B
WBS Element: 35008.1.1
County: Onslow
Description: Jacksonville – US 17 from SR 1403 (Country Club Road) to Western Blvd

SUBJECT: Parcel #907, Carolina Gas Partners, LLC Property
Report for Geophysical Surveys to Locate Possible UST's
Schnabel Engineering Project No. 08210020.02

Dear Mr. Garrett:

This letter contains our report on the geophysical surveys we conducted on the subject property. We understand this letter report will be included as an appendix in your report to the NCDOT. The report includes two 11x17 color figures.

1.0 INTRODUCTION

Schnabel Engineering conducted geophysical surveys on September 17, 2008, in the accessible areas of the proposed right-of-way (ROW) section of Parcel 907 (Carolina Gas Partners, LLC, Property) under our 2008 contract with the NCDOT. Parcel 907 is located on the north side of US 17 (North Marine Boulevard), approximately 140 feet east of Montford Lane, in Jacksonville, NC. The work was conducted at the location indicated by the NCDOT to support their environmental assessment of the subject parcel. The purpose of the geophysical surveys was to locate possible metal underground storage tanks (UST's) in the accessible areas of the site.

2.0 FIELD METHODOLOGY

Locations of geophysical data points were obtained using a sub-meter Trimble ProXRS DGPS system. References to direction and location in this report are based on the US State Plane 1983 system, North Carolina 3200 zone, using the NAD 83 datum, with units in US survey feet. The locations of existing site features (building, curbs, signs, etc.) were recorded for later correlation with the geophysical data and for location references to the NCDOT drawings. The geophysical investigation consisted of an electromagnetic (EM) induction survey using a Geonics EM61-MK2 instrument, and a ground-penetrating radar (GPR) survey using a Geophysical Survey Systems SIR-3000 system equipped with a 400 MHz antenna.

The EM61 data were collected along parallel survey lines spaced about 2.5 feet apart. The EM61 and DGPS data were recorded digitally using a field computer and later transferred to a desktop computer for data processing. The GPR data were collected along survey lines spaced one to two feet apart in orthogonal directions over anomalous EM readings that could not be attributed to known metallic features.

Preliminary results were sent to Richard Garrett and Ben Ashba of Catlin and Terry Fox and Cyrus Parker of the NCDOT on September 19, 2008.

3.0 DISCUSSION OF RESULTS

The EM61 early time gate results are plotted on Figure 1. The early time gate data provide the most sensitive detection of metal object targets, regardless of size. Figure 2 shows the difference between the response of the top and bottom coils of the EM61 instrument (differential response). The difference is taken to remove the effect of surface and very shallowly buried metallic objects. Typically, the differential response emphasizes anomalies from deeper and larger objects such as UST's.

The early time gate and differential results indicate several anomalies probably caused by known metallic features. Several areas containing anomalies not attributed to known metallic features were investigated using GPR. The GPR data indicate that these anomalies are caused by reinforced concrete or possible buried metal debris. The approximate locations of the three known UST's were determined from the GPR data collected over the tank pit, as shown on Figures 1 and 2. The GPR data indicate that the UST's are buried about 3 to 4 feet below the ground surface, and they are about 5 feet in diameter and about 24 feet long, equivalent to a capacity of about 4000 gallons each. The GPR data did not indicate the presence of unknown UST's in the areas surveyed on Parcel 907.

4.0 CONCLUSIONS

Our evaluation of the geophysical data collected on Parcel 907 of Project U-4007B in Jacksonville, NC indicates the following:

- The geophysical data indicated the presence of the three known UST's in the areas surveyed.

- The geophysical data did not indicate the presence of unknown UST's in the areas surveyed.

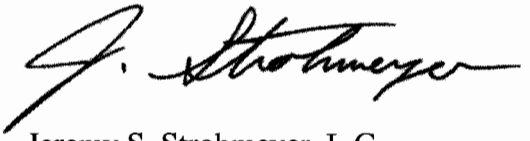
5.0 LIMITATIONS

These services have been performed and this report prepared for Catlin Engineers and Scientists, Inc. and the North Carolina Department of Transportation in accordance with generally accepted guidelines for conducting geophysical surveys. It is generally recognized that the results of geophysical surveys are non-unique and may not represent actual subsurface conditions.

Thank you for the opportunity to serve you on this project. Please call if you need additional information or have any questions.

Sincerely,

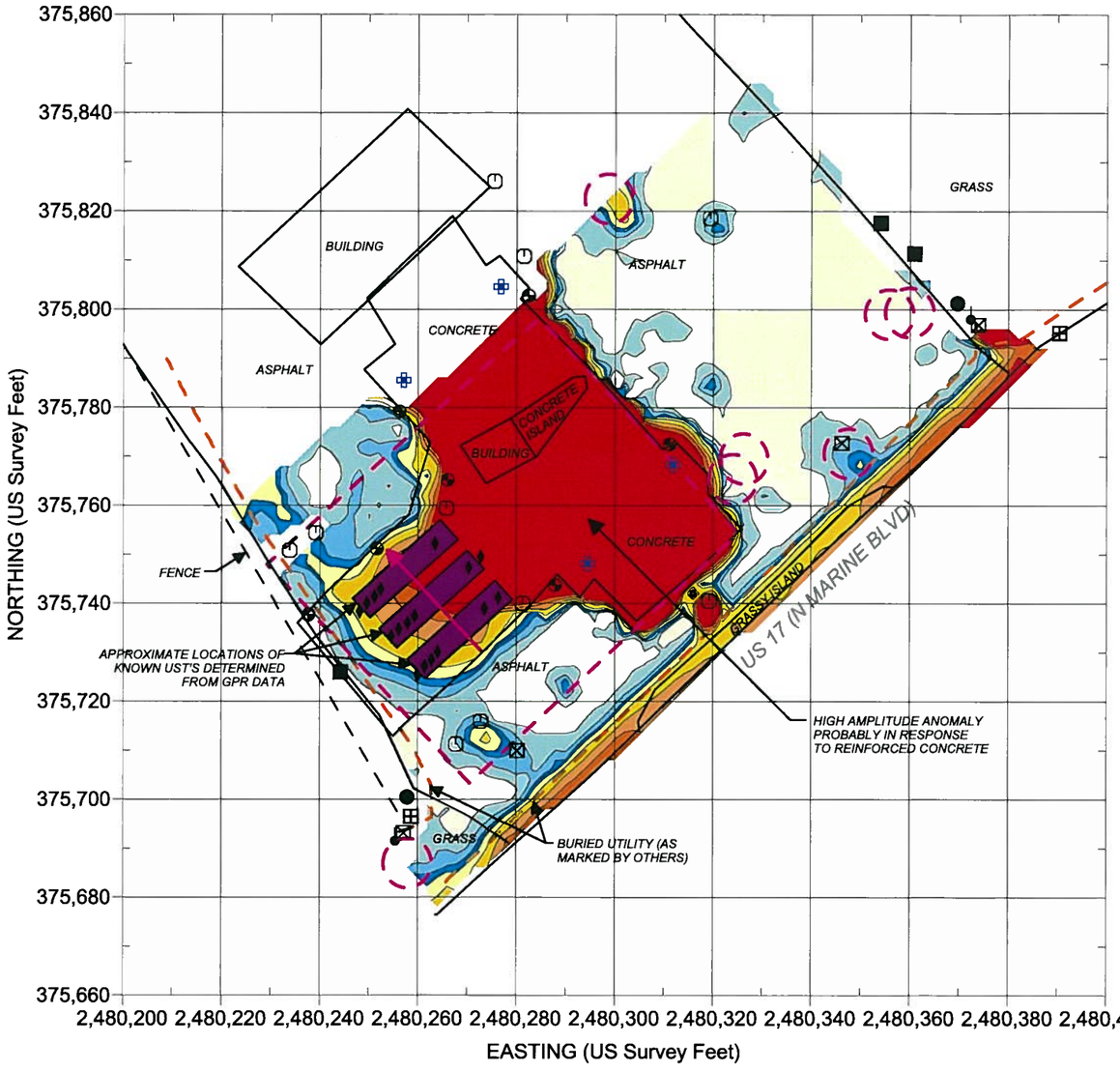
SCHNABEL ENGINEERING SOUTH, P.C.

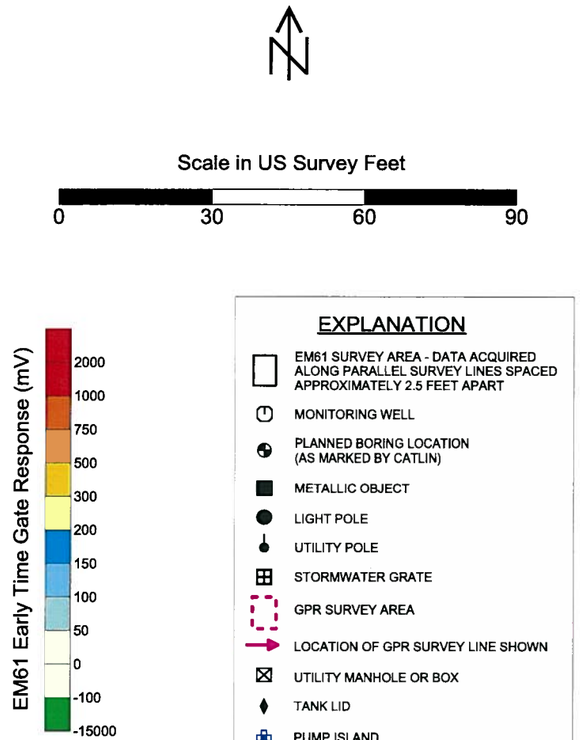


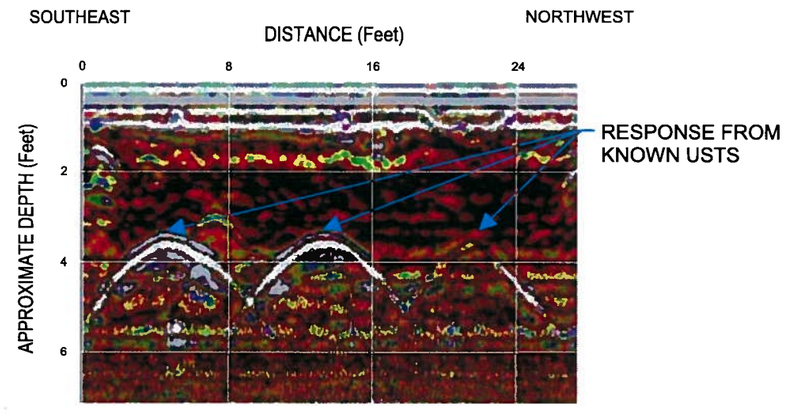
Jeremy S. Strohmeyer, L.G.
Project Manager

Edward D. Billington, L.G.
Senior Vice President

JW/JS/NB
Attachment: Figures (2)
FILE: G:\2008 PROJECTS\08210020 (NCDOT 2008 GEOTECH UNIT SERVICES)\08210020.02 (U-4007, ONSLOW COUNTY)\REPORT\SCHNABEL REPORT ON GEOPHYSICAL SURVEYS OF PARCEL 907.DOC







Note: The contour plot shows the earliest and most sensitive time gate of the EM61 bottom coil/channel in millivolts (mV). The EM data were collected on September 17, 2008, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina Zone 3200, using the NAD 1983 datum. GPR data were acquired on September 17, 2008, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

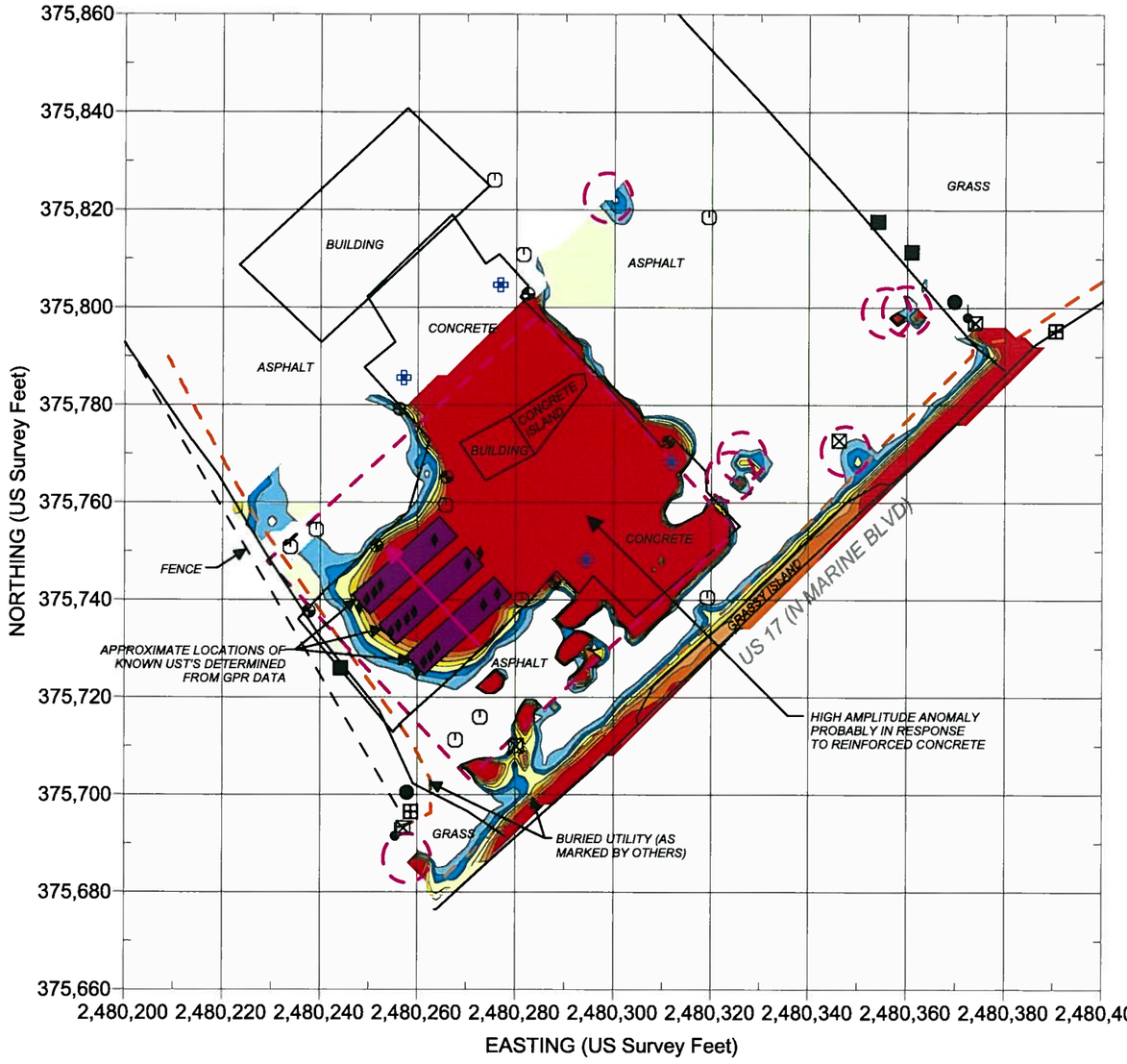
Schnabel Engineering

NC Department of Transportation
Geotechnical Engineering Unit

State Project No. U-4007B
Onslow County, North Carolina

EM61
EARLY TIME GATE RESPONSE

FIGURE 1



Scale in US Survey Feet

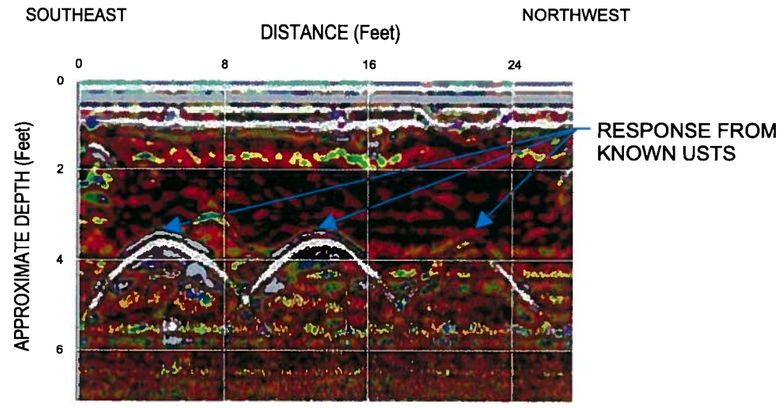
0 30 60 90

Differential Response (mV)

200
160
140
120
100
80
60
40
0
-500
-20000

EXPLANATION

- EM61 SURVEY AREA - DATA ACQUIRED ALONG PARALLEL SURVEY LINES SPACED APPROXIMATELY 2.5 FEET APART
- MONITORING WELL
- PLANNED BORING LOCATION (AS MARKED BY CATLIN)
- METALLIC OBJECT
- LIGHT POLE
- UTILITY POLE
- STORMWATER GRATE
- GPR SURVEY AREA
- LOCATION OF GPR SURVEY LINE SHOWN
- UTILITY MANHOLE OR BOX
- TANK LID
- PUMP ISLAND



Note: The contour plot shows the difference, in millivolts (mV), between the readings from the top and bottom coils of the EM61. The difference is taken to reduce the effect of shallow metal objects and emphasize anomalies caused by deeper metallic objects, such as drums and tanks. The EM data were collected on September 17, 2008, using a Geonics EM61-MK2 instrument. Positioning for the EM61 survey was provided using a submeter Trimble ProXRS DGPS system. Coordinates are in the US State Plane 1983 System, North Carolina 3200 Zone, using the NAD 1983 datum. GPR data were acquired on September 17, 2008, using a Geophysical Survey Systems SIR 3000 equipped with a 400 MHz antenna.

Schnabel Engineering

NC Department of Transportation
Geotechnical Engineering Unit

State Project No. U-4007B
Onslow County, North Carolina

EM61 DIFFERENTIAL RESPONSE

FIGURE 2

APPENDIX B

SITE PHOTOGRAPHS

PHOTOGRAPHS

Parcel #907
Carolina Gas Partners, LLC
Former Sunoco
1709 N. Marine Blvd.
Jacksonville, NC

Looking North from UST Basin at former convenience store

Looking Northeast at northern dispenser island

Looking East towards southern dispenser island and across UST basin

Looking Southeast across UST basin and along western property boundary.

APPENDIX C

BORING LOGS

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
208-055
Wilmington, NC

WBS Element: 35008.1.1
TIP Number: U-4007

SHEET 1 OF 1

PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler	**BORING ID:** DPT-01
		DRILLER: Bobbie D. Fowler	
NORTHING: 375,714.49	**EASTING:** 2,480,255.64	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/18/08	**FINISH DATE:** 9/18/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT (0.5 0.5 0.5 0.5)	MOI.	OVA RESULTS (ppm) (0 1000 2000 3000 4000)	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.8	Crush-n-run GRAVEL FILL.	
		M			SP		2.5	Olive to tan fine SAND. Few fines.	
2.0		W		DPT-01 (3-4') @ 1130 on 9/18/08	SM		4.0	Olive gray SILTY SAND. Switches to black organic silty sand at 3.5' BLS. Old gas odor @ 3-4'. Wet @ 3.5'.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 208-055 - NCDOT CAROLINA GAS.GPJ CATLIN.GDT 10/2/08

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
208-055
Wilmington, NC

WBS Element: 35008.1.1
TIP Number: U-4007

SHEET 1 OF 1

PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler	**BORING ID:** DPT-02
		DRILLER: Bobbie D. Fowler	
NORTHING: 375,731.47	**EASTING:** 2,480,272.39	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 8.0
START DATE: 9/18/08	**FINISH DATE:** 9/18/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.8	Crush-n-run GRAVEL FILL.	
		M							
2.0					SP			Olive fine SAND w/ some fines. Old gas odor 3-4'.	
		M		DPT-02 (3-4') @ 1115 on 9/18/08			3.5		
					CL		3.8	CLAY lense.	
4.0					SP			Olive fine SAND. Wet @ 4'.	
		W					5.3		
					CL		5.5	CLAY lense.	
6.0					SP			Olive fine SAND.	
		W							
8.0							8.0	Boring Terminated at Depth 8.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO_LOG_208-055 - NCDOT CAROLINA GAS.GPJ CATLIN.GDT 10/2/08

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
208-055
Wilmington, NC

WBS Element: 35008.1.1
TIP Number: U-4007

SHEET 1 OF 1

PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco	**LOGGED BY:** Steve Tyler		**BORING ID:** DPT-03
	DRILLER: Bobbie D. Fowler		
NORTHING: 375,746.00	**EASTING:** 2,480,288.26	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/18/08	**FINISH DATE:** 9/18/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.5	Crush-n-run GRAVEL FILL.	
		M			SM			Orange/tan SILTY SAND. Changes to olive color at 2' BLS. Slight fuel oil odor 2-3'.	
2.0		W		DPT-03 (2-3') @ 1100 on 9/18/08			3.3		
					SC/ SM			Olive/tan SILTY to CLAYEY SAND. Wet @ 3.75'.	
4.0							4.0	Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO_LOG_208-055 - NCDOT CAROLINA GAS.GPJ CATLIN.GDT 10/2/08

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
208-055
Wilmington, NC

WBS Element: 35008.1.1
TIP Number: U-4007

SHEET 1 OF 1

PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler	**BORING ID:** DPT-04
		DRILLER: Bobbie D. Fowler	
NORTHING: 375,775.32	**EASTING:** 2,480,310.41	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/18/08	**FINISH DATE:** 9/18/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT (0.5 0.5 0.5 0.5)	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.8	Crush-n-run GRAVEL FILL.	
		M			SP		2.3	Tan fine SAND. Few fines.	
2.0									
		M		DPT-04 (2-3') @ 1140 on 9/18/08	SM		4.0	Olive/brown SILTY SAND. Slight gas odor 3-4'.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 208-055 - NCDOT CAROLINA GAS.GPJ CATLIN.GDT 10/2/08

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
208-055
Wilmington, NC

WBS Element: 35008.1.1
TIP Number: U-4007
SHEET 1 OF 1

PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler	**BORING ID:** DPT-05
		DRILLER: Bobbie D. Fowler	
NORTHING: 375,738.80	**EASTING:** 2,480,236.65	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/18/08	**FINISH DATE:** 9/18/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.8	Crush-n-run GRAVEL FILL.	
		M			SP		2.8	Olive/tan fine SAND, some silt.	
2.0				DPT-05 (3-4') @ 1150 on 9/18/08					
		W			SM		4.0	Black organic SILTY SAND w/ wood fragments. Slight gas odor 3-4'. Wet @ 3.75'.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
208-055
Wilmington, NC

WBS Element: 35008.1.1
TIP Number: U-4007

SHEET 1 OF 1

PROJECT NO.: 208-055	STATE: NC	COUNTY: Onslow	LOCATION: Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco	LOGGED BY: Steve Tyler		BORING ID: DPT-06
	DRILLER: Bobbie D. Fowler		
NORTHING: 375,754.25	EASTING: 2,480,251.53	CREW:	
SYSTEM: NCSP NAD 83 (USft)	BORING LOCATION:		LAND ELEV.: NM
DRILL MACHINE: Power Probe	METHOD: Direct Push	0 HOUR DTW:	BORING DEPTH: 4.0
START DATE: 9/18/08	FINISH DATE: 9/18/08	24 HOUR DTW:	ROCK DEPTH: --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.5	Crush-n-run GRAVEL FILL.	
		M							
2.0					SP			Olive/tan fine SAND w/ some silt. Changes to gray/tan at 3'. Gas odor 2-4'.	
		W		DPT-06 (3-4') @ 1200 on 9/18/08					
							3.5		
					CL		3.8	CLAY lense.	
					SP		4.0	Gray/tan fine SAND. Wet.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 208-055 - NCDOT CAROLINA GAS.GPJ CATLIN.GDT 10/2/08

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
208-055
Wilmington, NC

WBS Element: 35008.1.1
TIP Number: U-4007

SHEET 1 OF 1

PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler	**BORING ID:** DPT-07
		DRILLER: Bobbie D. Fowler	
NORTHING: 375,769.94	**EASTING:** 2,480,265.02	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/18/08	**FINISH DATE:** 9/18/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.5	Crush-n-run GRAVEL FILL.	
		M			SP		2.8	Tan/gray fine SAND w/ some silt.	
2.0		M		DPT-07 (2-3') @ 1215 on 9/18/08	SC/ SM		4.0	Tan CLAYEY to SILTY fine SAND. No odor. Wet @ 3.75'.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 208-055 - NCDOT CAROLINA GAS.GPJ CATLIN.GDT 10/2/08

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
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Wilmington, NC

WBS Element: 35008.1.1
TIP Number: U-4007
SHEET 1 OF 1

PROJECT NO.: 208-055	STATE: NC	COUNTY: Onslow	LOCATION: Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco	LOGGED BY: Steve Tyler		BORING ID: DPT-08
	DRILLER: Bobbie D. Fowler		
NORTHING: 375,782.89	EASTING: 2,480,255.50	CREW:	
SYSTEM: NCSP NAD 83 (USft)	BORING LOCATION:		LAND ELEV.: NM
DRILL MACHINE: Power Probe	METHOD: Direct Push	0 HOUR DTW:	BORING DEPTH: 4.0
START DATE: 9/18/08	FINISH DATE: 9/18/08	24 HOUR DTW:	ROCK DEPTH: --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.5	Crush-n-run GRAVEL FILL.	
		M		DPT-08 (1-2') @ 1000 on 9/18/08	SM		2.3	Tan SILTY SAND. No odor.	
2.0		W			SC		4.0	Gray/tan CLAYEY SAND to SANDY CLAY. No odor. Wet @ 3.5'.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 208-055 - NCDOT CAROLINA GAS.GPJ CATLIN.GDT 10/2/08

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
208-055
Wilmington, NC

WBS Element: 35008.1.1
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PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler	**BORING ID:** DPT-09
		DRILLER: Bobbie D. Fowler	
NORTHING: 375,806.34	**EASTING:** 2,480,281.22	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/18/08	**FINISH DATE:** 9/18/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.5	Crush-n-run GRAVEL FILL.	
		M			SM			Tan/gray SILTY SAND. Slight gas odor 2-3'.	
2.0									
		M		DPT-09 (2-3') @ 1045 on 9/18/08					
					SC		4.0	Tan/olive CLAYEY SAND. Wet @ 3.75'.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

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BORING LOG

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Wilmington, NC

WBS Element: 35008.1.1
TIP Number: U-4007

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PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler **DRILLER:** Bobbie D. Fowler	**BORING ID:** DPT-10
NORTHING: 375,820.37	**EASTING:** 2,480,225.17	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/18/08	**FINISH DATE:** 9/18/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0		M			SC/ SM			Olive SILTY to CLAYEY SAND. Slight HC odor 2-3'.	
2.0		W		DPT-10 (2-3') @ 0845 on 9/18/08			3.0		
					SM			Gray SILTY SAND. Wet @ 3.5'.	
4.0							4.0	Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

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BORING LOG

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PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler	**BORING ID:** DPT-12
		DRILLER: Bobbie D. Fowler	
NORTHING: 375,768.49	**EASTING:** 2,480,238.90	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/22/08	**FINISH DATE:** 9/22/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.8	Crush-n-run GRAVEL FILL.	
		M		DPT-12 (1.5-2.5') @ 1115 on 9/18/08	SM		1.5	Tan SILTY SAND.	
					SP		2.0	Tan fine SAND. Very slight gas odor 1.5-2'.	
2.0		M			SM/ CL		4.0	Olive/gray SANDY CLAY. Moderate plasticity.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

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PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco	**LOGGED BY:** Steve Tyler		**BORING ID:** DPT-13
	DRILLER: Bobbie D. Fowler		
NORTHING: 375,798.65	**EASTING:** 2,480,338.46	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/22/08	**FINISH DATE:** 9/22/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.8	Crush-n-run GRAVEL FILL.	
		M							
2.0					SP			Tan fine SAND w/ some silts. Switches to black organic sand at 2'. Very slight odor 2-3'.	
		M		DPT-13 (2-3') @ 1130 on 9/18/08					
4.0							4.0	Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

BORING LOG

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Wilmington, NC

WBS Element: 35008.1.1
TIP Number: U-4007

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PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler	**BORING ID:** DPT-14
		DRILLER: Bobbie D. Fowler	
NORTHING: 375,791.83	**EASTING:** 2,480,295.92	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/22/08	**FINISH DATE:** 9/22/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.8	Crush-n-run GRAVEL FILL.	
		M			SM		2.0	Tan SILTY SAND. Changes to black organic SILTY SAND at 1.5'.	
2.0		M		DPT-14 (2.5-3.5') @ 1145 on 9/22/08	SC		4.0	Olive/tan SANDY CLAY (moderate plasticity). Very slight HC odor 2.5-3.5'.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

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PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler	**BORING ID:** DPT-15
		DRILLER: Bobbie D. Fowler	
NORTHING: 375,818.15	**EASTING:** 2,480,320.45	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/22/08	**FINISH DATE:** 9/22/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					GW		0.3	ASPHALT.	
					GW		0.8	Crush-n-run GRAVEL FILL.	
		M			SC/ SM		1.5	Tan SILTY to CLAYEY SAND.	
2.0					SM		2.5	Tan SILTY SAND. No odor.	
		M		DPT-15 (2-3') @ 1200 on 9/22/08	SP		4.0	Black organic fine SAND w/ some fines. No odor.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

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PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler	**BORING ID:** DPT-16
		DRILLER: Bobbie D. Fowler	
NORTHING: 375,821.71	**EASTING:** 2,480,365.94	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/22/08	**FINISH DATE:** 9/22/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0					SM			Olive/tan SILTY SAND.	
							0.5		
					SC/CL		0.8	Tan SANDY CLAY.	
		M		DPT-16 (1-2') @ 1215 on 9/22/08					
2.0					SM			Tan SILTY SAND. Switches to black organic silty sand at 2.5'. No odor. Wet @ 2.5'.	
		W							
4.0							4.0	Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

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PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler	**BORING ID:** DPT-17
		DRILLER: Bobbie D. Fowler	
NORTHING: 375,838.07	**EASTING:** 2,480,389.24	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/22/08	**FINISH DATE:** 9/22/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT 0.5 0.5 0.5 0.5	MOI.	OVA RESULTS (ppm) 0 1000 2000 3000 4000	LAB.	USCS	LOG	SOIL AND ROCK DESCRIPTION DEPTH	ELEVATION
							0.0 LAND SURFACE	
0.0		M		DPT-17 (1-2') @ 1230 on 9/22/08	SP		Black organic fine SAND w/ some fines. No odor. Wet @ 2.25'.	
2.0		W						
4.0							4.0 Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 208-055 - NCDOT CAROLINA GAS.GPJ CATLIN.GDT 10/2/08

BORING LOG

CATLIN ENGINEERS and SCIENTISTS
208-055
Wilmington, NC

WBS Element: 35008.1.1
TIP Number: U-4007

SHEET 1 OF 1

PROJECT NO.: 208-055	**STATE:** NC	**COUNTY:** Onslow	**LOCATION:** Jacksonville
PROJECT NAME: Carolina Gas Property / Sunoco		**LOGGED BY:** Steve Tyler	**BORING ID:** DPT-18
		DRILLER: Bobbie D. Fowler	
NORTHING: 375,694.16	**EASTING:** 2,480,229.76	**CREW:**	
SYSTEM: NCSP NAD 83 (USft)	**BORING LOCATION:**		**LAND ELEV.:** NM
DRILL MACHINE: Power Probe	**METHOD:** Direct Push	**0 HOUR DTW:**	**BORING DEPTH:** 4.0
START DATE: 9/22/08	**FINISH DATE:** 9/22/08	**24 HOUR DTW:**	**ROCK DEPTH:** --

DEPTH	BLOW COUNT (0.5 0.5 0.5 0.5)	MOI.	OVA RESULTS (ppm) (0 1000 2000 3000 4000)	LAB.	USCS	LOG	DEPTH	SOIL AND ROCK DESCRIPTION	ELEVATION
							0.0	LAND SURFACE	
0.0		M		DPT-18 (1.5-2.5') @ 1245 on 9/22/08	SM		1.3	Black organic SILTY SAND.	
2.0		W			SP		4.0	Tan/olive fine SAND. No odor. Saturated at 3'.	
4.0								Boring Terminated at Depth 4.0 ft	

▽ = 0hr. DTW ▼ = 24hr. DTW

CATLIN ENVIRO LOG 208-055 - NCDOT CAROLINA GAS.GPJ CATLIN.GDT 10/2/08

APPENDIX D

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

SGS

Rick Garrett
Richard Catlin & Associates
220 Old Dairy Rd.
Wilmington, NC 28405

Report Number: G128-2249

Client Project: NCDOT Sunoco

Dear Rick Garrett,

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. 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 services performed during this project, please call Ashley Nifong at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS Environmental Services for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS Environmental Services, Inc.

