

ENVIRONMENTAL
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MARCH 25th, 1997

**UNDERGROUND STORAGE TANK (UST) CLOSURE:
REMOVAL OF 1-1100, 1-550 & 2-5000 GALLON TANKS**

PROJECT #96-1879

SITE:

**OLD SEALTEST DAIRY/KING BROS., INC.
(NO FACILITY ID ISSUED)
US HWY 70 EAST
HICKORY, NORTH CAROLINA 28601**

PREPARED FOR:

**MR BUCK KING
KING BROS., INC.
P.O. BOX 733
HICKORY, NORTH CAROLINA 28603**

PROJECT MANAGEMENT:

**SALEM ENVIRONMENTAL
P.O. BOX 5535
WINSTON-SALEM, N.C. 27113-5535
(800) 862-9231 (910) 759-9700
FAX (910) 759-9704**

GEOLOGIC SERVICES:

**ANDREW RARING, PhD, PG
P.O. BOX 34
BETHANIA, N.C. 27010
(910) 759-9703**

Salem Environmental/Certifoam Services

P.O. Box 5535

Winston-Salem, North Carolina 27113-5535

(800) 862-9231 (910) 759-9700

Fax (910) 759-9704

March 25th, 1997

Mr Buck King
King Bros., Inc.
P.O. Box 733
Hickory, North Carolina 28603-0733

Dear Mr King:

Enclosed is your copy of the closure report; take time to review it and do not hesitate to call with any questions. Another copy will be forwarded to the Mooresville Regional Office of the N.C. Division of Water Quality (DWQ).

It is attested that our work involving project management was carried out with full respect to regulatory guidance under the supervision of a N.C. licensed geologist. Where regulatory guidance was not applicable, standard industry procedures were strictly adhered to. The data received from the independent lab and all other third parties is assumed to be accurately delineated and transposed. Should said data be found erroneous, the right to alter this report is reserved. Although we assisted in the preparation of this report, all opinions, assessments and recommendations are those of the consulting geologist, Mr Raring. His assessment applies to the time and place of sampling only; no other expressed or implied warranty is offered. This report is the exclusive property of King Bros., Inc., and it will not be released without prior approval.

Sincerely yours,



Harvey C. Danner, Jr.
President

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: **King Bros. Dist., Inc.**
2. Owner address and telephone number: **P.O. Box 733 Hickory, NC 28603-0733
704/328-3676**

B. Facility Information

1. Facility name: **Old Sealtest Dairy/King Bros.**
2. Facility ID #: **Not issued at closure**
3. Facility address, telephone number and county: **US Hwy 70 East, Hickory 28601
Catawba County (closed-no phone)**

C. Contacts

1. Name, address, telephone number and job title of primary contact person:
Harold King, same address/phone; property owner
2. Name, address and telephone number of closure contractor:
**Salem Environmental/Certifoam Services; P.O. Box 5535, Winston-Salem, NC 27113
910/759-9700 (Fax) 910/759-9704**
3. Name, address and telephone number of primary consultant:
Andrew Raring, Ph.D., P.G., P.O. Box 5535, Winston-Salem, NC 27113 910/759-9703
4. Name, address, telephone number, and State certification number of laboratory:
**Bioremediation Labs, Inc. Rt 2 Box 180-C, Pinnacle, NC 27043 910/325-2318
NC License #480**

D. UST Information

Tank no.	Installation dates	Size in Gallons	Tank Dimensions	Last Contents	Previous Contents (if any)
1	1966	6000	8' x 13'5"	gasoline	
2	1966	5000	8' x 13'5"	gasoline	
3	1959	1100	46" x 148"	diesel fuel	
4	1959	550	46" x 74"	fuel oil	

E. Site Characteristics

1. Describe any past releases at this site: **None reported or known to us.**
2. Is the facility active or inactive at this time? If the facility is inactive note the last time the USTs were in operation: **Inactive since the mid-1980's.**

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

Commercial, dense; Hwy. 70 is a completely developed shopping mall & strip center district. Nearest residential is 150 feet north. No manufacturing is nearby.

4. Describe site geology/hydrogeology **Per the 1985 N.C. Geologic Map, the site resides near the boundary of three formations. These are characterized by large concentrations of biotite gneiss, mica schist and amphibolite. It resides in the Inner Piedmont Belt of the Piedmont Physiographic Province. Depth to shallow ground water varies in the Piedmont, often being from 10-40 feet below grade. The shallow aquifer often originates above bedrock in the saprolite layer, which is chemically degraded bedrock often retaining characteristics of the parent rock.**

II. Closure Procedures

A. Describe preparations for closure including the steps taken to notify authorities, permits obtained and the steps taken to clean and purge the tanks **The permit from the Hickory Fire Department is enclosed. Dry ice was introduced into the USTs to purge vapors. A representative of the F.D. was on site to check LEL levels prior to removal. All were under 3%.**

B. Note the amount of residual material pumped from the tank(s): **150 gallons**

C. Describe the storage, sampling and disposal of the residual material: **Handled by L & M Environmental of Sedalia, N.C., who will ship it to an authorized facility.**

D. 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: **At the gasoline USTs and along the product lines (joined over UST #1 w/ a tee union) the soil was not odorous or discolored. Sand backfill was around the tanks. However, at the pump associated with those, the soil was odorous to 10', which was the maximum depth of excavation due to the adjacent building. At the diesel UST the same was the case, except that the odorous soil terminated at about 4'. Backfill was silt. At the fuel oil UST the soil was lightly odorous; a small pinhole was in its top side. Backfill was a dense silty clay. Impacted soil from under both pumps was stockpiled on an adjacent property also owned by the Kings'. The extent of all excavations is on the detail map in the Appendix.**

All other USTs were in good condition, without pitting and only light rust. Lines were also in good shape. The USTs were recycled by Safeway Tank of Belews Creek, NC.

