



## **Limited Phase II Environmental Site Assessment**

for

### **Tract/Buildings at 2013 New Hope Church Road 2013 New Hope Church Road Raleigh, North Carolina**

prepared for:

***Property Ventures of Marin, Inc.***

**July 17, 2008**

## LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT

at

### TRACT/BUILDINGS AT 2013 NEW HOPE CHURCH ROAD 2013 NEW HOPE CHURCH ROAD RALEIGH, NORTH CAROLINA

#### **BACKGROUND**

A Phase I Environmental Site Assessment (ESA) was conducted by *GeoLogix* on the buildings and tract located at 2013 New Hope Church Road in Raleigh, North Carolina. The Phase I ESA report was dated July 16, 2008. While there was no direct evidence of environmental contamination, environmental impairment, or Recognized Environmental Conditions (REC) associated directly with the subject property, observations of adjacent properties indicated that a gasoline station/convenience mart, Quality Mart, was located immediately adjacent to the subject property to the southwest. The Quality Mart's underground storage tanks (USTs) used to store gasoline were located on the north end of the Quality Mart property, and only fifty to sixty feet at the USTs closest point, from the subject property boundary. Accordingly, due to the proximity of the USTs to the subject property boundary, and the fact that the USTs were topographically upgradient, a limited Phase II ESA was recommended. A site vicinity map is contained in Appendix A. A map of the subject property is contained in Appendix B.

#### **SCOPE OF WORK**

The scope of the limited Phase II ESA included obtaining four (4) groundwater samples and four (4) soil samples in close proximity to the property boundary between the subject property and Quality Mart. The groundwater and soil samples were taken on the subject property at locations determined by site observations to be downgradient from the USTs at the Quality Mart gasoline station/convenience mart.

#### **FIELD ACTIVITIES and SAMPLING**

On July 6, 2008, *GeoLogix* personnel and geoprobe subcontractor Quantex personnel were on site to obtain groundwater and soil samples. Four locations along the subject property's southwestern property boundary with Quality Mart were selected for advancing boreholes and obtaining the samples. Those locations are depicted on an aerial photo contained in Appendix C of this report.

Sample borehole data was as follows:

<b>Sample Location</b>	<b>Boring Depth</b>	<b>Depth to Groundwater</b>	<b>Soil Sample Depth (Approximate)</b>
GW-1/S-1	25.0'	21.0'	19.0'
GW-2/S-2	25.0'	21.0'	19.5'
GW-3/S-3	30.0'	20.0'	18.5
GW-4/S-4	23.0' (Geoprobe refusal)	19.5'	18.0'

The groundwater and soil samples were obtained and immediately placed into sample vials and/or jars furnished by the analytical laboratory, and then placed in a cooler containing ice. The samples were delivered later that afternoon for analysis to ENCO, a certified commercial laboratory in Cary, North Carolina.

### **ANALYTICAL RESULTS**

Analyses were performed on the four groundwater and soil samples for GRO (gasoline range organics) and on two of the groundwater samples for DRO (diesel range organics). The groundwater sample analytical results for Sample No. GW-1 indicated an estimated GRO level of 0.041 mg/L (milligrams per liter), just below the Mean Reporting Limit (MRL) of 0.055 mg/L. The groundwater sample analytical results for Sample No. GW-2 indicated a GRO level of 0.777 mg/L, above the MRL level of 0.055 mg/L. The DRO constituents in GW-2 were indicated at an estimated 0.097 mg/L, slightly below the MRL of 0.100 mg/L. The groundwater sample analytical results for Sample No. GW-3 indicated a GRO level of 63.6 mg/L, well above the sample's MRL level of 2.75 mg/L. The DRO constituents were indicated at 8.04 mg/L, above the MRL of 0.300 mg/L. However, the elevated DRO analysis in Sample No. GW-3 could be "bleedover" from the GRO constituents, a common occurrence in laboratory analyses results. The groundwater sample analytical results for Sample No. GW-4 indicated a GRO level of 0.128 mg/L (milligrams per liter), slightly above MRL of 0.055 mg/L.

