

AUG 25 1993



August 24, 1993

Mr. Charles B. Schwer
Petroleum Sites Coordinator
Vermont Department of
Environmental Conservation
103 South Main Street
Waterbury, Vermont 05676

RE: Summary Report - Al's Country Store, Hartford, VT
(VDEC Site #91-1174)

Dear Chuck;

As we previously indicated to you, Lincoln Applied Geology, Inc. (LAG) has successfully completed our site investigation as delineated in the approved workplan. While evidence of petroleum product contamination was found during the November 1991 UST removal and replacement, no significant contamination remains on-site nor has significant downgradient migration of soluble phase contaminants been documented through January, 1993. No impacts to nearby bedrock water supplies have been detected.

During a routine underground storage tank (UST) removal and replacement upgrade at Al's Country Store in Hartford, VT gasoline contaminated soils were encountered. Approximately 120 cubic yards of soil with photoionization values (PID) up to 450 parts per million (ppm) were removed for polyencapsulation at the Bradford Oil Facility in Wells River, Vermont. Ledge was encountered in the excavation at a depth of nine feet and ground water seeped into the excavation at a depth of 7 feet. A monitor well (i.e. MW-1) was installed and sampled. Although no free product was encountered, an analysis demonstrated ground water impacts in excess of ground water enforcement standards. In response to these findings, known nearby water supplies and the tank pull report submitted by the excavator, the Vermont Department of Environmental Conservation (VDEC) requested on December 20, 1991 that additional site investigations be performed. The Bradford Oil company retained LAG to provide these services as outlined in our January 8, 1992 workplan. That workplan was conditionally approved by the VDEC on January 15, 1992 and we commenced site work on February 13, 1992. Copies of the pertinent historic correspondence are included in **Appendix A.**

Al's Country Store is located on the northerly side of Route 4 in Hartford, VT. (**Figure 1**). The site is directly across the street and topographically upgradient from the Pine Valley Resort Campground and within 500 feet of the Campground's 350' deep drilled bedrock well owned by Peter Robe.

Although the campground is not depicted on the 1988 photorevised topographic map used to prepare **Figure 1**, it is depicted on the **Figure 2** Regional Site Map. The pond was created within a wetland area for the campground. Significant fill material was used for bringing Route 4 to its current grade. A culvert under Route 4 drains surface water runoff to a drainage ditch. Immediately behind and to the west of Al's Store, and the adjoining properties, bedrock outcrops are evident as the topography rises rapidly.

The observed schist bedrock is mapped by the Vermont Geologic Survey as a part of the Gile Mountain formation. The four water supply wells depicted on **Figure 2** are deep bedrock wells whose available well completion reports are included in **Appendix A**. Bedrock was encountered within 10 feet of the ground surface in the 3 wells on the westerly side of Route 4 and at 63 feet below ground surface in the Robe well serving the campground. The overlying shallow soils west of Route 4 are glacial till in origin with a silt loam texture and significant coarse fragments of broken rock. On the easterly side of Route 4 the till grades into a fragment free, high organic matter, fine, stratified sand of lacustrine type origin.

As delineated in our January 1992 workplan, a series of hand auger borings were made on February 13, 1992 at the locations identified as SB-1, SB-2, and SB-3 on **Figure 2**. SB-1 was installed in a low spot adjacent to the culvert. The first 2 feet of a fine sandy gravel were frozen. The underlying reduced, dense, silt loam (20% fragments) extended to a depth of 50 inches where bedrock refusal was encountered. Two additional holes were augered within a 5 foot radius and the refusal depth was the same. No positive photoionization (PID) readings were obtained from any part of the soil profile (10.2 eV lamp). A 30 inch long, 2 inch diameter PVC well screen was installed with appropriate riser, sand pack and bentonite seal to serve as monitor well SB-1. The well remains sufficiently isolated from the culvert to serve as an effective ground water monitoring well not influenced by surface water runoff.

Soil boring 2 (SB-2) was placed downgradient below the road embankment, but westerly of the surface water drainage swale. Frozen silt loam till was encountered from 0-18" with reduced, loose silt loam till (20%



fragments) extending to 32 inches where it became dense with bedrock refusal identified at 54 inches. A second auger hole in the adjacent area confirmed the bedrock refusal zone. No positive PID readings were obtained from any of the soil samples. A ground water monitoring well was installed in SB-2 in a manner akin to SB-1. Ground water infiltration into both SB-1 and SB-2 was minimal during augering and well installation. Water level data was not recorded until the wells had fully equilibrated.