Ashley Nifong
REVISED
2008.10.02 14:58:58 -04'00'

Project Manager
Ashley Nifong

Date

CASE NARRATIVE
Richard Catlin & Associates

SGS Laboratory Number: G128-2249

DATE: October 2, 2008

SAMPLE RECEIPT OBSERVATIONS:
The samples were received September 22, 2008 at 1500 via courier in good condition. The samples arrived with a temperature of 6.0 ° C.

All extractions and analyses were completed within holding time and without quality control exception.

Three of the samples had DRO detections and one of the samples had a low DRO detection. Applicable chromatographic similarities to known standard patterns are noted below. The following observations were made and can be used as a general guide. Additional testing may be required for a definitive characterization of the contamination.

CLIENT SAMPLE ID	APPEARANCE OF CONTAMINATION
DPT-13 2-3'	Similar to residual oil range organics
DPT-14 2.5-3.5'	Similar to residual oil range organics
DPT-16 1-2'	Similar to residual oil range organics
DPT-17 1-2'	Concentration too low to characterize

Ashley Conklin
2008.10.02 11:29:51 -04'00'
Date

Data Review

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.

2) Uncertainty for all reported data is less than or equal to 30 percent.

Print Date: 10/2/2008

Client Sample ID: **DPT-12 1.5-2.5'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-1D
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 11:15
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 84.96
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	BQL	7.25		MG/KG	1		24-Sep-08 0:44

Surrogates

OTP	68.3	40-140		%	1		24-Sep-08 0:44

Batch Information

Analytical Batch: EP092308
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.47
Prep Extract Vol: 10

Print Date: 10/2/2008

Client Sample ID: **DPT-13 2-3'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-2D
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 11:30
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 90.11
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	**43.8**	6.36		MG/KG	1		24-Sep-08 1:12

Surrogates

OTP	81.5	40-140		%	1		24-Sep-08 1:12

Batch Information

Analytical Batch: EP092308
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 34.88
Prep Extract Vol: 10

Print Date: 10/2/2008

Client Sample ID: **DPT-14 2.5-3.5'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-3D
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 11:45
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 86.59
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	**80.0**	6.99		MG/KG	1		24-Sep-08 1:41

Surrogates

OTP	74.8	40-140		%	1		24-Sep-08 1:41

Batch Information

Analytical Batch: EP092308
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 33.04
Prep Extract Vol: 10

Print Date: 10/2/2008

Client Sample ID: **DPT-15 2-3'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-4D
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 12:00
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 88.55
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	BQL	6.87		MG/KG	1		24-Sep-08 2:09

Surrogates

OTP	67.4	40-140		%	1		24-Sep-08 2:09

Batch Information

Analytical Batch: EP092308
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.9
Prep Extract Vol: 10

Print Date: 10/2/2008

Client Sample ID: **DPT-16 1-2'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-5D
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 12:15
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 85.12
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	**13.4**	6.96		MG/KG	1		24-Sep-08 2:38

Surrogates

OTP	80.5	40-140		%	1		24-Sep-08 2:38

Batch Information

Analytical Batch: EP092308
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 33.75
Prep Extract Vol: 10

Print Date: 10/2/2008

Client Sample ID: **DPT-17 1-2'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-6D
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 12:30
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 89.68
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	**9.14**	6.64		MG/KG	1		24-Sep-08 3:07

Surrogates

OTP	78.9	40-140		%	1		24-Sep-08 3:07

Batch Information

Analytical Batch: EP092308
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 33.58
Prep Extract Vol: 10

Print Date: 10/2/2008

Client Sample ID: **DPT-18 1.5-2.5'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-7D
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 12:45
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 84.03
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	BQL	7.26		MG/KG	1		24-Sep-08 3:35

Surrogates

OTP	72.4	40-140		%	1		24-Sep-08 3:35

Batch Information

Analytical Batch: EP092308
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.77
Prep Extract Vol: 10

Print Date: 10/2/2008

Client Sample ID: **DPT-12 1.5-2.5'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-1A
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 11:15
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 84.96
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	BQL	4.83		MG/KG	1		24-Sep-08 19:10

Surrogates

BFB	96	70-130		%	1		24-Sep-08 19:10

Batch Information

Analytical Batch: VP092408
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 7.31
Prep Extract Vol: 5

Print Date: 10/2/2008

Client Sample ID: **DPT-13 2-3'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-2A
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 11:30
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 90.11
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	BQL	5.08		MG/KG	1		24-Sep-08 19:37

Surrogates

BFB	92.4	70-130		%	1		24-Sep-08 19:37

Batch Information

Analytical Batch: VP092408
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.55
Prep Extract Vol: 5

Print Date: 10/2/2008

Client Sample ID: **DPT-14 2.5-3.5'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-3A
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 11:45
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 86.59
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	BQL	5.28		MG/KG	1		25-Sep-08 17:17

Surrogates

BFB	104	70-130		%	1		25-Sep-08 17:17

Batch Information

Analytical Batch: VP092508
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.56
Prep Extract Vol: 5

Print Date: 10/2/2008

Client Sample ID: **DPT-15 2-3'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-4A
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 12:00
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 88.55
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	BQL	5.00		MG/KG	1		25-Sep-08 17:44

Surrogates

BFB	92.6	70-130		%	1		25-Sep-08 17:44

Batch Information

Analytical Batch: VP092508
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.78
Prep Extract Vol: 5

Print Date: 10/2/2008

Client Sample ID: **DPT-16 1-2'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-5A
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 12:15
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 85.12
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	BQL	6.71		MG/KG	1		25-Sep-08 18:10

Surrogates

BFB	92.9	70-130		%	1		25-Sep-08 18:10

Batch Information

Analytical Batch: VP092508
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 5.25
Prep Extract Vol: 5

Print Date: 10/2/2008

Client Sample ID: **DPT-17 1-2'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-6A
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 12:30
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 89.68
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	BQL	6.17		MG/KG	1		25-Sep-08 18:37

Surrogates

BFB	91.8	70-130		%	1		25-Sep-08 18:37

Batch Information

Analytical Batch: VP092508
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 5.42
Prep Extract Vol: 5

Print Date: 10/2/2008

Client Sample ID: **DPT-18 1.5-2.5'**
Client Project ID: NCDOT Sunoco
Lab Sample ID: G128-2249-7A
Lab Project ID: G128-2249

Collection Date: 22-Sep-08 12:45
Received Date: 22-Sep-08
Matrix: SOIL
Solids: 84.03
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	BQL	5.89		MG/KG	1		25-Sep-08 19:03

Surrogates

BFB	99.5	70-130		%	1		25-Sep-08 19:03

Batch Information

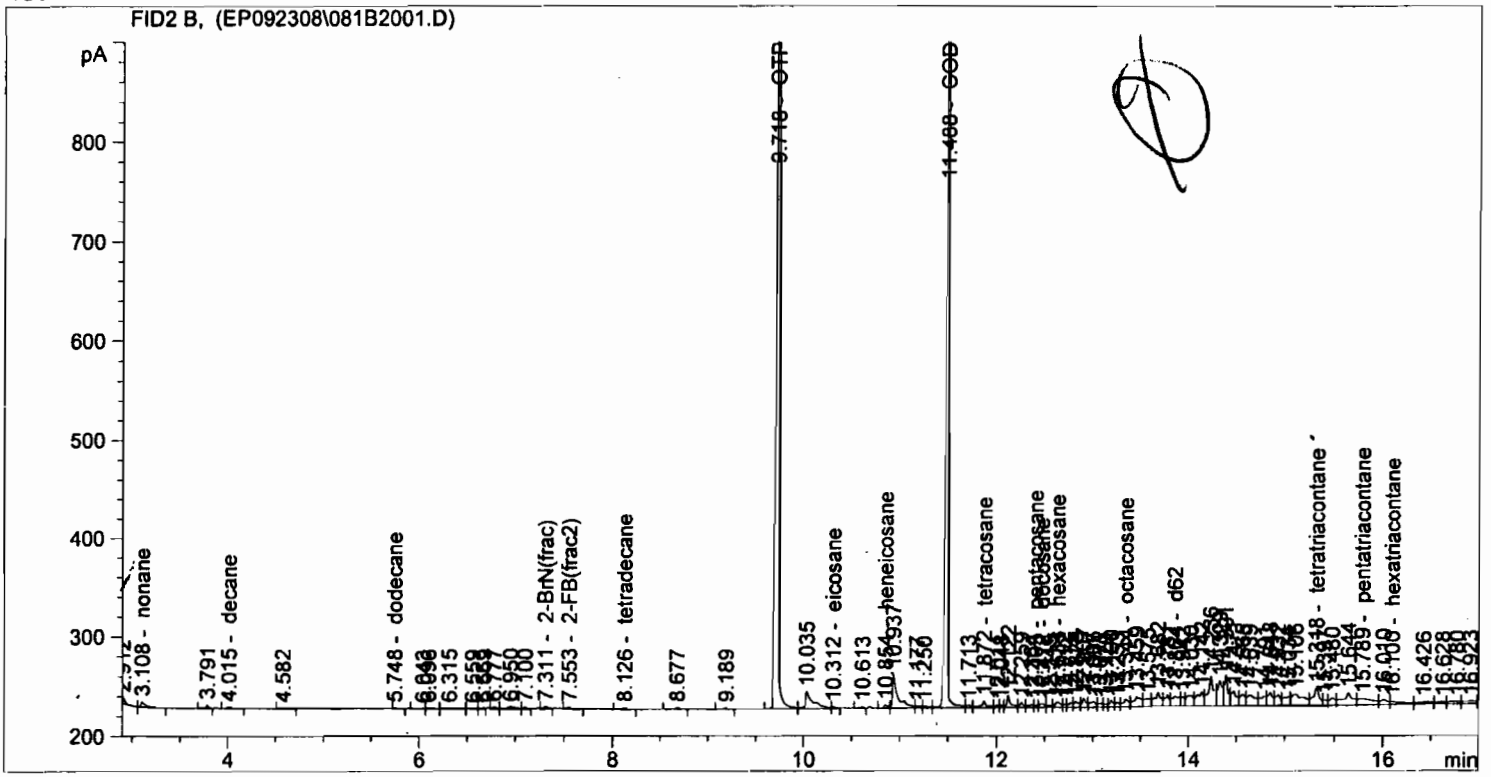
Analytical Batch: VP092508
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.06
Prep Extract Vol: 5

DPT-12 1.5-2.5'

Gr 092509

```
Injection Date  : 9/24/2008 12:44:34 AM          Seq. Line :  20
Sample Name     : G128-2249-1D x1               Location : Vial 81
Acq. Operator   : EAW                              Inj :   1
Acq. Instrument : GC6                          Inj Volume : 10 µl
Acq. Method     : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed    : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed    : 9/23/2008 3:50:09 PM by EAW
TPH
```

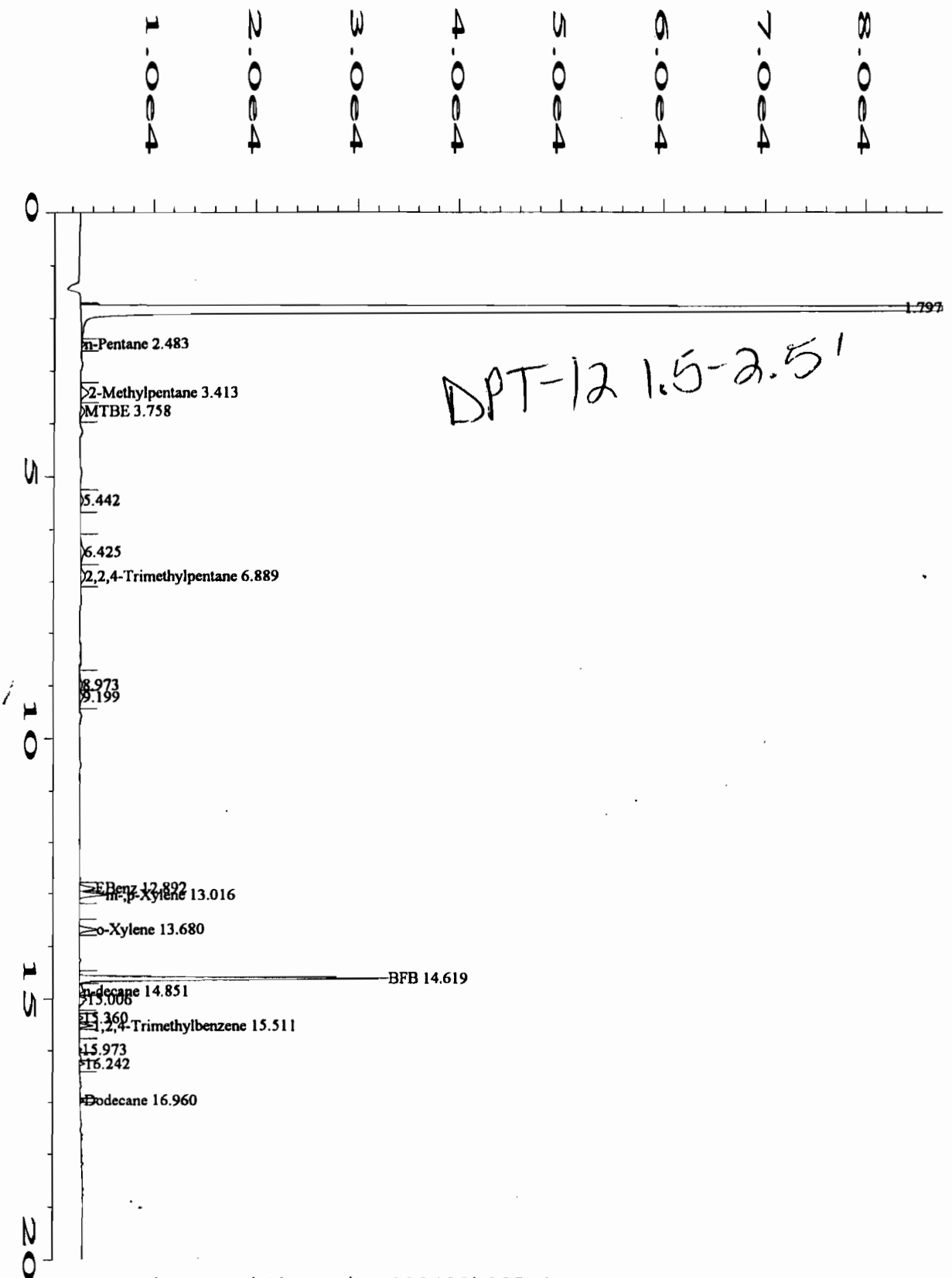


Area Percent Report

```
Sorted By             :      Signal
Calib. Data Modified  :      9/22/2008 10:52:08 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs
```

Signal 1: FID2 B,

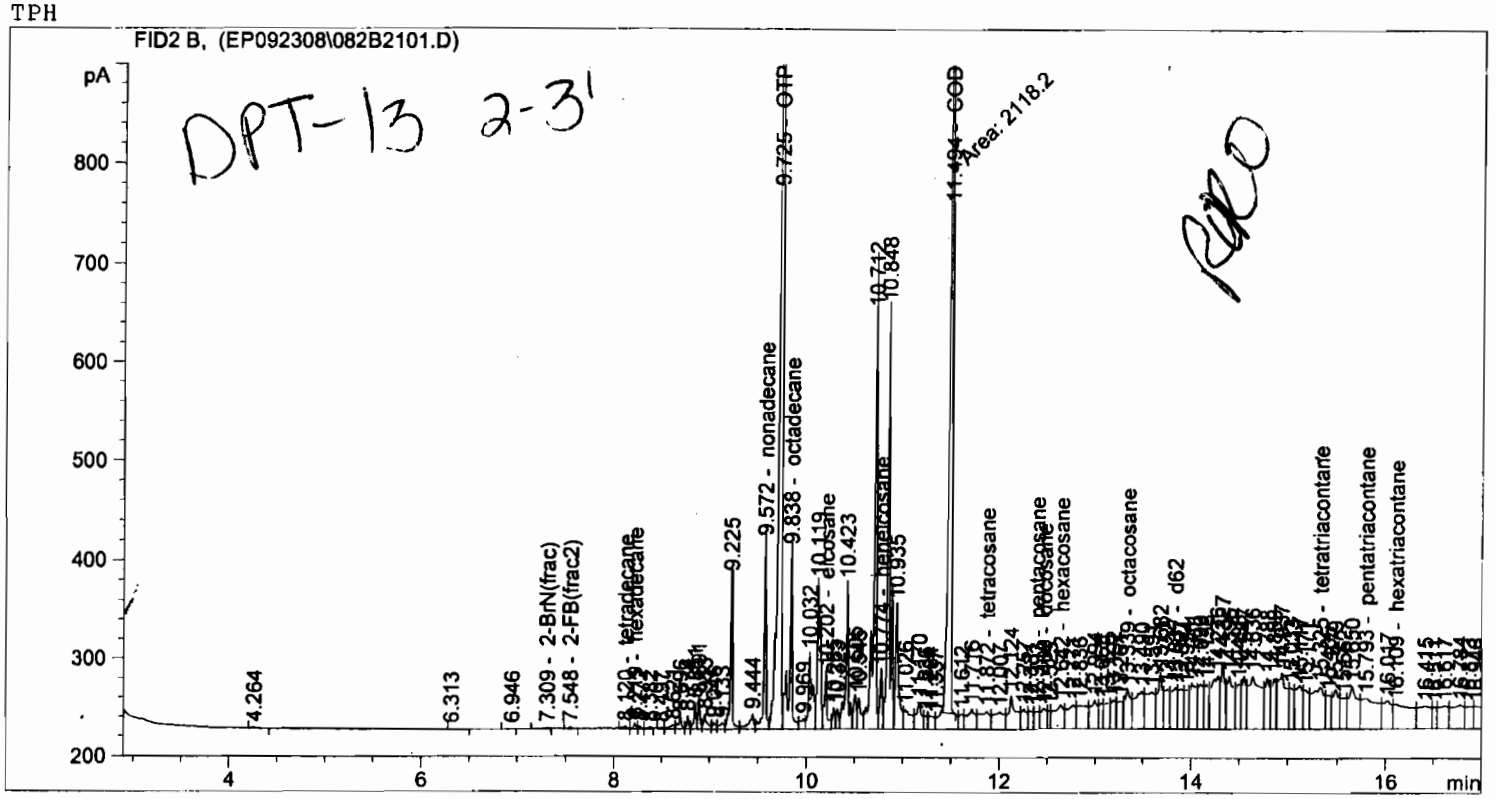
Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.108	VP	0.0452	18.33983	0.00010	nonane
2	4.015	VV	0.0893	9.81088	5.589e-5	decane
3	5.748	VV	0.0530	4.30885	2.455e-5	dodecane
4	7.311	VV	0.0556	11.28215	6.427e-5	2-BrN(frac)
5	7.553	VV	0.0720	12.08141	6.883e-5	2-FB(frac2)
6	8.126	VP	0.0502	5.72735	3.263e-5	tetradecane
7	8.223		0.0000	0.00000	0.00000	hexadecane
8	9.697		0.0000	0.00000	0.00000	nonadecane
9	9.700		0.0000	0.00000	0.00000	octadecane
10	9.718	VV	0.0274	2071.55835	0.01180	OTP
11	10.312	VV	0.0454	5.55618	3.165e-5	eicosane
12	10.854	VV	0.0464	9.99648	5.695e-5	heneicosane
13	11.488	VV	0.0257	1860.22839	0.01060	COD




```
Data File Name    : C:\HPCHEM\1\DATA\vp092408\025F0101.D
Operator          : DVG                          Page Number       : 1
Instrument        : GC4                          Vial Number       : 25
Sample Name       : g128-2249-1a x1              Injection Number  : 1
Run Time Bar Code:                               Sequence Line     : 1
Acquired on       : 24 Sep 08  07:10 PM          Instrument Method: GAS2.MTH
Report Created on: 25 Sep 08  08:00 AM           Analysis Method   : VPH_FIDG.MTH
Last Recalib on   : 24 SEP 08 08:21 AM           Sample Amount     : 0
Multiplier        : 1                            ISTD Amount       :
```

Injection Date	: 9/24/2008 1:12:54 AM	Seq. Line	: 21
Sample Name	: G128-2249-2D x1	Location	: Vial 82
Acq. Operator	: EAW	Inj	: 1
Acq. Instrument	: GC6	Inj Volume	: 10 µl
Acq. Method	: C:\HPCHEM\1\METHODS\DCSEPHB.M		
Last changed	: 9/11/2008 11:04:07 AM by EAW		
Analysis Method	: C:\HPCHEM\1\METHODS\EPHTK_R.M		
Last changed	: 9/23/2008 3:50:09 PM by EAW		

TPH



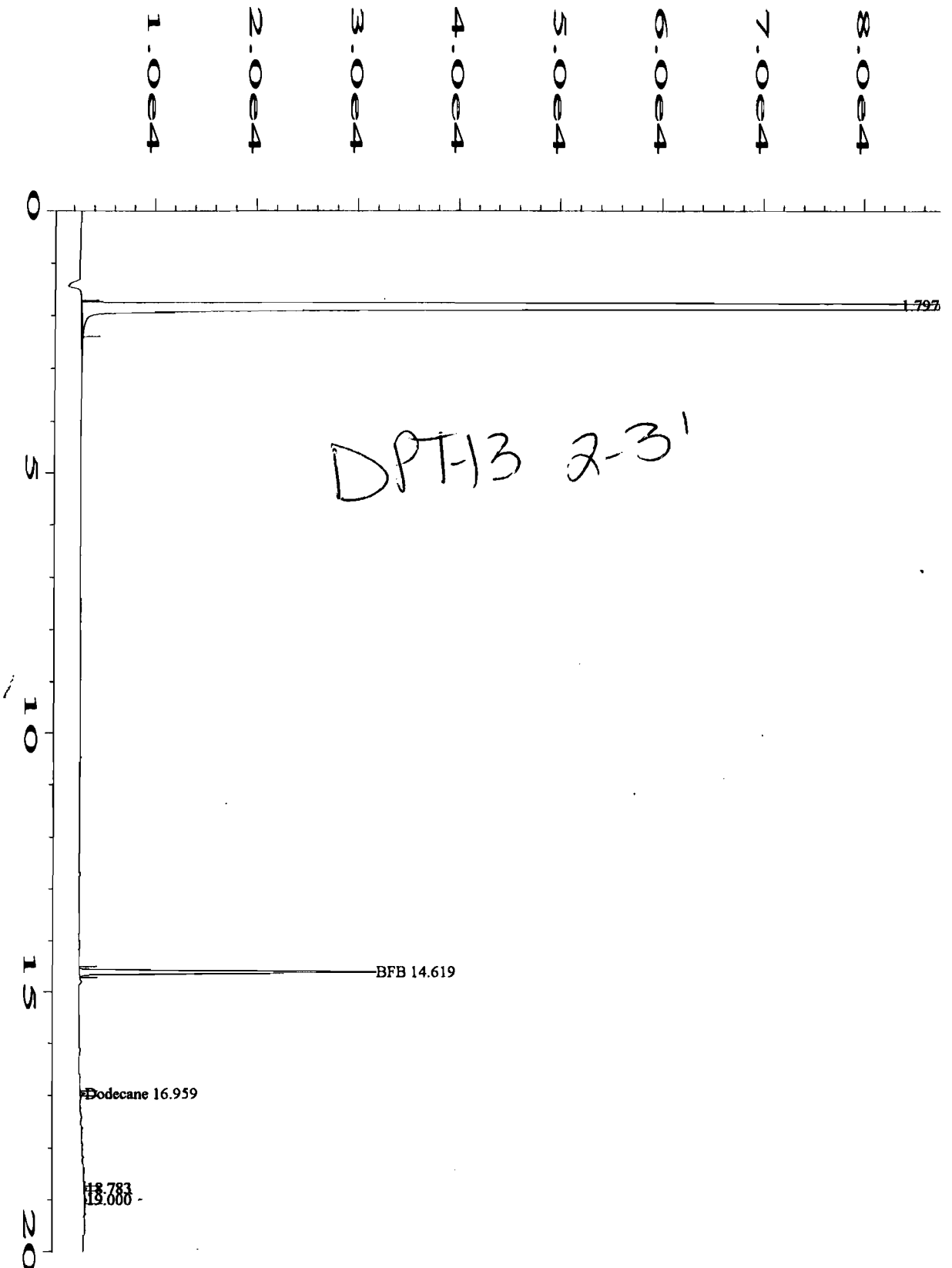
Area Percent Report

Sorted By	:	Signal	
Calib. Data Modified	:	9/22/2008 10:52:08 AM	
Multiplier	:	1.0000	
Dilution	:	1.0000	

Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

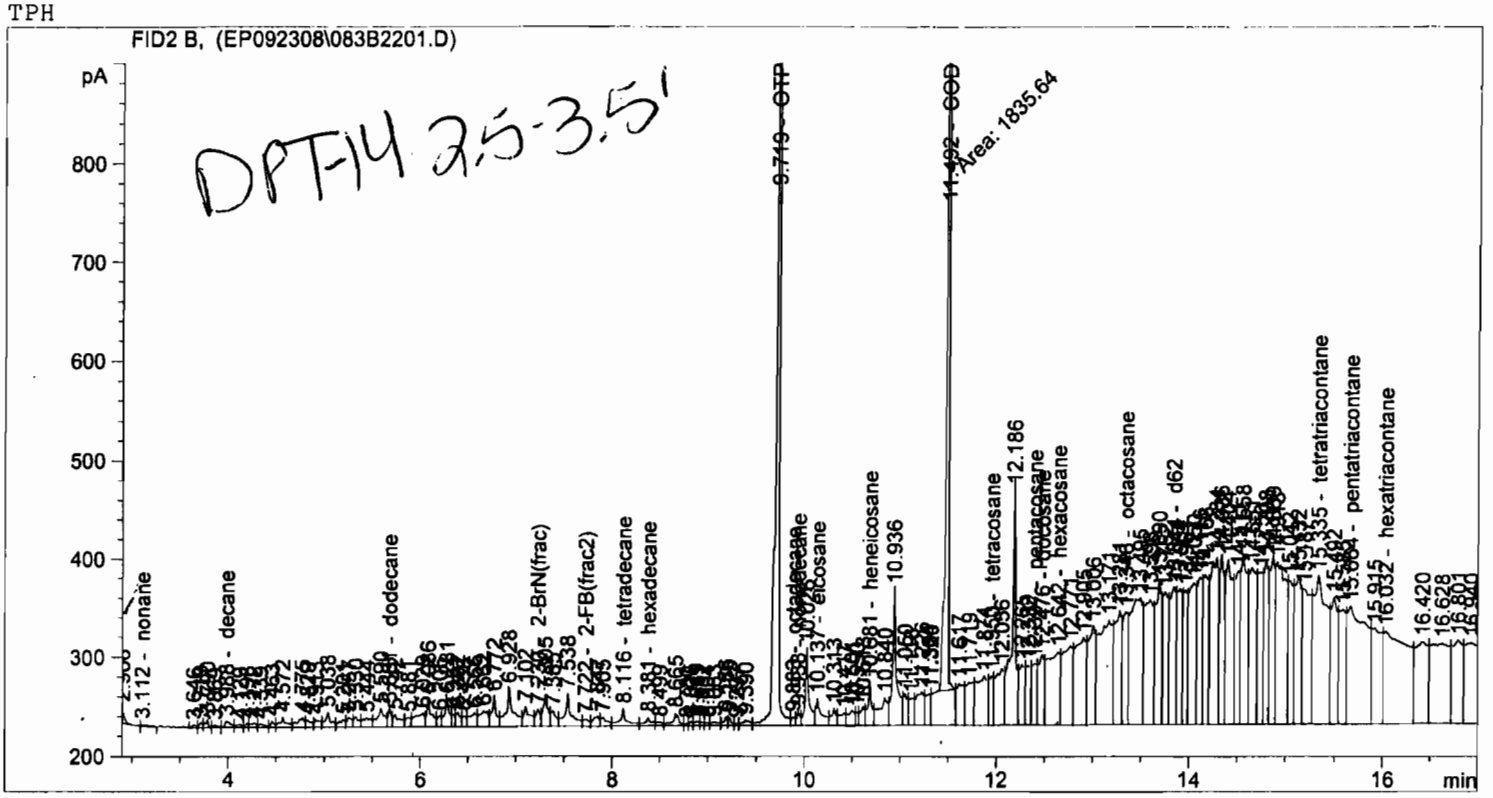
Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.131		0.0000	0.00000	0.00000	nonane
2	4.022		0.0000	0.00000	0.00000	decane
3	5.704		0.0000	0.00000	0.00000	dodecane
4	7.309	VV	0.0623	7.81831	5.154e-5	2-BrN(frac)
5	7.548	VV	0.0525	7.24871	4.778e-5	2-FB(frac2)
6	8.120	VV	0.0479	8.96504	5.910e-5	tetradecane
7	8.219	VV	0.0288	11.05333	7.287e-5	hexadecane
8	9.572	VV	0.0240	295.35739	0.00195	nonadecane
9	9.725	VV	0.0287	2528.56812	0.01667	OTP
10	9.838	VV	0.0320	408.64914	0.00269	octadecane
11	10.202	VV	0.0318	129.18465	0.00085	eicosane
12	10.774	VV	0.0282	113.89165	0.00075	heneicosane
13	11.494	MM T	0.0284	2118.20190	0.01396	COD



Data File Name	: C:\HPCHEM\1\DATA\vp092408\026F0101.D		
Operator	: DVG	Page Number	: 1
Instrument	: GC4	Vial Number	: 26
Sample Name	: g128-2249-2a x1	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 24 Sep 08 07:37 PM	Instrument Method	: GAS2.MTH
Report Created on	: 25 Sep 08 08:00 AM	Analysis Method	: VPH_FIDG.MTH
Last Recalib on	: 24 SEP 08 08:21 AM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Injection Date	: 9/24/2008 1:41:26 AM	Seq. Line	: 22
Sample Name	: G128-2249-3D x1	Location	: Vial 83
Acq. Operator	: EAW	Inj	: 1
Acq. Instrument	: GC6	Inj Volume	: 10 µl
Acq. Method	: C:\HPCHEM\1\METHODS\DCSEPHB.M		
Last changed	: 9/11/2008 11:04:07 AM by EAW		
Analysis Method	: C:\HPCHEM\1\METHODS\EPHTK_R.M		
Last changed	: 9/23/2008 3:50:09 PM by EAW		

TPH



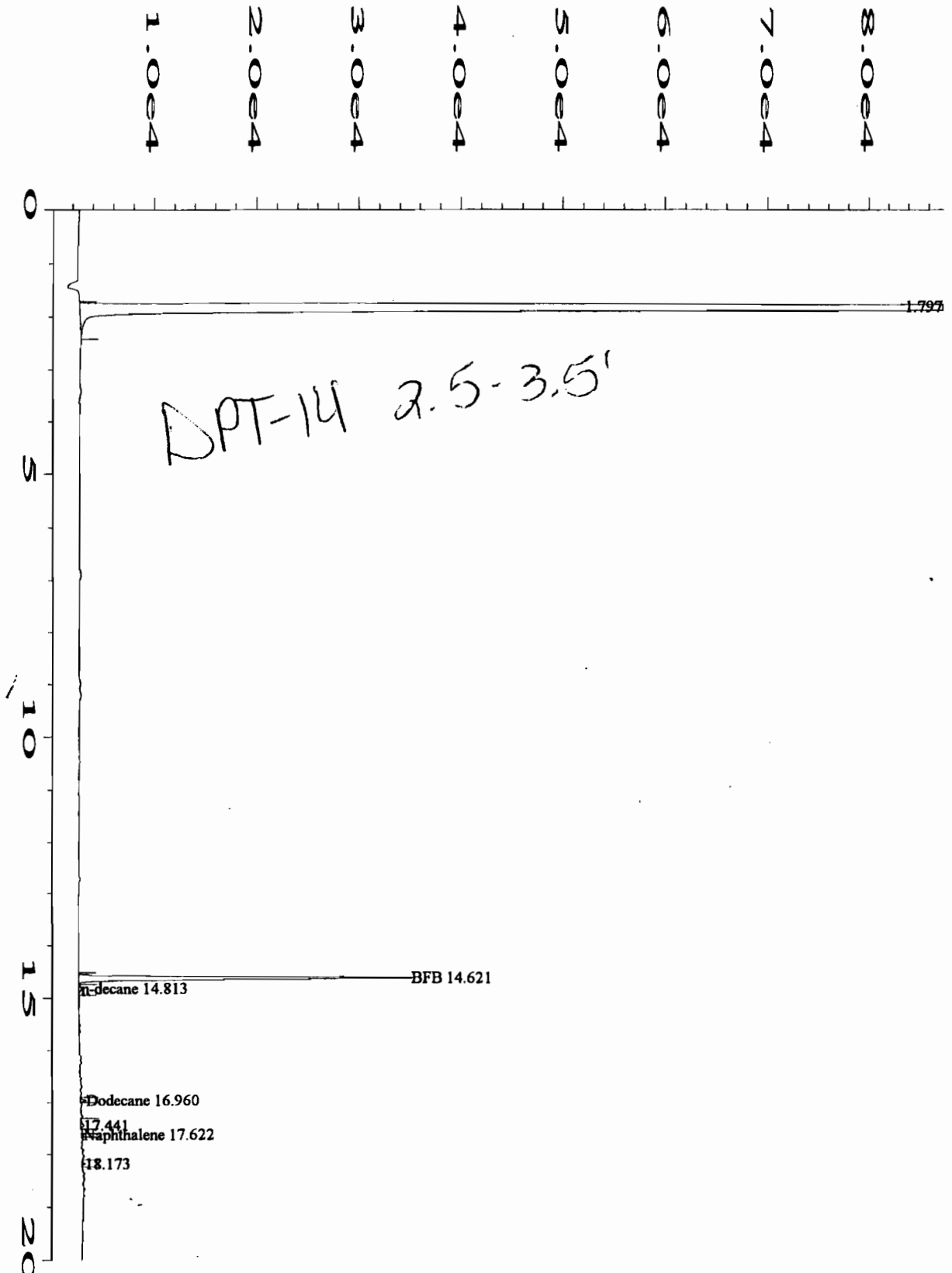
Area Percent Report

Sorted By	:	Signal
Calib. Data Modified	:	9/22/2008 10:52:08 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

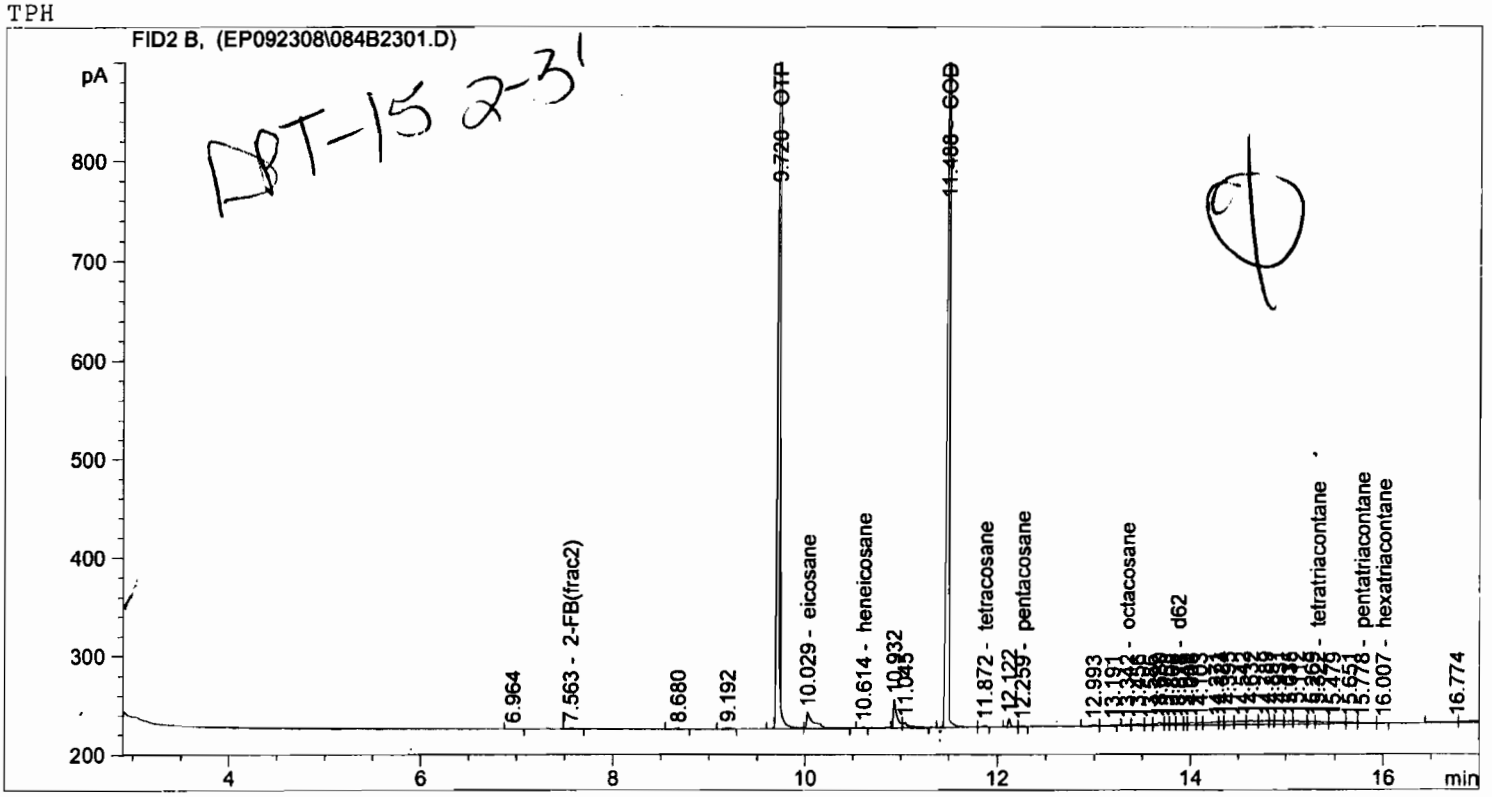
Signal 1: FID2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.112	VP	0.0721	11.34097	6.390e-5	nonane
2	3.988	VV	0.0559	25.80829	0.00015	decane
3	5.681	VV	0.0375	46.95257	0.00026	dodecane
4	7.230	VV	0.0453	55.06322	0.00031	2-BrN(frac)
5	7.722	VV	0.0615	31.68530	0.00018	2-FB(frac2)
6	8.116	VV	0.0659	89.67042	0.00051	tetradecane
7	8.381	VV	0.0631	39.97501	0.00023	hexadecane
8	9.719	VV	0.0306	2294.23853	0.01293	OTP
9	9.883	VV	0.0364	22.67619	0.00013	octadecane
10	9.938	VV	0.0381	40.43009	0.00023	nonadecane
11	10.137	VV	0.0582	119.56379	0.00067	eicosane
12	10.681	VV	0.0411	126.38733	0.00071	heneicosane
13	11.492	MM T	0.0264	1835.64233	0.01034	COD



Data File Name	: C:\HPCHEM\1\DATA\vp092508\020F0101.D		
Operator	: DVG	Page Number	: 1
Instrument	: GC4	Vial Number	: 20
Sample Name	: g128-2249-3a x1	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 25 Sep 08 05:17 PM	Instrument Method	: GAS2.MTH
Report Created on	: 26 Sep 08 07:59 AM	Analysis Method	: VPH_FIDG.MTH
Last Recalib on	: 24 SEP 08 08:21 AM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Injection Date : 9/24/2008 2:09:57 AM Seq. Line : 23
Sample Name : G128-2249-4D x1 Location : Vial 84
Acq. Operator : EAW Inj : 1
Acq. Instrument : GC6 Inj Volume : 10 µl
Acq. Method : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed : 9/23/2008 3:50:09 PM by EAW
TPH

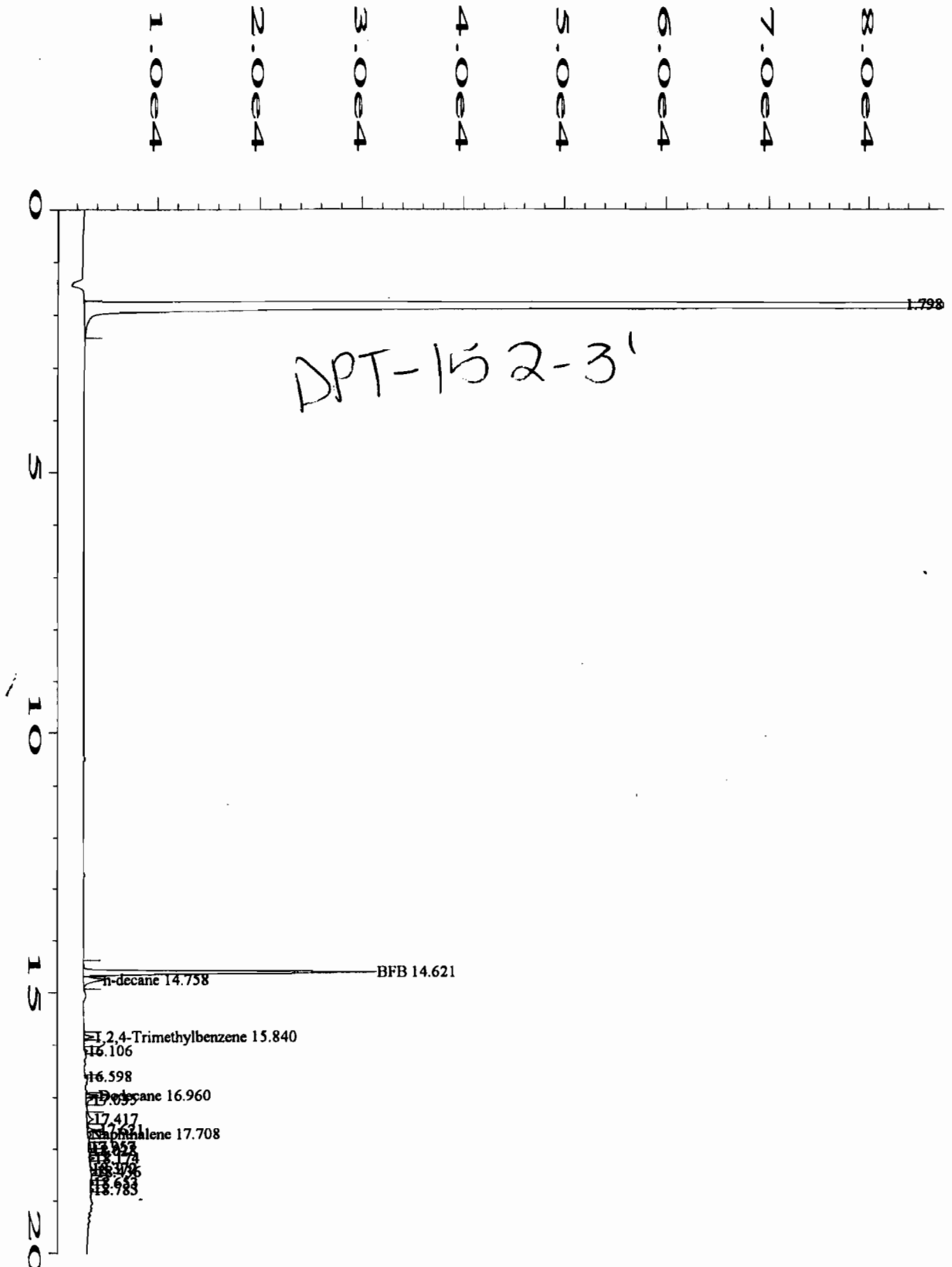


Area Percent Report

Sorted By : Signal
Calib. Data Modified : 9/22/2008 10:52:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

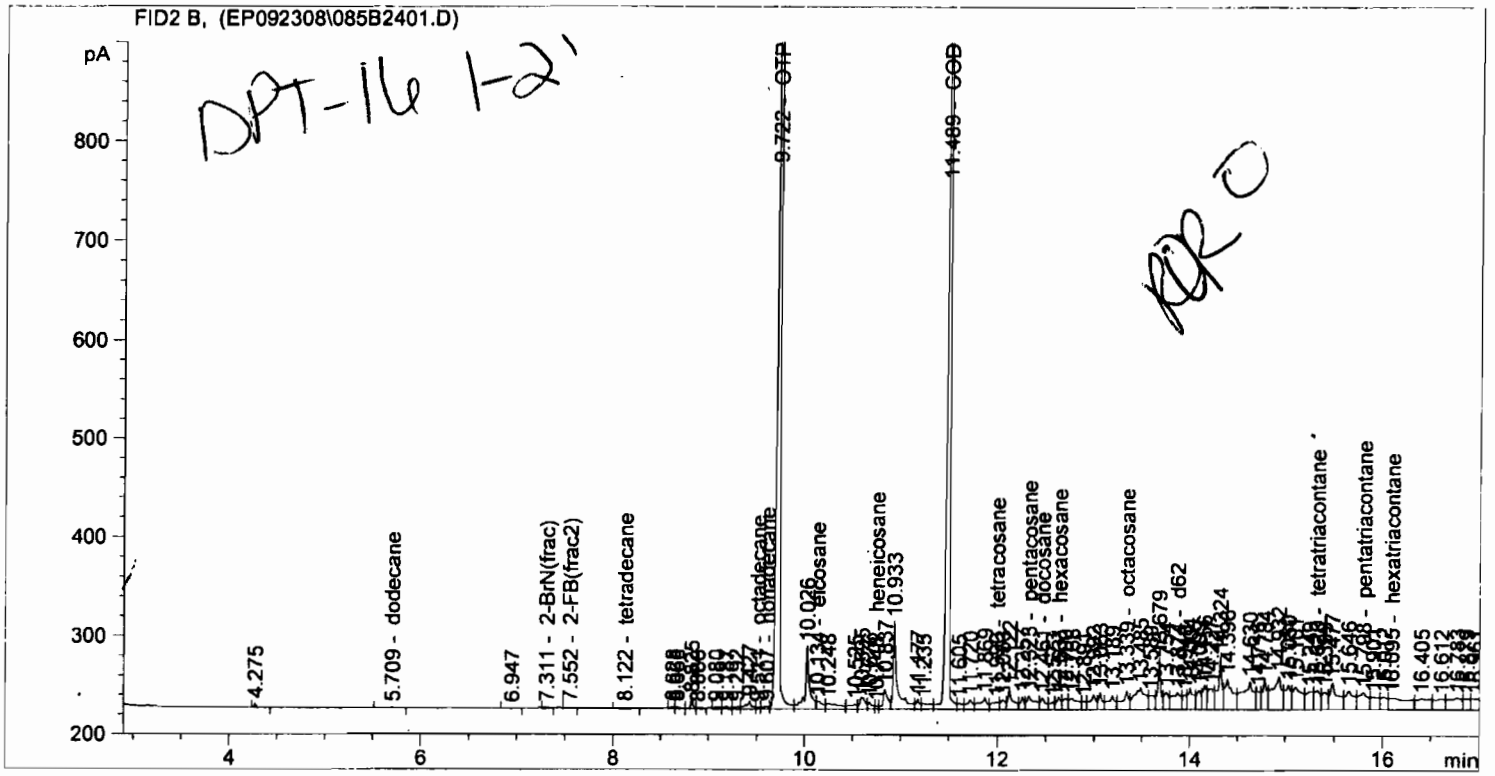
Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.131		0.0000	0.00000	0.00000	nonane
2	4.022		0.0000	0.00000	0.00000	decane
3	5.704		0.0000	0.00000	0.00000	dodecane
4	7.247		0.0000	0.00000	0.00000	2-BrN(frac)
5	7.563	VV	0.0916	4.61300	4.385e-5	2-FB(frac2)
6	8.195		0.0000	0.00000	0.00000	tetradecane
7	8.223		0.0000	0.00000	0.00000	hexadecane
8	9.697		0.0000	0.00000	0.00000	nonadecane
9	9.700		0.0000	0.00000	0.00000	octadecane
10	9.720	VV	0.0283	2037.82898	0.01937	OTP
11	10.029	VV	0.0754	92.70958	0.00088	eicosane
12	10.614	VV	0.0491	4.65188	4.422e-5	heneicosane
13	11.488	VV	0.0243	1815.22070	0.01725	COD



Data File Name : C:\HPCHEM\1\DATA\vp092508\021F0101.D
Operator : DVG
Instrument : GC4
Sample Name : g128-2249-4a x1
Run Time Bar Code:
Acquired on : 25 Sep 08 05:44 PM
Report Created on: 26 Sep 08 07:59 AM
Last Recalib on : 24 SEP 08 08:21 AM
Multiplier : 1

Page Number : 1
Vial Number : 21
Injection Number : 1
Sequence Line : 1
Instrument Method: GAS2.MTH
Analysis Method : VPH_FIDG.MTH
Sample Amount : 0
ISTD Amount :

```
Injection Date  : 9/24/2008 2:38:35 AM          Seq. Line :  24
Sample Name     : G128-2249-5D x1               Location : Vial 85
Acq. Operator   : EAW                              Inj :   1
Acq. Instrument : GC6                          Inj Volume : 10 µl
Acq. Method     : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed    : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed    : 9/23/2008 3:50:09 PM by EAW
TPH
```

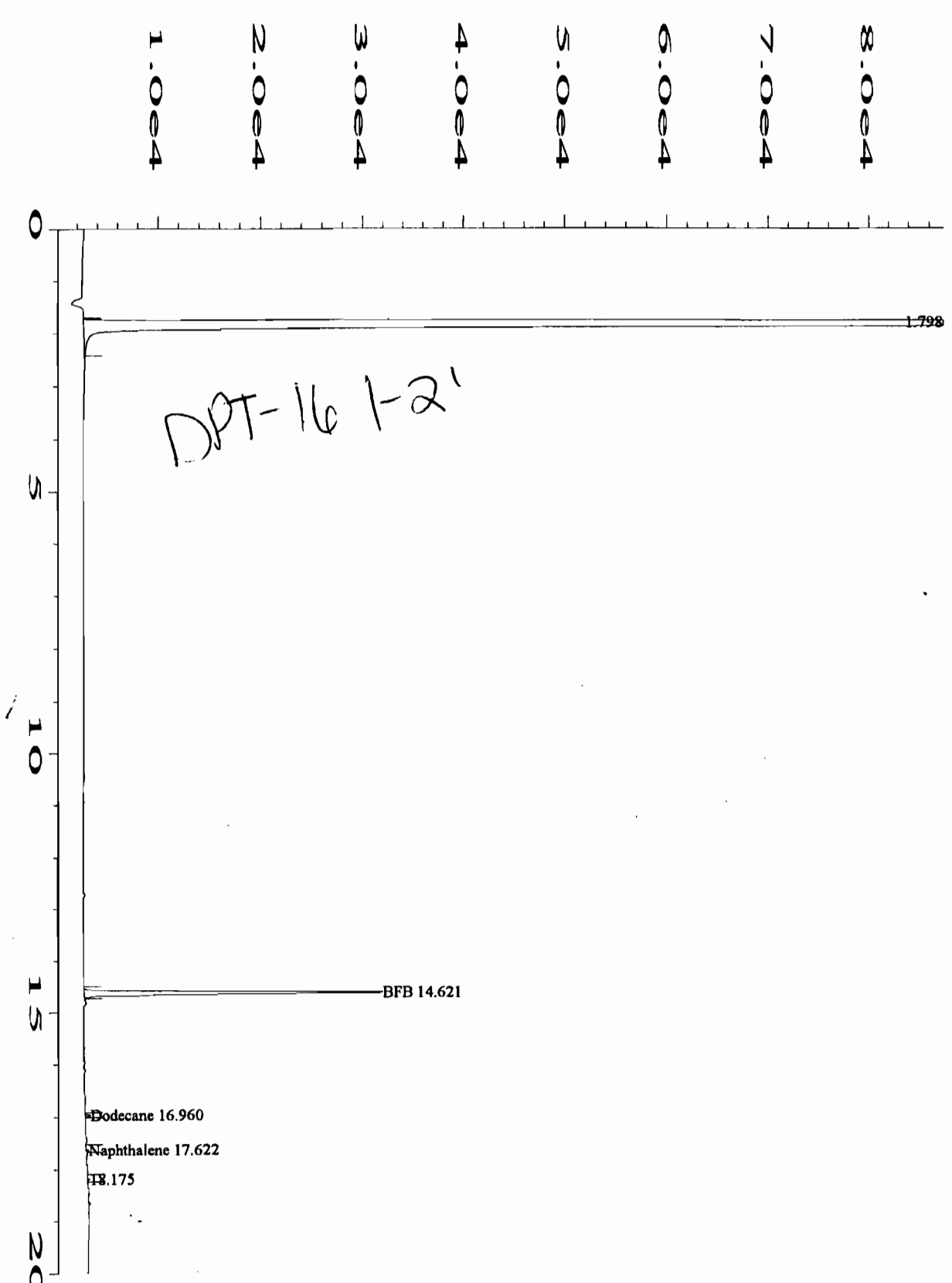


Area Percent Report

```
Sorted By             :      Signal
Calib. Data Modified  :      9/22/2008 10:52:08 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs
```

Signal 1: FID2 B,

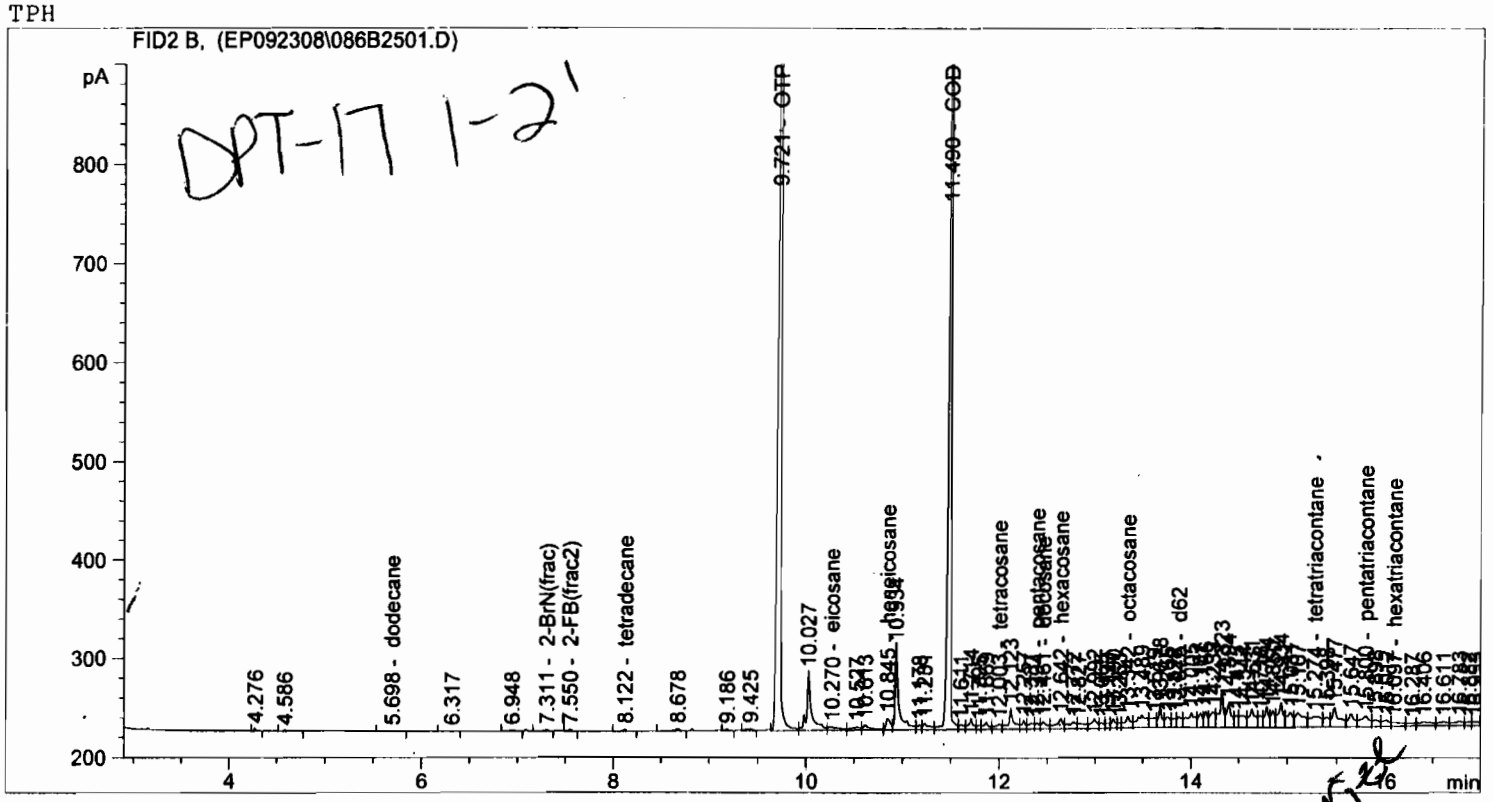
Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.131		0.0000	0.00000	0.00000	nonane
2	4.022		0.0000	0.00000	0.00000	decane
3	5.709	VV	0.1184	5.28155	3.028e-5	dodecane
4	7.311	VV	0.0509	5.25569	3.013e-5	2-BrN(frac)
5	7.552	VV	0.0662	7.28566	4.177e-5	2-FB(frac2)
6	8.122	VV	0.0651	7.33998	4.208e-5	tetradecane
7	8.223		0.0000	0.00000	0.00000	hexadecane
8	9.511	VV	0.0412	5.58848	3.204e-5	octadecane
9	9.607	VV	0.0540	10.56337	6.057e-5	nonadecane
10	9.722	VV	0.0262	2492.95117	0.01429	OTP
11	10.134	VV	0.0588	37.38067	0.00021	eicosane
12	10.748	VV	0.0382	7.13681	4.092e-5	heneicosane
13	11.489	VV	0.0274	2136.75537	0.01225	COD