With regard to soil sample analyses, a soil sample was obtained from each of the boreholes at roughly a foot to two feet above the determined level of the groundwater. Only Sample No. S-3 indicated any GRO constituents. The GRO level in Sample No. S-3 was an estimated 3.6 mg/kg, slightly below the MRL of 5.3 mg/kg (milligrams per kilogram).

Analytical laboratory data and chain-of-custody records are contained in Appendix D of this report.



**CONCLUSIONS**

Based on the results of the laboratory analyses of the groundwater and soil samples obtained at the subject property boundary with the Quality Mart, it can be concluded that some degree of petroleum contamination has occurred on the subject property. The origin of the petroleum constituents detected is likely the adjacent, and upgradient, USTs (storage tank and/or UST system in general) at the Quality Mart. The highest petroleum constituent levels were exhibited for both groundwater and soil at the location of Sample No. GW-3/Sample No. S-3, taken from the same borehole. Interestingly, that sample location was the closest of the four borehole locations to the Quality Mart USTs. Some photographs of the sample locations and adjacent Quality Mart are contained in Appendix E.

This limited assessment of groundwater conducted at the subject property represented an attempt to determine if a release(s) of petroleum constituents from an adjacent property had occurred and possibly affected soil and/or groundwater on the subject property. *GeoLogix* is not responsible for any inaccuracy of information furnished by other parties used to arrive at the conclusions reached in this report. The findings contained in this report are relevant to the dates of the site work and should not be relied upon to represent site conditions at other times.



Robert H. Livermon, Jr., P. G.