Soil boring 3 (SB-3) was augered nearby the Robe well. The top 6 inches of black organic silt loam was frozen. The black silt loam extended to a depth of approximately 18 inches where a saturated, reduced grey and mottled fine sand was encountered. The fine sand extended to approximately 3 feet before grading into a grey silt. Saturated conditions and hole collapse prevented further characterization although no positive PID assays were obtained from the saturated soil samples removed. A five foot long, two inch diameter well point installed in the partially collapsed hole was driven the full five feet. A coupling and riser were installed and the point was driven another foot. Sand pack was added to 6 inches below ground surface followed by a bentonite seal to ground surface. The three monitoring wells were allowed to equilibrate prior to gentle development (by peristaltic pumping) and sampling on March 11, 1992. Summaries of water level measurements and headspace PID assays conducted to date are included in **Tables 1 and 2**, respectively.

As seen in **Table 1**, no free phase product has been detected by LAG staff. Ground water levels have fluctuated by as much as three feet although the overall ground water flow direction remains consistent with the site topography and bedrock surfaces slope in an easterly direction. **Figure 3** presents the ground water contour map for the March 11, 1992 data set.

As seen in **Table 2**, the only quantifiable monitoring well headspace PID assays were recorded from MW-1, the well installed in the tank excavation. The PID levels in MW-1 have generally decreased with time. None of the other monitoring wells have ever provided positive PID assays.

The Robe's and Al's water supplies were sampled on February 13, 1992 along with MW-1. Copies of all analytical results are included in **Appendix B** and summarized in **Table 3**. As seen, no quantifiable impacts have been observed in the bedrock wells. Low levels of MTBE, ranging from less than 1 to 53 parts per billion (ppb) have been intermittently detected in the wells installed in the soil borings. Quantifiable levels of soluble MTBE and BTEX constituents in MW-1 have significantly decreased to non detectable levels.

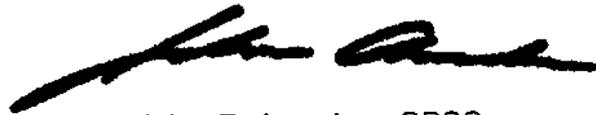


Mr. Charles Schwer
Page 4
August 19, 1993

Based on these cumulative results LAG believes that there is no adverse impact to human health or the environment as a result of the gasoline contamination found in 1991. We recommend that one more round of water quality be performed, and if comparable results to the January, 1993 round are obtained, the site should be closed.

Please feel free to contact me with any questions or comments you may have regarding this site. We look forward to hearing from you in the near future.

Sincerely,



John F. Amadon, CPSS

JFA/tasp
Enclosures
cc: Bill Sellinger
Al Chiasson



Lincoln Applied Geology, Inc.
Environmental Consultants

RD #1 Box 710 • Bristol, Vermont 05443 • (802) 453-4384 • FAX (802) 453-5399

APPENDIX A

Historic Correspondence and Drilled Well Logs

NOV 20 1991

DANA E. CALKINS
EXCAVATING CONTRACTOR

P. O. BOX 74
DANVILLE, VT 05828
(802) 684-3375

November 18, 1991

Agency of Natural Resources
Dept. of Environmental Conservation
Hazardous Materials Management Division
Attn: Mark Coleman
UST Program, West Building
103 South Main Street
Waterbury, VT 05676

Dear Mark:

On November 7, 1991, 3 tanks were removed which included (1) 2000 gal. unleaded gas, (1) 1000 gal. unleaded and (1) 1000 gal. diesel. All tanks were in use and of an unknown age. All piping appeared to be tight with no leaks, as did the 2000 gal. and 1000 gal. diesel tanks. After removing the 1000 gal. super unleaded and cleaning off dirt and heavy scale, 3 holes appeared which then verified the PID readings being taken. Throughout the entire excavated area of tanks #1 & 2, sporadic PID readings were observed of vapors which had traveled through both course and dense material ranging from 0-80 ppm at surface level to a depth of 4 ft. At 8 ft. the 2000 gal. tank bottom showed 80 ppm where at 7" the 1000 gal. tank displayed 450 ppm. A soft layered ledge was exposed at 9' below surface under tank #1 with ppm still at 450, 11 ft. 350, 12 ft. 300, and at 12½ ft. water table found with 100 ppm. Excavating 1 more foot into ledge with a total of 14' below surface elevation, ppm was reduced showing only 3 to 8 parts. The flow of water increased which is possibly responsible for the drop in readings, rinsing the ledge of petroleum.