2. Note the depth of tank burial(s) (from land surface to top of tank): **#1: 40"; #2: 38"; #3: 33"; #4: 22".**

3. Quantity of soil removed: **about 15-20 cubic yards were stockpiled; 150-200 were removed overall.**

4. Describe soil type(s): **0-0.5': asphalt/gravel; 0.5-10': brownish-gold loose silt, some sandy white silt streaking; 11-16': brown silt; 16-22': gold-brown silt with clayish blebs; 22-28': brown silt; 28-40': dark brown silt, light micaceous, sandy, some dampness from 39'+.**

5. Type and source of backfill used: **brown clay silt supplied by the excavation contractor, Max's Digging Service of Hickory.**

E. 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 backfill.

1. Describe how it was determined to what extent to excavate the soil: **At the gasoline pump, the presence of the building next to it precluded excavation below 10', due to structural considerations. Odor ceased at the 4' depth at the diesel pump. Soil from both areas were screened with an OVA (see III.A. below) for presence of hydrocarbons.**

2. Describe method of temporary storage, sampling and treatment/disposal of soil: **per DWQ regulations on and covered with plastic behind the site on property owned by the Kings'.**

III. Site investigation

A. Provide information on field screening and observations, include methods used to calibrate field screening instrument(s): **Soil was screened for volatiles with a Gastech Model 1238 Organic Vapor Analyzer (OVA). The process involves placing soil into a ziplock type bag (about 1/4 to 1/3rd its volume), sealing the bag and allowing 10 to 15 minutes for the soil gasses to equilibrate. Then, the probe from the OVA is inserted into the bag. The subsequent reading, expressed in parts per million of total organics, can suggest if hydrocarbon contamination is present, especially when coupled with a petroleum odor of any kind. The total organics level for the sample collected at 4' at the diesel pump was <10 ppm (parts per million); it was 200 ppm at 2'. At the gasoline pump the OVA was 12,000+ all the way down to 10', the maximum depth of excavation. Under the gasoline USTs/line(s) the levels were all <20 ppm, while those associated with the diesel UST/line were <10 ppm. The sample under the fuel oil UST was 110 ppm.**

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 **2' in from each end of USTs 1, 2 & 3. At midpoint of UST #4. Along line at 1 & 2 (no union between UST & pump); at angle joint at #3's line**
- Type of samples (from excavation, stockpiled soil, etc.) **From excavation**
- Sample collection procedures (grab, split spoon, hand auger, etc.) **Hand grab from bucket;**
- Depth of soil samples (below land surface) **13' feet under USTs 1 & 2; 8' under #3; 7' under #4. 3-3.5' under lines; 10' at gasoline pump & 5' at diesel pump.**
- Whether samples were taken from side or floor of an excavation **Floor**
- Sample identification **Lab/field is cross-referenced on the chain of custody**
- Sample analyses **Enclosed w/ ID's**

C. Describe groundwater or surface water sampling procedures used, including: **N/A**

D. Quality control measures

- Describe sample handling procedures including sample preservation and transportation **Disposable latex gloves were worn during sample collection to prevent cross-contamination. Soil was packed tightly into the glass jars supplied by the lab, which had teflon seal screw caps. Temperature was**

maintained under 40 degrees by ice chest with a solid block coolant and refrigeration throughout our hold time.

- Describe decontamination procedures used Clean latex gloves were used for sample collection each time.
- Describe time and date samples were collected and date submitted to lab See chain of custody.

E. Investigation results

- Describe results of Site Sensitivity Evaluation (SSE), (if SSE was not conducted, explain why not) The soil is a silt - 50 points are scored (see Grain Size Analysis in Appendix). Relicts are assumed, adding 10 more. The shallow water table is 15' from the soil plume; this is 20 pts. There are no artificial conduits, and the water table would be intercepted above bedrock. No points are scored. The total is 70, while the site is a Category E. Permissible ppm levels are 180 per the 5030 Modified Method and 720 per the 3550 Process.
- Describe methods of analyses used (include U.S. EPA method number) As the systems supplied gasoline, diesel and fuel oil analysis was per EPA 5030-8015 Modified, Purge & Trap Method, with EPA 3550 Sonication Process added for the samples associated with USTs 3 & 4.. These are required under current regulatory guidelines.
- Describe analytical results for samples; discuss in relation to site specific cleanup level or action level, as appropriate

SAMPLE ID#	EPA 5030	EPA 3550
1A-13	<10	
1B-13	<10	
2A-13	<10	
2B-13	<10	
L-3	<10	
P-10	1858	
P-20	94	
P-25	<10	
P-30	<10	
P-35	<10	
P-40	79	
3A-8	<10	<20
3B-8	<10	<20
L3-3.5	<10	<20
P3-5'	<10	<20
4A-7	1373	2850
SP (STOCKPILE)	4550	2641

All the above are in ppm of TPH. Samples P-10, P-20, P-40 & 4A-7 are all above the DWQ allowable; P-10 & 4A-7 are above the SSE levels.

IV. Conclusions and Recommendations

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

There are two locations where soil contains petroleum hydrocarbons, based on our assessment at closure. The first is at the gasoline pump. Excavation extended to a depth of 10'. Field screening suggested and laboratory analysis confirmed that soil was impacted. Concentration of gasoline TPH was 1858 ppm at 10'. In response to this finding we advanced an hollow-stem auger boring at this location. A sample from 20' contained 94 ppm TPH; samples from 25', 30', and 35' were all below the SSE reported above

was based on this result. However, a sample from 40' contained 79 ppm TPH. This sample was damp, suggesting proximity to the ground water table. The 79 ppm may be only a laboratory cross-contamination or GC column error, as suggested by lack of odor or OVA meter response, or could signify that ground water is impacted and yielding volatiles to the soil immediately above.

