

**DIVISION OF WATER QUALITY
GROUNDWATER SECTION, WSRO**

October 1, 1996

MEMORANDUM

TO: A. Preston Howard, Jr., Director

THROUGH: Sherri Knight, Regional Groundwater Supervisor, WSRO

and

Arthur Mouberry, Section Chief

FROM: Michael Zappia

SUBJECT: NCAC 2L .106(l) Corrective Action Plan
ARA / Smith's
6301 Burnt Poplar Road
Greensboro, Guilford County
Groundwater Incident # 10077

I. Site History

The ARA / Smith's site is located at the intersection of Burnt Poplar Road and Chimney Rock Road in an industrial / commercial area of Greensboro, Guilford County. Two businesses are located on the site: Gate City Truck Repair at the northeast corner of the property and West Brothers Trucking Company located on the north-central portion of the property. The site has been used as a truck repair garage since the 1970's. On January 25-26, 1993, three underground storage tanks (one 10,000 gallon diesel UST, one 500 gallon gasoline UST, one 500 gallon waste oil UST) associated with the truck repair shop were removed. Subsequent investigations showed that petroleum hydrocarbons were present in site soils and groundwater at concentrations above regulatory levels. This site a REGUST site and the groundwater incident number is 10077.

II. Incident Data

1. A. Setting: The site is located in Greensboro, Guilford County, North Carolina. The surrounding properties are primarily industrial and/or commercial, but some residential properties exist within 1500 feet of the site.
- B. Groundwater Pollutants: benzene 1810 ug/l; ethylbenzene 37.8 ug/l; xylenes(total) 1420 ug/l; EDB 275 ug/l; naphthalene 142 ug/l; lead 41 ug/l; 1,2-dichloroethane 7.9 ug/l
- C. Source: USTs
- D. Date Release Confirmed: March 22, 1993

- E. Initial Corrective Action: On January 25-26, 1993, three USTs were removed. Soil surrounding the diesel fuel and gasoline tanks was excavated, stockpiled and sampled. A total of 253.06 tons of soil was disposed of at Lee Brick & Tile in Sanford.

III. Regulatory Notices

A Notice of Regulatory Requirements was issued on February 3, 1993. A Notice of Violation of NCAC Title 15A 2L was issued on April 22, 1993.

IV. Contamination

- A. Soil Contamination: Following initial excavation, additional investigation showed soil TPH as high as 46 ppm (Method 5030) and 240 ppm (Method 3550) in the areas of the former gasoline and diesel USTs. On June 20, 1996, approximately 350 tons of soil were excavated from the former gasoline and diesel UST locations and disposed of at Carlisle Farms, Inc. Confirmatory sampling showed no soil TPH levels in excess of action levels above the water table.
- B. Groundwater Plume Areal Extent (square feet)
 - 1. Shallow Aquifer: 16,000 feet²
 - 2. Bedrock: Vertical extent well in bedrock showed that contamination was limited to the upper aquifer (above bedrock).

V. Proposed Corrective Action System

- A. Type System Proposed: All impacted soil above the water table has been excavated. Natural attenuation has been proposed for the groundwater cleanup.
- B. Pilot Test Results: no pilot tests have been conducted.
- C. System Adequacy
 - 1. Suitability, based on soil Type: NA
 - 2. Suitability for Pollutant Type: BTEX levels at the site have decreased significantly from 1993-1994 to the most recent samples (1996). The decrease in BTEX levels indicates favorable conditions for natural degradation of the petroleum hydrocarbons. Attenuation of the halogenated hydrocarbons (EDB and 1,2-DCA) and lead was not discussed. The CAP proposes to analyze monitoring well samples by EPA Methods 601/602, 625 and 3030C (lead). Monitoring wells would be sampled quarterly for the first year and annually thereafter.
 - 3. Suitable, based Site Hydrogeology: The reported linear groundwater flow is approximately 0.135 ft/yr. Although the low hydraulic conductivity will likely slow biodegradation, it will also retard the movement of the plume.
- D. Effluent Discharge Point & Volume (Gpm): NA
- E. Required Permit: NA

VI. Geology

- A. Surficial Materials: Saprolite
- B. Bedrock: 51 feet below grade in VEW-1
- C. Soil Type: Red silty loam with some gray saprolitic loam

VII. Hydrogeology

- A. Hydraulic Conductivity: 2.6×10^{-6} cm/sec
- B. Groundwater Flow Direction: to the west-southwest
- C. Hydraulic Gradient: 0.02
- D. Groundwater Flow Velocity: 0.135 ft/yr
- E. Monitor Wells
 - 1. Shallow: Seven Type II, 2-inch diameter PVC screened in the saprolite aquifer.
 - 2. Deep: One Type III (well number), 6-inch diameter PVC to 51 feet. 2-inch PVC to a depth of 61 feet. Screened from 51-61 feet.
 - 3. Placement of monitor wells: adequate to track plume.
- F. Hydrogeologic Tests Conducted: rising head slug test