All soils with a level of 25 ppm or more were removed and hauled to a site in Wells River owned by George Pratt, owner of

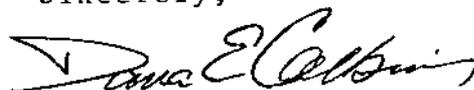
Bradford Oil Co. This staging area is located at the intersection of 302 and I-91 across from Blue Mt. High School entrance. I have viewed this site and find it to meet all your criteria. This soil was piled on, and covered with plastic, assigned to a separate staging area named, Al's Country Store, Quechee. Due to possible undermining of overhead sign and front porch footings, soils of 25 ppm had to remain on site. All other contaminated soil from 25 ppm to 450 ppm were removed and hauled to the staging area.

No leak could be detected from the diesel tank. All piping and tank appeared to be sound.

I spoke with Bill Sellinger on site November 8, and discussed the possibility of further investigation required by the D.E.C. As can be seen on the site map, four water wells are possible receptors of petroleum entering the underground water table. Directional flow appeared to be down slope as was observed after penetrating the soft ledge to 18" below water table.

On the morning of November 8, you visited this site at which time we were removing contaminated soil and now have personally, a general overview of this tank removal project. If there is further information you need concerning this project that I can be of assistance on, please give me a call.

Sincerely,



Dana E. Calkins

cc: Bradford Oil (Al's Country Store)

Hartford Chapeau's Country Store 11/7/91 #7

RETURN TO:
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
UNDERGROUND STORAGE TANK PROGRAM
103 SOUTH MAIN STREET
WATERBURY, VERMONT 05676

NOV 20 1991

DATE OF REMOVAL: Nov. 7, 1991 DATE OF SITE ASSESSMENT: Nov. 7 & 8 1991

PERSON/CO DOING SITE ASSESSMENT: Dana E. Calkins
TELEPHONE NUMBER: 684-3375

BUSINESS NAME WHERE TANK(S) LOCATED: Al's Old Time Country Store
STREET ADDRESS OF BUSINESS: (407 Woodstock Rd. Rt #4)
TOWN/CITY: Hartford, VT 05047 (White River, VT 05001)

OWNER OF TANK(S): Bradford Oil Company
ADDRESS OF OWNER:
TOWN/CITY: Bradford, VT 05033

UST FACILITY ID#:

TANK #	PRODUCT	SIZE	CONDITION
1) 1	Unleaded gas	2000	Fair with light rust scale
2) 2	Super unleaded	1000	Poor with heavy scale - leaking
3)			
4)			
5)			

DEC PERMITTED TANKS STILL ON SITE? (Y) or N HOW MANY?
OUT OF SERVICE TANKS? Y or (N) HOW MANY?
ON PREMISES HEATING OIL TANK? Y or N HOW MANY? SIZE?

WHY IS TANK(S) BEING REMOVED? Replacement tanks being installed
REPLACEMENTS: (Y) or N HOW MANY? 2 PERMIT OBTAINED? Yes

ANY WASTE PUMPAGE: (Y) or N EST. VOL. 40 gals
TRANSPORTED BY: Bradford Oil Company

RECEPTORS: (SOILS) (GROUNDWATER) SURFACEWATER RESIDENTIAL
SOIL TYPE: Silty loam with 6" to 12" stones-Ledge found at 9'
CONTAMINATED SOILS: (Y) or N AMOUNT: 126 yds
CONTAMINATED STOCKPILED SOILS: (Y) or N AMOUNT: 126 yds in Wells River, VT

DEGREE OF CONTAMINATION: (PID READINGS)-0- to 450 PPM Max
HNU PID CALIBRATION SCHEDULE: 60 PPM
w/10.2 ev lamp - soon ops - on site
MONITOR WELLS INSTALLED? recovery (Y) or N HOW MANY? 1
DEPTH TO GROUNDWATER? Y or (N) AMOUNT? -0-
FREE PHASE PRODUCT ENCOUNTERED?