The second area is at the heating oil UST (#4) where excavation stopped at 7 feet. TPH was 1373 and 2850 ppm by the 5030 and 3550 extractions (gasoline and heating oil). No additional assessment was done.

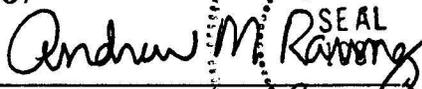
Recommendations for further activities are as follows. First, excavation at both areas is proposed. At the gasoline pump soil should be removed to a depth of 20 feet, where TPH was only 94 ppm; assuming the SSE applies, this would clear this area. At UST #4, needed depth of excavation is unknown but even with extension to 20 feet only about 35 cubic yards would be removed. This is a cost effective first response action.

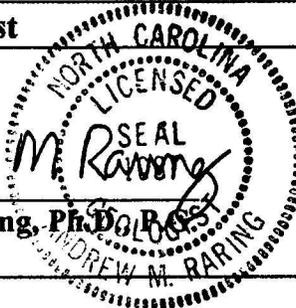
Second, a monitor well should be installed just lateral of the pump excavation. Soil samples from 40' and below, if the water table is significantly deeper, would be taken. If ground water is clean, the soil lab result from 40' could be ignored and the SSE formalized.

Remediation of the current stockpile awaits conclusion of excavation activities.

V. Signature of Professional Engineer or Licensed Geologist

Licensed Geologist License #: 1087


Andrew M. Raring, Ph.D.



VI. Enclosures

A. Figures

1. USGS Hickory Quadrangle, 7.5 Minute Topographic Series (Scale is 1" = 2,000')
2. Site map of UST excavation area drawn to scale, showing:
 - Buildings
 - Underground utilities such as sewer lines and other conduits
 - Orientation of UST(s), pumps, and product lines with excavation zones
 - Length, diameter and volume of USTs
 - Type of material(s) stored in USTs (currently and previously)
 - Sample locations (identified by letter or number)
 - Analytical results
 - North arrow

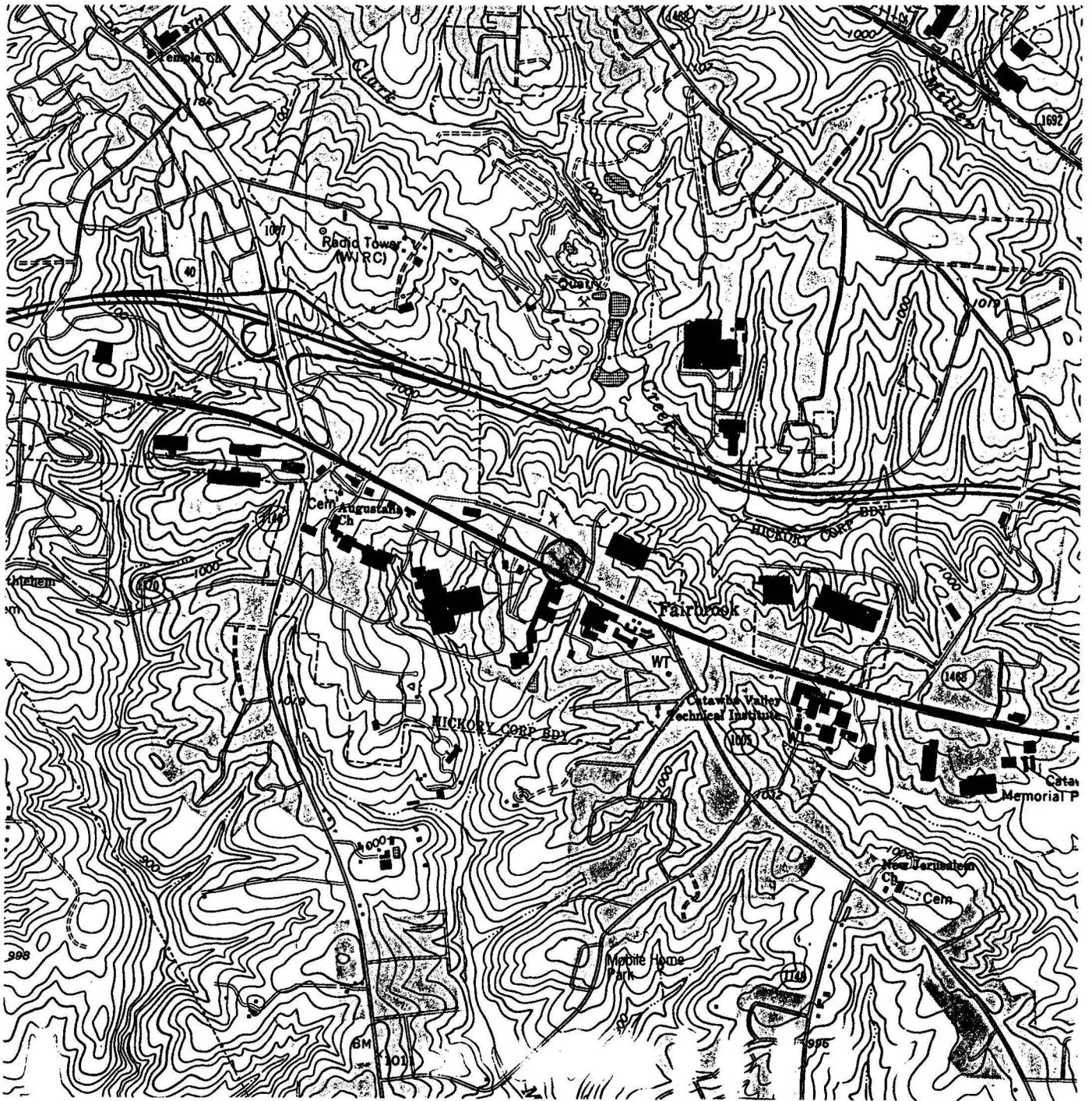
C. Appendices

- Appendix A: Notification of intent to close (GW/UST-3)
- Appendix B: Site Investigation Report for Permanent Closure or Change-in-Service of UST (GW/UST-2)
- Appendix C: Certificate of tank disposal
- Appendix D: Manifests of waste disposal