Data File Name : C:\HPCHEM\1\DATA\vp092508\022F0101.D
Operator : DVG
Instrument : GC4
Sample Name : g128-2249-5a x1
Run Time Bar Code:
Acquired on : 25 Sep 08 06:10 PM
Report Created on: 26 Sep 08 07:59 AM
Last Recalib on : 24 SEP 08 08:21 AM
Multiplier : 1

Page Number : 1
Vial Number : 22
Injection Number : 1
Sequence Line : 1
Instrument Method: GAS2.MTH
Analysis Method : VPH_FIDG.MTH
Sample Amount : 0
ISTD Amount :

```
Injection Date  : 9/24/2008 3:07:13 AM          Seq. Line :  25
Sample Name     : G128-2249-6D x1               Location : Vial 86
Acq. Operator   : EAW                              Inj :   1
Acq. Instrument : GC6                          Inj Volume : 10 µl
Acq. Method     : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed    : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed    : 9/23/2008 3:50:09 PM by EAW
TPH
```



DPT-17 1-21

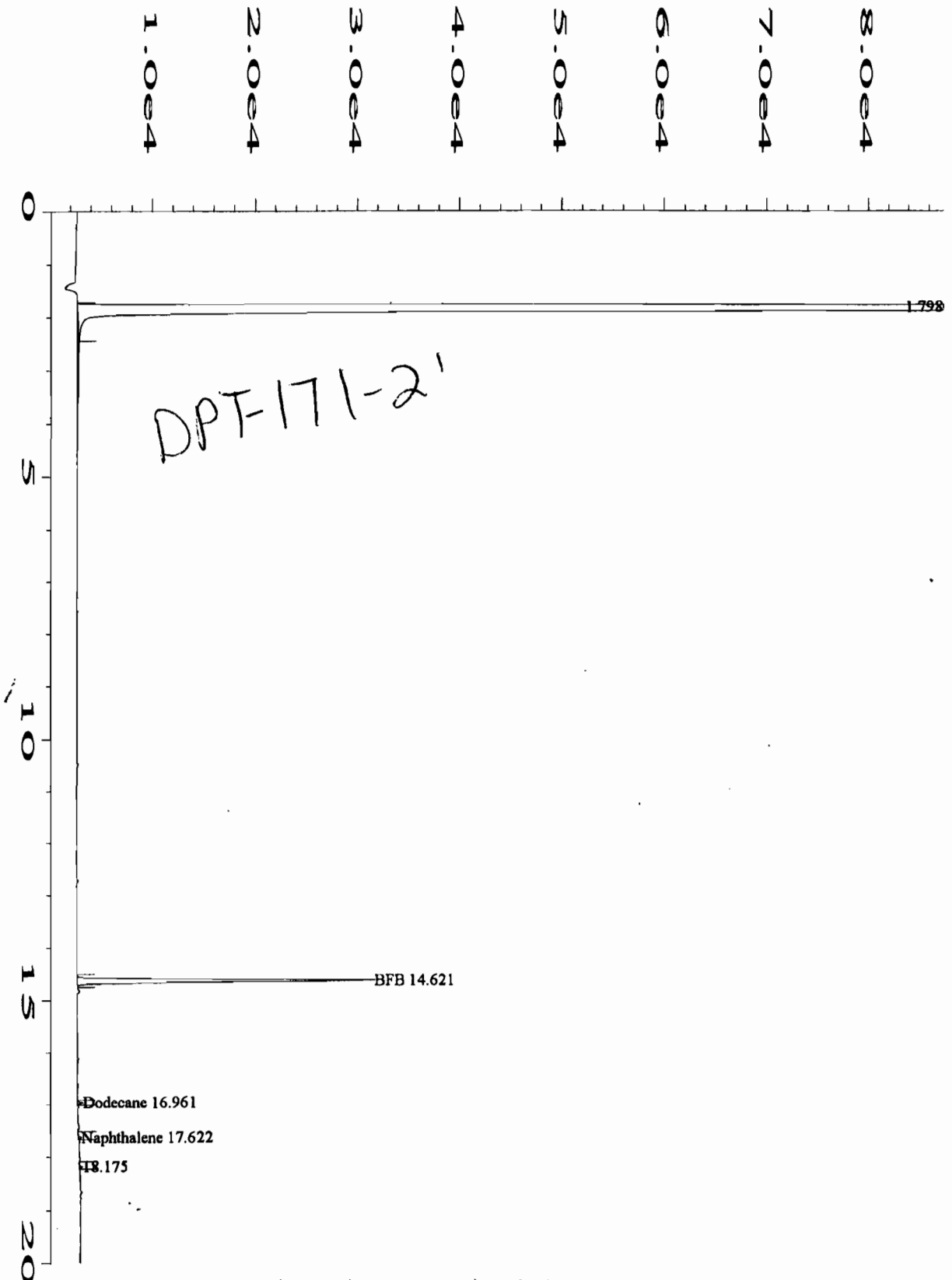
Area Percent Report

```
Sorted By             :      Signal
Calib. Data Modified  :      9/22/2008 10:52:08 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs
```

too low to characterize

Signal 1: FID2 B,

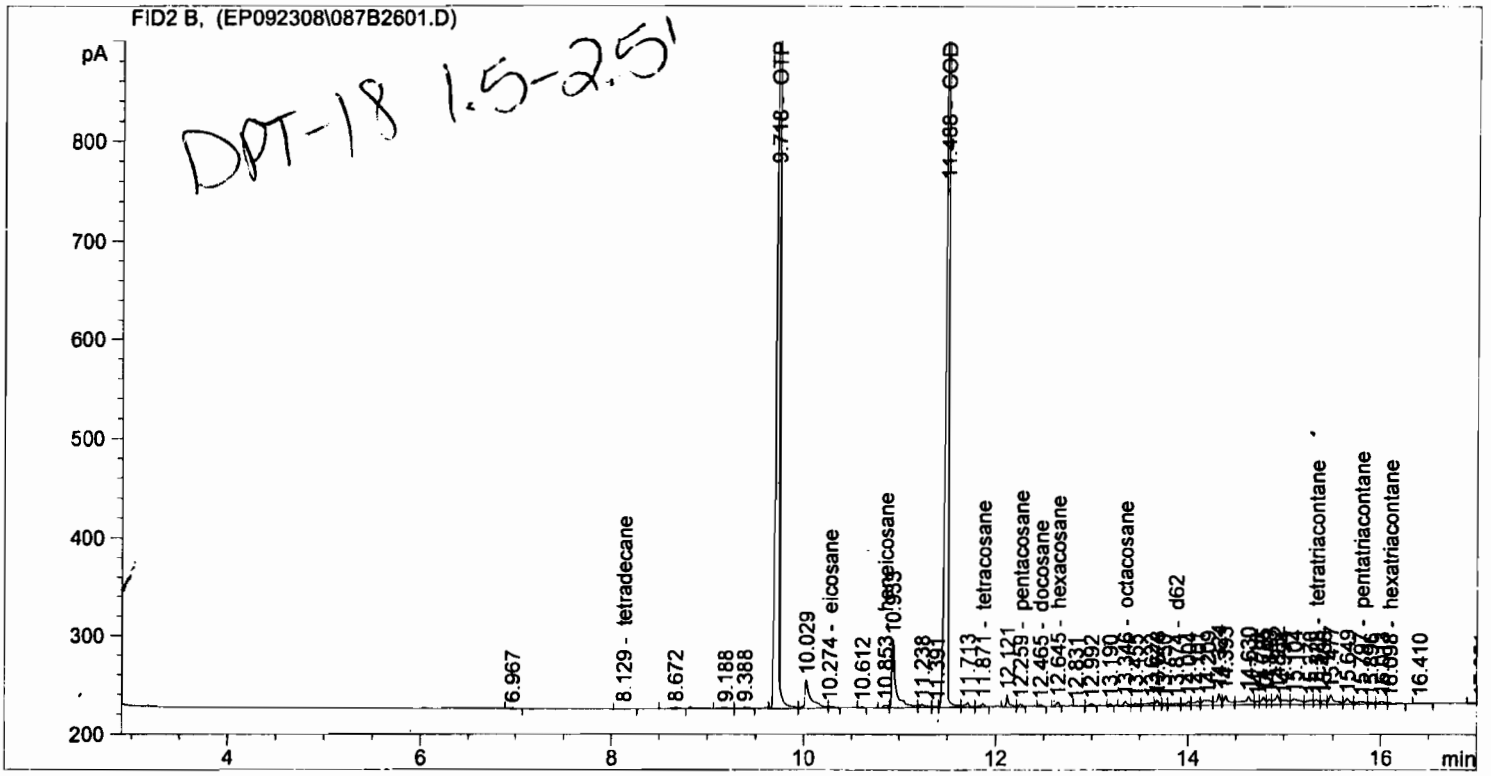
Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.131		0.0000	0.00000	0.00000	nonane
2	4.022		0.0000	0.00000	0.00000	decane
3	5.698	VV	0.1114	5.21556	2.898e-5	dodecane
4	7.311	VV	0.0577	8.22731	4.571e-5	2-BrN(frac)
5	7.550	VV	0.0550	8.14750	4.527e-5	2-FB(frac2)
6	8.122	VV	0.0496	8.12546	4.515e-5	tetradecane
7	8.223		0.0000	0.00000	0.00000	hexadecane
8	9.697		0.0000	0.00000	0.00000	nonadecane
9	9.700		0.0000	0.00000	0.00000	octadecane
10	9.721	VV	0.0260	2436.92017	0.01354	OTP
11	10.270	VV	0.1014	28.53535	0.00016	eicosane
12	10.845	VV	0.0531	39.90775	0.00022	heneicosane
13	11.490	VV	0.0279	2153.25391	0.01196	COD



Data File Name : C:\HPCHEM\1\DATA\vp092508\023F0101.D
Operator : DVG
Instrument : GC4
Sample Name : g128-2249-6a x1
Run Time Bar Code:
Acquired on : 25 Sep 08 06:37 PM
Report Created on: 26 Sep 08 07:59 AM
Last Recalib on : 24 SEP 08 08:21 AM
Multiplier : 1

Page Number : 1
Vial Number : 23
Injection Number : 1
Sequence Line : 1
Instrument Method: GAS2.MTH
Analysis Method : VPH_FIDG.MTH
Sample Amount : 0
ISTD Amount :

```
Injection Date  : 9/24/2008 3:35:07 AM          Seq. Line :  26
Sample Name     : G128-2249-7D x1               Location : Vial 87
Acq. Operator   : EAW                              Inj :   1
Acq. Instrument : GC6                          Inj Volume : 10 µl
Acq. Method     : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed    : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed    : 9/23/2008 3:50:09 PM by EAW
TPH
```

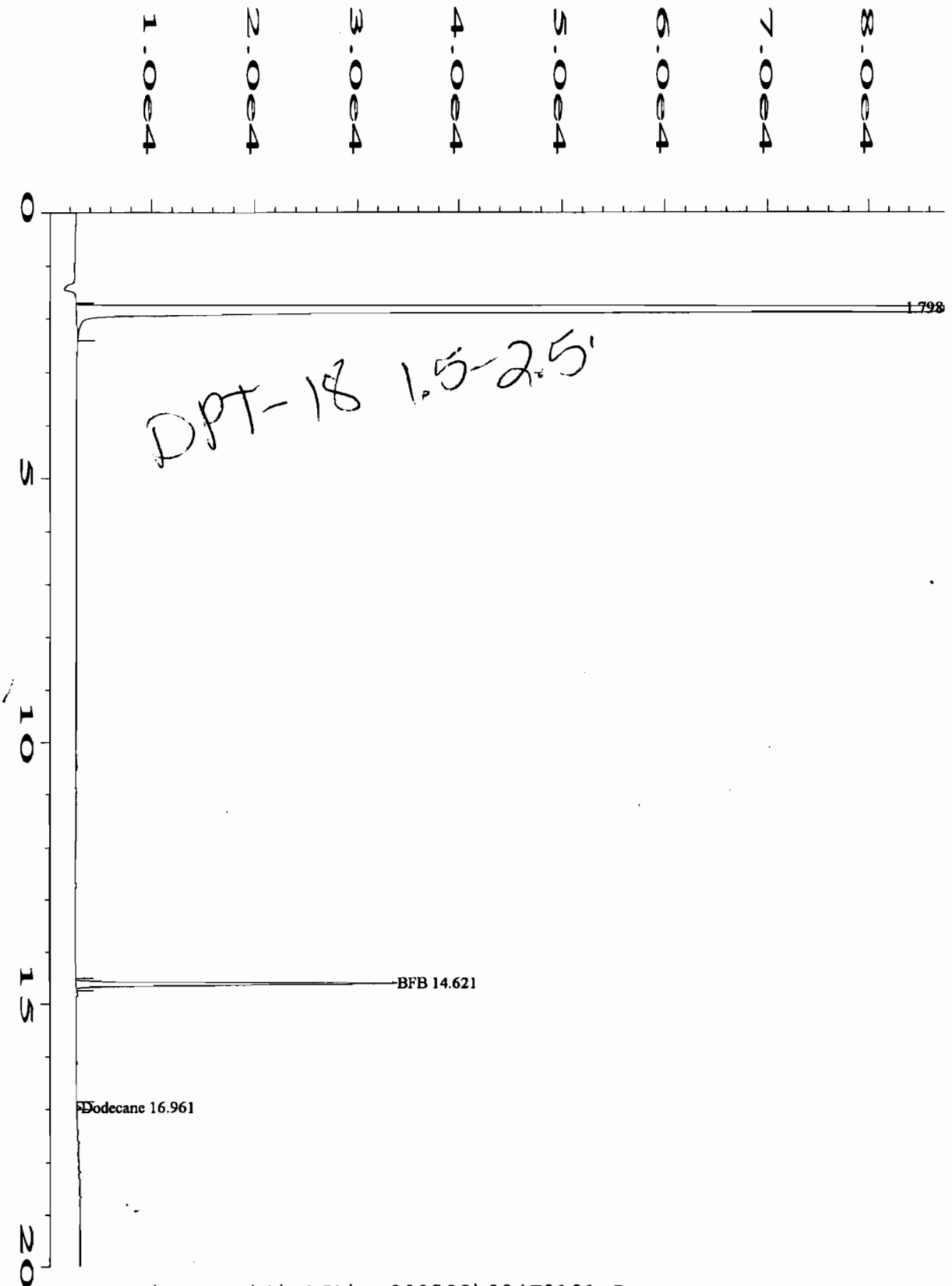


Area Percent Report

```
Sorted By             :      Signal
Calib. Data Modified  :      9/22/2008 10:52:08 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs
```

Signal 1: FID2 B,

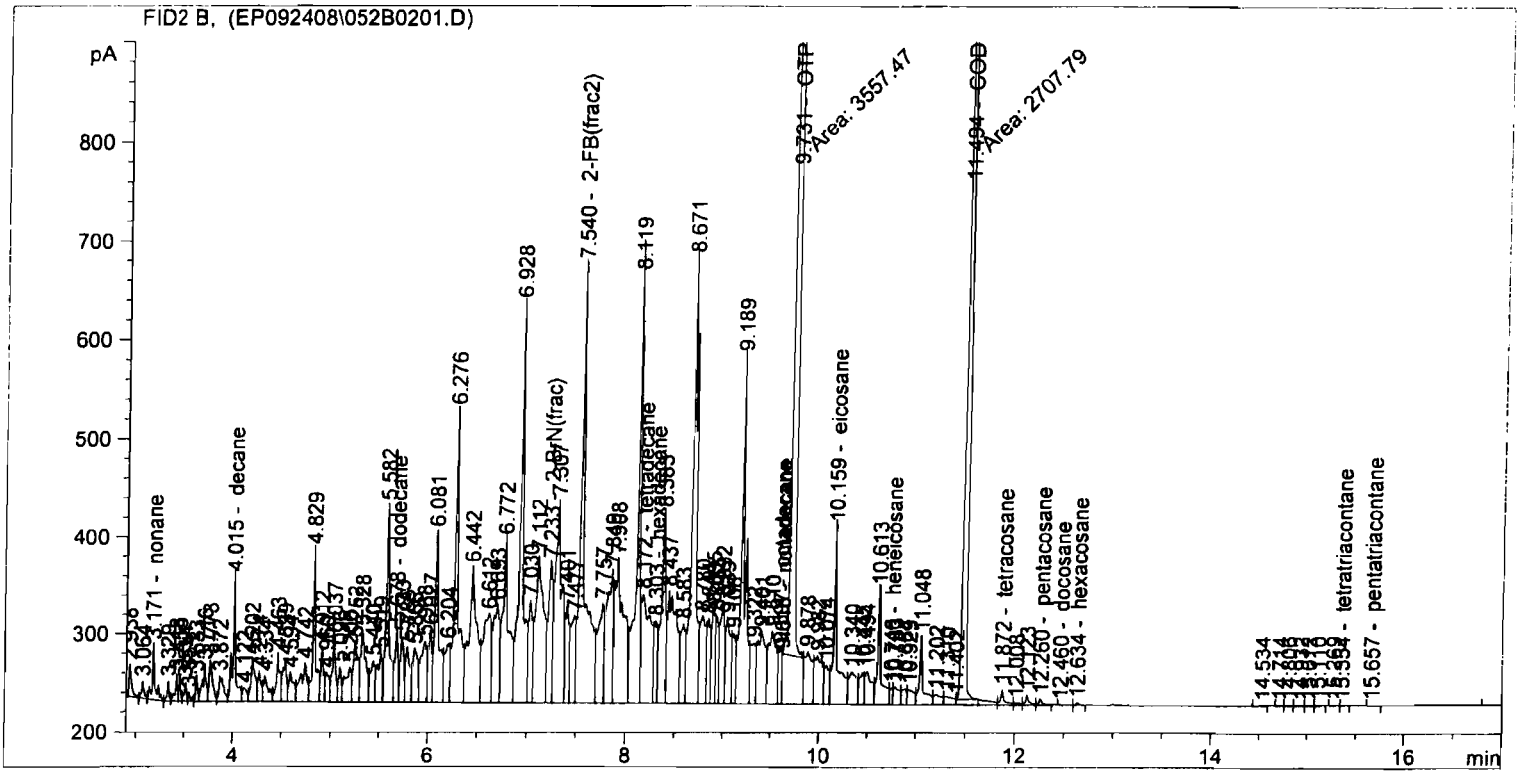
Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.131		0.0000	0.00000	0.00000	nonane
2	4.022		0.0000	0.00000	0.00000	decane
3	5.704		0.0000	0.00000	0.00000	dodecane
4	7.247		0.0000	0.00000	0.00000	2-BrN(frac)
5	7.631		0.0000	0.00000	0.00000	2-FB(frac2)
6	8.129	VV	0.0641	4.80640	2.631e-5	tetradecane
7	8.223		0.0000	0.00000	0.00000	hexadecane
8	9.697		0.0000	0.00000	0.00000	nonadecane
9	9.700		0.0000	0.00000	0.00000	octadecane
10	9.718	VV	0.0281	2213.00708	0.01211	OTP
11	10.274	VV	0.0639	8.55586	4.683e-5	eicosane
12	10.853	VV	0.0470	8.58998	4.702e-5	heneicosane
13	11.488	VV	0.0266	1999.01538	0.01094	COD



Data File Name : C:\HPCHEM\1\DATA\vp092508\024F0101.D
Operator : DVG
Instrument : GC4
Sample Name : g128-2249-7a x1
Run Time Bar Code:
Acquired on : 25 Sep 08 07:03 PM
Report Created on: 26 Sep 08 07:59 AM
Last Recalib on : 24 SEP 08 08:21 AM
Multiplier : 1

Page Number : 1
Vial Number : 24
Injection Number : 1
Sequence Line : 1
Instrument Method: GAS2.MTH
Analysis Method : VPH_FIDG.MTH
Sample Amount : 0
ISTD Amount :

```
==========================================================================
Injection Date  : 9/24/2008 9:55:42 AM          Seq. Line :   2
Sample Name     : cvs-D-500 DRO                  Location : Vial 52
Acq. Operator   : EAW                               Inj :   1
Acq. Instrument : GC6 CHROMATOGRAM          Inj Volume : 10 µl
Acq. Method     : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed    : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed    : 9/23/2008 3:50:09 PM by EAW
TPH
```

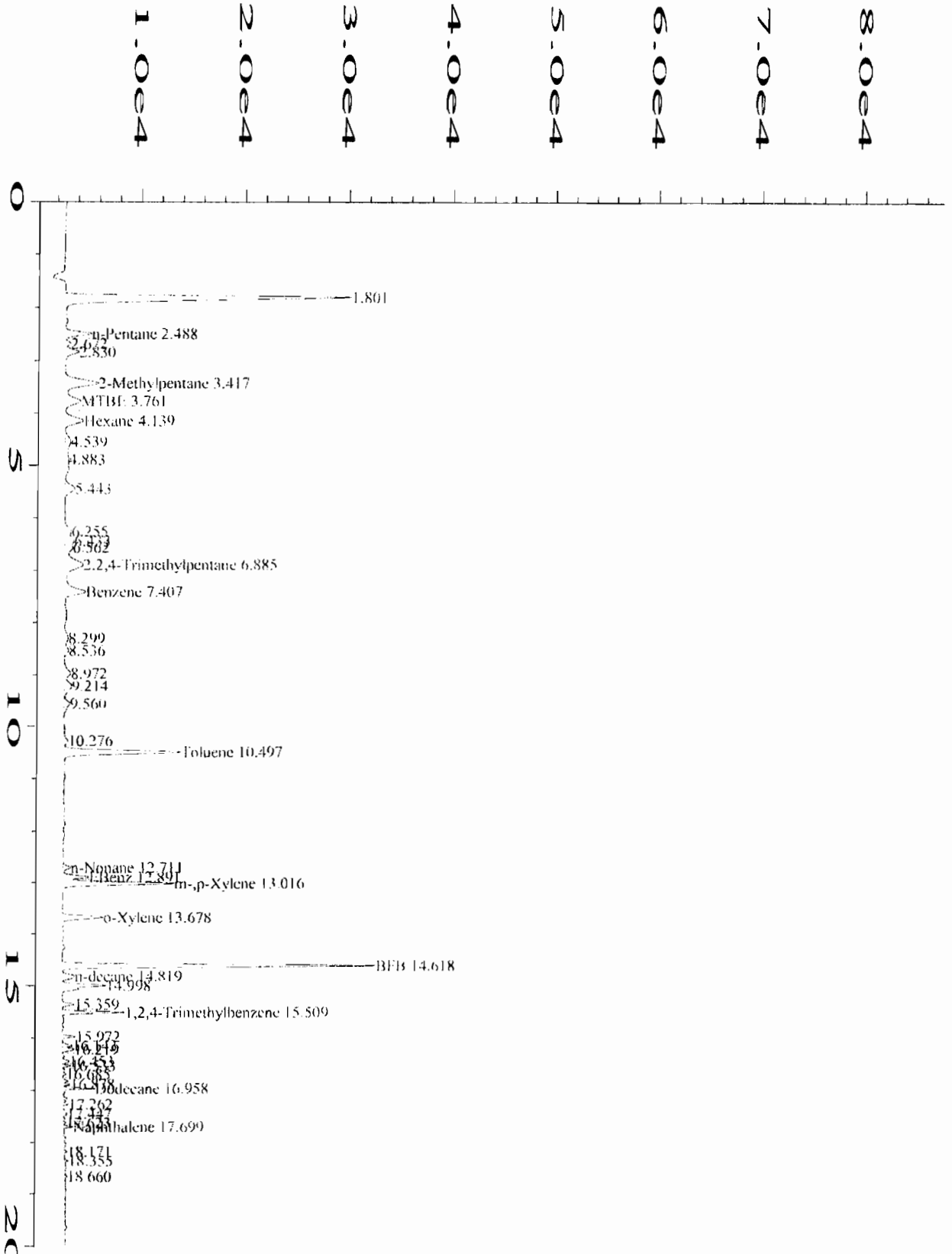



```
==========================================================================
                        Area Percent Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      9/22/2008 10:52:08 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: FID2 B,

Peak RetTime  Type    Width     Area      Area    Name
  #   [min]           [min]   [pA*s]       %
----|-------|------|-------|----------|--------|--------------------
   1   3.171 VP       0.0308  118.17753  0.00061 nonane
   2   4.015 VV       0.0319  283.02881  0.00147 decane
   3   5.678 VV       0.0361  181.63387  0.00094 dodecane
   4   7.233 VV       0.0429  429.76685  0.00223 2-BrN(frac)
   5   7.540 VV       0.0492 1580.09656  0.00821 2-FB(frac2)
   6   8.172 VV       0.0862  729.48566  0.00379 tetradecane
   7   8.303 VV       0.0336  199.13966  0.00103 hexadecane
   8   9.597 VV       0.0365  147.93909  0.00077 octadecane
   9   9.618 VV R    5.27e-3  652.81775  0.00339 nonadecane
  10   9.731 MM T     0.0340 3557.47046  0.01849 OTP
  11  10.159 VV       0.0420  561.84082  0.00292 eicosane
  12  10.746 VV       0.0330   40.24302  0.00021 heneicosane
  13  11.494 MM T     0.0310 2707.79150  0.01407 COD
```



Data File Name : C:\HPCHEM\1\DATA\VP092408\004F0101.D
Operator : DVG
Instrument : GC4
Sample Name : g200
Run Time Bar Code:
Acquired on : 24 Sep 08 09:47 AM
Report Created on: 02 Oct 08 10:28 AM
Last Recalib on : 26 SEP 08 09:09 AM
Multiplier : 1

GRO STANDARD

Page Number : 1
Vial Number : 4
Injection Number : 1
Sequence Line : 1
Instrument Method: GAS2.MTH
Analysis Method : VPH_FIDB.MTH
Sample Amount : 0
ISTD Amount :

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(1)

CLIENT: NCDOT

CONTACT: CATLIN ATTN: RICK GARRETT PHONE NO:(910 452-5861

PROJECT: NCDOT SUNOCO SITE/PWSID# :

REPORTS TO: CATLIN ATTN: RICK GARRETT E-MAIL: FAX NO.:( )

INVOICE TO: NCDOT QUOTE # P.O. NUMBER WBS 35008.11

SGS Reference: G128-2249

PAGE 1 OF 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE C=COMP G=GRAB	Preservatives Used	Analysis Required (3) TPH-DRO	TPH-GRO	REMARKS
1	DPT-HP12 1.5-2.5	9-22-08	1115	Soil	3			✓	✓	ID's corrected per S.Tyler 9/23/08
✓	DPT-HP13 2-3'		1130					✓	✓	
✓	DPT-HP14 2.5-3.5		1145					✓	✓	
✓	DPT-HP15 2-3'		1200					✓	✓	
✓	DPT-HP16 1-2'		1215					✓	✓	
✓	DPT-HP17 1-2'		1230					✓	✓	
✓	DPT-HP18 1.5-2.5'		1245					✓	✓	

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:	Date	Time
	9-22-08	1500	Samantha Lattimore	9/23/08	15:00
Relinquished By: (2)	Date	Time	Received By:	Date	Time
Relinquished By: (3)	Date	Time	Received By:	Date	Time
Relinquished By: (4)	Date	Time	Received By:	Date	Time

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature °C: 6.0 °F:

Special Deliverable Requirements:

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:

☐ RUSH _____ Date Needed ☐ STD

☐ 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557
☐ 1270 Greenbrier Street Charleston, WV 25311 Tel: (304) 346-0725 Fax: (304) 346-0761

White - Retained by Lab
Yellow - Returned with Report

SGS

Rick Garrett
Richard Catlin & Associates
220 Old Dairy Rd.
Wilmington, NC 28405

Report Number: G128-2247

Client Project: Sunoco

Dear Rick Garrett,

Enclosed are the results of the analytical services performed under the referenced project. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. 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 services performed during this project, please call Ashley Nifong at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS Environmental Services for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS Environmental Services, Inc.

Lori Lockamy
for
2008.10.03 16:51:52 -04'00'

Project Manager
Ashley Nifong

Date

CASE NARRATIVE
Catlin
Project: Sunoco
SGS Laboratory Number: G128-2247

DATE: October 2, 2008

SAMPLE RECEIPT OBSERVATIONS:
Ten soil samples were received at the laboratory on September 19, 2008 at 1205 for analysis of TPH-DRO and GRO by method 8015. The samples arrived in good condition, with a temperature of 4.1 ° C.