[Signature]
Signature of Owner or Owner's Authorized Representative
[Signature]
Signature of Person Performing Site Assessment
Nov. 16, 1991
Date

COMMENTS/RECOMMENDATIONS: (Please attach on a separate page)
White - DEC File Copy Yellow - DEC File Copy Pink - Owner Copy

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
 UNDERGROUND STORAGE TANK PROGRAM
 SITE MAP

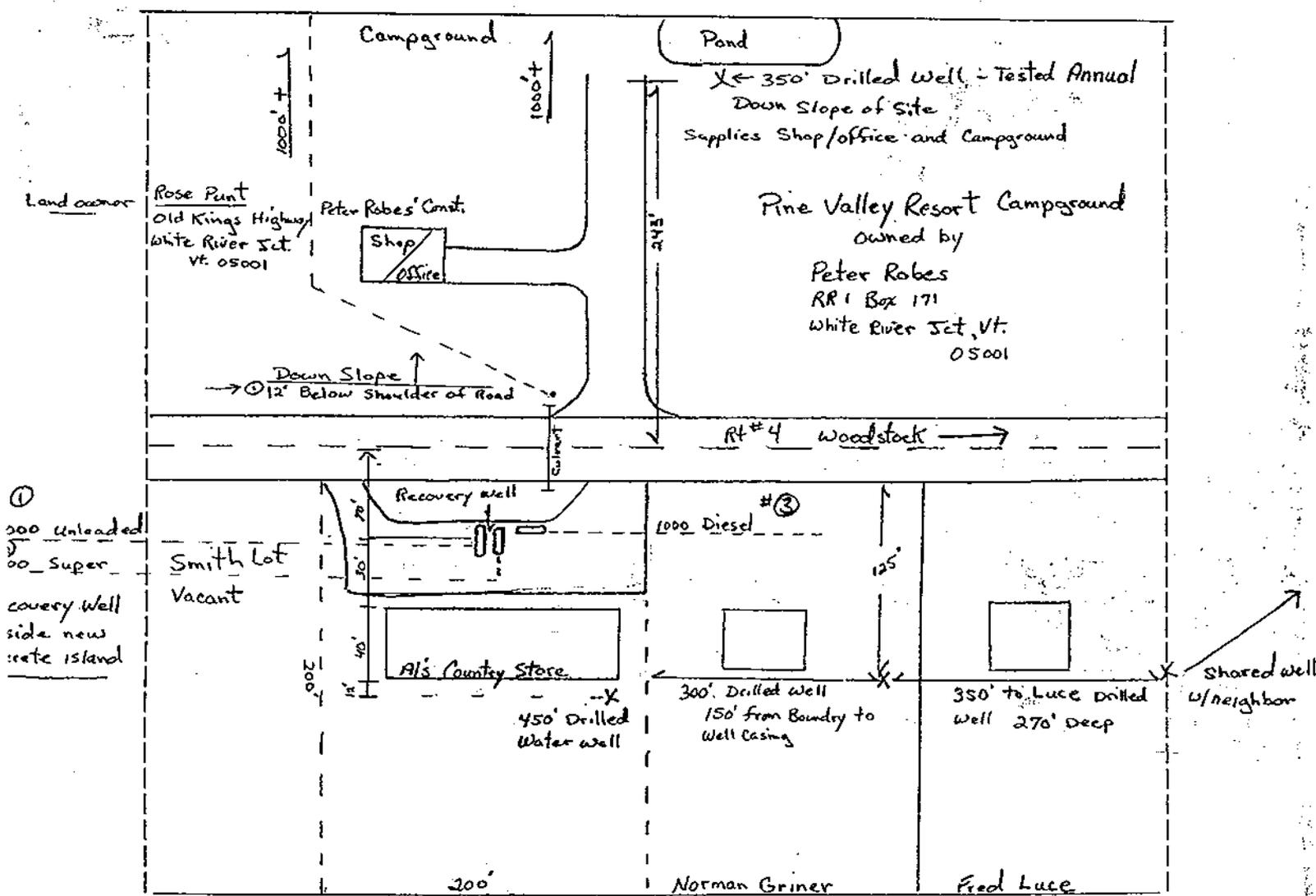
NOV 20 1991

RECOMMENDED SCALE 1" = 50 feet (but not smaller than 1" = 100 feet)

MAP DRAWN BY: D. CALKINS

BUSINESS NAME WHERE TANK(S) LOCATED: Al's Old Time Country Store
 Quechee Rt #4 Hatfield

Show location of all tanks and property boundary; distance to permanent structures; monitoring wells; water wells within 500 foot radius; storm; sewer and water lines; sample points; areas of contamination and other pertinent site information. Indicate North arrow and major street names or route number.