Appendix E: Complete chain-of-custody records
Appendix F: Copy of all laboratory analytical records
Appendix G: Site Sensitivity Evaluation (SSE), with Grain Size Analysis
Appendix H: Geologic logs for excavation(s)
Appendix I: Fire Department Permit

kingbros.doc

FIGURE 1

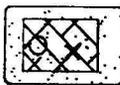


OLD SEALTEST DAIRY/KING BROS. BASE MAP

US HWY 70 E., HICKORY, CATAWBA COUNTY, N.C. 28601

U.S.G.S. HICKORY QUADRANGLE MAP, 7.5 MINUTE SERIES

SCALE : 1 INCH = 2,000 FEET



4A-7'
1378/2850



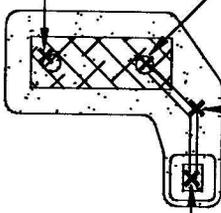
#4 550gal

KING BROTHERS

<10/<20
3B-8'

<10/<20
3A-8'

asphalt



L3-3.5'
<10/<20

P3-5'
<10/<20

asphalt

steep bank beyond

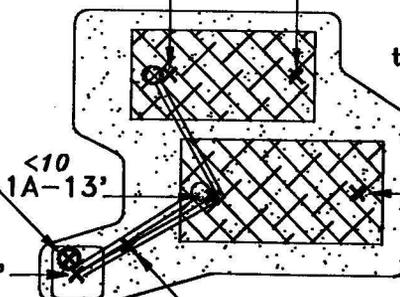
to US 70E



94 P-20'
<10 -25'
<10 -30'
<10 -35'
79 -40'

<10 2B-13' <10 2A-13'

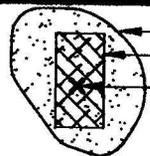
to stockpile
4550/2647



1B-17'
<10

P-10'
1858

L-3'
<10 GARAGE



excavation
removed UST
grab sample location

● utility pole

FIGURE 2: SITE MAP; KING BROTHERS US Highway 70 East, Hickory, Catawba County

SCALE: 1"=15'



SALEM ENVIRONMENTAL/CERTIFOAM SERVICES

MARCH, 1997

FOR TANKS IN NC

Return Completed Form To: The appropriate DEM Regional Office according to the county of the facility's location. [SEE REVERSE SIDE OF OWNER'S COPY (PINK) FOR REGIONAL OFFICE ADDRESS].

State Use Only

I. D. Number

Date Received

INSTRUCTIONS

Complete and return five (5) working days prior to closure or change-in-service.

I. OWNERSHIP OF TANK(S)

Tank Owner Name: King Bros. Dist., Inc
Street Address: P.O. Box 733
County: Catawba
City: Hickory State: NC Zip Code: 28603
Tele. No. (Area Code): 704-328-3676

II. LOCATION OF TANK(S)

Facility Name or Company: Same
Facility ID # (if available): None
Street Address or State Road: US Hwy 70 East
County: City: Zip Code:
Tele. No. (Area Code): none

III. CONTACT PERSON

Name: Harold Buck King Job Title: Owner Telephone Number: (704) 328-3676

IV. TANK REMOVAL, CLOSURE IN PLACE, CHANGE-IN-SERVICE

- 1. Contact Local Fire Marshall.
2. Plan the entire closure event.
3. Conduct Site Soil Assessments.
4. If Removing Tanks or Closing in Place refer to API Publications 2015 "Cleaning Petroleum Storage Tanks" & 1604 "Removal & Disposal of Used Underground Petroleum Storage Tanks".
5. Provide a sketch locating piping, tanks and soil sampling locations.
6. Fill out form GW/UST-2 "Site Investigation Report for Permanent Closure" and return within 30 days following the site investigation.
7. The site assessment portion of the tank closure must be conducted under the supervision of a Professional Engineer or Licensed Geologist. After January 1, 1994, all closure site assessment reports must be signed and sealed by a P.E. or L.G.
8. Keep closure records for 3 years.

V. WORK TO BE PERFORMED BY:

(Contractor) Name: Salem Environmental / Certifoam Services
Address: P.O. Box 5535 Winston-Salem, NC Zip Code: 27113
Contact: Harvey Danner Phone: 910-661-9231
Primary Consultant: Andrew Raring, P.G. Phone: 910-661-9245

VI. TANK(S) SCHEDULED FOR CLOSURE OR CHANGE-IN-SERVICE

Table with columns: TANK ID#, TANK CAPACITY, LAST CONTENTS, PROPOSED ACTIVITY (CLOSURE, CHANGE-IN-SERVICE). Includes handwritten entries for tanks 1, 2, and 3 with capacities 5000, 5000, 550 and contents Gasoline, Diesel.

VII. OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE

Print name and official title: Harvey Danner; Pres., SELCS

Signature: Harvey Danner

*Scheduled Removal Date: 2/24/97

Date Submitted: 2/3/97

*If scheduled work date changes, notify your appropriate DEM Regional Office 48 hours prior to original date.

