

# Agra Environmental

P.O. BOX 5611  
CARY, NC 27512  
TEL: (919) 858-5350  
FAX: (919) 858-5351

*revised 9-12-06*

## UST CLOSURE REPORT

(GW/UST-12)

Flowers Store  
4181 NC Hwy 42 E  
Clayton, Johnston County, North Carolina 27527

## UNDERGROUND STORAGE TANK CLOSURE REPORT

*The closure report should contain, at a minimum, the following information. Any other information that is pertinent to the site should be included.*

### I. General Information

#### A. Ownership of UST(s)

##### 1. Name of UST owner:

Mr. David Milton Flowers

##### 2. Owner address and telephone number:

4181 NC Hwy 42 E

Clayton, Johnston County, North Carolina 27527

Phone No. (919) 553-4044

#### B. Facility Information

##### 1. Facility name:

Flowers Store

##### 2. Incident #:

17217

##### 3. Facility address, telephone number and county:

4181 NC Hwy 42 E

Clayton, Johnston County, North Carolina 27527

#### C. Contacts

##### 1. Name, address and telephone number of closure contractor:

ECS, LLC

Post Office Box 5611

Cary, Wake County, North Carolina 27512

Phone No. (919) 622-1164

##### 3. Name, address and telephone number of primary consultant:

Agra Environmental, Inc.

539 Keisler Drive, Suite 104

Cary, Wake County, North Carolina 27512

Phone No. (919) 858-5350

## 4. Name, address, telephone number, and State certification number of laboratory:

Analytics Corporation  
 8040 Villa Park Drive, Suite 250  
 Richmond, Virginia 23228  
 Phone No. (804) 264-7100  
 Drinking Water ID: 37715

## D. UST Information

Tank no.	Estimated Age (years)	Size in Gallons	Tank Dimensions	Last Contents	Previous Contents	Tank Owner
1	Unknown	1,000	46" X 12'	Gasoline	N/A	Flowers Store

## E. Site Characteristics

## 1. Describe any past releases at this site:

Froehling and Robertson, Inc removed three tanks from the site in September of 1994. One 8,000-gallon gasoline tank, one 1,000-gallon Kerosene/diesel tank, and one 6,000 gallon gasoline tank were removed at that time. Soil contamination was found at the time of removal. The site was assigned GW Incident # 17217. No contaminated soil was removed from the site.

## 2. Is the facility active or inactive at this time? If the facility is inactive note the last time the USTs were in operation:

The facility was inactive prior to closure. The UST has been out of operation since 1994.

## 3. Describe surrounding property use (for example, residential, commercial, farming, etc.)

Rural – residential and agricultural.

## 4. Describe site geology/hydrogeology

*Coastal Plain*

~~Coastal Plain~~ - Red-Buff, mg - fg sandy clay. The site has moderate topographic relief (Figure 1). Surface drainage on the site is to the north-northwest.

## 5. Describe results of receptor survey

*private water wells.*

The area is served by a public water supply. There are potential groundwater supply wells within 1,000 feet of the subject site.

## II. Closure Procedures

## A. Note the amount of residual material pumped from the tank(s):

No residual material was removed from the tank.

## B. Describe the storage, sampling and disposal of the residual material:

No residual material was removed from the tank.

### C. Excavation

*Note: Refer to the "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater" on limiting excavations. The Trust Fund will not pay for excessive excavation unless it is justified and verified by laboratory results.*

1. Describe excavation procedures noting the condition of the soils and the dimensions of the excavation in relation to the tanks, piping and/or pumps:  
The tank excavation was just large enough to remove the tank. Soils appeared to be free of contamination at the time of closure.
2. Note the depth of tank burial(s) (from land surface to top of tank):  
The tank was buried approximately 2.0 feet below land surface.
3. Describe the condition of the UST system:  
No Pitting or holes were encountered.
4. Note if water, free product, or bedrock were encountered:  
Water, free product, and bedrock were not observed.
5. Quantity of soil removed:  
Two drums of soil were removed. The remaining soil was returned to the tank pit
6. Describe soil type(s):  
The soils encountered during the UST closure consisted mostly of a clayey sand. According to the geologic map of North Carolina, the site is located in the Raleigh Belt and is underlain by biotite gneiss and schist's.
7. Type and source of back fill used:  
Clean soil was used from a local pit.
8. Describe the location and method of disposal of the UST's:  
The Tanks were disposed of by Environmental Contracting Services, LLC (Appendix A).