*Appendix A*

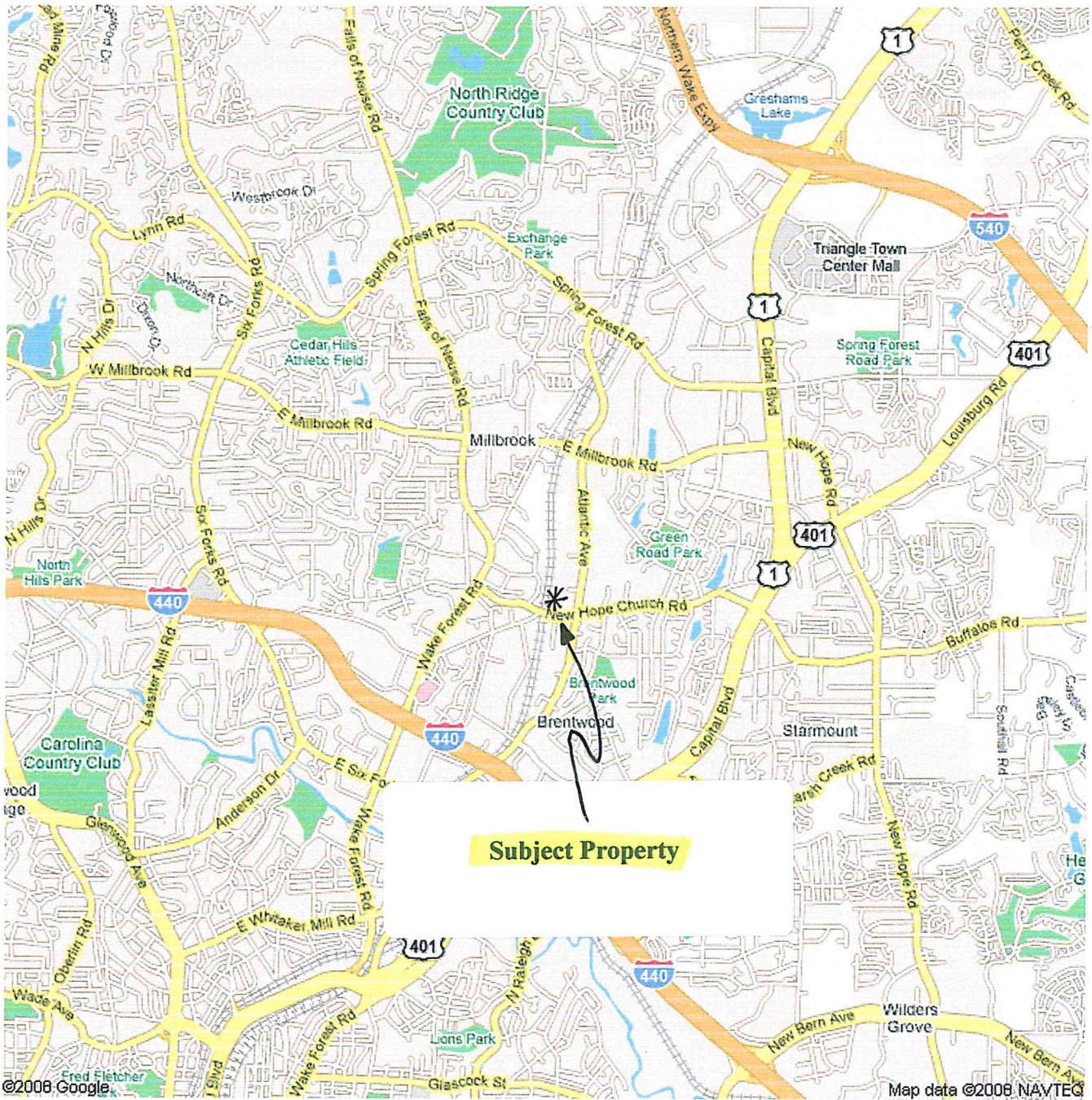
*Site Vicinity Map*



Address North Carolina

Get Google Maps on your phone

Text the word "GMAPS" to 466453



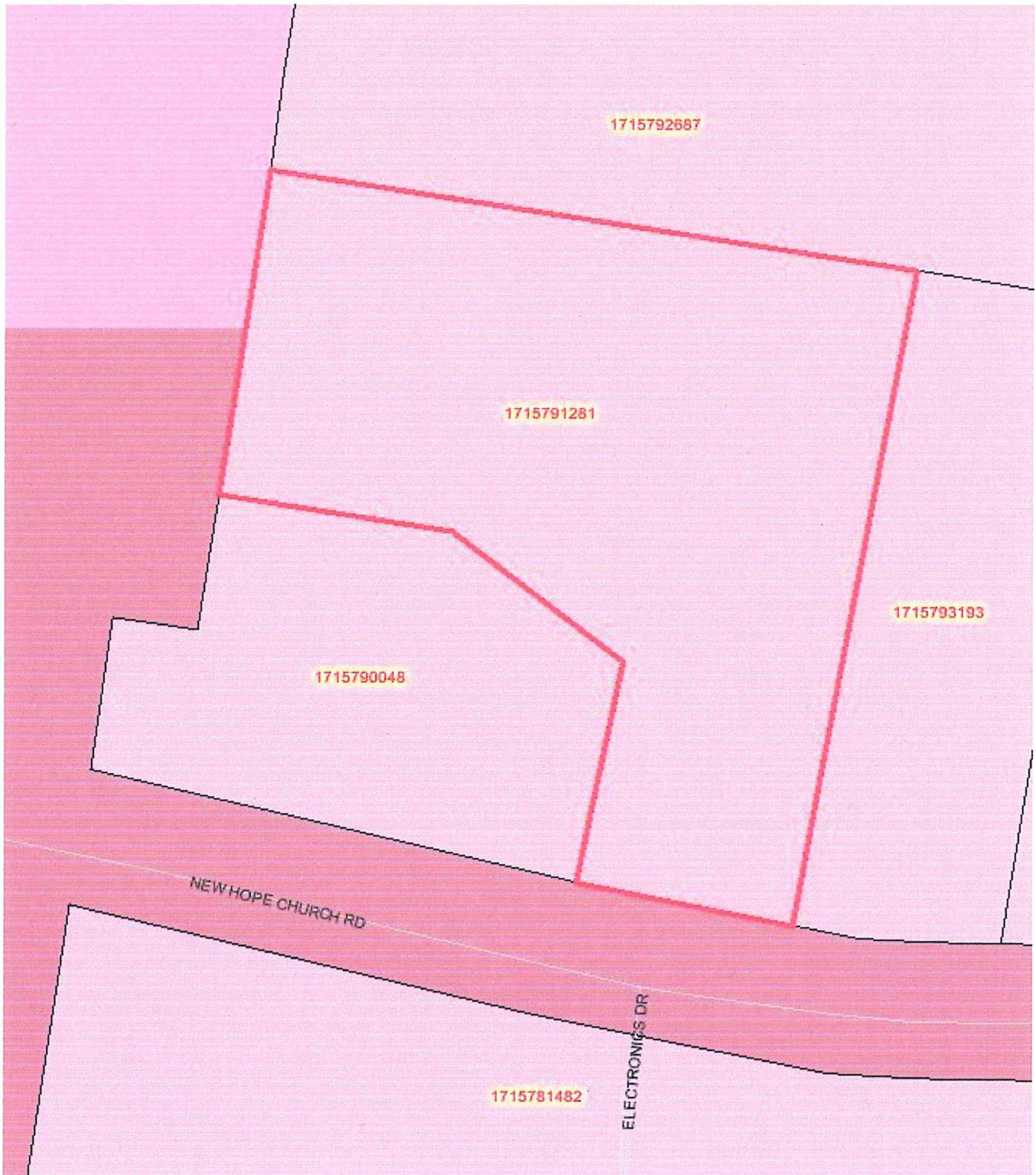
*Appendix B*

*Site Property Map*





RALEIGH &



*Appendix C*

*Aerial Photo Indicating Sampling Locations*







*Appendix D*

*Analytical Laboratory Results*

**Environmental Conservation Laboratories, Inc.**

102-A Woodwinds Industrial Court

Cary NC, 27511

Phone: 919.467.3090

FAX: 919.467.3515



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Monday, July 14, 2008

GEOLOGIX (GE024)

Attn: ROB LIVERMON

5316 DEEP VALLEY RUN

RALEIGH, NC 27606-

**RE: Laboratory Results for**

**Project Number: [none], Project Name/Desc: 2013 New Hope Church Rd**

**ENCO Workorder: C807522**

Dear ROB LIVERMON,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Wednesday, July 9, 2008.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Stephanie Franz', written in a cursive style.

Stephanie Franz

Project Manager

Enclosure(s)



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### SAMPLE SUMMARY/LABORATORY CHRONICLE

<b>Client ID:</b> GW-1	<b>Lab ID:</b> C807522-01	<b>Sampled:</b> 07/09/08 09:30	<b>Received:</b> 07/09/08 15:45
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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
CA-LUFT (GRO)	07/23/08	07/09/08 15:58	7/9/2008 17:52