①
 500 Unloaded
 500 Super
 recovery well
 side new
 concrete island

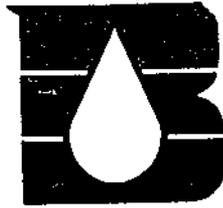
Al's Old Time Country Store
 407 Woodstock Rd.
 White River Jct., Vt.
 05001

White-DEC File Copy

Yellow-DEC File Copy

Pink-Owner Copy

DEC 5 1991



BRADFORD OIL COMPANY

November 29, 1991

Mr. Charles Schwer, Supervisor
Site Management Section
103 S. Main Street
Waterbury, VT 05671-0404

SUBJ: AL'S COUNTRY STORE, SITE #0001648

Dear Chuck:

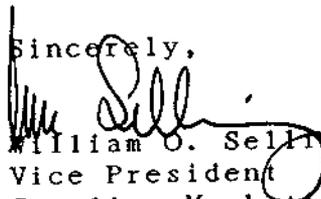
On November 7, 1991, Dana Calkins was hired by Bradford Oil to remove three USTs at this site. This was accomplished and Mr. Calkins forwarded a report to Marc Coleman, a copy of which is enclosed.

On November 8, 1991 a water sample was taken from the monitoring well marked M/W #1 and sent to Endyne for analysis. I have enclosed the results.

Also, enclosed please find a site map of the waste site in Wells River, VT, described by Mr. Calkins. You will note the HNU readings of the soil marked on the map.

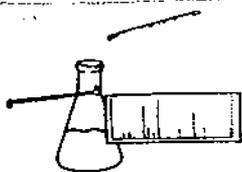
Anything further I can do please do not hesitate to contact me.

Sincerely,


William O. Sellinger
Vice President
Gasoline Marketing

WOS/dsl

cc: R. G. Pratt, Jr.
H. B. Pratt
M. Farr
Al's Country Store
Marc Coleman
FILE (2)



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

GC METHOD -- BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

CLIENT: Northern Petroleum
PROJECT NAME: Chiasson's Country Store
REPORT DATE: November 25, 1991 ANALYSIS DATE: November 21, 1991
SAMPLER: Maynard Farr STATION: Water
DATE SAMPLED: November 8, 1991 REF.#: 25,896
DATE RECEIVED: November 13, 1991 TIME SAMPLED: 4:00 p.m.

<u>Parameter</u>	<u>Concentration (ug/L)</u>
Benzene	204.
Toluene	1,830.
Ethylbenzene	198.
Xylenes	2,000.
MTBE	154.

NUMBER OF UNIDENTIFIED PEAKS FOUND: 21

Reviewed by _____



State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
Natural Resources Conservation Council

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation

Hazardous Materials Management Division
103 South Main Street / West Building
Waterbury, Vermont 05671-0404
802-244-8702

December 20, 1991

William Sellinger
Bradford Oil Company
Routes 5 and 25
PO Box 394
Bradford, VT 05033

RE: Petroleum contamination at Al's Country Store, Route 4, Hartford (Site #91-1171)

Dear Mr. Sellinger:

The Sites Management Section (SMS) has reviewed the tank pull form and site assessment report prepared by Dana Calkins concerning the removal of three underground storage tanks (USTs) from Al's Country Store on November 7, 1991.

There was contamination in the soils surrounding the gasoline tanks. The majority of these soils were removed and are encapsulated in an approved area owned by George Pratt of Bradford Oil Company.

At the time of removal, a monitoring well was installed in the area of the former gasoline tanks. On November 8, 1991, a groundwater sample was obtained from this well, and the results showed petroleum contamination above Vermont groundwater standards.

There is a private drinking supply well downgradient, which serves the Pine Valley Resort Campground; this campground also has a pond downgradient of the site. There are other private drinking supply wells in the area, including one onsite.

Due to the degree of contamination in the groundwater sample obtained from the monitoring well, the SMS is requesting that Bradford Oil Company hire a qualified consultant to perform additional work at this site.

Additional monitoring wells need to be installed downgradient of the excavation, in order to define the degree and extent of the contamination. Generally, at least three wells are necessary in order to define the contamination. We recognize that site limitations may influence the location of these wells, and that your consultant will have to work around these limitations. Ideally, the SMS would like to have at least one of the monitoring wells installed on the eastern side of Route 4.

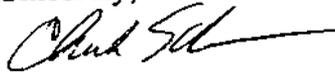
During the well drillings, your consultant should record the soil types and degrees of contamination. These will assist in the determination of the lateral extent of contamination.

Groundwater samples from the monitoring wells should be obtained and analyzed according to EPA Method 8020. Also, the drinking supplies serving the campground and the store should be sampled and analyzed according to EPA Method 8020.

Following completion of the onsite work, your consultant should submit to the SMS a summary report containing analytical results of the groundwater samples, detailed well logs, and site and groundwater flow maps. The report should also include the potential to impact nearby sensitive receptors such as private drinking wells and the campground's pond. It should also provide recommendations of the need for groundwater and soil monitoring or treatment.