All extractions and analyses were completed within holding time and without quality control exception.

Seven out of the ten samples contained DRO detections and five out of the ten samples contained GRO detections. Applicable chromatographic similarities to known standard patterns are noted below. The following observations were made and can be used as a general guide, additional testing may be required for a definitive characterization of the contamination.

SAMPLE ID	APPEARANCE OF CONTAMINATION
DPT-01 3-4' G128-2247-1	Resembles gasoline range organics with a possible presence in the residual oil range as well. The early eluting peaks seen in the DRO chromatogram can be attributed to the upper distillate range for GRO. This overlapping is common with higher contamination levels.
DPT-02 3-4' G128-2247-2	Resembles gasoline range organics with a possible presence in the residual oil range as well. The early eluting peaks seen in the DRO chromatogram can be attributed to the upper distillate range for GRO. This overlapping is common with higher contamination levels.
DPT-03 2-3' G128-2247-3	The major contaminate in this sample seems to be residual oil range organics with a possible presence in the diesel range as well.
DPT-04 2-3' G128-2247-4	Resembles gasoline range organics. The early eluting peaks seen in the DRO chromatogram can be attributed to the upper distillate range for GRO. This overlapping is common with higher contamination levels. There could possibly be a presence in the diesel range as well, but the GRO range contaminates is too high to be able to differentiate.
DPT-05 3-4' G128-2247-5	Resembles gasoline range organics with a possible presence in the residual oil range as well.

DPT-06 3-4' G128-2247-6	Resembles gasoline range organics. The early eluting peaks seen in the DRO chromatogram can be attributed to the upper distillate range for GRO. This overlapping is common with higher contamination levels. There could possibly be a presence in the diesel range as well, but the GRO range contaminates is too high to be able to differentiate.
DPT-09 2-3' G128-2247-9	The GRO and DRO chromatograms for this sample seem inconsistent. According to the DRO chromatogram, there seems to be a presence of gasoline with a possible presence in the diesel range as well, which can not be determined. However, the GRO analysis result was BQL. Both parameters were re-analyzed (and re-extracted for the DRO) with confirming results. Upon visual inspection of the samples, they seem to be non-homogenous, explaining the differing chromatographic differences.

Digitally signed by Erin Stagaard
DN: CN = Erin Stagaard, C = US, O = SGS, OU = Project Manager
Date: 2008.10.03 16:50:27 -04'00'

_____ Date _____

Data Review

List of Reporting Abbreviations and Data Qualifiers

B = Compound also detected in batch blank

BQL = Below Quantitation Limit (RL or MDL)

DF = Dilution Factor

Dup = Duplicate

D = Detected, but RPD is > 40% between results in dual column method.

E = Estimated concentration, exceeds calibration range.

J = Estimated concentration, below calibration range and above MDL

LCS(D) = Laboratory Control Spike (Duplicate)

MDL = Method Detection Limit

MS(D) = Matrix Spike (Duplicate)

PQL = Practical Quantitation Limit

RL/CL = Reporting Limit / Control Limit

RPD = Relative Percent Difference

mg/kg = milligram per kilogram, ppm, parts per million

ug/kg = micrograms per kilogram, ppb, parts per billion

mg/L = milligram per liter, ppm, parts per million

ug/L = micrograms per liter, ppb, parts per billion

% Rec = Percent Recovery

% soilds = Percent Solids

Special Notes:

1) Metals and mercury samples are digested with a hot block, see the standard operating procedure document for details.

2) Uncertainty for all reported data is less than or equal to 30 percent.

Print Date: 10/3/2008

Client Sample ID: **DPT-01 3-4'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-1D
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 11:30
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 92.17
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	**84.4**	6.75		MG/KG	1		23-Sep-08 5:00
Surrogates							
OTP	89.7	40-140		%	1		23-Sep-08 5:00

Batch Information

Analytical Batch: EP092208
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.17
Prep Extract Vol: 10

Print Date: 10/3/2008

Client Sample ID: **DPT-02 3-4'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-2D
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 11:15
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 92.07
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	**62.4**	6.77		MG/KG	1		23-Sep-08 5:29

Surrogates

OTP	84.7	40-140		%	1		23-Sep-08 5:29

Batch Information

Analytical Batch: EP092208
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.11
Prep Extract Vol: 10

Print Date: 10/3/2008

Client Sample ID: **DPT-03 2-3'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-3D
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 11:00
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 87.80
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	**212**	6.96		MG/KG	1		23-Sep-08 6:54

Surrogates

OTP	83	40-140		%	1		23-Sep-08 6:54

Batch Information

Analytical Batch: EP092208
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.71
Prep Extract Vol: 10

Print Date: 10/3/2008

Client Sample ID: **DPT-04 2-3'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-4D
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 11:40
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 88.69
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	**487**	13.9		MG/KG	2		23-Sep-08 22:23

Surrogates

OTP	89.8	40-140		%	2		23-Sep-08 22:23

Batch Information

Analytical Batch: EP092308
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.47
Prep Extract Vol: 10

Print Date: 10/3/2008

Client Sample ID: **DPT-05 3-4'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-5D
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 11:50
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 85.21
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	**21.8**	7.29		MG/KG	1		23-Sep-08 7:50

Surrogates

OTP	74.9	40-140		%	1		23-Sep-08 7:50

Batch Information

Analytical Batch: EP092208
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.19
Prep Extract Vol: 10

Print Date: 10/3/2008

Client Sample ID: **DPT-06 3-4'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-6D
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 12:00
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 92.11
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	**587**	33.8		MG/KG	5		23-Sep-08 22:52

Surrogates

OTP	107	40-140		%	5		23-Sep-08 22:52

Batch Information

Analytical Batch: EP092308
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.16
Prep Extract Vol: 10

Print Date: 10/3/2008

Client Sample ID: **DPT-07 2-3'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-7D
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 12:15
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 86.54
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	BQL	7.02		MG/KG	1		23-Sep-08 8:47

Surrogates

OTP	81.9	40-140		%	1		23-Sep-08 8:47

Batch Information

Analytical Batch: EP092208
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 32.92
Prep Extract Vol: 10

Print Date: 10/3/2008

Client Sample ID: **DPT-08 1-2'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-8D
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 10:00
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 80.39
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	BQL	7.50		MG/KG	1		23-Sep-08 11:29

Surrogates

OTP	80.1	40-140		%	1		23-Sep-08 11:29

Batch Information

Analytical Batch: EP092308
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 33.15
Prep Extract Vol: 10

Print Date: 10/3/2008

Client Sample ID: **DPT-09 2-3'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-9D
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 10:45
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 89.09
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	**139**	7.00		MG/KG	1		23-Sep-08 11:57

Surrogates

OTP	79.7	40-140		%	1		23-Sep-08 11:57

Batch Information

Analytical Batch: EP100308
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 33.51
Prep Extract Vol: 10

Print Date: 10/3/2008

Client Sample ID: **DPT-10 2-3'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-10D
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 8:45
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 87.24
Basis: Dry

Results by 8015DRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Diesel Range Organics	BQL	6.78		MG/KG	1		23-Sep-08 12:25

Surrogates

OTP	77.4	40-140		%	1		23-Sep-08 12:25

Batch Information

Analytical Batch: EP092308
Analytical Method: 8015DRO
Instrument: GC6
Analyst: EAW

Prep Batch:
Prep Method: 3541
Prep Date/Time:
Initial Prep Wt./Vol.: 33.8
Prep Extract Vol: 10

Print Date: 10/3/2008

Client Sample ID: **DPT-01 3-4'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-1A
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 11:30
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 92.17
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	**827**	188		MG/KG	50		24-Sep-08 13:21

Surrogates

BFB	93.8	70-130		%	50		24-Sep-08 13:21

Batch Information

Analytical Batch: VP092408
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 5.76
Prep Extract Vol: 5

Print Date: 10/3/2008

Client Sample ID: **DPT-02 3-4'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-2A
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 11:15
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 92.07
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	**100**	5.71		MG/KG	5		25-Sep-08 15:30

Surrogates

BFB	97.6	70-130		%	5		25-Sep-08 15:30

Batch Information

Analytical Batch: VP092508
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 5.71
Prep Extract Vol: 5

Print Date: 10/3/2008

Client Sample ID: **DPT-03 2-3'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-3A
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 11:00
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 87.80
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	BQL	5.52		MG/KG	1		25-Sep-08 11:57
Surrogates							
BFB	95.8	70-130		%	1		25-Sep-08 11:57

Batch Information

Analytical Batch: VP092508
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.19
Prep Extract Vol: 5

Print Date: 10/3/2008

Client Sample ID: **DPT-04 2-3'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-4A
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 11:40
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 88.69
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	**835**	181		MG/KG	50		24-Sep-08 15:09
Surrogates							
BFB	93.2	70-130		%	50		24-Sep-08 15:09

Batch Information

Analytical Batch: VP092408
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.24
Prep Extract Vol: 5

Print Date: 10/3/2008

Client Sample ID: **DPT-05 3-4'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-5A
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 11:50
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 85.21
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	**19.7**	5.83		MG/KG	1		25-Sep-08 13:17

Surrogates

BFB	94.9	70-130		%	1		25-Sep-08 13:17

Batch Information

Analytical Batch: VP092508
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.04
Prep Extract Vol: 5

Print Date: 10/3/2008

Client Sample ID: **DPT-06 3-4'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-6A
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 12:00
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 92.11
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	**1200**	176		MG/KG	50		24-Sep-08 16:03
Surrogates							
BFB	101	70-130		%	50		24-Sep-08 16:03

Batch Information

Analytical Batch: VP092408
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.17
Prep Extract Vol: 5

Print Date: 10/3/2008

Client Sample ID: **DPT-07 2-3'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-7A
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 12:15
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 86.54
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	BQL	4.95		MG/KG	1		25-Sep-08 14:37

Surrogates

BFB	95.6	70-130		%	1		25-Sep-08 14:37

Batch Information

Analytical Batch: VP092508
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 7
Prep Extract Vol: 5

Print Date: 10/3/2008

Client Sample ID: **DPT-08 1-2'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-8A
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 10:00
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 80.39
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	BQL	5.79		MG/KG	1		25-Sep-08 15:04
Surrogates							
BFB	98.2	70-130		%	1		25-Sep-08 15:04

Batch Information

Analytical Batch: VP092508
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.45
Prep Extract Vol: 5

Print Date: 10/3/2008

Client Sample ID: **DPT-09 2-3'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-9A
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 10:45
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 89.09
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	BQL	6.06		MG/KG	1		25-Sep-08 19:31

Surrogates

BFB	99	70-130		%	1		25-Sep-08 19:31

Batch Information

Analytical Batch: VP092508
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 5.56
Prep Extract Vol: 5

Print Date: 10/3/2008

Client Sample ID: **DPT-10 2-3'**
Client Project ID: Sunoco
Lab Sample ID: G128-2247-10A
Lab Project ID: G128-2247

Collection Date: 18-Sep-08 8:45
Received Date: 19-Sep-08
Matrix: SOIL
Solids: 87.24
Basis: Dry

Results by 8015GRO

Parameter	Result	RL/CL	MDL	Units	DF	Qual	Date Analyzed
Gasoline Range Organics	BQL	5.36		MG/KG	1		25-Sep-08 16:23

Surrogates

BFB	101	70-130		%	1		25-Sep-08 16:23

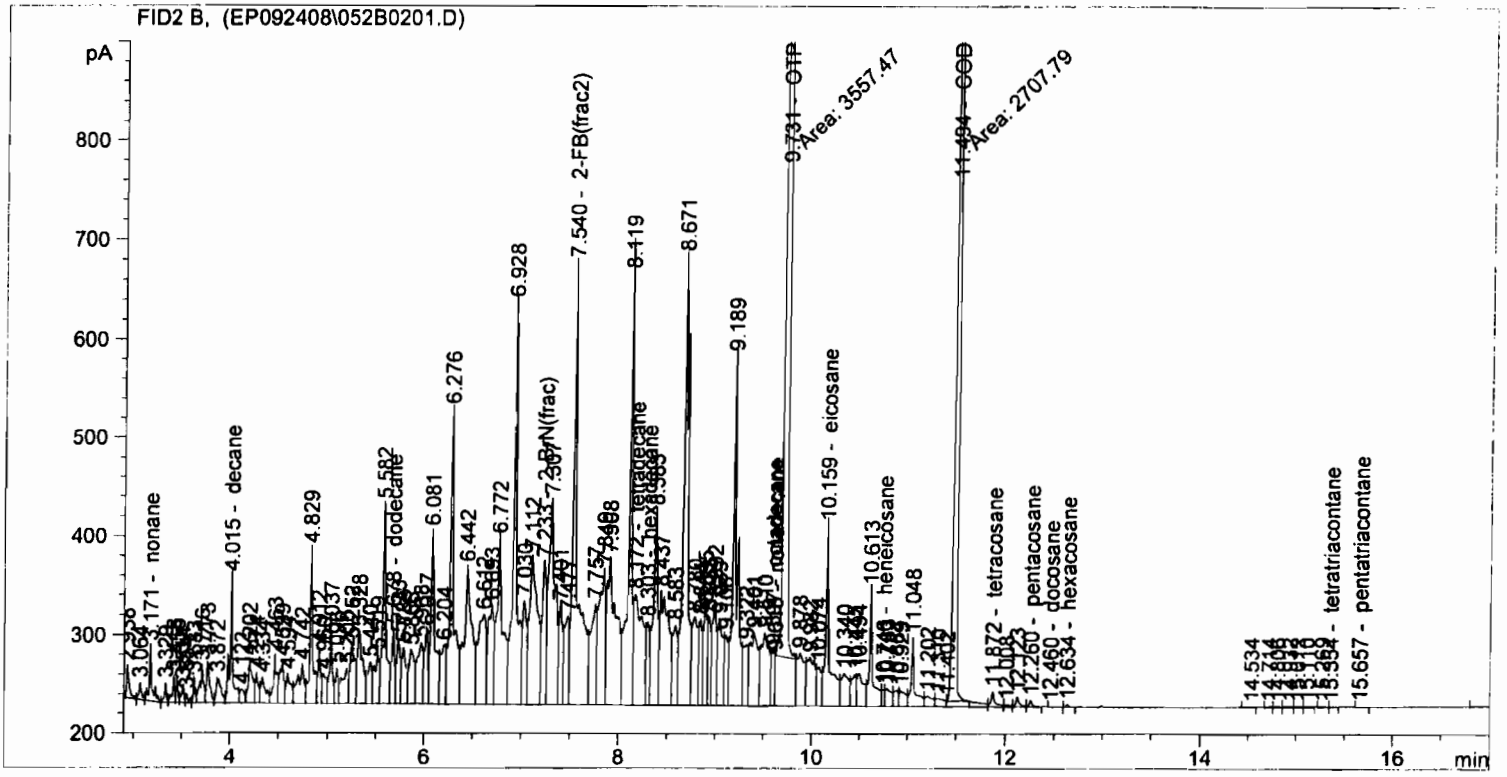
Batch Information

Analytical Batch: VP092508
Analytical Method: 8015GRO
Instrument: GC4
Analyst: DVG

Prep Batch:
Prep Method: 5035
Prep Date/Time:
Initial Prep Wt./Vol.: 6.41
Prep Extract Vol: 5

Injection Date : 9/24/2008 9:55:42 AM Seq. Line : 2
Sample Name : cvs-D-500 Location : Vial 52
Acq. Operator : EAW Inj : 1
Acq. Instrument : GC6 Inj Volume : 10 µl
Acq. Method : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed : 9/23/2008 3:50:09 PM by EAW
TPH

DRO CHROMATOGRAM



Area Percent Report

Sorted By : Signal
Calib. Data Modified : 9/22/2008 10:52:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.171	VP	0.0308	118.17753	0.00061	nonane
2	4.015	VV	0.0319	283.02881	0.00147	decane
3	5.678	VV	0.0361	181.63387	0.00094	dodecane
4	7.233	VV	0.0429	429.76685	0.00223	2-BrN(frac)
5	7.540	VV	0.0492	1580.09656	0.00821	2-FB(frac2)
6	8.172	VV	0.0862	729.48566	0.00379	tetradecane
7	8.303	VV	0.0336	199.13966	0.00103	hexadecane
8	9.597	VV	0.0365	147.93909	0.00077	octadecane
9	9.618	VV R	5.27e-3	652.81775	0.00339	nonadecane
10	9.731	MM T	0.0340	3557.47046	0.01849	OTP
11	10.159	VV	0.0420	561.84082	0.00292	eicosane
12	10.746	VV	0.0330	40.24302	0.00021	heneicosane
13	11.494	MM T	0.0310	2707.79150	0.01407	COD

DPT-01 3-4'

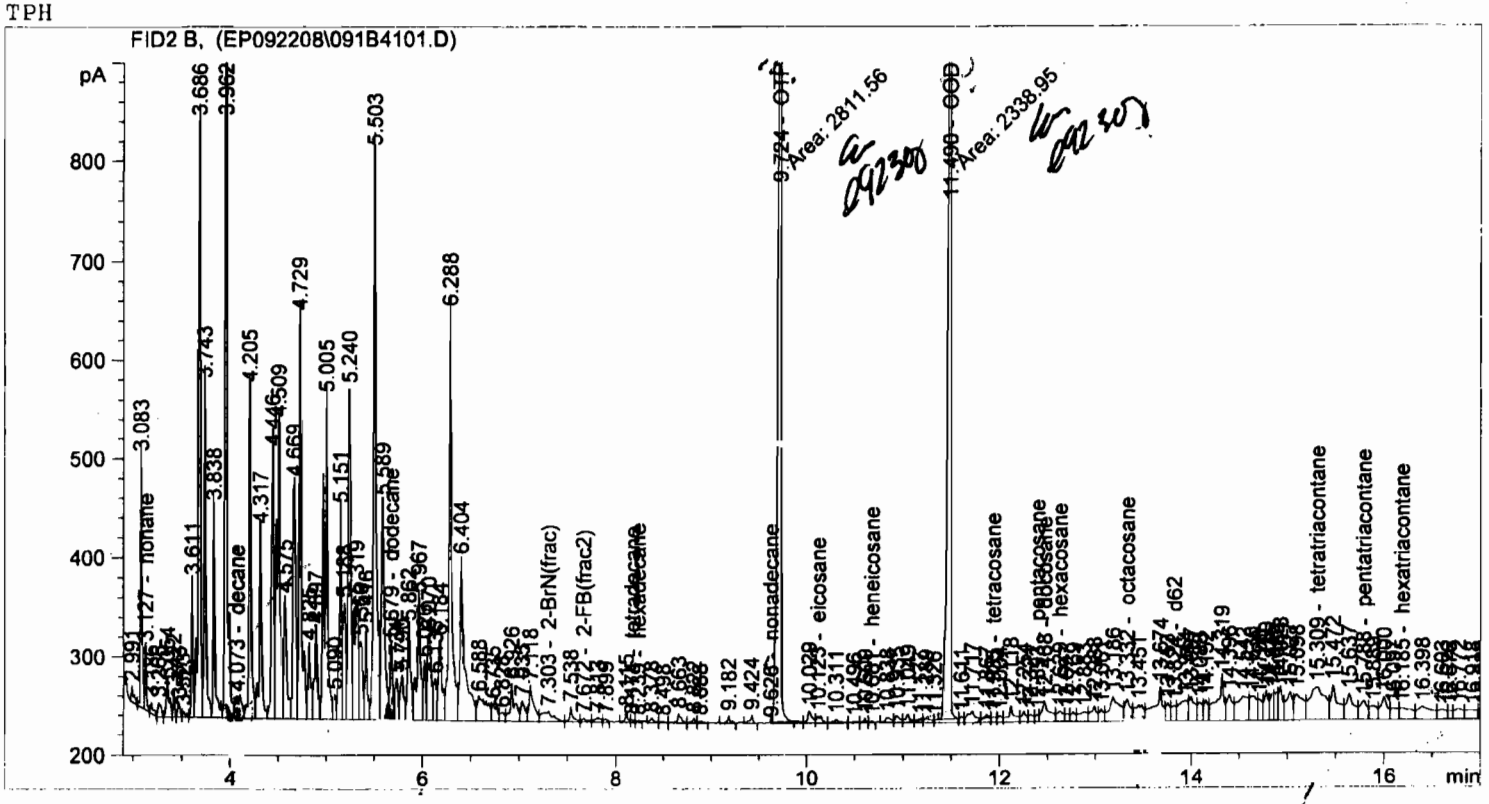
128

128

09238

Injection Date	: 9/23/2008 5:00:59 AM	Seq. Line	: 41
Sample Name	: ~~G110~~-2247-1D x1	Location	: Vial 91
Acq. Operator	: EAW	Inj	: 1
Acq. Instrument	: GC6	Inj Volume	: 10 µl
Acq. Method	: C:\HPCHEM\1\METHODS\DCSEPHB.M		
Last changed	: 9/11/2008 11:04:07 AM by EAW		
Analysis Method	: C:\HPCHEM\1\METHODS\EPHTK_R.M		
Last changed	: 9/22/2008 10:52:03 AM by EAW (modified after loading)		

TPH



Area Percent Report

Sorted By	: Signal
Calib. Data Modified	: 9/22/2008 10:52:08 AM
Multiplier	: 1.0000
Dilution	: 1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

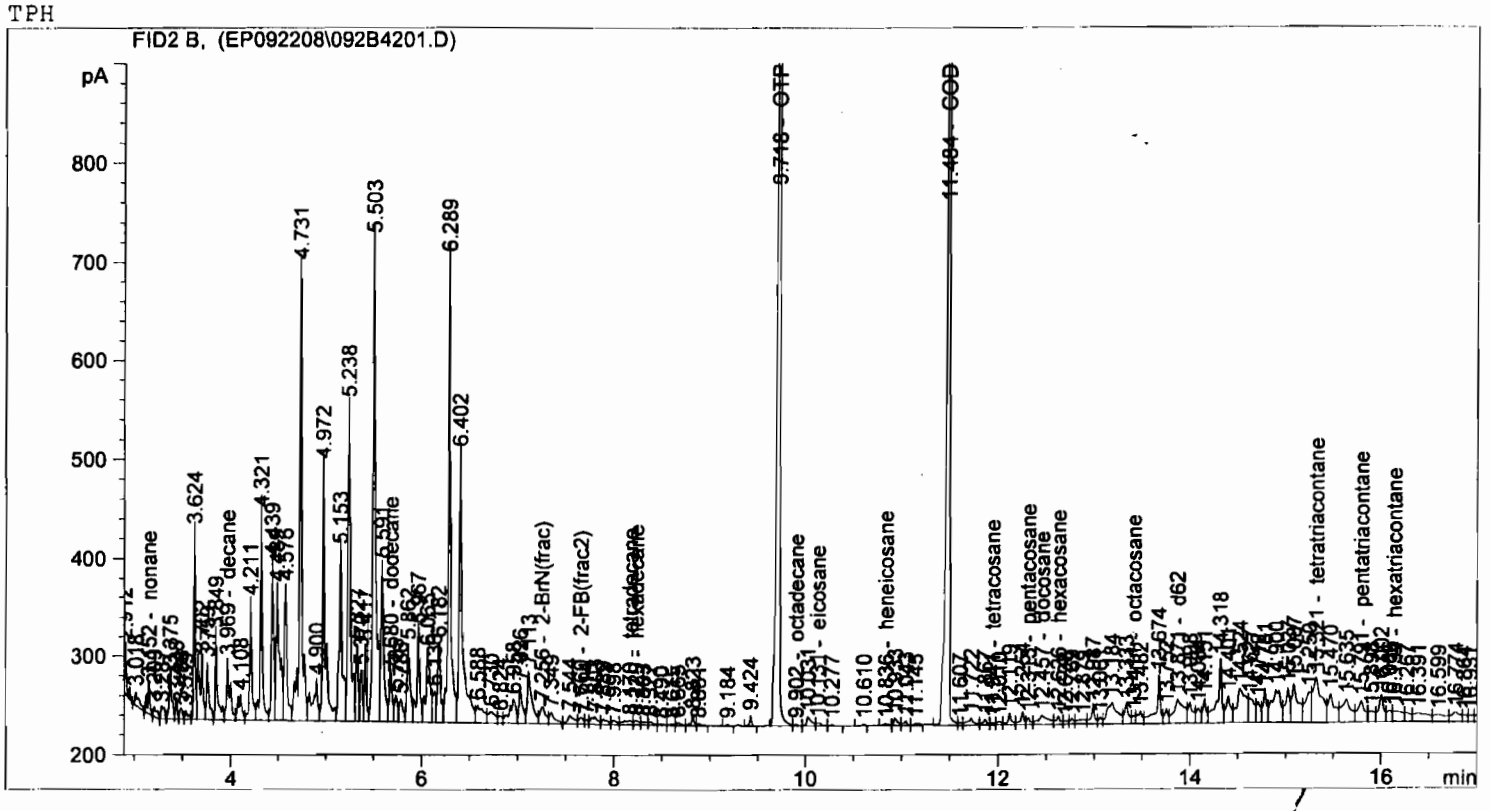
Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.127	VV	0.0185	79.87681	0.00049	nonane
2	4.073	VV	0.0737	97.75034	0.00059	decane
3	5.679	VV	0.0300	160.18672	0.00097	dodecane
4	7.303	VV	0.1062	88.56530	0.00054	2-BrN(frac)
5	7.672	VV	0.0580	15.97870	9.722e-5	2-FB(frac2)
6	8.174	VV	0.0343	6.10059	3.712e-5	tetradecane
7	8.239	VV	0.0560	6.75533	4.110e-5	hexadecane
8	9.626	VV R	2.68e-4	29.12927	0.00018	nonadecane
9	9.700		0.0000	0.00000	0.00000	octadecane
10	9.724	MM T	0.0279	2811.55591	0.01711	OTP
11	10.123	VV	0.0518	28.85184	0.00018	eicosane
12	10.681	VV	0.0336	4.69392	2.856e-5	heneicosane

DPT-02 3-41

Injection Date : 9/23/2008 5:29:21 AM Seq. Line : 42
Sample Name : ~~G110-2247~~-2D x1 Location : Vial 92
Acq. Operator : EAW Inj : 1
Acq. Instrument : GC6 Inj Volume : 10 µl
Acq. Method : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed : 9/22/2008 10:52:03 AM by EAW
(modified after loading)

EW 092308

TPH



Area Percent Report

Sorted By : Signal
Calib. Data Modified : 9/22/2008 10:52:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

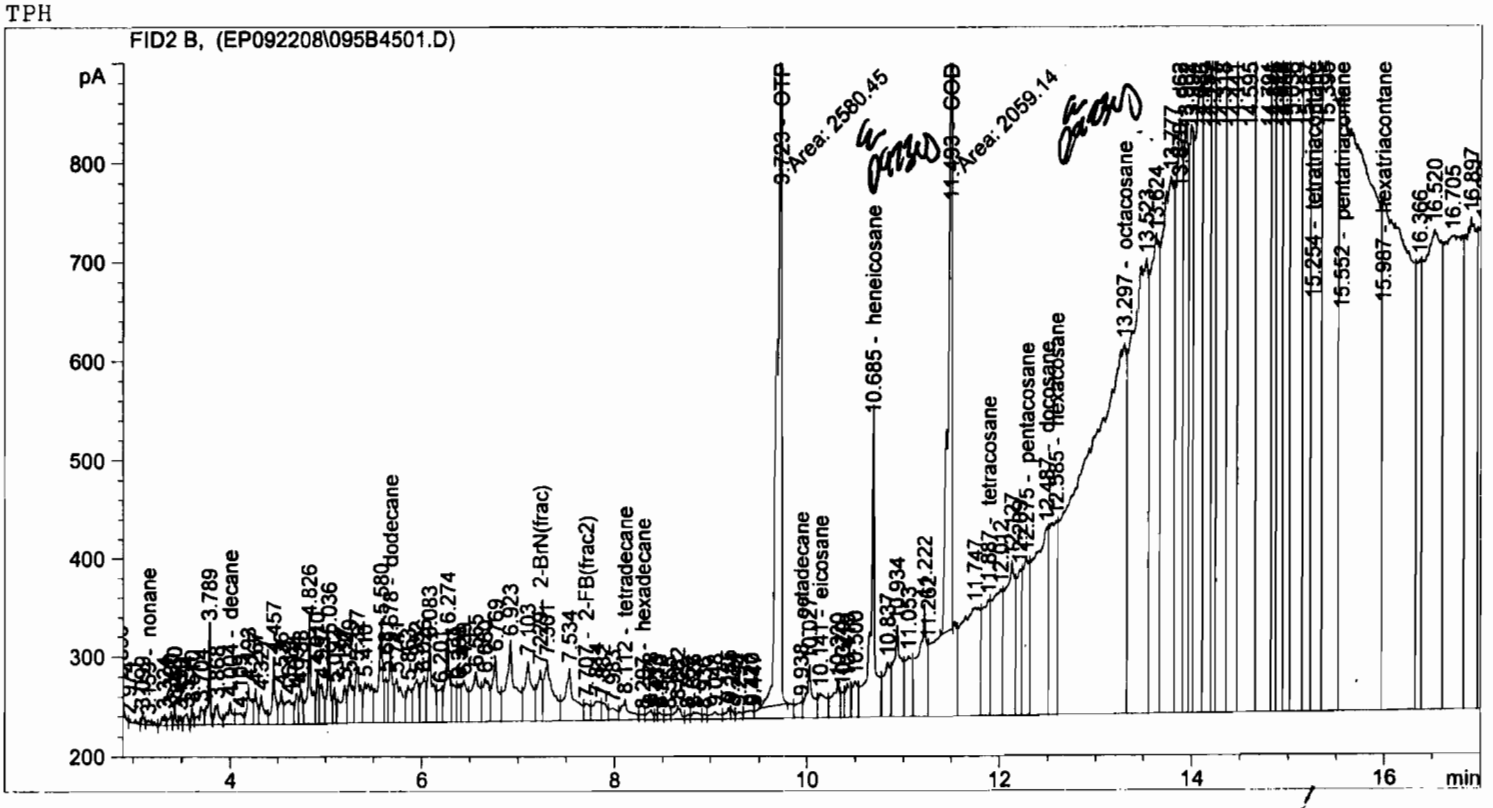
Signal 1: FID2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.152	VV	0.0354	58.85844	0.00032	nonane
2	3.969	VV	0.0357	153.04919	0.00084	decane
3	5.680	VV	0.0327	109.22895	0.00060	dodecane
4	7.256	VV	0.0604	71.55347	0.00039	2-BrN(frac)
5	7.660	VV	0.0526	23.15616	0.00013	2-FB(frac2)
6	8.170	VV	0.0774	27.85854	0.00015	tetradecane
7	8.229	VV	0.0547	15.93538	8.782e-5	hexadecane
8	9.697		0.0000	0.00000	0.00000	nonadecane
9	9.718	VV	0.0291	2638.87134	0.01454	OTP
10	9.902	VV	0.0461	7.51636	4.142e-5	octadecane
11	10.131	VV	0.0532	14.48214	7.981e-5	eicosane
12	10.836	VV	0.0574	9.37474	5.166e-5	heneicosane