FOR
TANKS
IN
NC

Return Completed Form To:

The appropriate DWQ Regional Office according to the county of the facility's location. [SEE MAP ON REVERSE SIDE OF OWNER'S COPY (PINK) FOR REGIONAL OFFICE ADDRESS].

State Use Only

I.D. Number _____

Date Received _____

INSTRUCTIONS

Complete and return within (30) days following completion of site investigation.

I. Ownership of Tank(s)

Owner Name: King Bros. Dist., Inc.
 Corporation, Individual, Public Agency, or Other Entity: _____
 Street Address: P.O. Box 733
 County: Catawba
 City: Hickory State: NC Zip Code: 28603
 Telephone Number: (704) 328-3676
(Area Code)

II. Location of Tank(s)

Facility Name: King Bros. / Old Seal test Dairy
(or Company)
 Facility ID # (if available): _____
 Street Address: US Hwy 70 E.
(or State Road)
 County: Cat. City: Hick. Zip Code: 28601
 Telephone Number: (_____) _____
(Area Code)

III. Contact Person

Name: Harold King Job Title: Owner Tel. No.: 704/328-3676
 Closure Contractor: Salem Environmental/Cont. Svcs. Address: POB 5535, W.S., NC 27113 Tel. No.: 910/759-9700
 Primary Consultant: Andrew Raring, PG Address: POB 34, BETHANICA, NC 27010 Tel. No.: 910/759-9703
 Lab: Bio Rem (#480) Address: Rt. 2 Bx 180 - C, Pinnacle, 27043 Tel. No.: 910/325-2318

IV. U.S.T. Information

V. Excavation Condition

VI. Additional Information Required

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
1	5000	8x13'5"	Gasoline		X		X		X
2	5000	8x13'5"	Gasoline		X		X		X
3	1100	46"x148"	Diesel		X		X		X
4	550	46"x74"	Fuel Oil		X		X	X	

See reverse side of pink copy (owner's copy) for additional information required by N.C. - DWQ 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. Check List (Check the activities completed)

PERMANENT CLOSURE (For Removing or Abandoning-in-place)

- Contact local fire marshal.
 - Notify DWQ Regional Office before abandonment.
 - Drain & 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 other tank fixtures.
 - Cap or plug all lines except the vent and fill lines.
 - Purge tank of all product & flammable vapors.
 - Cut one or more large holes in the tanks.
 - Backfill the area.
- Date Tank(s) Permanently closed: 3/6/97
 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. Safeway
 Final tank destination: Tank Disposal; Belews Creek

VIII. Certification (Read and Sign)

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

Harvey Danner, Pres, SE/CS

Signature

Harvey Danner

Date Signed

Mar 25th, 1997

L & M ENVIRONMENTAL SERVICES
P.O. BOX 70
SEDALIA, N.C. 27342
PHONE-(910)449-5155

INVOICE 260
DATE 3/7/97

Bill To:
CERTIFOAM SERVICES, INC
P.O. BOX 5524
WINSTONSALEM N.C. 27113

JOB SITE:
HICKORY N.C.
3/6/97

P.O. Number Terms
 10 days vactruck was used to Hickory N.C.

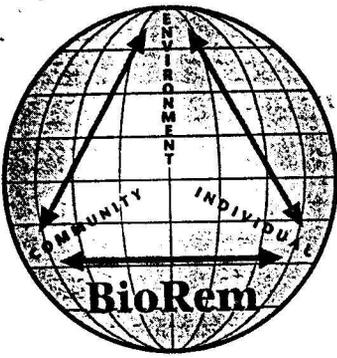
=====

Description

Amount

150 GALLONS OF WASTE FUEL GAS & WATER [REDACTED]

THANK YOU, W. ANTHONY MAYNARD.



BIOREMEDIATION RESEARCH, LTD.

ROUTE 2, BOX 180-C
PINNACLE, NC 27043
PHONE (910) 325-2318

CERTIFICATE OF ANALYSIS

NC Cert. # 480

March 11, 1997

Client: Salem Environmental
Project: King

EPA 5030/M8015;3550/M8015: California Method; Diesel Range

Client Sample	Lab Sample	TPH(5030)	TPH(3550)
4A-7'	9700373	1373 ppm	2850 ppm
L3-3.5'	9700374	< 10	< 20
P-10'	9700375	1858	
P3-5'	9700376	< 10	< 20
2A-13'	9700377	< 10	
2B-13'	9700378	< 10	
3A-8'	9700379	< 10	< 20
3B-8'	9700380	< 10	< 20
1A-13'	9700381	< 10	
1B-13'	9700382	< 10	
L-3'	9700383	< 10	


Kenneth H. Goehle, Ph.D.

CHAIN OF CUSTODY RECORD

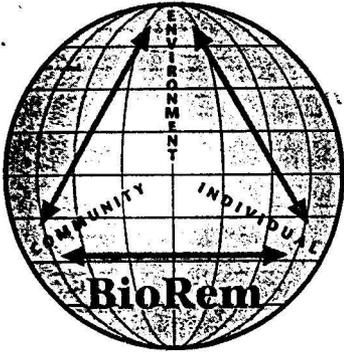
Use ballpoint pen only, press hard

BIOREMEDIATION RESEARCH. LTD.

Route 2 Box 180-C
Pinnacle, NC 27043
Telephone (910) 325-2318

Client Name: SALEM ENVIRON.
Project: KING
Attention: HARVEY
Telephone: 759-7900 (?)