Please have your consultant submit a preliminary work plan outlining the above requirements, so that we may approve it before work begins at the site. The plan should be submitted within fifteen days of your receipt of this letter. If you have any questions, please call.

Sincerely,



Charles B. Schwer, Supervisor
Sites Management Section

cc: Al's Country Store
Hartford Selectboard

CBS:CW\ust\AI's Jet



January 8, 1992

Mr. Chuck Schwer
Petroleum Sites Coordinator
Vermont Department of
Environmental Conservation
103 South Main Street
Waterbury, Vermont 05676

RE: Preliminary work plan for Al's Country Store, Hartford (Site # 91-1171)

Dear Mr. Schwer:

Lincoln Applied Geology, Inc. (LAG) is pleased to submit this preliminary work plan on behalf of the Bradford Oil Company. This is in response to your December 20, 1991 letter request for additional site investigation to Mr. William Sellinger of the Bradford Oil Company.

This work plan is based on a review of your file, #91-1171, coupled with a preliminary on-site evaluation. As you indicated in your December 20th letter, there are indeed some site limitations that may influence the locations of the additional monitoring wells.

We are proposing, as Task 1, to initially utilize hand augers to obtain soils descriptions and degree of contamination by PID. Locations of these points are shown on the attached copy of the tank pull site map as SB1 through SB3. The depth of boring will be dependant on the depth to water table coupled with practicalities of hand augering. Screened PVC ground water monitoring wells will be appropriately installed if applicable.

Should hand augering to the water table not be successful, there is both access and verbal permission from Mr. Robes, owner of the adjacent campground, for a drill rig in the vicinity of SB2 only, where two monitoring wells could be installed. Due to topography, drill rig access to SB1 and SB3 is prohibited. Monitoring points and nearby critical features will be surveyed for relative elevations and locations in order to assess directions of potential contaminant flow.

The recovery well (MW-1 on the attached site map) was installed during the tank pull operations and was sampled on November 8, 1991. Petroleum constituents were present then and MW-1 will continue to be a sampling point for this proposed phase of the site investigation.

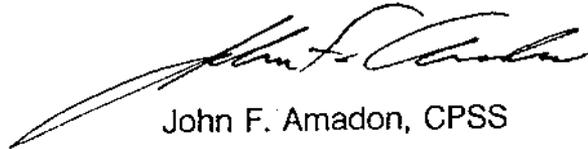
Mr. Chuck Schwer
Page 2
January 8, 1992

Analytical ground water samples will be appropriately obtained along with representative tap samples from Al's Country Store and Mr. Robe's campground. As Task 2 samples will be assayed for petroleum constituents (EPA Methods 602 and 418.1).

Task 3 will include a compilation of all applicable data in the form of an assessment report coupled with our recommendations for additional site work, if warranted.

Please feel free to contact us with any comments or questions you may have. A cost estimate for this work plan has been included as **Attachment A**. I have included costs for both types of drill rigs in the event we need to drill bedrock. We look forward to proceeding with this work plan with your approval.

Sincerely,



John F. Amadon, CPSS

JFA/smd

Enclosures

cc: Bill Sellinger



ATTACHMENT A

- A. Preliminary Work Plan Submittal (includes site visit and State file review for effective planning).

Soil Scientist - 8 hrs @ \$45.00	\$360.00
Soil Scientist - Mileage - 250 miles @ \$0.30	75.00
Secretary - 2 hrs @ \$18.00	<u>36.00</u>
TOTAL A	\$471.00

- B¹. Soil Borings and Monitor Well Installations

Soil Scientist - 10 hrs @ \$45.00	\$450.00
Technician - 10 hrs @ \$25.00	250.00
Mileage - 250 miles @ \$0.30	75.00
HNU - 1 day @ \$75.00/day	75.00
Pump and Generator - 1 day @ \$110.00	110.00
Lab Analyses - 6 samples @ \$135 (602 & 418.1)	810.00
Monitoring wells	<u>142.14</u>
TOTAL B ¹	\$1,912.14

- B². Drilled Monitoring Wells (required only if hand augering to ground water in B¹ is not successful)

Drillers charges (one day - Hollow Stem Rig)	\$1,519.00
Soil Scientist - 10 hrs @ \$45.00	<u>450.00</u>
TOTAL B ²	\$1,969.00

Drillers charges (one day - Air Rotary Rig)	\$2,070.00
Soil Scientist - 10 hrs @ \$45.00	<u>450.00</u>
TOTAL B ²	\$2,520.00