DRT-03 2-3'

Injection Date	: 9/23/2008 6:54:12 AM	Seq. Line	: 45
Sample Name	: G128-2247-3D x1	Location	: Vial 95
Acq. Operator	: EAW	Inj	: 1
Acq. Instrument	: GC6	Inj Volume	: 10 µl
Acq. Method	: C:\HPCHEM\1\METHODS\DCSEPHB.M		
Last changed	: 9/11/2008 11:04:07 AM by EAW		
Analysis Method	: C:\HPCHEM\1\METHODS\EPHTK_R.M		
Last changed	: 9/22/2008 10:52:03 AM by EAW (modified after loading)		

TPH



Area Percent Report

Sorted By	:	Signal
Calib. Data Modified	:	9/22/2008 10:52:08 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

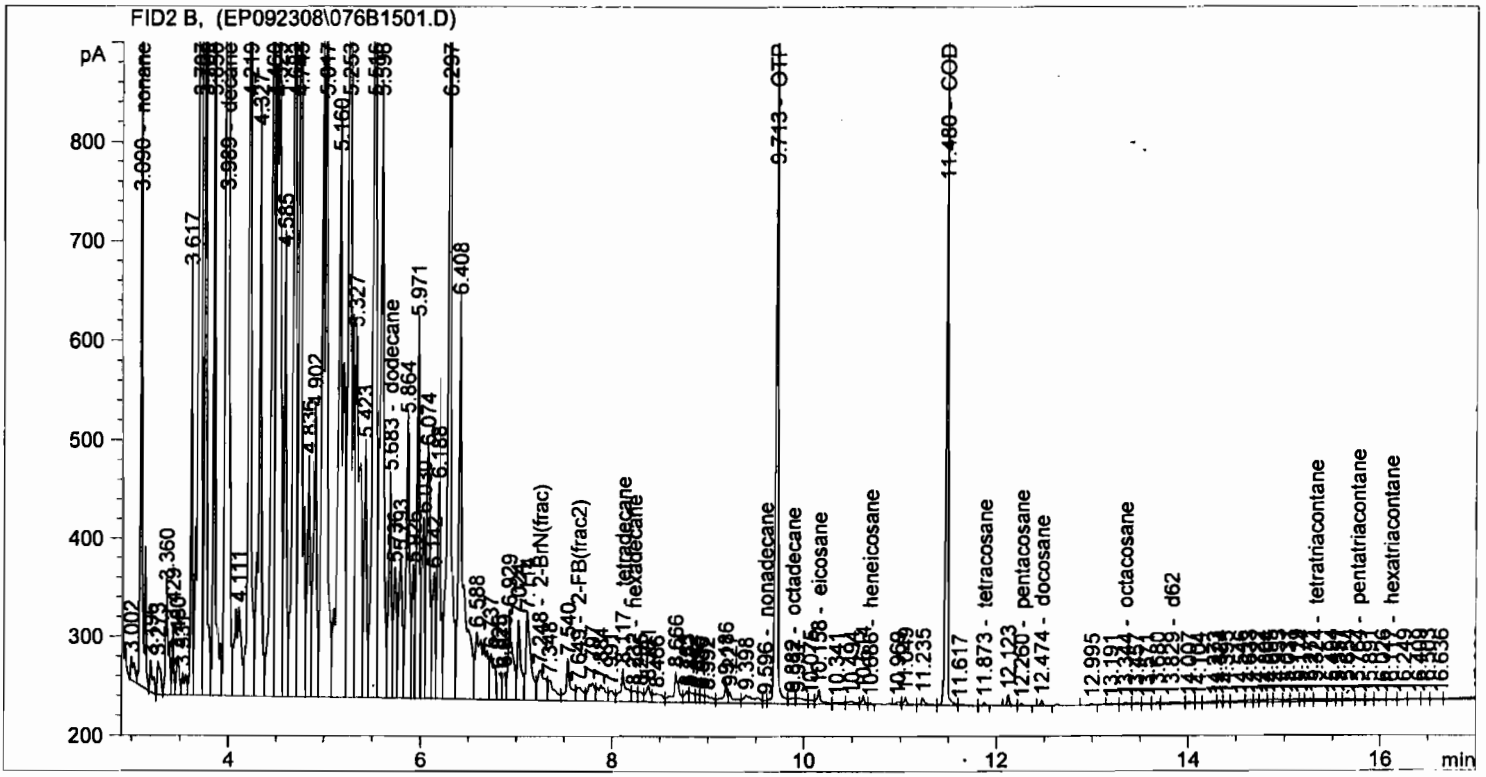
Signal 1: FID2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.159	VP	0.0644	21.78802	0.00012	nonane
2	4.004	VV	0.0490	84.84642	0.00048	decane
3	5.678	VV	0.0351	186.30170	0.00105	dodecane
4	7.229	VV	0.0474	182.61200	0.00103	2-BrN(frac)
5	7.707	VV	0.0534	70.90232	0.00040	2-FB(frac2)
6	8.112	VV	0.0834	124.26700	0.00070	tetradecane
7	8.297	VV	0.0523	19.14066	0.00011	hexadecane
8	9.697		0.0000	0.00000	0.00000	nonadecane
9	9.723	MM T	0.0357	2580.44678	0.01453	OTP
10	9.938	VV	0.0661	85.64011	0.00048	octadecane
11	10.141	VV	0.0734	145.57797	0.00082	eicosane
12	10.685	VV	0.0439	980.14661	0.00552	heneicosane

DRT-04 2-31

Injection Date : 9/23/2008 10:23:28 PM Seq. Line : 15
Sample Name : G128-2247-4D x2 Location : Vial 76
Acq. Operator : EAW Inj : 1
Acq. Instrument : GC6 Inj Volume : 10 µl
Acq. Method : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed : 9/23/2008 3:50:09 PM by EAW
TPH

EP 092308



Area Percent Report

Sorted By : Signal
Calib. Data Modified : 9/22/2008 10:52:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

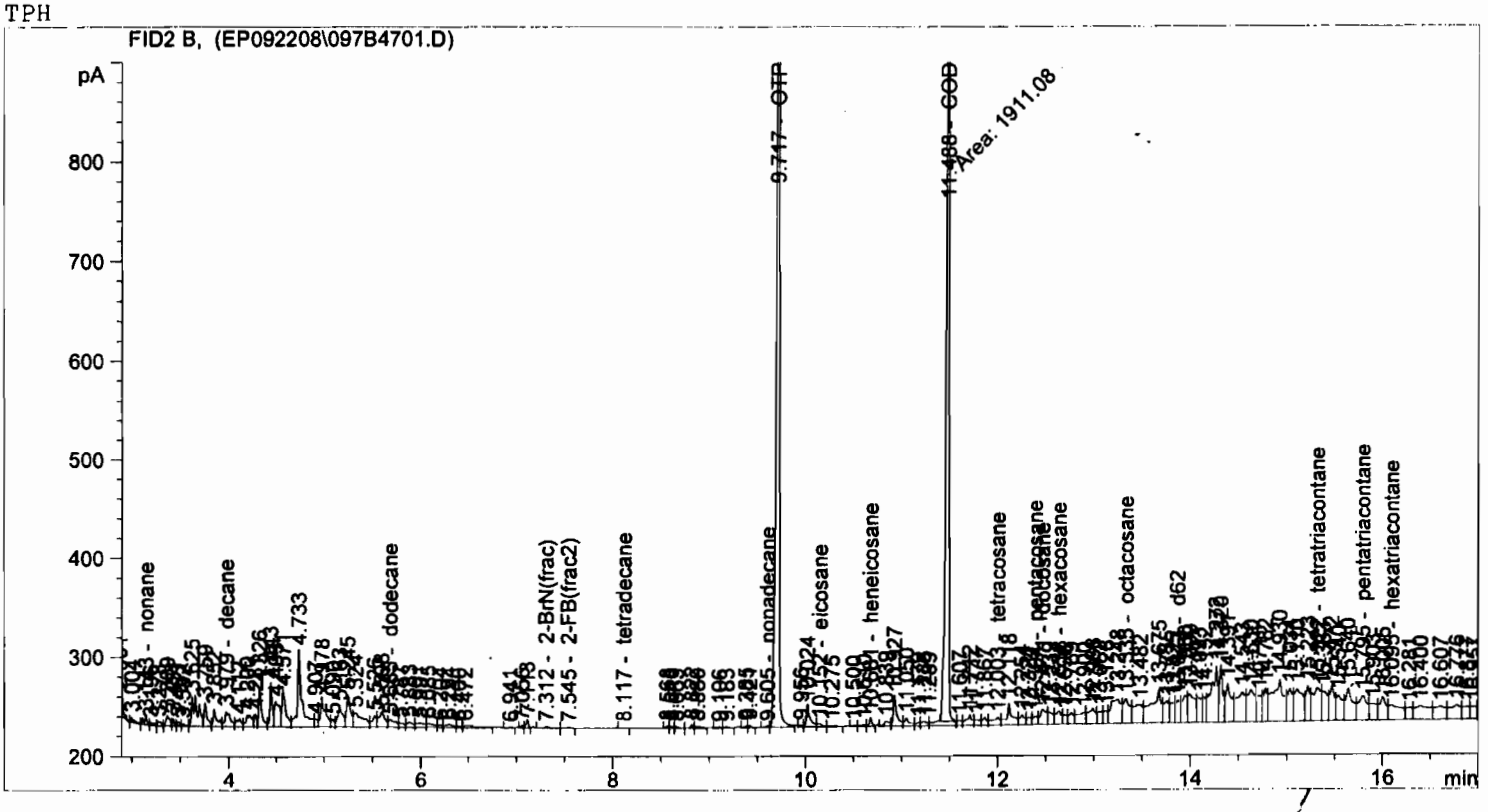
Signal 1: FID2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.090	VV	0.0217	1033.33582	0.00595	nonane
2	3.989	VV	0.0300	5485.16455	0.03156	decane
3	5.683	VV	0.0301	466.48892	0.00268	dodecane
4	7.248	VV	0.0773	171.66077	0.00099	2-BrN(frac)
5	7.649	VV	0.0718	67.98785	0.00039	2-FB(frac2)
6	8.117	VV	0.0517	127.84689	0.00074	tetradecane
7	8.232	VV	0.0556	40.02384	0.00023	hexadecane
8	9.596	VV	0.0377	8.31662	4.786e-5	nonadecane
9	9.713	VV	0.0455	1258.95667	0.00724	OTP
10	9.882	VV	0.0578	25.20647	0.00015	octadecane
11	10.158	VV	0.0397	40.49576	0.00023	eicosane
12	10.686	VV	0.0342	4.48184	2.579e-5	heneicosane
13	11.480	VV	0.0252	1008.08191	0.00580	COD

DRT-05 3-41

Injection Date : 9/23/2008 7:50:50 AM Seq. Line : 47
Sample Name : G128-2247-5D x1 Location : Vial 97
Acq. Operator : EAW Inj : 1
Acq. Instrument : GC6 Inj Volume : 10 µl
Acq. Method : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed : 9/22/2008 10:52:03 AM by EAW
(modified after loading)

TPH



Area Percent Report

Sorted By : Signal
Calib. Data Modified : 9/22/2008 10:52:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

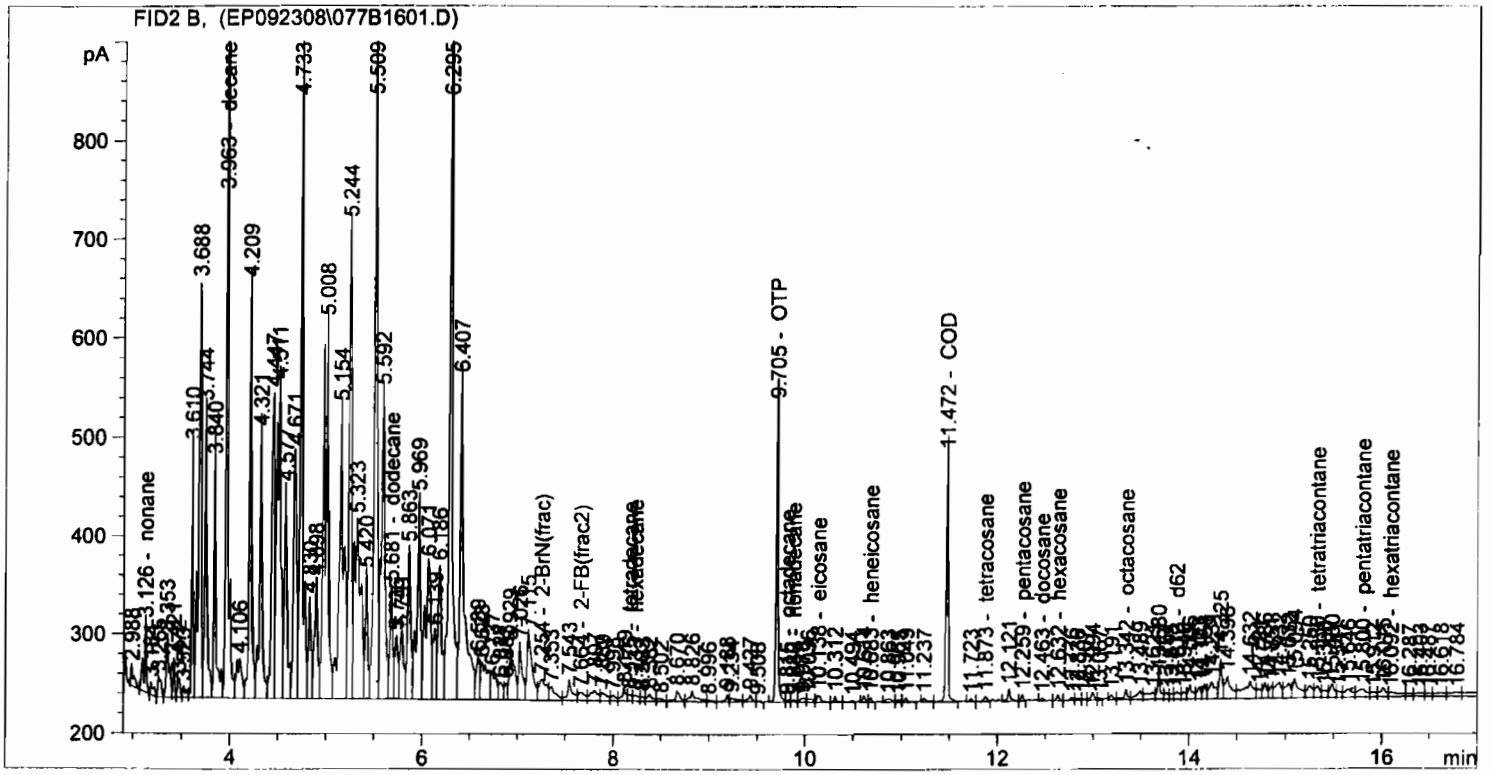
Signal 1: FID2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.143	VV	0.0324	21.94117	0.00012	nonane
2	3.979	VV	0.0531	61.09516	0.00035	decane
3	5.685	VV	0.0662	41.04560	0.00023	dodecane
4	7.312	VV	0.0620	8.76263	4.973e-5	2-BrN(frac)
5	7.545	VV	0.0531	5.40274	3.066e-5	2-FB(frac2)
6	8.117	VV	0.0396	4.39133	2.492e-5	tetradecane
7	8.223		0.0000	0.00000	0.00000	hexadecane
8	9.605	VV	0.0440	4.44250	2.521e-5	nonadecane
9	9.700		0.0000	0.00000	0.00000	octadecane
10	9.717	VV	0.0276	2297.54858	0.01304	OTP
11	10.152	VV	0.0663	12.92196	7.333e-5	eicosane
12	10.681	VV	0.0309	17.82387	0.00010	heneicosane

DRT-06 3-4

Injection Date : 9/23/2008 10:52:07 PM Seq. Line : 16
Sample Name : G128-2247-6D x5 Location : Vial 77
Acq. Operator : EAW Inj : 1
Acq. Instrument : GC6 Inj Volume : 10 µl
Acq. Method : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed : 9/23/2008 3:50:09 PM by EAW
TPH

EV 092508



Area Percent Report

Sorted By : Signal
Calib. Data Modified : 9/22/2008 10:52:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

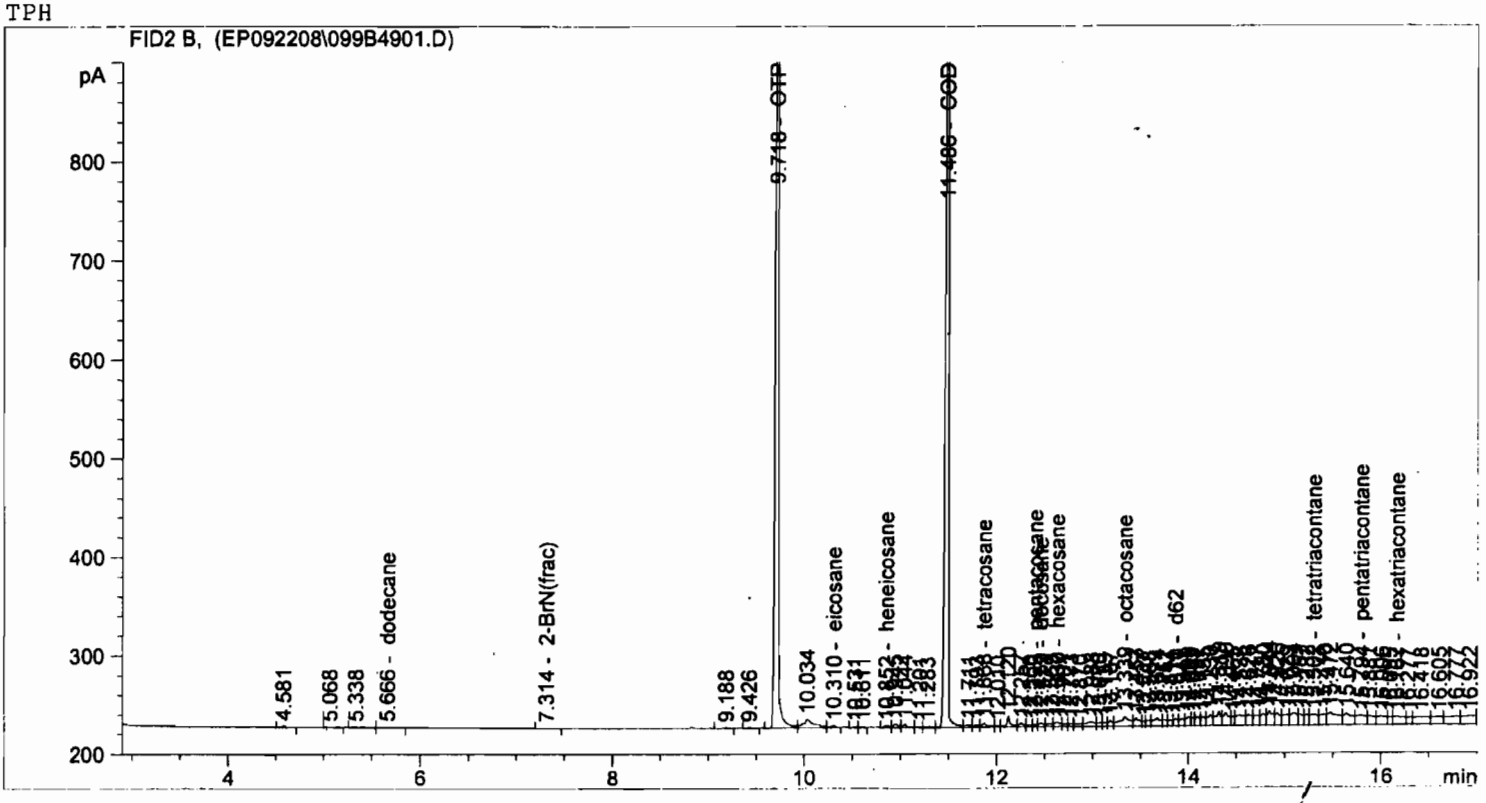
Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.126	VV	0.0254	127.18146	0.00076	nonane
2	3.963	VV	0.0225	1316.24097	0.00785	decane
3	5.681	VV	0.0310	243.40297	0.00145	dodecane
4	7.254	VV	0.0796	119.20454	0.00071	2-BrN(frac)
5	7.664	VV	0.0698	39.58383	0.00024	2-FB(frac2)
6	8.175	VV	0.0398	18.48409	0.00011	tetradecane
7	8.233	VV	0.0546	21.98937	0.00013	hexadecane
8	9.705	VV	0.0231	443.79105	0.00265	OTP
9	9.815	VV	0.0367	5.34286	3.186e-5	octadecane
10	9.880	VV	0.0499	7.81596	4.660e-5	nonadecane
11	10.138	VV	0.0447	23.72896	0.00014	eicosane
12	10.683	VV	0.0285	8.84802	5.276e-5	heneicosane
13	11.472	VV	0.0237	380.83511	0.00227	COD

DRT-07 2-31

Injection Date : 9/23/2008 8:47:12 AM Seq. Line : 49
Sample Name : G128-2247-7D x1 Location : Vial 99
Acq. Operator : EAW Inj : 1
Acq. Instrument : GC6 Inj Volume : 10 µl
Acq. Method : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed : 9/22/2008 10:52:03 AM by EAW
(modified after loading)

EW 092308

TPH



Area Percent Report

Sorted By : Signal
Calib. Data Modified : 9/22/2008 10:52:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

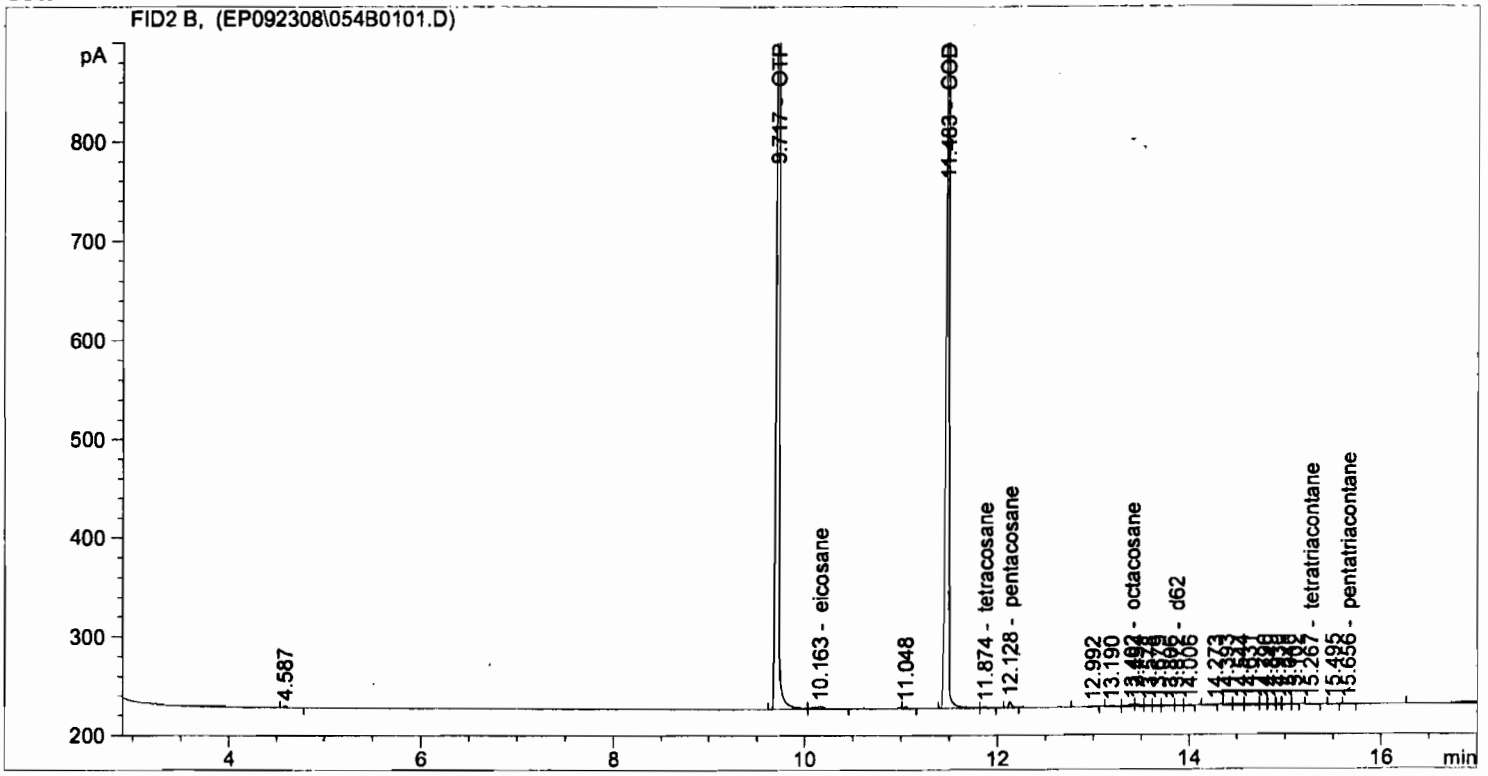
Signal 1: FID2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.131		0.0000	0.00000	0.00000	nonane
2	4.022		0.0000	0.00000	0.00000	decane
3	5.666	VV	0.1568	7.87056	4.499e-5	dodecane
4	7.314	VV	0.1059	5.91436	3.381e-5	2-BrN(frac)
5	7.631		0.0000	0.00000	0.00000	2-FB(frac2)
6	8.195		0.0000	0.00000	0.00000	tetradecane
7	8.223		0.0000	0.00000	0.00000	hexadecane
8	9.697		0.0000	0.00000	0.00000	nonadecane
9	9.700		0.0000	0.00000	0.00000	octadecane
10	9.718	VV	0.0286	2543.05884	0.01454	OTP
11	10.310	VV	0.0599	12.56102	7.180e-5	eicosane
12	10.852	VV	0.0689	9.61597	5.496e-5	heneicosane

DT-08 1-21

Injection Date : 9/23/2008 11:29:32 AM Seq. Line : 1
Sample Name : G128-2247-8D x1 Location : Vial 54
Acq. Operator : EAW Inj : 1
Acq. Instrument : GC6 Inj Volume : 10 µl
Acq. Method : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed : 9/23/2008 3:50:09 PM by EAW
TPH

EW 092308



Area Percent Report

Sorted By : Signal
Calib. Data Modified : 9/22/2008 10:52:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