<b>Client ID:</b> GW-2	<b>Lab ID:</b> C807522-02	<b>Sampled:</b> 07/09/08 10:30	<b>Received:</b> 07/09/08 15:45
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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
CA-LUFT (DRO)	07/23/08 08/20/08	07/11/08 09:58	7/11/2008 19:24
CA-LUFT (GRO)	07/23/08	07/09/08 15:58	7/9/2008 18:24

<b>Client ID:</b> GW-3	<b>Lab ID:</b> C807522-03	<b>Sampled:</b> 07/09/08 11:15	<b>Received:</b> 07/09/08 15:45
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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
CA-LUFT (DRO)	07/23/08 08/20/08	07/11/08 09:58	7/14/2008 09:50
CA-LUFT (GRO)	07/23/08	07/09/08 15:58	7/10/2008 13:30

<b>Client ID:</b> GW-4	<b>Lab ID:</b> C807522-04	<b>Sampled:</b> 07/09/08 12:00	<b>Received:</b> 07/09/08 15:45
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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
CA-LUFT (GRO)	07/23/08	07/09/08 15:58	7/9/2008 19:29

<b>Client ID:</b> S-1	<b>Lab ID:</b> C807522-05	<b>Sampled:</b> 07/09/08 09:30	<b>Received:</b> 07/09/08 15:45
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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
CA-LUFT (GRO)	07/23/08	07/10/08 10:51	7/10/2008 19:10

<b>Client ID:</b> S-2	<b>Lab ID:</b> C807522-06	<b>Sampled:</b> 07/09/08 09:50	<b>Received:</b> 07/09/08 15:45
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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
CA-LUFT (GRO)	07/23/08	07/10/08 10:51	7/10/2008 19:41