### D. Contaminated Soil

*Note: Suspected contaminated soil should be segregated from soil that appears to be uncontaminated and should be treated as contaminated until proven otherwise. It should not be used as back fill.*

1. Describe how it was determined to what extent to excavate the soil:  
Just enough soil was excavated to remove the tank. Two drums of contaminated soil were disposed of due to spillage of residual sludge in the UST.
2. Describe method of temporary storage, sampling and treatment/disposal of soil:  
Contaminated soil was not excavated. Soil was returned to the tank pit. Two drums of soil were disposed of due to the spillage of residual sludge in the UST.

### III. Site investigation

- A. Provide information on field screening and observations, include methods used to calibrate field screening instrument(s):

Soil samples were not screened in the field.

- B. Describe soil sampling points and sampling procedures used, including:

*Note: Refer to the "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater" for information about sampling requirements.*

- Location of samples:

~~Soil samples were collected below the base of the tank (Figure 3).~~

- Type of samples (from excavation, stockpiled soil, etc.):

~~Samples were taken from the excavation beneath the tank.~~

- Sample collection procedures (grab, split spoon, hand auger, etc.):

Grab samples were collected beneath the tank.

- Depth of soil samples (below land surface):

Sample depths are shown in Figure 3.

- Whether samples were taken from side or floor of an excavation:

Samples were taken from the floor of the excavation.

- Sample identification:

Sample identification is listed in Table 1, and shown in Figure 3.

- Sample analyses:

Samples analyses and results are listed in Table 1, and shown in Figure 3.

- C. Describe groundwater or surface water sampling procedures used, including:

*Note: Refer to the "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater" for information about sampling requirements.*

- Location of samples

- Sample collection procedures (grab, bailer, etc.)

~~Ground water was not encountered.~~

- Sample identification

~~Ground water samples were not collected.~~

- Sample analyses

- D. Quality control measures

- Describe sample handling procedures including sample preservation and transportation:

Chain of custody was initiated; samples were preserved on ice and delivered to the lab.

- Describe decontamination procedures used:

All samples (grab) were collected with a clean latex glove.

- Describe time and date samples were collected and date submitted to lab:  
Samples were collected on 4/24/06, and submitted to the lab on 4/24/06.
- Describe samples collected for quality control purposes (e.g. duplicates, field blanks, trip blanks, etc.)  
Include methods used to obtain these samples and analytical parameters.:  
No blanks or duplicates were collected.
- Discuss how results of quality control samples may have affected your interpretation of soil, groundwater or surface water sample results  
Not applicable.

E. Investigation results

- Describe methods of analyses used (include U.S. EPA method number)  
USEPA Method 8015/5030 (Table 1 and Figure 3).
- Describe analytical results for samples; discuss in relation to site specific cleanup level or action level, as appropriate  
USEPA Method TPH DRO/GRO reported contaminant concentrations below action limits (Figure 3).

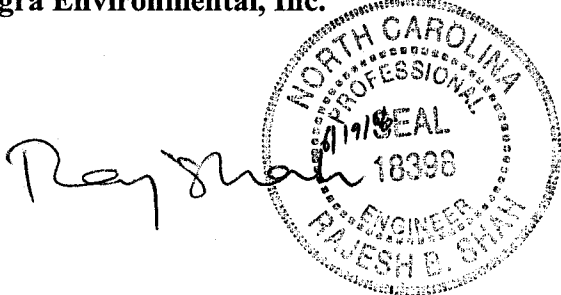
**IV. Conclusions and Recommendations**

Include probable sources of contamination, further investigation or remediation tasks, or whether no further action is required.