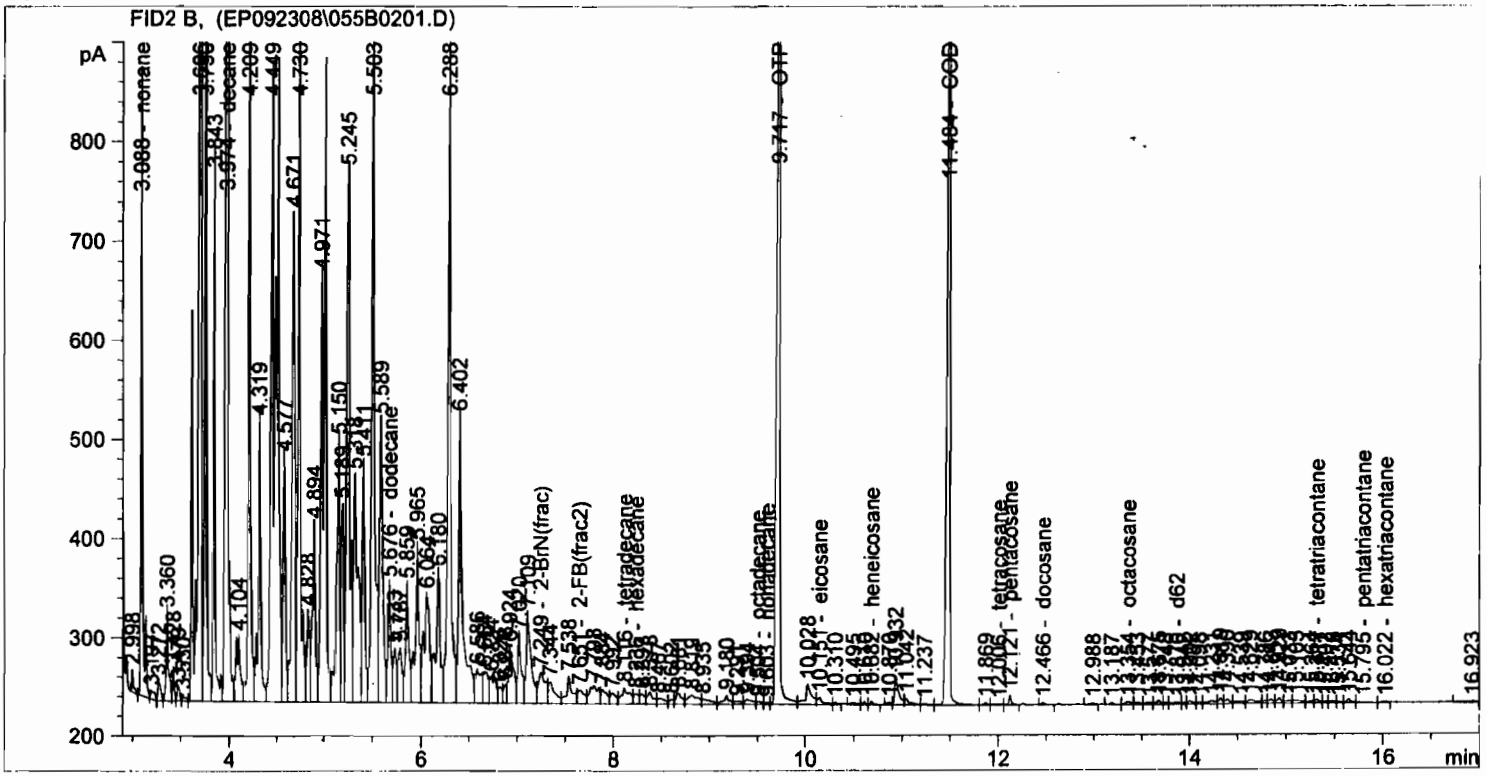
Signal 1: FID2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.131		0.0000	0.00000	0.00000	nonane
2	4.022		0.0000	0.00000	0.00000	decane
3	5.704		0.0000	0.00000	0.00000	dodecane
4	7.247		0.0000	0.00000	0.00000	2-BrN(frac)
5	7.631		0.0000	0.00000	0.00000	2-FB(frac2)
6	8.195		0.0000	0.00000	0.00000	tetradecane
7	8.223		0.0000	0.00000	0.00000	hexadecane
8	9.697		0.0000	0.00000	0.00000	nonadecane
9	9.700		0.0000	0.00000	0.00000	octadecane
10	9.717	VV	0.0277	2479.03027	0.01259	OTP
11	10.163	VV	0.1335	28.97378	0.00015	eicosane
12	10.755		0.0000	0.00000	0.00000	heneicosane
13	11.483	VV	0.0280	1998.20752	0.01015	COD

PPT-09 2-3'

Injection Date : 9/23/2008 11:57:24 AM Seq. Line : 2
Sample Name : G128-2247-9D x1 Location : Vial 55
Acq. Operator : EAW Inj : 1
Acq. Instrument : GC6 Inj Volume : 10 µl
Acq. Method : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed : 9/23/2008 3:50:09 PM by EAW
TPH

EW 092308



Area Percent Report

Sorted By : Signal
Calib. Data Modified : 9/22/2008 10:52:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

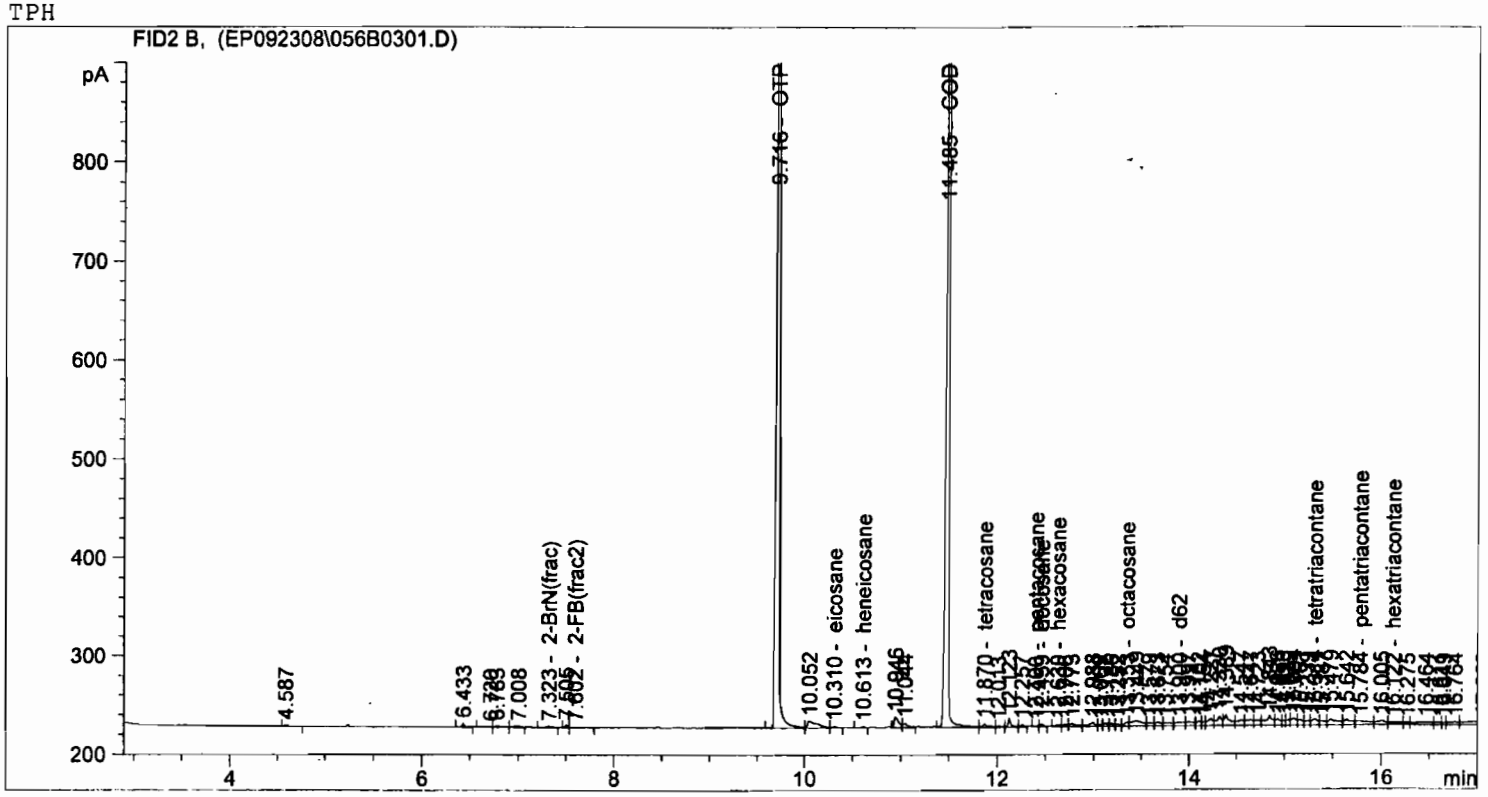
Signal 1: FID2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.088	VV	0.0186	731.80164	0.00421	nonane
2	3.974	VV	0.0227	3161.39771	0.01817	decane
3	5.676	VV	0.0305	255.20947	0.00147	dodecane
4	7.249	VV	0.0738	165.91647	0.00095	2-BrN(frac)
5	7.651	VV	0.0713	66.88202	0.00038	2-FB(frac2)
6	8.116	VV	0.0729	92.77028	0.00053	tetradecane
7	8.236	VV	0.0562	37.98678	0.00022	hexadecane
8	9.504	VV	0.0519	11.01600	6.330e-5	octadecane
9	9.603	VV	0.0536	6.63779	3.814e-5	nonadecane
10	9.717	VV	0.0277	2467.16650	0.01418	OTP
11	10.151	VV	0.0680	29.15230	0.00017	eicosane
12	10.682	VV	0.0344	8.62145	4.954e-5	heneicosane
13	11.484	VP	0.0280	1984.87659	0.01141	COD

RT-10 2-3'

Injection Date : 9/23/2008 12:25:42 PM Seq. Line : 3
Sample Name : G128-2247-10D x1 Location : Vial 56
Acq. Operator : EAW Inj : 1
Acq. Instrument : GC6 Inj Volume : 10 µl
Acq. Method : C:\HPCHEM\1\METHODS\DCSEPHB.M
Last changed : 9/11/2008 11:04:07 AM by EAW
Analysis Method : C:\HPCHEM\1\METHODS\EPHTK_R.M
Last changed : 9/23/2008 3:50:09 PM by EAW
TPH

092308

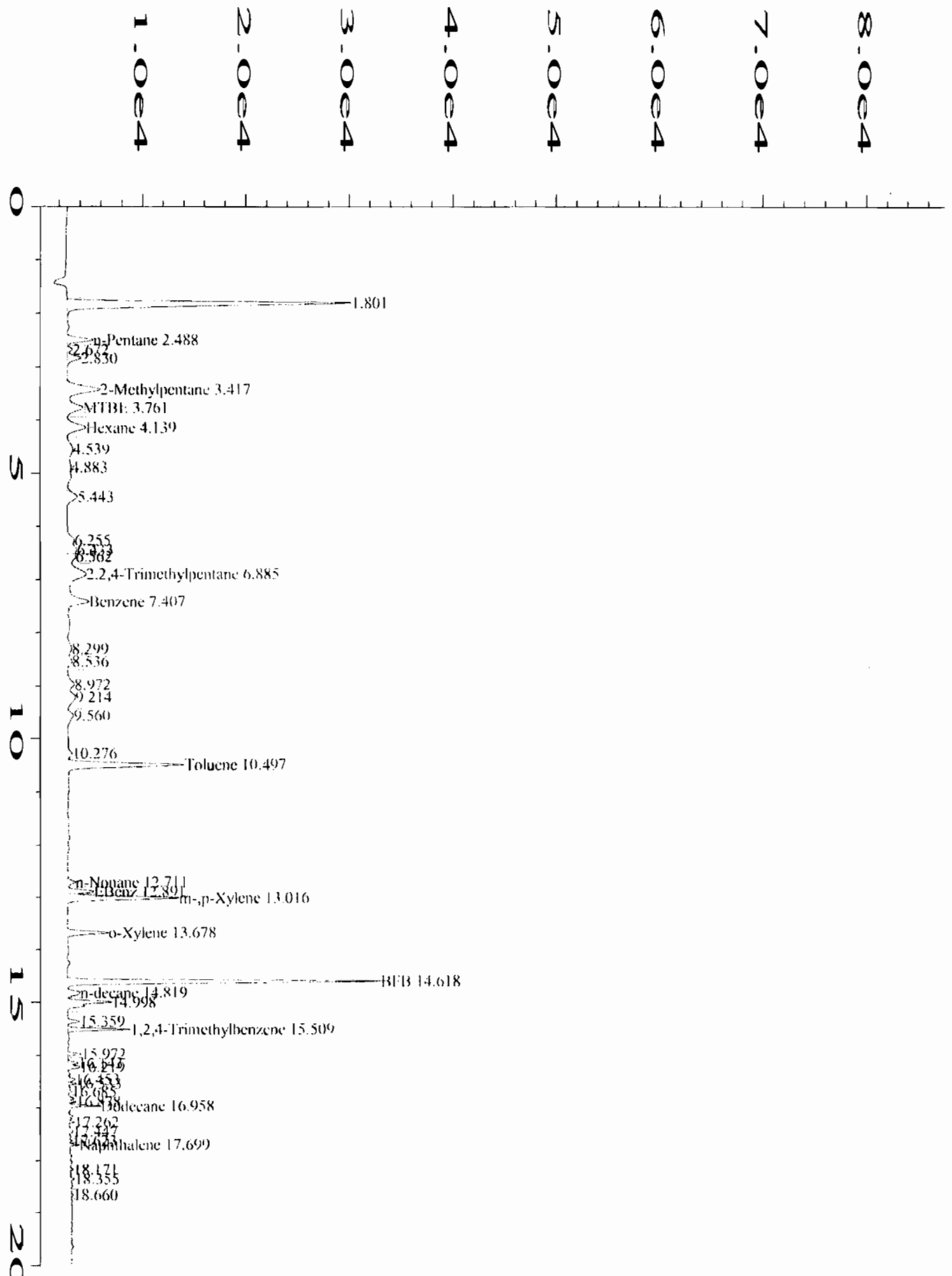


Area Percent Report

Sorted By : Signal
Calib. Data Modified : 9/22/2008 10:52:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

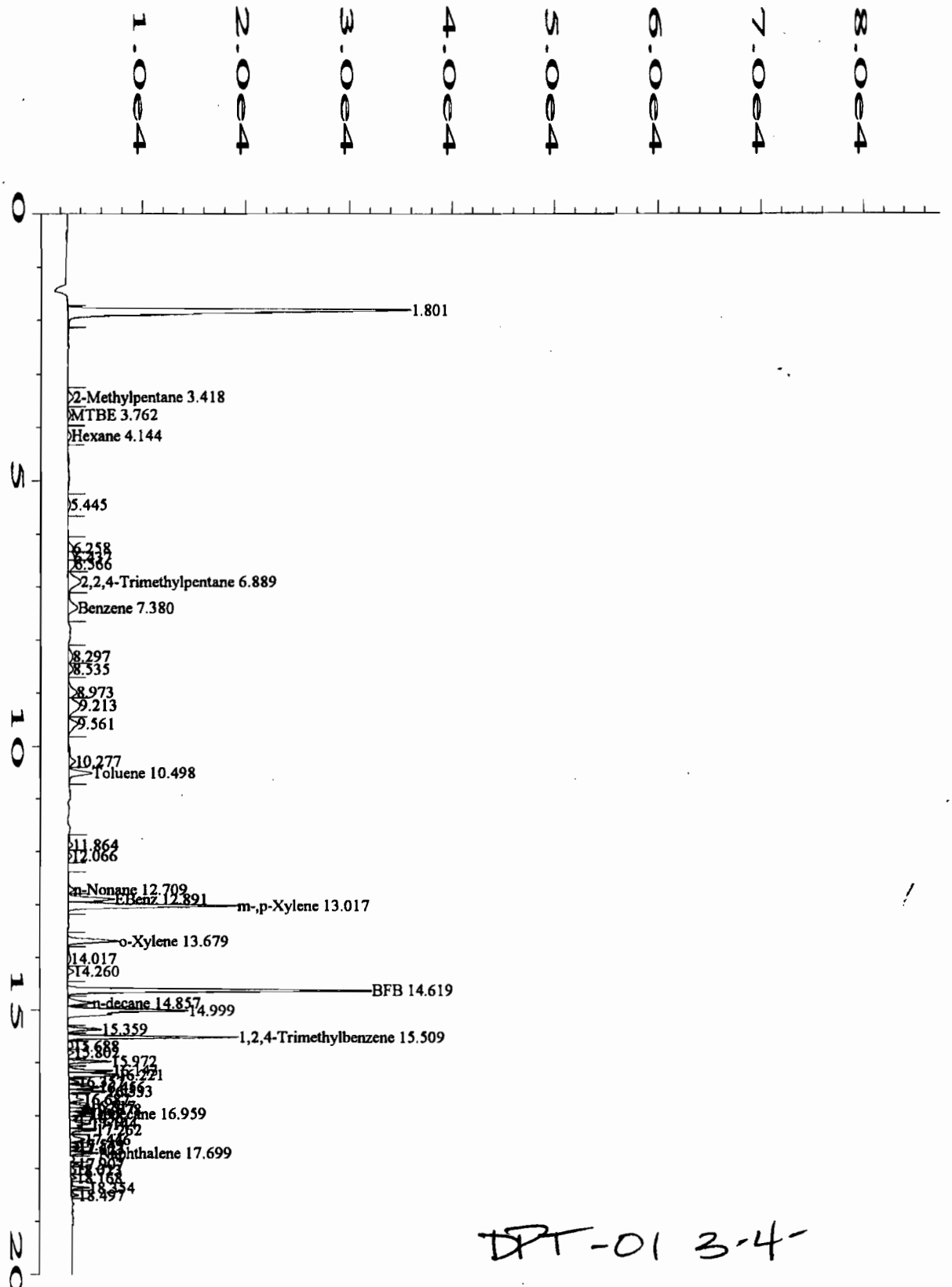
Signal 1: FID2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	3.131		0.0000	0.00000	0.00000	nonane
2	4.022		0.0000	0.00000	0.00000	decane
3	5.704		0.0000	0.00000	0.00000	dodecane
4	7.323	VV	0.0841	7.54130	4.243e-5	2-BrN(frac)
5	7.602	VP	0.1034	9.85080	5.543e-5	2-FB(frac2)
6	8.195		0.0000	0.00000	0.00000	tetradecane
7	8.223		0.0000	0.00000	0.00000	hexadecane
8	9.697		0.0000	0.00000	0.00000	nonadecane
9	9.700		0.0000	0.00000	0.00000	octadecane
10	9.716	VV	0.0267	2386.63599	0.01343	OTP
11	10.310	VV	0.0506	7.28122	4.097e-5	eicosane
12	10.613	VV	0.0546	4.69599	2.642e-5	heneicosane
13	11.485	VV	0.0280	2064.58130	0.01162	COD



GRO STANDARD

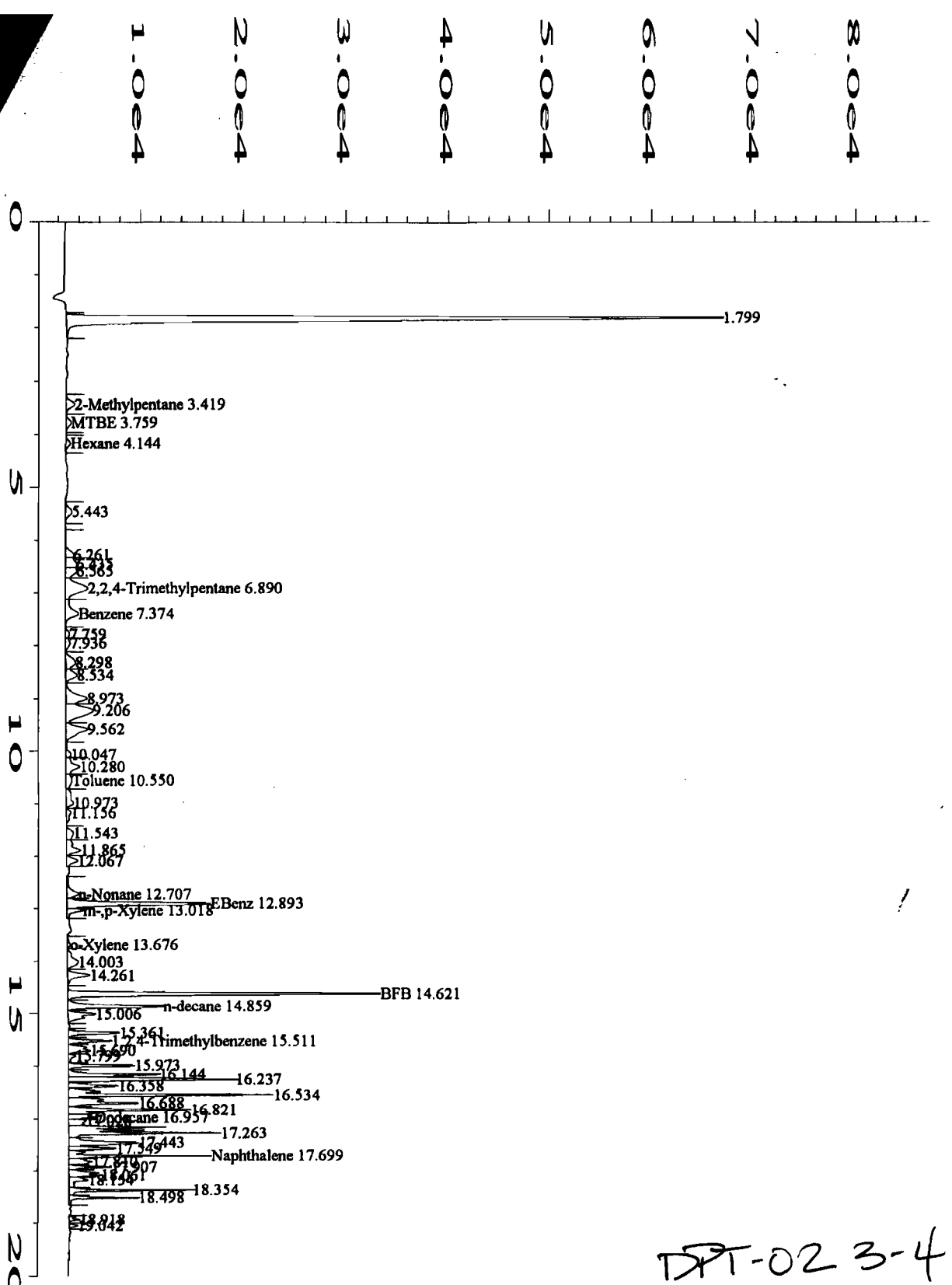
Data File Name	: C:\HPCHEM\1\DATA\VP092408\004F0101.D		
Operator	: DVG	Page Number	: 1
Instrument	: GC4	Vial Number	: 4
Sample Name	: g200	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 24 Sep 08 09:47 AM	Instrument Method	: GAS2.MTH
Report Created on	: 02 Oct 08 10:28 AM	Analysis Method	: VPH_FIDB.MTH
Last Recalib on	: 26 SEP 08 09:09 AM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:



DPT-01 3-4-

Data File Name : C:\HPCHEM\1\DATA\vp092408\012F0101.D
Operator : DVG
Instrument : GC4
Sample Name : g128-2247-1a x50
Run Time Bar Code:
Acquired on : 24 Sep 08 01:21 PM
Report Created on: 24 Sep 08 02:23 PM
Last Recalib on : 24 SEP 08 08:21 AM
Multiplier : 1

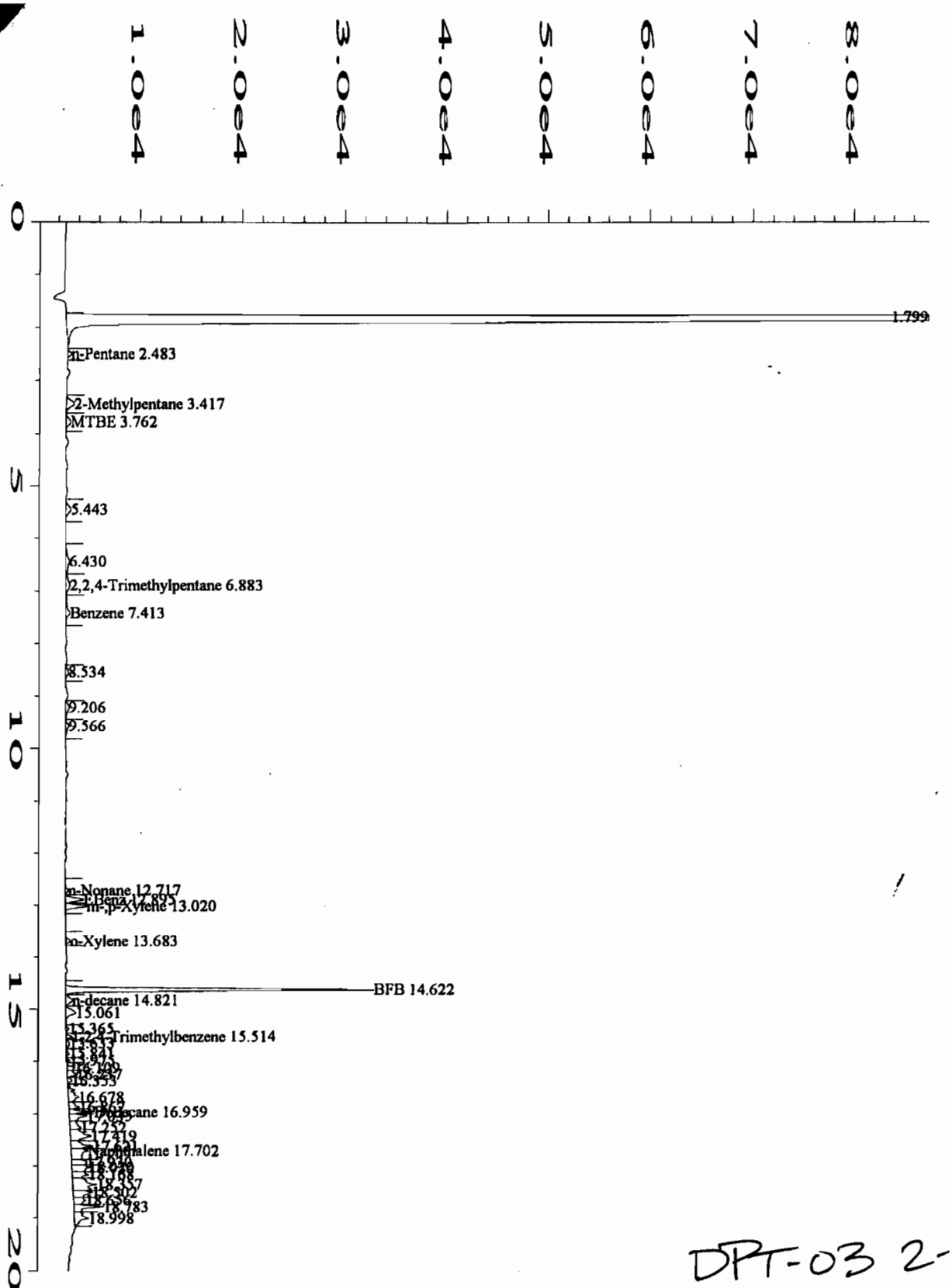
Page Number : 1
Vial Number : 12
Injection Number : 1
Sequence Line : 1
Instrument Method: GAS2.MTH
Analysis Method : VPH_FIDG.MTH
Sample Amount : 0
ISTD Amount :



TPT-023-4

Data File Name : C:\HPCHEM\1\DATA\vp092508\016F0101.D
Operator : DVG
Instrument : GC4 -2A x5
Sample Name : g128-2247 ~~-9a x1~~
Run Time Bar Code:
Acquired on : 25 Sep 08 03:30 PM
Report Created on: 25 Sep 08 03:55 PM
Last Recalib on : 24 SEP 08 08:21 AM
Multiplier : 1

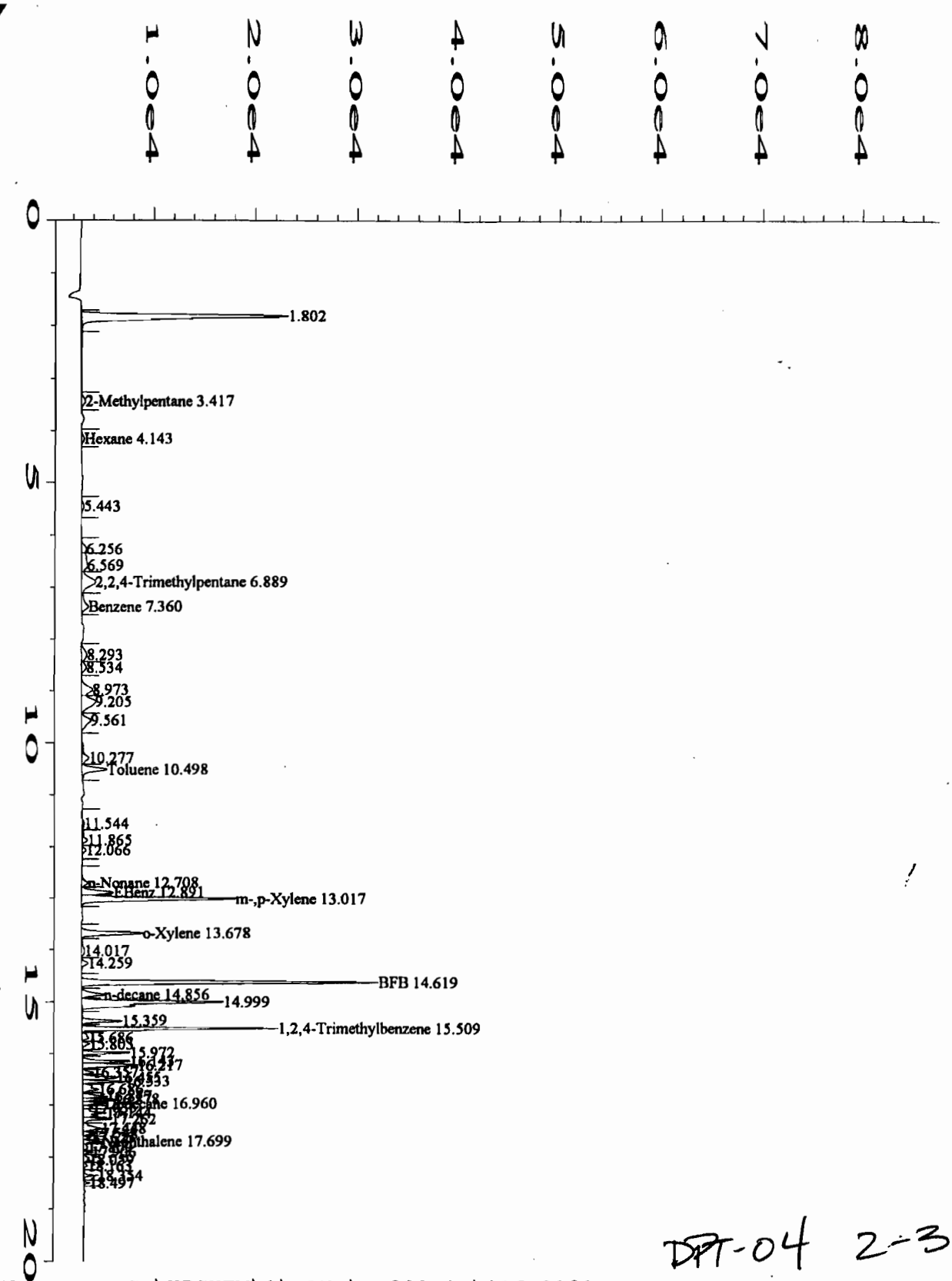
Page Number : 1
Vial Number : 16
Injection Number : 1
Sequence Line : 1
Instrument Method: GAS2.MTH
Analysis Method : VPH_FIDG.MTH
Sample Amount : 0
ISTD Amount :