<b>Client ID:</b> S-3	<b>Lab ID:</b> C807522-07	<b>Sampled:</b> 07/09/08 11:15	<b>Received:</b> 07/09/08 15:45
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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
CA-LUFT (GRO)	07/23/08	07/10/08 10:51	7/10/2008 20:12

<b>Client ID:</b> S-4	<b>Lab ID:</b> C807522-08	<b>Sampled:</b> 07/09/08 12:00	<b>Received:</b> 07/09/08 15:45
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Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
CA-LUFT (GRO)	07/23/08	07/10/08 10:51	7/10/2008 20:43





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### SAMPLE DETECTION SUMMARY

**Client ID: GW-1** **Lab ID: C807522-01**

Analyte	Results	Flag	MRL	Units	Method	Notes
GRO (C6-C10)	0.041	J	0.055	mg/L	CA-LUFT (GRO)	

**Client ID: GW-2** **Lab ID: C807522-02**

Analyte	Results	Flag	MRL	Units	Method	Notes
DRO (C10-C28)	0.097	J	0.100	mg/L	CA-LUFT (DRO)	
GRO (C6-C10)	0.777		0.055	mg/L	CA-LUFT (GRO)	

**Client ID: GW-3** **Lab ID: C807522-03**

Analyte	Results	Flag	MRL	Units	Method	Notes
DRO (C10-C28)	8.04	D	0.300	mg/L	CA-LUFT (DRO)	
GRO (C6-C10)	63.6	D	2.75	mg/L	CA-LUFT (GRO)	

**Client ID: GW-4** **Lab ID: C807522-04**

Analyte	Results	Flag	MRL	Units	Method	Notes
GRO (C6-C10)	0.128		0.055	mg/L	CA-LUFT (GRO)	

**Client ID: S-3** **Lab ID: C807522-07**

Analyte	Results	Flag	MRL	Units	Method	Notes
GRO (C6-C10)	3.6	J	5.3	mg/kg dry	CA-LUFT (GRO)	



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### ANALYTICAL RESULTS

Description: GW-1

Matrix: Water

Project: 2013 New Hope Church Rd

Lab Sample ID: C807522-01

Sampled: 07/09/08 09:30

Sampled By: Rob Liverman

Received: 07/09/08 15:45

Work Order: C807522

#### Gasoline Range Organics by GC

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
GRO (C6-C10) [NA] ^	0.041	J	mg/L	1	0.009	0.055	8G08031	CA-LUFT (GRO)	07/09/08 17:52	bpk	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
2,5-Dibromotoluene	0.158	1	0.140	113 %	70-130	8G08031	CA-LUFT (GRO)	07/09/08 17:52	bpk		

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



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Description: GW-2  
Matrix: Water  
Project: 2013 New Hope Church Rd

Lab Sample ID: C807522-02  
Sampled: 07/09/08 10:30  
Sampled By: Rob Liverman

Received: 07/09/08 15:45  
Work Order: C807522

**Gasoline Range Organics by GC**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
GRO (C6-C10) [NA] ^	0.777		mg/L	1	0.009	0.055	8G08031	CA-LUFT (GRO)	07/09/08 18:24	bpk	
<b>Surrogates</b>	<b>Results</b>	<b>DF</b>	<b>Spike Lvl</b>	<b>% Rec</b>	<b>% Rec Limits</b>	<b>Batch</b>	<b>Method</b>	<b>Analyzed</b>	<b>By</b>	<b>Notes</b>	
2,5-Dibromotoluene	0.164	1	0.140	117 %	70-130	8G08031	CA-LUFT (GRO)	07/09/08 18:24	bpk		





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Description: GW-2

Matrix: Water

Project: 2013 New Hope Church Rd

Lab Sample ID: C807522-02

Sampled: 07/09/08 10:30

Sampled By: Rob Liverman

Received: 07/09/08 15:45

Work Order: C807522

**Diesel Range Organics by GC**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
DRO (C10-C28) [NA] ^	0.097	J	mg/L	1	0.076	0.100	8G11008	CA-LUFT (DRO)	07/11/08 19:24	JHH	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
<i>o</i> -Terphenyl	0.0388	1	0.0500	78 %	56-127	8G11008	CA-LUFT (DRO)	07/11/08 19:24	JHH		