USEPA Method TPH DRO/GRO reported contaminant concentrations below action limits (Figure 3). No further investigation and/or remediation should be required at this portion of the site.

**V. Signature of Professional Engineer or Licensed Geologist**

Raj B. Shah, P.E.  
Agra Environmental, Inc.



■ Professional Engineer Registration #: 18398

9-18-06

- reviewed report
- page 2 of report - clarify the item # 5 of site characteristics  
Dgt knowledge of site indicates site is served by private wells.
- page 2 of report - correct item # 4 of site characteristics

MSP 9-18-06

## VI. Enclosures

### A. Figures

1. Site Location and Regional Topography
2. Location Diagram
3. Sample Location Diagram

### B. Tables

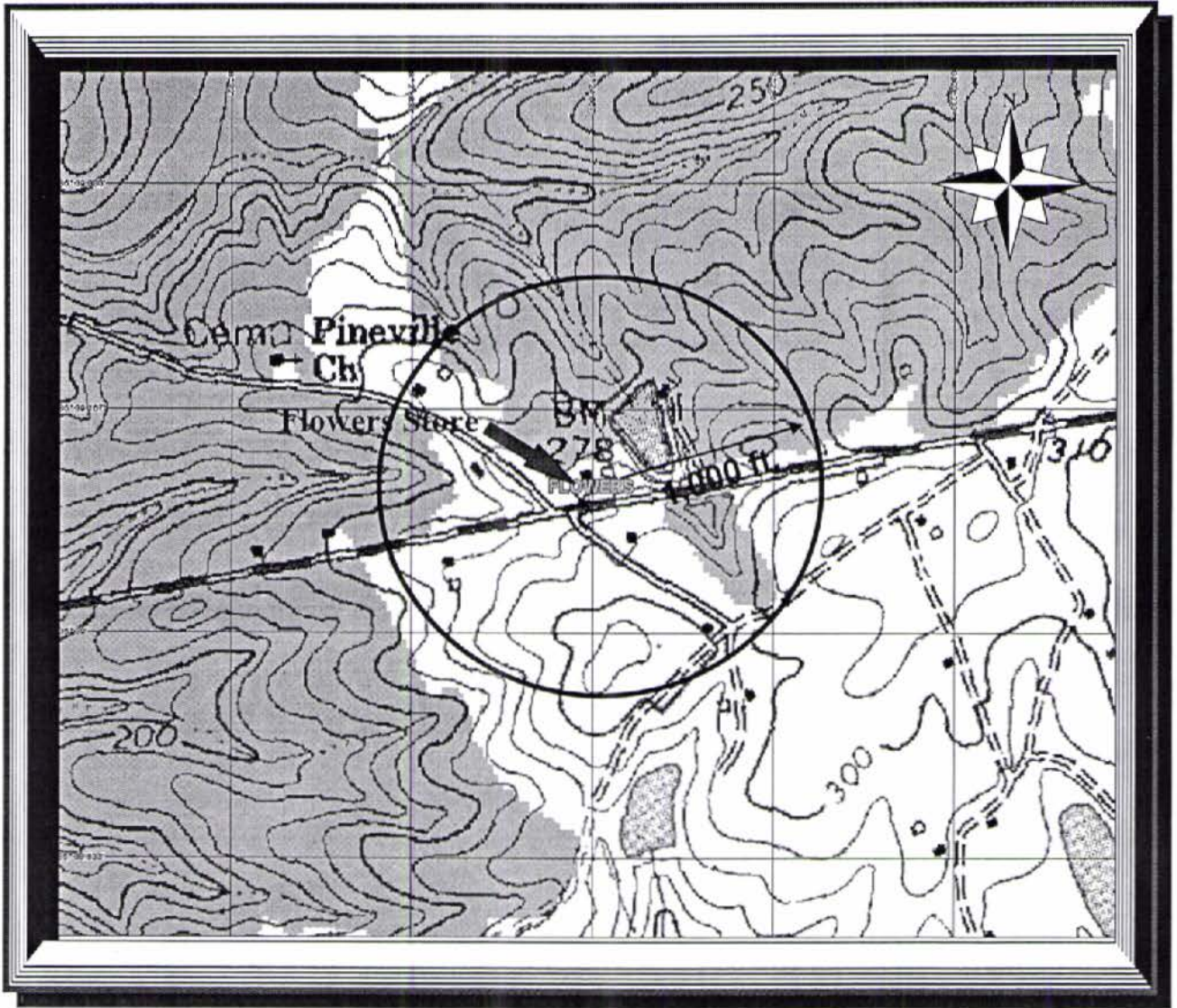
1. Sample Analytical Results – Soil

### C. Appendices

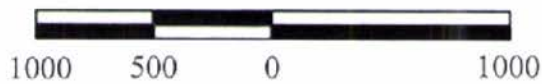
- Appendix A: Site Investigation Report (GW/UST 2 Form)
- Appendix C: Certificate of Tank Disposal
- Appendix E: Complete Chain-of-Custody Records
- Appendix F: Laboratory Analytical Records

# **FIGURES**





**GRAPHIC SCALE: FEET**



**CONTOUR INTERVAL: 10 FEET**

**QUADRANGLE LOCATION**



**FLOWERS, NORTH CAROLINA**

7.5' QUADRANGLE

N3539 - W7821/7.5

**AGRA ENVIRONMENTAL**  
 POST OFFICE BOX 5611  
 CARY, NORTH CAROLINA 27512

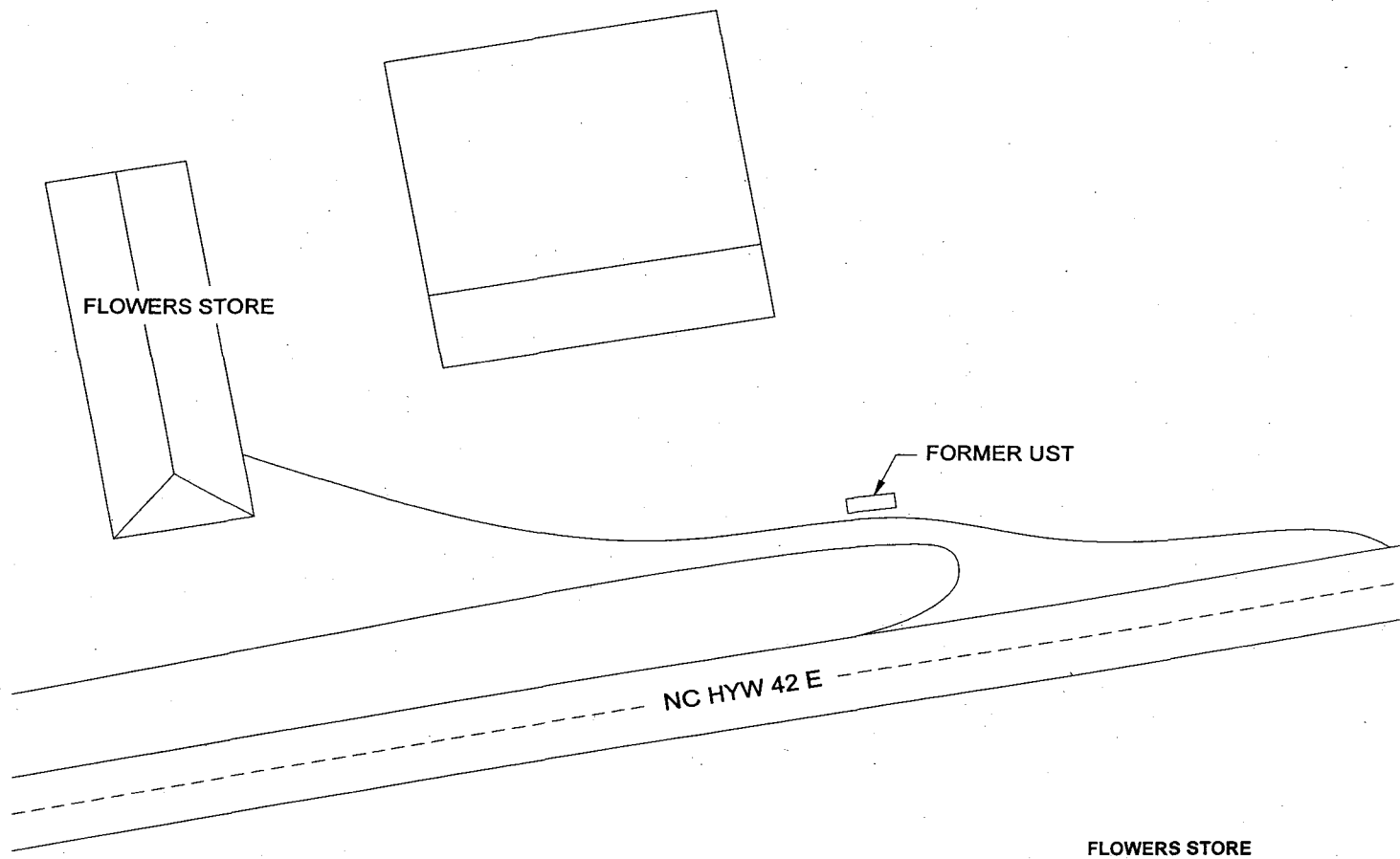
**SITE LOCATION AND  
 REGIONAL TOPOGRAPHY  
 FLOWERS STORE, CLAYTON  
 JOHNSON COUNTY, NORTH CAROLINA**