DPT-03 2-3'

Data File Name : C:\HPCHEM\1\DATA\vp092508\008F0101.D
Operator : DVG
Instrument : GC4
Sample Name : g128-2247-3a x1
Run Time Bar Code:
Acquired on : 25 Sep 08 11:57 AM
Report Created on: 25 Sep 08 01:11 PM
Last Recalib on : 24 SEP 08 08:21 AM
Multiplier : 1

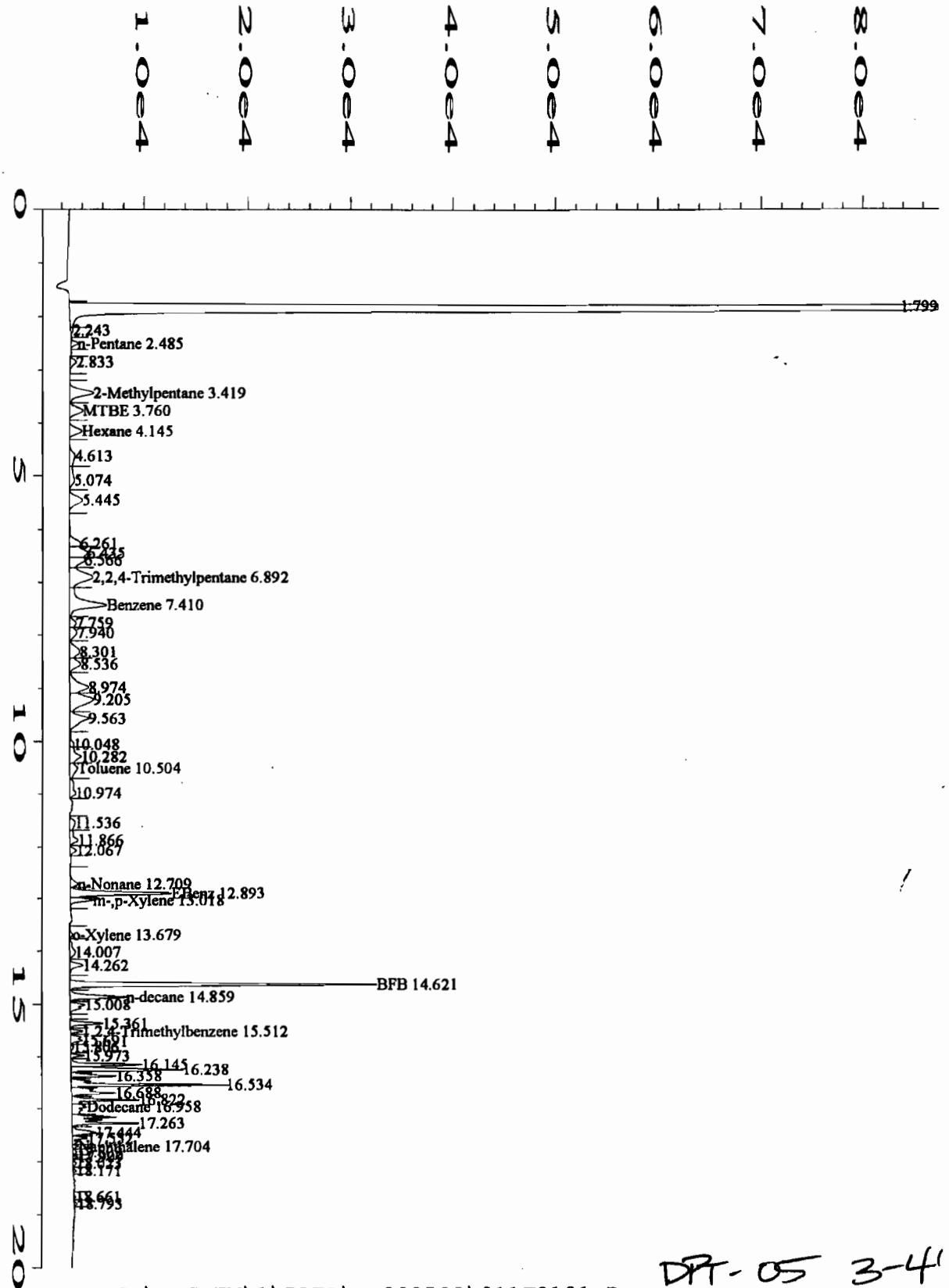
Page Number : 1
Vial Number : 8
Injection Number : 1
Sequence Line : 1
Instrument Method: GAS2.MTH
Analysis Method : VPH_FIDG.MTH
Sample Amount : 0
ISTD Amount :



DPT-04 2-3'

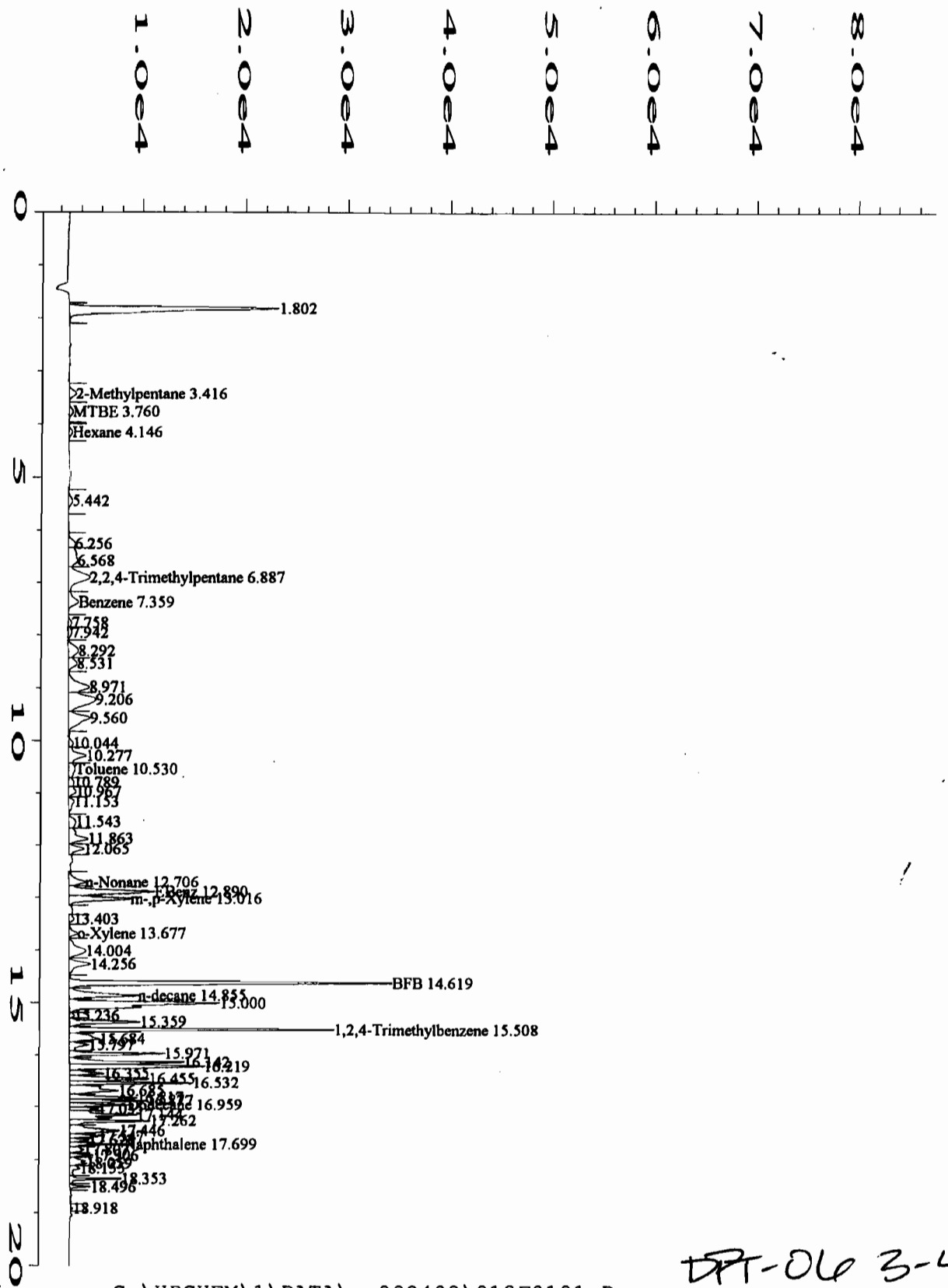
Data File Name : C:\HPCHEM\1\DATA\vp092408\016F0101.D
Operator : DVG
Instrument : GC4
Sample Name : g128-2247-4a x50
Run Time Bar Code:
Acquired on : 24 Sep 08 03:09 PM
Report Created on: 24 Sep 08 03:58 PM
Last Recalib on : 24 SEP 08 08:21 AM
Multiplier : 1

Page Number : 1
Vial Number : 16
Injection Number : 1
Sequence Line : 1
Instrument Method: GAS2.MTH
Analysis Method : VPH_FIDG.MTH
Sample Amount : 0
ISTD Amount :



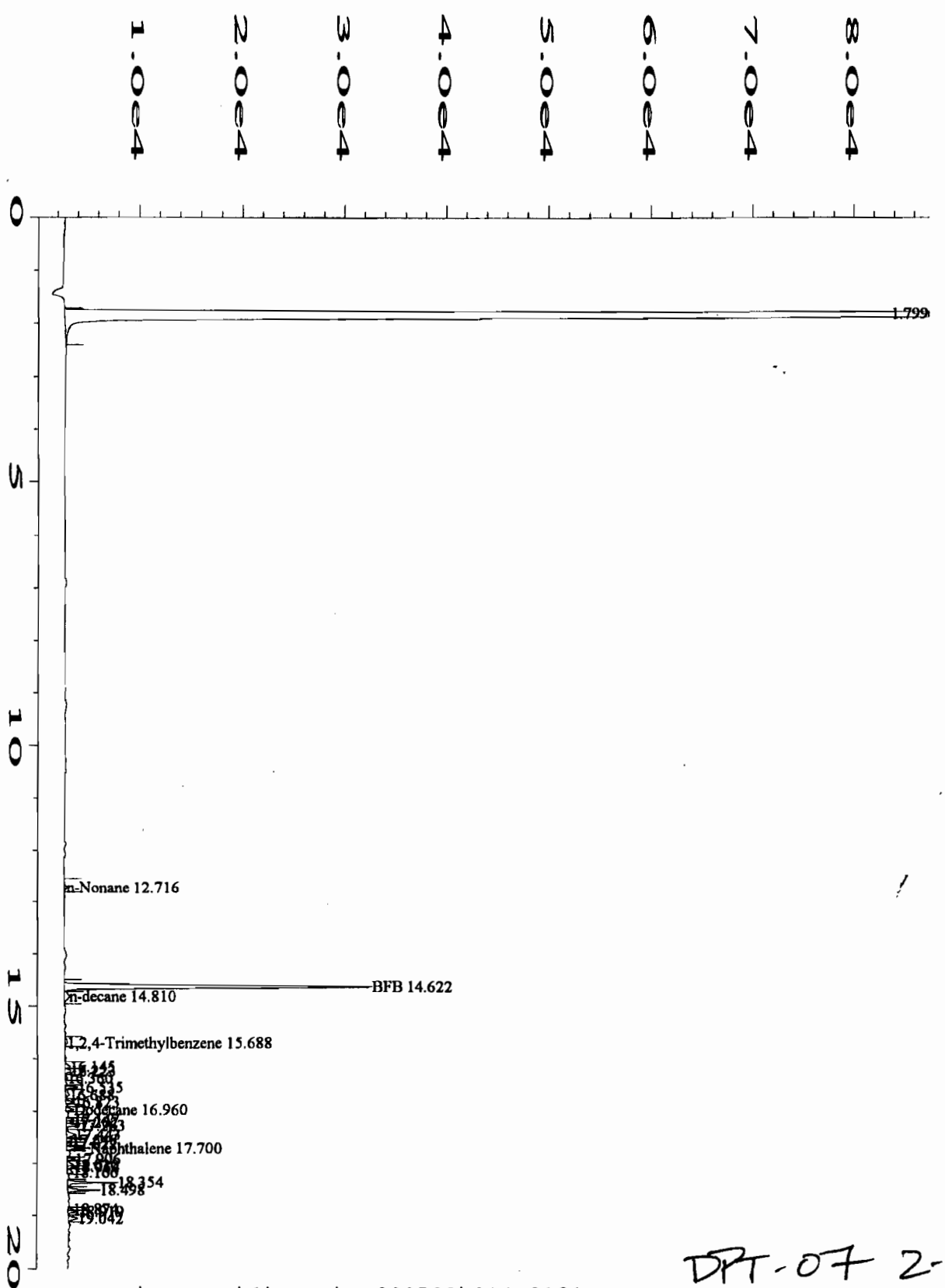
DRT-05 3-4'

Data File Name	: C:\HPCHEM\1\DATA\vp092508\011F0101.D		
Operator	: DVG	Page Number	: 1
Instrument	: GC4	Vial Number	: 11
Sample Name	: g128-2247-5a x1	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 25 Sep 08 01:17 PM	Instrument Method	: GAS2.MTH
Report Created on	: 25 Sep 08 02:37 PM	Analysis Method	: VPH_FIDG.MTH
Last Recalib on	: 24 SEP 08 08:21 AM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:



DPT-06 3-4'

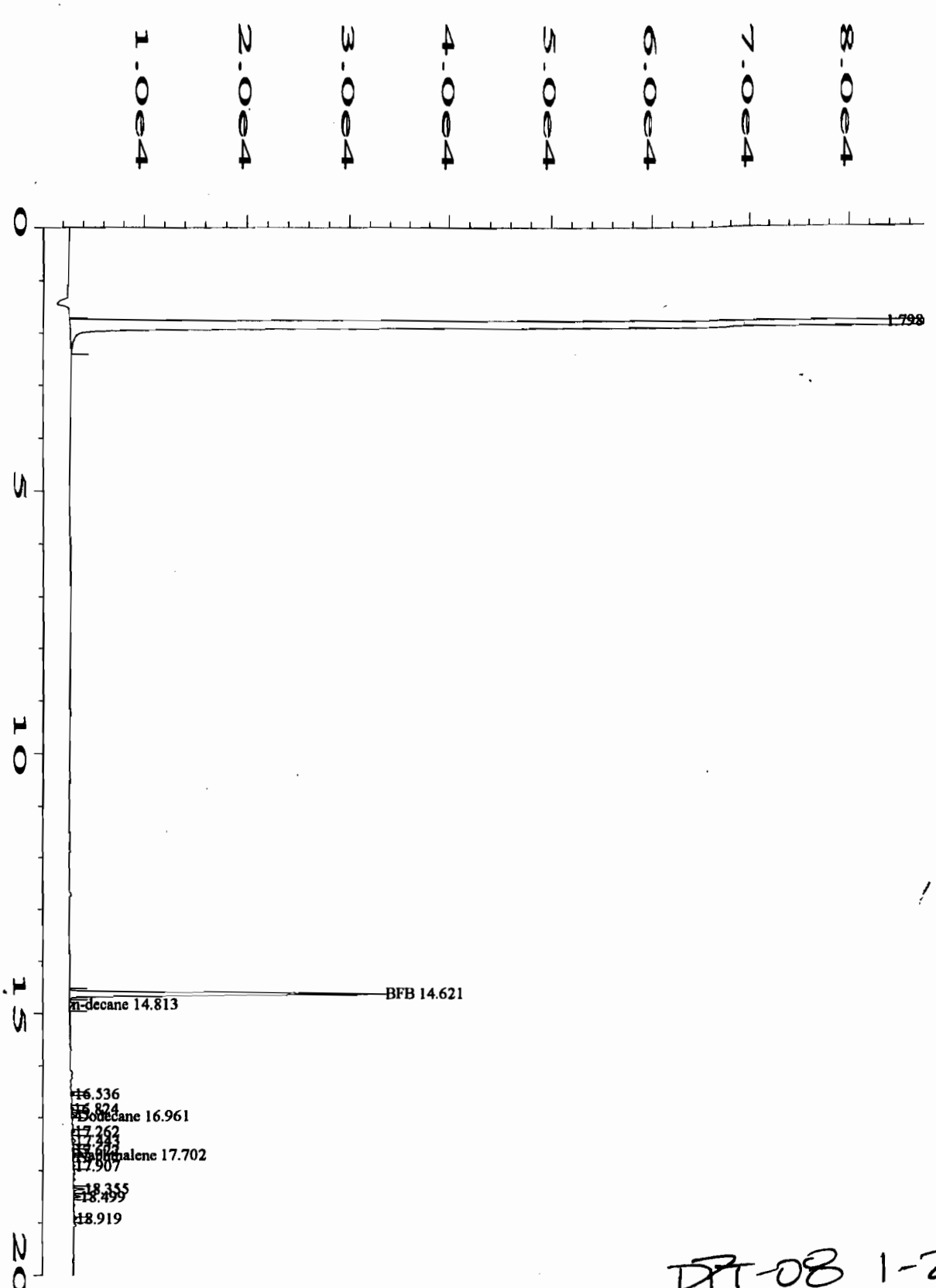
Data File Name	: C:\HPCHEM\1\DATA\vp092408\018F0101.D		
Operator	: DVG	Page Number	: 1
Instrument	: GC4	Vial Number	: 18
Sample Name	: g128-2247-6a x50	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 24 Sep 08 04:03 PM	Instrument Method	: GAS2.MTH
Report Created on	: 24 Sep 08 04:44 PM	Analysis Method	: VPH_FIDG.MTH
Last Recalib on	: 24 SEP 08 08:21 AM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:



DPT-07 2-3'

Data File Name : C:\HPCHEM\1\DATA\vp092508\014F0101.D
Operator : DVG
Instrument : GC4
Sample Name : g128-2247-7a x1
Run Time Bar Code:
Acquired on : 25 Sep 08 02:37 PM
Report Created on: 25 Sep 08 03:55 PM
Last Recalib on : 24 SEP 08 08:21 AM
Multiplier : 1

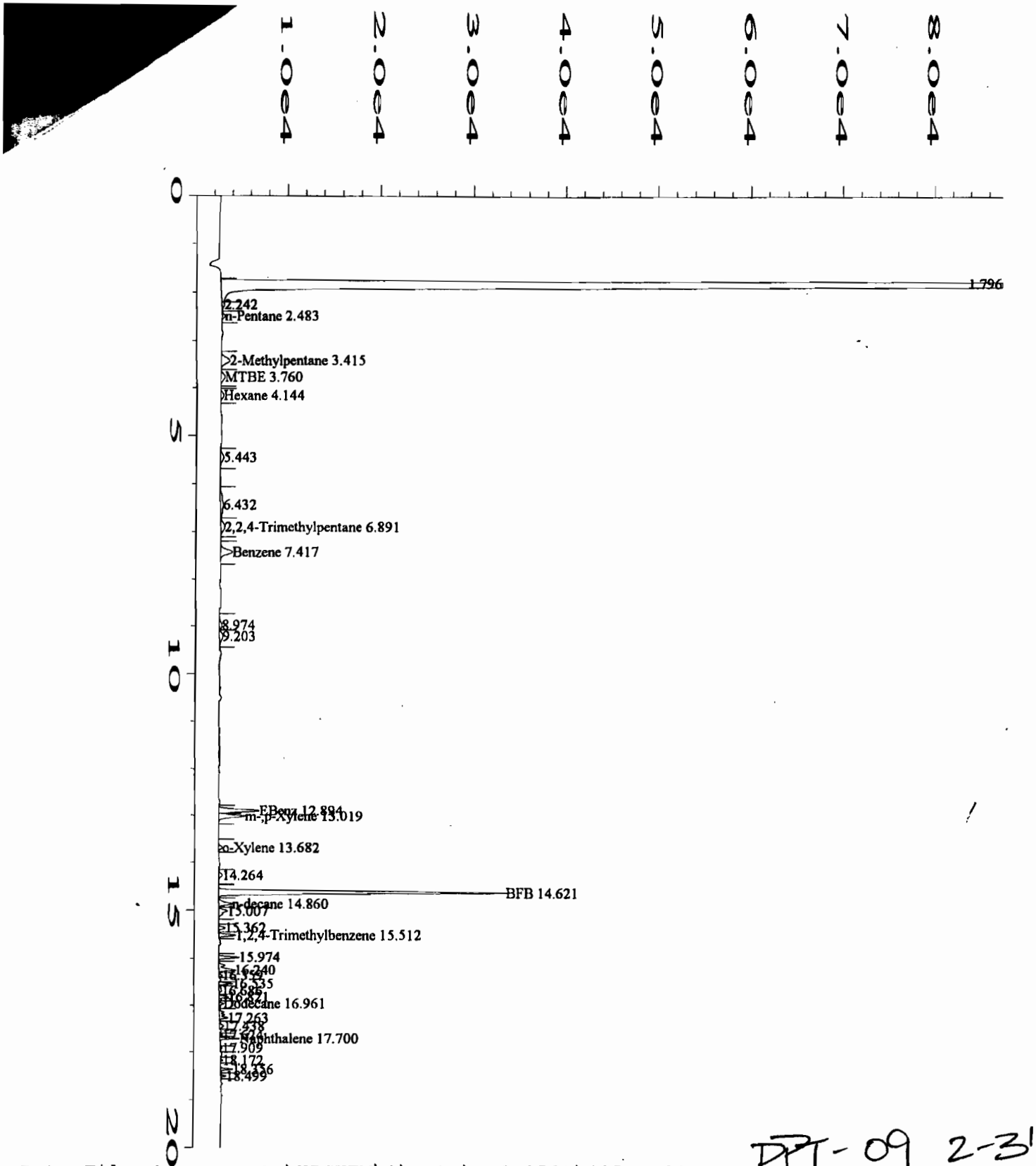
Page Number : 1
Vial Number : 14
Injection Number : 1
Sequence Line : 1
Instrument Method: GAS2.MTH
Analysis Method : VPH_FIDG.MTH
Sample Amount : 0
ISTD Amount :



DPT-08 1-21

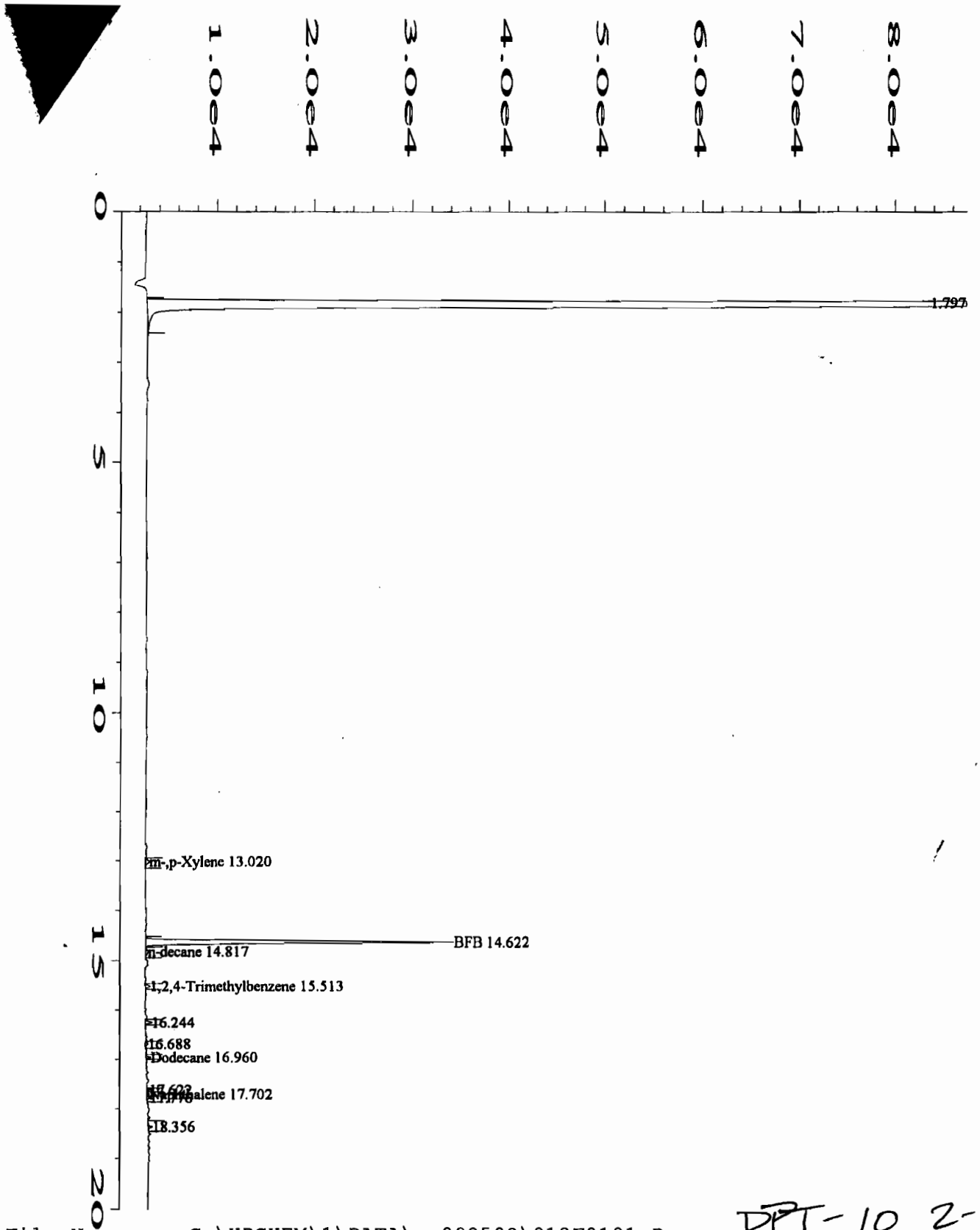
Data File Name : C:\HPCHEM\1\DATA\vp092508\015F0101.D
Operator : DVG
Instrument : GC4
Sample Name : g128-2247-8a x1
Run Time Bar Code:
Acquired on : 25 Sep 08 03:04 PM
Report Created on: 25 Sep 08 03:55 PM
Last Recalib on : 24 SEP 08 08:21 AM
Multiplier : 1

Page Number : 1
Vial Number : 15
Injection Number : 1
Sequence Line : 1
Instrument Method: GAS2.MTH
Analysis Method : VPH_FIDG.MTH
Sample Amount : 0
ISTD Amount :



DPT-09 2-3'

Data File Name	: C:\HPCHEM\1\DATA\vp092508\025F0101.D		
Operator	: DVG	Page Number	: 1
Instrument	: GC4	Vial Number	: 25
Sample Name	: g128-2247-9a x1	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 1
Acquired on	: 25 Sep 08 07:31 PM	Instrument Method	: GAS2.MTH
Report Created on	: 26 Sep 08 07:59 AM	Analysis Method	: VPH_FIDG.MTH
Last Recalib on	: 24 SEP 08 08:21 AM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:



DPT-10 2-3'

Data File Name : C:\HPCHEM\1\DATA\vp092508\018F0101.D
Operator : DVG
Instrument : GC4
Sample Name : g128-2247-10a x1
Run Time Bar Code:
Acquired on : 25 Sep 08 04:23 PM
Report Created on: 25 Sep 08 05:00 PM
Last Recalib on : 24 SEP 08 08:21 AM
Multiplier : 1

Page Number : 1
Vial Number : 18
Injection Number : 1
Sequence Line : 1
Instrument Method: GAS2.MTH
Analysis Method : VPH_FIDG.MTH
Sample Amount : 0
ISTD Amount :

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(1)

CLIENT: DOT

CONTACT: CAITLIN RICK GARRETT PHONE NO:( )

PROJECT: SUNOCO SITE/PWSID# :

REPORTS TO: CAITLIN 4TH: RICK GARRETT E-MAIL:

FAX NO.:( )

INVOICE TO: NCDOT QUOTE #

~~P.O. NUMBER~~ HBS 35008.1.1

SGS Reference: C128-2247

PAGE 1 OF ~~2~~ 1

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	No CONTAINERS	SAMPLE TYPE (C=COMP G=GRAB)	Preservatives Used	Analysis Required (3) TPH-DRO	TPH-GRO	REMARKS
1	DPT-01 3-4'	9-18-08	1130	Soil	3			✓	✓	
2	DPT-02 3-4'		1115					✓	✓	
3	DPT-03 2-3'		1100					✓	✓	
4	DPT-04 2-3'		1140					✓	✓	
5	DPT-05 3-4'		1150					✓	✓	
6	DPT-06 3-4'		1200					✓	✓	
7	DPT-07 2-3'		1215					✓	✓	
8	DPT-08 1-2'		1000					✓	✓	
9	DPT-09 2-3'		1045					✓	✓	
10	DPT-10 2-3'		0945					✓	✓	

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:	Date	Time
	9-19-08	1205		9/19/08	1205
Relinquished By: (2)	Date	Time	Received By:	Date	Time
Relinquished By: (3)	Date	Time	Received By:	Date	Time
Relinquished By: (4)	Date	Time	Received By:	Date	Time

(4)

Shipping Carrier:

Shipping Ticket No:

Samples Received Cold? (Circle) YES NO

Temperature °C: 4.1°C °F:

Special Deliverable Requirements:

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

Special Instructions:

Requested Turnaround Time:

☐ RUSH _____ (Date Needed) ☐ STD

☐ 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
☐ 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557
☐ 1270 Greenbrier Street Charleston, WV 25311 Tel: (304) 346-0725 Fax: (304) 346-0761

White - Retained by Lab
Yellow - Returned with Report