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Description: GW-3  
Matrix: Water  
Project: 2013 New Hope Church Rd

Lab Sample ID: C807522-03  
Sampled: 07/09/08 11:15  
Sampled By: Rob Liverman

Received: 07/09/08 15:45  
Work Order: C807522

**Gasoline Range Organics by GC**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
GRO (C6-C10) [NA] ^	63.6	D	mg/L	50	0.445	2.75	8G08031	CA-LUFT (GRO)	07/10/08 13:30	bpk	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
2,5-Dibromotoluene	0.169	1	0.140	121 %	70-130	8G08031	CA-LUFT (GRO)	07/10/08 13:30	bpk		



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Description: GW-3

Matrix: Water

Project: 2013 New Hope Church Rd

Lab Sample ID: C807522-03

Sampled: 07/09/08 11:15

Sampled By: Rob Liverman

Received: 07/09/08 15:45

Work Order: C807522

**Diesel Range Organics by GC**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
DRO (C10-C28) [NA] ^	8.04	D	mg/L	3	0.228	0.300	8G11008	CA-LUFT (DRO)	07/14/08 09:50	JHH	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
<i>o</i> -Terphenyl	0.0433	3	0.0500	87 %	56-127	8G11008	CA-LUFT (DRO)	07/14/08 09:50	JHH		

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Description: GW-4

Matrix: Water

Project: 2013 New Hope Church Rd

Lab Sample ID: C807522-04

Sampled: 07/09/08 12:00

Sampled By: Rob Liverman

Received: 07/09/08 15:45

Work Order: C807522

**Gasoline Range Organics by GC**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
GRO (C6-C10) [NA] ^	0.128		mg/L	1	0.009	0.055	8G08031	CA-LUFT (GRO)	07/09/08 19:29	bpk	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
2,5-Dibromotoluene	0.166	1	0.140	119 %	70-130	8G08031	CA-LUFT (GRO)	07/09/08 19:29	bpk		

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Description: S-1  
Matrix: Soil  
Project: 2013 New Hope Church Rd

Lab Sample ID: C807522-05  
Sampled: 07/09/08 09:30  
Sampled By: Rob Liverman

Received: 07/09/08 15:45  
Work Order: C807522  
% Solids: 83.8

**Gasoline Range Organics by GC**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DE</u>	<u>MDL</u>	<u>MRL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
GRO (C6-C10) [NA] ^	0.98	U	mg/kg dry	1	0.98	6.6	8G10015	CA-LUFT (GRO)	07/10/08 19:10	bpk	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
2,5-Dibromotoluene	11	1	10.9	103 %	28-139	8G10015	CA-LUFT (GRO)	07/10/08 19:10	bpk		

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Description: S-2  
Matrix: Soil  
Project: 2013 New Hope Church Rd

Lab Sample ID: C807522-06  
Sampled: 07/09/08 09:50  
Sampled By: Rob Liverman

Received: 07/09/08 15:45  
Work Order: C807522  
% Solids: 71.6

**Gasoline Range Organics by GC**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
GRO (C6-C10) [NA] ^	0.98	U	mg/kg dry	1	0.98	6.6	8G10015	CA-LUFT (GRO)	07/10/08 19:41	bpk	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
2,5-Dibromotoluene	12	1	12.0	103 %	28-139	8G10015	CA-LUFT (GRO)	07/10/08 19:41	bpk		

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



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Description: S-3  
Matrix: Soil  
Project: 2013 New Hope Church Rd

Lab Sample ID: C807522-07  
Sampled: 07/09/08 11:15  
Sampled By: Rob Liverman

Received: 07/09/08 15:45  
Work Order: C807522  
% Solids: 83.3

**Gasoline Range Organics by GC**

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	Batch	Method	Analyzed	By	Notes
GRO (C6-C10) [NA] ^	3.6	J	mg/kg dry	1	0.79	5.3	8G10015	CA-LUFT (GRO)	07/10/08 20:12	bpk	
Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes	
2,5-Dibromotoluene	8.9	1	9.68	92 %	28-139	8G10015	CA-LUFT (GRO)	07/10/08 20:12	bpk		