Sample ID	Yr. Date	Time	Matrix	Please indicate the number of each size of sample container and any preservatives which were used. e.g., 2-HNO3 indicates 2 containers w/ nitric acid.					Suspected Contaminant	Level			Analysis Requested	Lab use only Lab ID	
				40 ml	120 ml	250 ml	500 ml	950 ml		other	0	Low			Med
4A-7'	3/6	10:40	Soil		1					Gasoline				5030 & 3550	373
13-3.5'		11:10			1					↓					374
P-10'		12:15			1					Gasoline only				5030 only	375
P3-5'		12:30			1					Acid/Keros				5030 & 3550	376
7-13'		1:30			1					Gasoline				5030	377
7-13'		1:35			1					Gasoline				5030 & 3550	378
-8'		2:30			1					Diesel/Kero				5030 & 3550	379
-8'		2:40			1					" "				5030 & 3550	380
-13'		3:00			1					Gasoline				5030 -	381
1-13'		3:05			1					Gasoline				5030 -	382
1-1'		9:40								Gasoline				5030 -	383
Relinquished by: (Sig.)	Date	Time	Received by: (Sig.)	Date	Time	Remarks:	Time								
(Andrew Rawns Collector)	3/7/97	2:30													
Relinquished by: (Sig.)	Date	Time	Received by: (Sig.)	Date	Time		Time								
Relinquished by: (Sig.)	Date	Time	Received by: (Sig.)	Date	Time		Time								



BIOREMEDIATION RESEARCH, LTD.

ROUTE 2, BOX 180-C
PINNACLE, NC 27043
PHONE (910) 325-2318

CERTIFICATE OF ANALYSIS

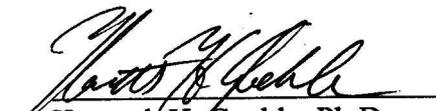
NC Cert. # 480

March 17, 1997

Client: Salem Environmental
Project: King

EPA 5030/M8015;3550/M8015: California Method; Diesel Range

Client Sample	Lab Sample	TPH(5030)	TPH(3550)
SP	9700397	4550 ppm	2641 ppm
P-20'	9700398	94	
P-35'	9700399	< 10	
P-25'	9700400	< 10	
P-40'	9700401	79	
P-30'	9700402	< 10	


Kenneth H. Goehle, Ph.D.

CHAIN OF CUSTODY RECORD

Use ballpoint pen only, press hard

BIOREMEDIATION RESEARCH. LTD.

Route 2 Box 180-C
Pinnacle, NC 27043
Telephone (910) 325-2318

Client Name: Salem Enrich
Project: King
Attention: H. Bender
Telephone: 759-9700

Sample ID	Yr. Date	Time	Matrix	Please indicate the number of each size of sample container and any preservatives which were used. e.g., 2-HNO3 indicates 2 containers w/ nitric acid.						Suspected Contaminant	Level			Analysis Requested	Lab use only Lab ID	
				40 ml	120 ml	250 ml	500 ml	950 ml	other		0	Low	Med			High
SP	3/10/97	10:00	SO.L		X										3550/5030TH	397
P-20		11:05	I		I										5030 TPH	398
P-35		11:40	I		I										5030	399
P-15		11:15	I		I										5030	400
P-40		11:55	I		I										5030	401
P-30		11:30	I		I										5030	402
Released by: (Sig.)																
Received by: (Sig.)	3/11/97	7:00	Collector													
Received by: (Sig.)	3/12	1:40														
Received by: (Sig.)																

Site Sensitivity Evaluation (SSE)

Site Characteristics Evaluation (Step 1)

Characteristic	Condition	Rating	
Grain Size*	Gravel	150	
	Sand	100	
	Silt ✓	50	
	Clay	0	
			50
Are relict structures, sedimentary structures, and/or textures present in the zone of contamination and underlying "soils"?	Present and intersecting the water table. ✓	10	
	Present but <u>not</u> intersecting the water table.	5	
	None present.	0	
			10
Distance from location of deepest contaminated soil** to water table.	0 - 5 feet	20	
	(C, D & E sites only)	20	
	5 - 10 feet	10	
	>10 - 40 feet ✓	0	
	> 40 feet	0	
			10
Is the top of bedrock or transmissive indurated sediments located above the water table?	Yes	20	
	No ✓	0	
			—
Artificial conduits present within the zone of contamination.	Present and intersecting the water table.	10	
	Present but <u>not</u> intersecting the water table.	5	
	Not present. ✓	0	
			—

Total Site Characteristics Score: 70

* **Predominant grain size** based on Unified Soil Classification System or U.S. Dept. of Agriculture's Soil Classification Method.
 ** (>10 ppm TPFH by Method 5030; >40 ppm TPFH by Method 3550; >250 ppm O&G by Method 907)

Table 2

Site Sensitivity Evaluation (SSE)
 Initial Cleanup Level (Step 2) Final Cleanup Level (Step 3)

Low Boiling Point Hydrocarbons			
Total Site Characteristics Score	Initial Cleanup Level TPFH (ppm) EPA Method 5030		Final Cleanup Level
>150	≤10	Select Site Category* 	Category A & B (Multiply initial cleanup level by 1) 1 x _____ = _____ ppm
121-150	20		Category C & D (Multiply initial cleanup level by 2) 2 x _____ = _____ ppm
91-120	40		Category E (Multiply initial cleanup level by 3) 3 x <u>60</u> = <u>180</u> ppm
61-90	60		---
31-60	80		
0-30	100		