DIAGRAM #:  
 06-0619

DATE:  
 6/19/06

SCALE:  
 1:12,000

FIGURE # 1



**FLOWERS STORE  
UST INFORMATION**

TANK ID	CAPACITY (GALLONS)	DATE INSTALLED	DATE REMOVED	PRODUCT	STATUS
1	1,000	UNKNOWN	4/24/2006	Gasoline	P

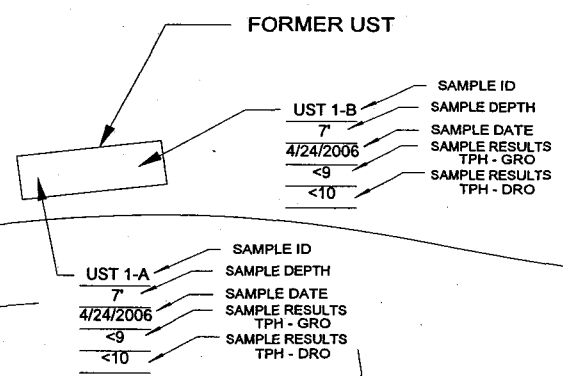
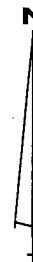
STATUS: C = CURRENTLY IN USE  
P = PERMANENTLY CLOSED BY REMOVAL

Project No.: 17217	Drawing No.: 0519060101	Project Title: Figure 2 Site Diagram FLOWERS STORE CLAYTON, NORTH CAROLINA
Checked By: RBS	Scale: 1" = 50'	
Drawn By: MAC	Date: 5/19/06	