VIII. Potential Receptors

- A. Public Water Supply Wells. None reported. The site and most surrounding properties are on city water. City water is available in the area, but not all area residents are connected.
- B. Private Water Supply Wells: Reportedly 3 private wells within a 1,500-foot radius, two crossgradient and one upgradient. The two crossgradient wells are located 700-900 feet south of the site. The downgradient well is located approximately 900 feet west of the site, but the plume is not expected to migrate offsite.
- C. Surface Water Bodies: There are no surface water intakes for public water supplies within at least 1500 feet of the site. An intermittent creek is located approximately 700 feet west of the site. This creek is reportedly not used as a water source for any residential, commercial, industrial or agricultural purpose.
- D. Utilities: None expected to impact plume migration.

IX. Administrative Requirements

- A. Sealed by L.G. (G. Van Ness Burbach, License # 1349)
- B. Form GW-100 included.
- C. Notification requirements met per 15A NCAC 2L .0114 with no comment.
- E. Implementation Schedule included.
- F. Monitoring Plan enclosed and found adequate.

X. Recommendation Criteria

The CAP met all requirements listed in 15A NCAC 2L .0106 (I).

- A. All primary sources of contamination have reportedly been removed.
- B. All secondary sources of contamination have been removed.
- C. Free product was not detected.
- D. The contaminants have the capacity to degrade or attenuate under the site-specific conditions.
- E. The time and direction of contaminated travel can be predicted with reasonable certainty based on historical data and computer modeling using Bioplume-II.
- F. The contaminant migration will not result in any violation of applicable groundwater standards at any existing or foreseeable receptor.
- G. The nearest receptor is an intermittent creek 700 feet west of the site. The contaminant plume is not expected to migrate offsite.
- H. The contaminant plume is not expected to intercept surface waters.
- I. A monitoring well network will be in place as a part of this CAP to detect contaminants at least one year travel upgradient of any potential receptors and no greater than the distance the groundwater at the contaminated site is predicted to travel in five years.
- J. The proposed Corrective Action Plan appears to be consistent with all other environmental laws.
- K. The site ranking score is 70/B.
- L. Public Notice was provided in accordance with 15A NCAC 2L .0114(b) with no comments received.

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Water Quality

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
A. Preston Howard, Jr., P.E., Director



Mr. M. Cope Livingston
Lindley Property Trust
P.O. Box 35681
Greensboro, NC 27425-5681

RE: Final Approval - Corrective Action Plan
ARA /Smith's, 6301 Burnt Poplar Road, Greensboro
Guilford County, North Carolina
Groundwater Incident #10077
Priority Ranking 70/B

Dear Mr. Livingston:

On August 7, 1995, the Groundwater Section of the Winston-Salem Regional Office received your proposed Corrective Action Plan (CAP) for the above-referenced site. On May 7, 1996, additional information was requested by the Groundwater Section of the Winston-Salem Regional Office. As of September 11, 1996, that information has been received by the Regional Office. As described in Title 15A North Carolina Administrative Code (NCAC), Subchapter 2L (Classifications and Water Quality Standards Applicable to the Groundwaters of North Carolina), the Division's final approval of the CAP is contingent upon consideration of public input received following notification in accordance with 15A NCAC 2L .0114. Certified mail receipts have been provided, showing proof of notification to property owners and occupants potentially affected by the approval of the proposed CAP submitted pursuant to 15A NCAC 2L .0106(1) using natural attenuation processes.

The Regional Office has considered any public comments received, and based on the staff's review and recommendations, I am hereby granting Lindley Property Trust final approval to implement the CAP as proposed. The Division's decision is based on the information submitted in the proposed CAP and supporting documents.

This CAP approval should not be considered an approval of any cost estimates presented in the CAP for reimbursement from the N.C. Leaking Petroleum Underground Storage Tank Cleanup Funds. The Division may only reimburse corrective action costs which are determined to be reasonable and necessary in accordance with 15A NCAC 2P. (Rules for the

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Administration of the Leaking Petroleum Underground Storage Tank Cleanup Funds) and established guidelines.

Upon receiving additional information, I may require you to perform additional monitoring, conduct additional site assessment activities, assess the performance of the ongoing corrective action, and/or evaluate the technological and economical feasibility of implementing a new technology at the subject site.

Please be advised that you are required by 15A NCAC 2L .0114(c) to notify all interested parties, as specified in paragraph (b) of that rule, that approval of the CAP has been granted by the Director. This notification is required to be made by certified mail and must be done within thirty (30) days of receipt of the Director's decision.

If you have any questions, please call L. Gene Mao at (910) 373-3771.

Sincerely,

A. Preston Howard, Jr., P.E.

APH/capshell.doc
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