- C. Report Preparation and Submittal

Soil Scientist - 8 hrs @ \$45.00	\$360.00
Secretary - 4 hrs @ \$18.00	72.00
Computer Technician - 4 hrs @ \$25.00	<u>100.00</u>
TOTAL C	\$532.00

TOTAL A, B¹, B² (Hollow Stem), and C \$4,884.14

TOTAL A, B¹, B² (Air Rotary), and C \$5,435.14





State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
Natural Resources Conservation Council

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation

Hazardous Materials Management Division
103 South Main Street / West Building
Waterbury, Vermont 05671-0404
802-244-8702

January 15, 1992

John Amadon
Lincoln Applied Geology
RD #1, Box 710
Bristol, VT 05443

RE: Proposed work plan for petroleum investigation at Al's Country Store, Hartford (Site #91-1171)

Dear Mr. Amadon:

The Sites Management Section (SMS) has received a proposed work plan from Lincoln Applied Geology (LAG), dated January 8, 1992. The plan outlines a subsurface petroleum investigation at the above referenced site. We approve of the plan, but would like to comment on some areas of concern.

Both of the tanks believed to be the source of contamination were gasoline tanks. Therefore, the SMS feels that only EPA Method 602 will be necessary, and not also Method 418.1.

The SMS also has concerns with the use of hand augers as a method of installing monitoring wells. This method can be acceptable if groundwater is close to the ground surface, and if the soils are such to allow penetration by hand, without collapse. Given that these conditions are acknowledged, and LAG feels that the conditions will not pose unsurmountable problems, this method is acceptable.

If hand augers cannot be used to install the wells, LAG proposes to use a hollow stem or air rotary drill to install two wells in the vicinity of SB-2. Because of the topography, a drill rig cannot be used in the area of SB-1. Also, the owner of the campground does not want a drill rig disturbing the ground in the area of SB-3.

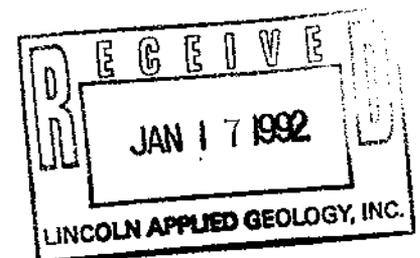
The SMS feels that groundwater samples obtained from the areas of SB-1 and SB-3 would provide useful information. Therefore, if hand augers prove unsuccessful, other types of well installations may be able to be utilized in place of drill rigs, such as driven wells with well points. This would allow a greater chance for wells to be installed in the vicinity of SB-1 and also SB-3.

Please give the above concerns your consideration. We would like to have these matters agreed upon before onsite work begins.

Sincerely,

Charles B. Schwer, Supervisor
Sites Management Section

cc: William Sellinger, Bradford Oil Company
CBS: CW \ Al's.wrk



WELL NO. / TAG NO.

2497

(For Driller's Use)

This report must be completed and submitted to the Department of Environmental Conservation 103 South Main Street (10N), Waterbury, Vt. 05676 no later than 60 days after completion of the well

State of Vermont Dept. of Environmental Conservation 103 South Main Street (10N) Waterbury, Vt. 05676 WELL COMPLETION REPORT

APR - 6 1988

Location map attached to WCR

DEPARTMENT USE ONLY

E.C. 588 U.S.G.S. Field Location Map area 46A9 Latitude Elev. Longitude Topo. Scale: 62,500, 25,000, 24,000 Data in Town Files

1. WELL OWNER Peter Robes Const. Quechee, Vt. OR Name Permanent Mailing Address WELL PURCHASER Name Permanent Mailing Address

2. LOCATION OF WELL: TOWN Hartford SUBDIVISION LOT NO.

3. DATE WELL WAS COMPLETED 3/20/88

4. PROPOSED USE OF WELL: Domestic, Other Pine Valley Resort Campground

5. REASON FOR DRILLING WELL: New Supply, Replace Existing Supply, Deepen Existing Well, Test or Exploration, Provide Additional Supply, Other

6. DRILLING EQUIPMENT: Cable Tool, Rotary with A-P, Other

7. TYPE OF WELL: Open Hole in Bedrock, Open End Casing, Screened or Slotted, Other

8. TOTAL DEPTH OF WELL: 350 feet below land surface.

9. CASING FINISH: Above ground, Finished, Above ground, Unfinished, Buried, In Pit, Removed, None used, Other Bedrock 63'