**AGRA  
ENVIRONMENTAL**

---

**Cary, North Carolina**



NC HYW 42 E

**FLOWERS STORE  
UST INFORMATION**

TANK ID	CAPACITY (GALLONS)	DATE INSTALLED	DATE REMOVED	PRODUCT	STATUS
1	1,000	UNKNOWN	4/24/2006	Gasoline	P

STATUS: C = CURRENTLY IN USE  
P = PERMANENTLY CLOSED BY REMOVAL

**LEGEND**

UST 1-A	SAMPLE ID
7'	SAMPLE DEPTH
4/24/2006	SAMPLE DATE
<9	SAMPLE RESULTS TPH - GRO
<10	SAMPLE RESULTS TPH - DRO

Project No.: 17217	Drawing No.: 0519060102
Checked By: RBS	Scale: 1" = 15'
Drawn By: MAC	Date: 5/19/06

Project Title: **Figure 3**  
**Sample Location Diagram**  
**FLOWERS STORE**  
**CLAYTON, NORTH CAROLINA**

**AGRA**  
**ENVIRONMENTAL**  
**Cary, North Carolina**

# **TABLES**

# **TABLE 1**

## SAMPLE ANALYTICAL RESULTS – SOIL

April 24, 2006

**Flowers Store  
4121 NC Hwy 42 East  
Clayton, Johnston County, North Carolina  
Incident # 17217**

SAMPLE	DATE COLLECTED	DEPTH (FEET)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
UST 1A	4/24/06	6.0'	<9	<10
UST 1B	4/24/06	6.0'	<9	<10

**TPH** - total petroleum hydrocarbons  
**GRO** - gasoline range organics  
**DRO** - diesel range organics  
**mg/kg** - parts per million

# **APPENDIX A**

## **SITE INVESTIGATION REPORT FOR CLOSURE OR CHANGE-IN-SERVICE OF UST (GW/UST-2 FORM)**

# UST-2

## Site Investigation Report for Permanent Closure or Change-in-Service of UST

**FOR TANKS  
IN  
NC**

**Return completed form to:**  
The DWM Regional office in the area the facility is located. SEE MAP ON THE BACK OF THIS FORM FOR REGIONAL OFFICE ADDRESSES. Return the yellow copy to the Central Office in Raleigh so that the status of the tank may be changed to "PERMANENTLY CLOSED".

STATE USE ONLY:  
I.D. # \_\_\_\_\_  
Date Received \_\_\_\_\_

### I. OWNERSHIP OF TANKS

Owner Name (Corporation, Individual, Public Agency, or Other Entity) Mr. David M. Flowers  
 Street Address 4181 NC Hwy 42 E  
 City Clayton County Johnson  
 State North Carolina Zip Code 27527  
 Area Code 919 Phone Number 553-4044

### II. LOCATION OF TANKS

Facility Name or Company Flowers Store  
 Facility ID # (if known) \_\_\_\_\_  
 Street Address 4181 NC Hwy 42 E  
 City Clayton Johnson Zip Code 27527  
 Area Code N/A Phone Number \_\_\_\_\_

### III. CONTACT PERSONNEL

Name Mark Creel Job Title Project Geologist Tel. No. 919-858-5350  
 Closure Contractor ECS, LLC Address Sanford, NC Tel. No. 919-775-1327  
 Primary Consultant Agri Environmental Address Cary, NC Tel. No. 919-858-5350  
 Lab Analytic's Address Ashland, VA Tel. No. 804-365-3000

### IV. UST INFORMATION

### V. EXCAVATION CONDITION

### VI. ADDITIONAL INFORMATION

Tank No.	Size in Gallons	Tank Dimensions	Last Contents	Water in excavation		Free product		Notable odor or visible soil contamination	
				Yes	No	Yes	No	Yes	No
<u>1</u>	<u>1000</u>	<u>46" x 12'</u>	<u>Gasoline</u>		<u>X</u>		<u>X</u>		<u>X</u>

See reverse side of pink copy (owner's copy) for additional information required by NC DWM in the written report and sketch.

**NOTE:** If a release from the tank(s) has occurred, the site assessment portion of the tank closure must be conducted under the supervision of a P.E. or L.G., with all closure site assessment reports bearing the signature and seal of the P.E. or L.G.