Medium Boiling Point Hydrocarbons			
Total Site Characteristics Score	Initial Cleanup Level TPFH (ppm) EPA Method 3550		Final Cleanup Level
>150	≤40	Select Site Category* 	Category A & B (Multiply initial cleanup level by 1) 1 x _____ = _____ ppm
121-150	80		Category C & D (Multiply initial cleanup level by 2) 2 x _____ = _____ ppm
91-120	160		Category E (Multiply initial cleanup level by 3) 3 x <u>240</u> = <u>720</u> ppm
61-90	240		
31-60	320		
0-30	400		

Oil & Grease (O&G)			
Total Site Characteristics Score	Initial Cleanup Level O&G (ppm) EPA Method 9071		Final Cleanup Level
>150	≤250	Select Site Category* 	Category A & B (Multiply initial cleanup level by 1) 1 x _____ = _____ ppm
121-150	400		Category C & D (Multiply initial cleanup level by 2) 2 x _____ = _____ ppm
91-120	550		Category E (Multiply initial cleanup level by 3) 3 x _____ = _____ ppm
61-90	700		
31-60	850		
0-30	1000		

* See Site Category Descriptions

TABLE 3
SITE SENSITIVITY EVALUATION (SSE)

SITE CATEGORY DESCRIPTIONS

CATEGORY A (*Site meets any one of the criteria*)

1. Water Supply well(s) contaminated and not served by accessible public water supply.
2. Vapors present in confined areas at explosive or health concern levels.
3. Treated surface water supply in violation of the safe drinking water standards.

CATEGORY B (*Any One*)

1. Water supply well(s) contaminated, but served by accessible public water supply.
2. Water supply well(s) within 1500 feet of site, but not contaminated and not served by accessible public water supply.
3. Vapors present in confined areas but not at explosive or health concern levels.

CATEGORY C (*Both*)

1. No known water supply well(s) contaminated.
2. Water supply well(s) greater than 1500 feet from site but not served by accessible public water supply.

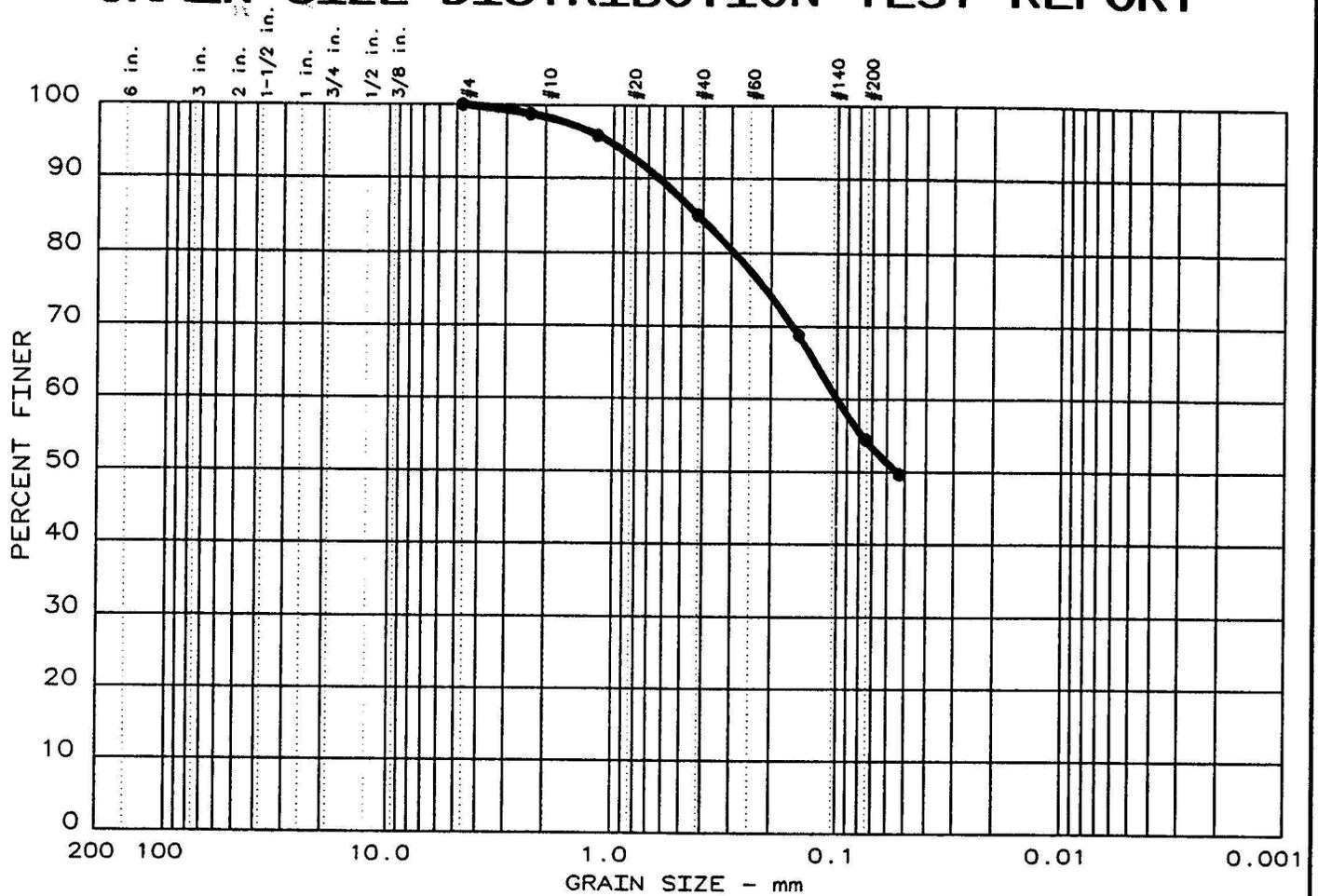
CATEGORY D (*Both*)

1. No known water supply well(s) contaminated.
2. Water supply well(s) within 1500 feet of site but served by accessible public water supply.