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.



www.encolabs.com

Description: S-4  
Matrix: Soil  
Project: 2013 New Hope Church Rd

Lab Sample ID: C807522-08  
Sampled: 07/09/08 12:00  
Sampled By: Rob Liverman

Received: 07/09/08 15:45  
Work Order: C807522  
% Solids: 87.6

**Gasoline Range Organics by GC**

^ - ENCO Cary certified analyte [NC 591]

<u>Analyte [CAS Number]</u>	<u>Results</u>	<u>Flag</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>MRL</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>
GRO (C6-C10) [NA] ^	0.94	U	mg/kg dry	1	0.94	6.3	8G10015	CA-LUFT (GRO)	07/10/08 20:43	bpk	
<u>Surrogates</u>	<u>Results</u>	<u>DF</u>	<u>Spike Lvl</u>	<u>% Rec</u>	<u>% Rec Limits</u>	<u>Batch</u>	<u>Method</u>	<u>Analyzed</u>	<u>By</u>	<u>Notes</u>	
2,5-Dibromotoluene	11	1	11.2	99 %	28-139	8G10015	CA-LUFT (GRO)	07/10/08 20:43	bpk		

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.





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**QUALITY CONTROL**

**Gasoline Range Organics by GC - Quality Control**

Batch 8G10015 - EPA 5035

**Blank (8G10015-BLK1)**

Prepared: 07/10/2008 10:51 Analyzed: 07/10/2008 16:34

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
GRO (C6-C10)	0.82	U	5.5	mg/kg wet							
Surrogate: 2,5-Dibromotoluene	7.5			mg/kg wet	9.60		79	28-139			

**LCS (8G10015-BS1)**

Prepared: 07/10/2008 10:51 Analyzed: 07/10/2008 17:05

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
GRO (C6-C10)	43		5.5	mg/kg wet	50.1		86	51-115			
Surrogate: 2,5-Dibromotoluene	12			mg/kg wet	10.0		117	28-139			

**Matrix Spike (8G10015-MS1)**

Prepared: 07/10/2008 10:51 Analyzed: 07/10/2008 17:36

Source: C807394-17

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
GRO (C6-C10)	53		5.5	mg/kg wet	50.9	1.5	101	45-162			
Surrogate: 2,5-Dibromotoluene	11			mg/kg wet	10.2		108	28-139			

**Matrix Spike Dup (8G10015-MSD1)**

Prepared: 07/10/2008 10:51 Analyzed: 07/10/2008 18:07

Source: C807394-17

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
GRO (C6-C10)	48		5.5	mg/kg wet	51.2	1.5	91	45-162	10	24	
Surrogate: 2,5-Dibromotoluene	11			mg/kg wet	10.2		106	28-139			

**Diesel Range Organics by GC - Quality Control**

Batch 8G11008 - EPA 3510C

**Blank (8G11008-BLK1)**

Prepared: 07/11/2008 09:58 Analyzed: 07/11/2008 17:29

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
DRO (C10-C28)	0.076	U	0.100	mg/L							
Surrogate: o-Terphenyl	0.0428			mg/L	0.0500		86	56-127			

**LCS (8G11008-BS1)**

Prepared: 07/11/2008 09:58 Analyzed: 07/11/2008 17:58

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
DRO (C10-C28)	0.539		0.100	mg/L	1.00		54	10-108			
Surrogate: o-Terphenyl	0.0395			mg/L	0.0500		79	56-127			

**Matrix Spike (8G11008-MS1)**

Prepared: 07/11/2008 09:58 Analyzed: 07/11/2008 18:26

Source: C807394-21

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
DRO (C10-C28)	0.627		0.100	mg/L	1.00	0.076 U	63	10-108			
Surrogate: o-Terphenyl	0.0404			mg/L	0.0500		81	56-127			



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**QUALITY CONTROL**

**Diesel Range Organics by GC - Quality Control**

Batch 8G11008 - EPA 3510C

Matrix Spike Dup (8G11008-MSD1)

Prepared: 07/11/2008 09:58 Analyzed: 07/11/2008 18:55

Source: C807394-21

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
DRO (C10-C28)	0.642		0.100	mg/L	1.00	0.076 U	64	10-108	2	25	
Surrogate: <i>o</i> -Terphenyl	0.0406			mg/L	0.0500		81	56-127			



**FLAGS/NOTES AND DEFINITIONS**

- B The analyte was detected in the associated method blank.
- D The sample was analyzed at dilution.
- J The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
- U The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
- MRL Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.