### VII. CHECKLIST (CHECK THE ACTIVITIES COMPLETED)

#### PERMANENT CLOSURE

(For Removal or Abandonment-in-Place)

- Contact local fire marshal
- Notify DWM Regional Office before abandonment
- Drain and flush piping into tank
- Remove all product and residuals from tank
- Excavate down to tank
- Clean and inspect tank
- Remove drop tube, fill pipe, gauge pipe, vapor recovery tank connections, submersible pumps, and all other tank fixtures
- Cap or plug all lines except the vent and fill lines
- Purge the tank of all product and flammable vapors
- Cut one or more large holes in the tank
- Backfill the area

Date tank(s) Permanently Closed: 4/24/06

Date of Change In-service: \_\_\_\_\_

#### ABANDONMENT IN PLACE

- Fill tank until material overflows tank opening
- Plug or cap all openings
- Disconnect and cap or remove vent line
- Solid inert material used --specify \_\_\_\_\_

#### REMOVAL

- Create vent hole
- Label tank
- Dispose of tank in approved manner. Final tank destination: \_\_\_\_\_

ECS, LLC.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true accurate and complete

Print name and official title of owner or owner's authorized representative

Mark A Creel, Project Geologist

Signature



Date Signed

6/19/06

# **APPENDIX B**

## **CERTIFICATE OF TANK DISPOSAL**



# Certificate of Tank Disposal

presented to

*Agra Environmental*

This document verifies the following 1000 gallons Diesel was properly cleaned, transported, and disposed of in accordance with all applicable State and Federal regulations

Environmental Contracting Services LLC

4-24-06

Date

*John W. Klein*

Signature

# **APPENDIX C**

## **COMPLETE CHAIN-OF-CUSTODY RECORDS**



# **APPENDIX D**

## **LABORATORY ANALYTICAL RECORDS**



Analytics Corporation  
8040 Villa Park Drive, Suite 250  
Richmond, VA 23228  
Phone: (804)264-7100  
Fax: (804)264-8873

April 28, 2006

LEE COVINGTON  
AGRA ENVIRONMENTAL  
SUITE 104  
539 KEISLER DRIVE  
CARY, NC 27511

Purchase Order:

Client ID: FLOWERS STORE  
Workorder: 6116011

Dear LEE COVINGTON:

Enclosed are the analytical results for sample(s) received by the laboratory on Wednesday, April 26, 2006. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please call the Client Services Dept. at 1-800-888-8061.

Sincerely,

DAWN CASTO

Unless otherwise specified all analyses of solid materials are based on dry weight.

The signatures at the end of this report certify that the results are based on the referenced methods and unless otherwise noted meet the requirements of NELAC.

Reported results relate only to the items tested, as received by the laboratory.

On-site analysis (analysis ASAP) is recommended for the following tests: pH, temperature, dissolved oxygen, residual chlorine and sulfite. When performed off-site, these tests do not meet the NELAC standards.

Abbreviations:

ug/L = micrograms per Liter, mg/L = milligrams per Liter, ug/g = micrograms per gram, mg/kg = milligrams per kilogram  
ug/wp = micrograms per wipe, ug/ml = micrograms per milliliter, uS = microsiemens per centimeter at 25 degrees  
ppb = parts per billion, DF = Dilution Factor

**CERTIFICATE OF ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Analytics Corporation.



Analytics Corporation  
8040 Villa Park Drive, Suite 250  
Richmond, VA 23228  
Phone: (804)264-7100  
Fax: (804)264-8873

**SAMPLE SUMMARY**

Workorder 6116011 FLOWERS STORE

---

Lab ID	Sample ID	Matrix	Received Cond	Date Collected	Date Received
6116011001	UST 1-A	Soil/Solids/Sedi	OK	4/24/2006 11:45	4/26/2006 11:41
6116011002	UST 1-B	Soil/Solids/Sedi	OK	4/24/2006 11:50	4/26/2006 11:41

**CERTIFICATE OF ANALYSIS**

This report shall not be reproduced, except in full,  
without the written consent of Analytics Corporation.