CATEGORY E (*Both*)

1. No known water supply well(s) contaminated or within 1500 feet of site.
2. Area served by accessible public water supply.

GRAIN SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 3	0.0	0.0	45.5	54.5	

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
●		0.417	0.0989	0.0543					

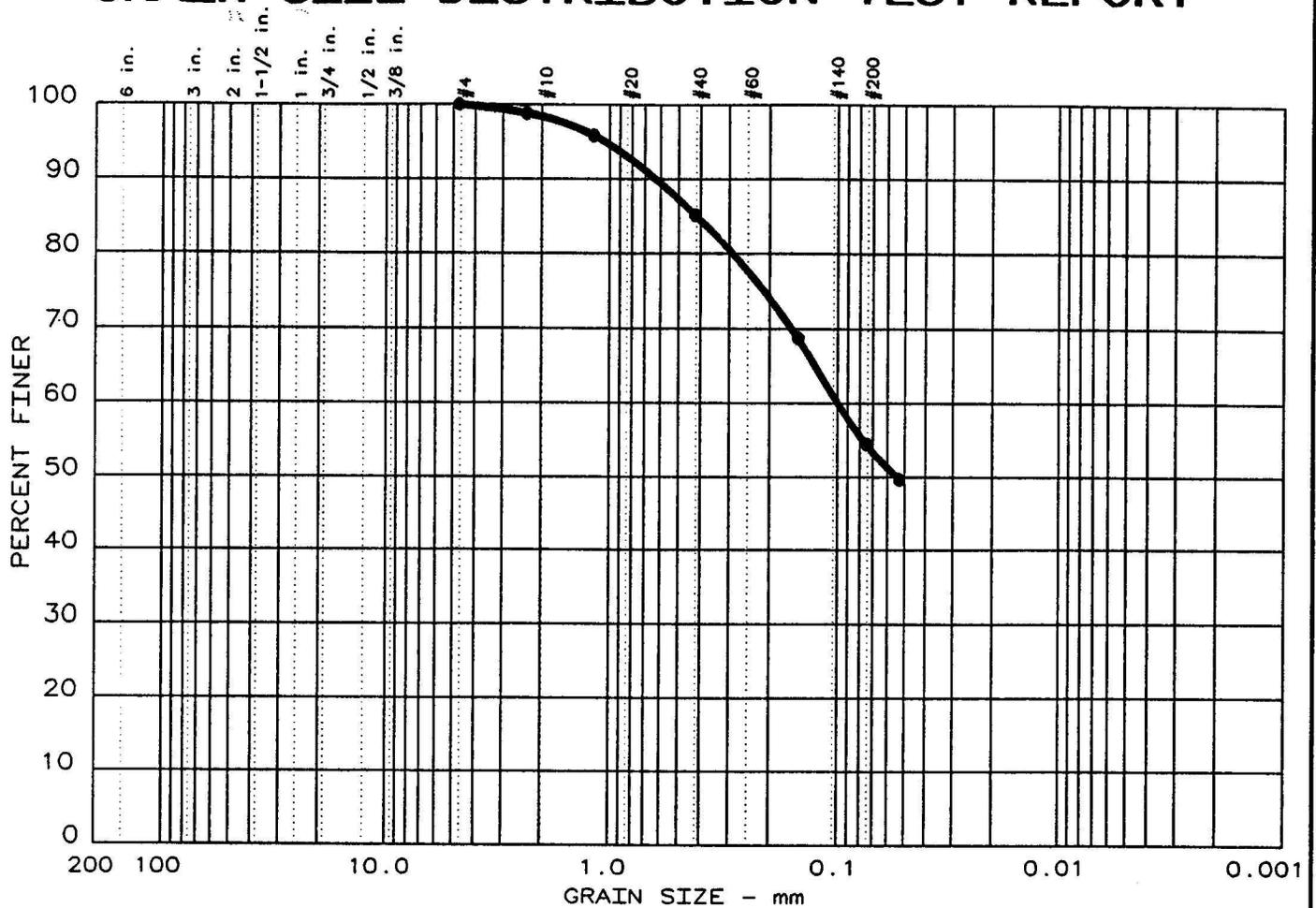
MATERIAL DESCRIPTION	USCS	AASHTO
● Dark Brown Sandy Silt	ML	A-4(0.0)

Project No.: 97-200B
 Project: King Job
 ● Location:

 Date: 03-12-97

Remarks:

GRAIN SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 3	0.0	0.0	45.5	54.5	

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
		0.417	0.0989	0.0543					

MATERIAL DESCRIPTION	USCS	AASHTO
● Dark Brown Sandy Silt	ML	A-4(0.0)

Project No.: 97-200B
 Project: King Job
 ● Location:

 Date: 03-12-97

Remarks:



HICKORY FIRE DEPARTMENT
 FIRE PREVENTION BUREAU
 (704) 323-7522
 FIRE INSPECTION REPORT



PERMIT# 588 INSP. DATE 3-6-97 INSPECTOR R. Mitchell
 ADDRESS Fly 70 SE TAX CODE _____
 NAME old seal test Daily TYPE OF OCCUPANCY _____

STORAGE TANK INSPECTION:

TANK TEST @5PSI	_____	LINE TEST	_____	BACKFILL	_____
SPACING	_____	LEAK DET.	_____	VENTING	_____
DIKING	_____	DISPENSER	_____	PROPER ID	_____
NEW INSTALLATION	_____	CLOSURE	_____	ABANDONMENT	<input checked="" type="checkbox"/>

ACTION

APPROVED _____

DISAPPROVED _____

REMARKS: Removed 4 underground Storage Tanks

1100 Diesel 500 gal tank