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ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10700 Camino Pavia, Suite 211, Jacksonville, FL 32209-3657, (904) 382-7311, Fax (904) 382-7316



Project Number: GEOLOGIK (GE0241)  
 Address: 5316 DEEP VALLEY RUN, RALEIGH, NC 27606  
 Phone: (919) 859-4544  
 Contact: Robert A. Livseyman, Jr.  
 Account: Accounts Payable

Requested Turnaround: 1 week  
 Standard:  Expedited  
 Due: \_\_\_\_\_  
 Lab Workorder: C807522

Sample ID	Sample Description	Collection Date	Container Type	Container No.	Matrix	Analysis	Comments
ID: GW-1		7/09/08	0930	G	WA	2	
ID: GW-2			1030	G	WA	3	
ID: GW-3			1115	G	WA	3	
ID: GW-4			1200	G	WA	2	
ID: S-1			0930	G	SO	2	
ID: S-2			0950	G	SO	2	
ID: S-3			1115	G	SO	2	
ID: S-4			1200	G	SO	2	

Initials of Containers: [Handwritten initials]

Signature: Robert A. Livseyman, Jr.  
 Date: 7/18/08

Comments: Please do on a 3-day turnaround

Project No: C-386

*Appendix E*

*Site Photographs*





**Quality Mart Gasoline Station Adjacent to Subject Property**



**Underground Storage Tanks and Vent Pipes at Adjacent Quality Mart**





**Location of Samples Nos. GW-1 and S-1 Near Western Tract Boundary**



**Location of Samples Nos. GW-2 and S-2**





**Location of Samples Nos. GW-3 and S-3  
(Gas Station UST Vent Pipes in Background)**



**Location of Samples Nos. GW-4 and S-4**

*Appendix F*

*GeoLogix - Qualifications of Personnel*





*GeoLogix/Geologic Strategies, P. C.*

Qualifications of Environmental Professionals

Principal: Robert H. Livermon, Jr.

Education: North Carolina State University (B. S. - Geology, 1973)

Licenses: N. C. Board for Licensing of Geologists - **Professional Geologist**, License No. 633

S. C. State Board of Registration for Geologists - **Professional Geologist**, License No. 383

Certifications: - **Registered Environmental Manager** No. 9963 - National Registry of Environmental Professionals

- **40-Hour Hazwopper Certified**

The principal of *GeoLogix* has over thirty (30) years of experience in the environmental field. During twenty-two (22) years of employment with a large local electrical utility, Mr. Livermon performed Phase I and Phase II Environmental Site Assessments (ESA) for eight (8) years, and waste disposal vendor compliance audits for twelve (12) years.

Mr. Livermon is experienced in the areas of environmental site assessments, site remediation/spill clean-ups, Spill Prevention Control and Countermeasure (SPCC) Plan preparation, environmental permitting, solid waste disposal, waste minimization, and transportation, storage, treatment and disposal of hazardous substances, toxic substances, and hazardous wastes. Mr. Livermon possesses an across-the-board knowledge of environmental regulations which, along with his years of experience, allows him to perform multi-media environmental compliance audits at plant and manufacturing facilities, maintenance buildings, warehouses, and garages. He was employed for two and one-half years with the former North Carolina Department of Natural & Economic Resources (now the Department of Environment & Natural Resources).

*GeoLogix* has provided clients with a variety of environmental and geological consulting services since 1995. Over three hundred fifty (350) Phase I Environmental Site Assessments, thirty (30) Phase II Environmental Site Assessments, forty (40) Underground Storage Tank (UST) closure projects, and forty (40) waste disposal vendor compliance audits have been conducted. *GeoLogix* capabilities also include management oversight services (remedial projects), training, and geological consulting services.