Analytics Corporation  
8040 Villa Park Drive, Suite 250  
Richmond, VA 23228  
Phone: (804)264-7100  
Fax: (804)264-8873

### ANALYTICAL RESULTS

Workorder 6116011 FLOWERS STORE

Lab ID: 6116011001  
Sample ID: UST 1-A

Date Received: 4/26/2006 11:41 Matrix: Soil/Solids/Sediment  
Date Collected: 4/24/2006 11:45 TYPE: GRAB

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	Qu	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	----	--------

#### Physical Properties

Analysis Desc: SW-846 3550 sec 7.2	Analytical Method: SW-846 3550 sec 7.2									
---------------------------------------	--	--	--	--	--	--	--	--	--	--

Percent Moisture	14.8	%		1			04/27/2006 11:31	DM		
------------------	------	---	--	---	--	--	------------------	----	--	--

#### Gasoline Range Organics

Analysis Desc: SW-846 8015B	Preparation Method: SW-846 5035									
	Analytical Method: SW-846 8015B									

TPH - GRO	<9	mg/Kg	9	1	04/26/2006 14:00	SJS	04/26/2006 17:16	SJS		
-----------	----	-------	---	---	------------------	-----	------------------	-----	--	--

Diesel Range Organics (DRO)	<10.0	mg/Kg	10.0	1	04/27/2006 13:15	DM	04/27/2006 16:52	MBC		
-----------------------------	-------	-------	------	---	------------------	----	------------------	-----	--	--

### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Analytics Corporation.



Analytics Corporation  
8040 Villa Park Drive, Suite 250  
Richmond, VA 23228  
Phone: (804)264-7100  
Fax: (804)264-8873

### ANALYTICAL RESULTS

Workorder 6116011 FLOWERS STORE

Lab ID: **6116011002** Date Received: 4/26/2006 11:41 Matrix: Soil/Solids/Sediment  
Sample ID: **UST-1-B** Date Collected: 4/24/2006 11:50 TYPE: GRAB

Parameters	Results	Units	Report Limit	DF	Prepared	By	Analyzed	By	Qu	RegLmt
------------	---------	-------	--------------	----	----------	----	----------	----	----	--------

#### Physical Properties

<b>Analysis Desc: SW-846 3550 sec 7.2</b>	<b>Analytical Method: SW-846 3550 sec 7.2</b>
---	---

Percent Moisture	11.4	%		1			04/27/2006 11:32	DM
------------------	------	---	--	---	--	--	------------------	----

#### Gasoline Range Organics

<b>Analysis Desc: SW-846 8015B</b>	<b>Preparation Method: SW-846 5035</b>
	<b>Analytical Method: SW-846 8015B</b>

TPH - GRO	<9	mg/Kg	9	1	04/26/2006 14:00	SJS	04/26/2006 17:54	SJS
Diesel Range Organics (DRO)	<10.0	mg/Kg	10.0	1	04/27/2006 13:16	DM	04/27/2006 17:14	MBC

### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
without the written consent of Analytics Corporation.



# ANALYTICS

Account Name: Agra Env.

## Sample Container Receipt Form:

6-16-00

Sample Identification	UST 1-A	UST 1-B					
Type of Container	80250R	80250R					
Number of Containers	1	1					
Temperature on Arrival	NA	NA					
pH on Arrival	NA	NA					
Chlorine on Arrival (ppm)	NA	NA					
VOA Sample Condition	NA	NA					
General Condition	good	good					
Notes and comments							

P=Plastic; G=Glass, Am=Amber, VOA=VOA vial

\*\* Samples received in \_\_\_\_\_ for VOC's in soil. See attached for details on sample containers for low level VOC's in soil.

Sample Custodian Adilbenza Date 4/26/00