10. CASING DETAILS: Total length 81 ft. Length below L.S. ft. Dia. 6 in. Material Steel Wt. 19 lb./ft.

11. LINER OR INNER CASING DETAILS: Length used ft. Diameter in. Material Weight lb./ft.

12. METHOD OF SEALING CASING TO BEDROCK: Drive Shoe, Grout - type Cement, Drilled 12 in. hole 18 ft. in Bedrock Other

13. SCREEN DETAILS: Make and Type Material Length ft. Diameter Slot Size Depth to top of screen in feet below land surface ft. Gravel pack if used: Gravel Size or Type

14. YIELD TEST: Bailed, Pumped, Compressed Air, for 2 Hours at 80 G.P.M. Measured by Bucket, Griface pipe, Wier, Meter Permanent Airline Install

15. STATIC WATER LEVEL: Flows feet below land surface, Date or Time measured, Overflows at 6 G.P.M.

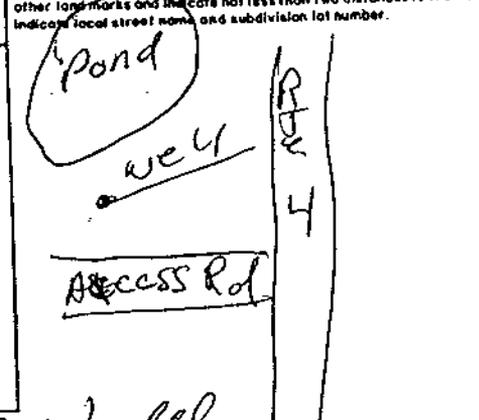
16. WATER ANALYSIS: Has the water been analyzed? Yes No, if Yes, Where

17. SPECIAL NOTES:

18. WELL LOG

19. SITE MAP Show permanent structure such as buildings, septic tanks, and/or other landmarks and indicate not less than two distances to the well indicate local street name and subdivision lot number.

Table with columns: Depth from Land Surface (Feet), Water Bearing, Formation Description, Sketch. Rows: Ground Surface 25, Sand; 25 63, Clay; 63 350, Granite.



20. TESTED YIELD If the yield was tested at different depths during drilling, list below: WELL DRILLED BY: Earl C. Woodliff

Table with columns: Feet, Gallons Per Minute. Row: 35, 80+

DOING BUSINESS AS: Valley Artesian Well Co. Inc. REPORT FILED BY: Earl C. Woodliff 2/20/88

WELL NO. / TAG NO.

213/46

(For Driller's Use)

This report must be completed and submitted to the Department of Environmental Conservation 103 South Main Street (ION), Waterbury, Vt. 05676 no later than 60 days after completion of the well.

State of Vermont
Dept. of Environmental Conservation
103 South Main Street (ION)
Waterbury, Vt. 05676

WELL COMPLETION REPORT

NOV 20 1989

Location map attached to WCR

DEPARTMENT USE ONLY

E.C. 672 U.S.G.S.

Field Location Map area 46A9

Latitude Elev.

Longitude Topo.

Scale: 62,500 25,000 24,000

Data in Town Files

1. WELL OWNER Al's Country Store 407 Woodstock Rd. White River Jct. Vt 05001
OR
WELL PURCHASER

2. LOCATION OF WELL: TOWN Hartford SUBDIVISION Rte 4 west LOT NO.

3. DATE WELL WAS COMPLETED 5-11-89

4. PROPOSED USE OF WELL: Domestic Other Store + house

5. REASON FOR DRILLING WELL: New Supply, Replace Existing Supply, Deepen Existing Well, Test or Exploration, Provide Additional Supply, Other

6. DRILLING EQUIPMENT: Cable Tool, Rotary with A-P, Other

7. TYPE OF WELL: Open Hole in Bedrock, Open End Casing, Screened or Slotted, Other

8. TOTAL DEPTH OF WELL: 447 feet below land surface.

9. CASING FINISH: Above ground, Finished, Above ground, Unfinished, Burled, In Pit, Removed, None used, Other

10. CASING DETAILS: Total length ft Length below L.S. ft Dia. in. Material lb./ft.

11. LINER OR INNER CASING DETAILS: Length used ft Diameter in. Material Weight lb./ft.

12. METHOD OF SEALING CASING TO BEDROCK: Drive Shoe, Grout-type, Drilled in hole ft in Bedrock, Other

13. SCREEN DETAILS: Make and Type, Material, Length ft, Diameter, Slot Size, Depth to top of screen in feet below land surface ft, Gravel pack if used: Gravel Size or Type

14. YIELD TEST: Boiled, Pumped, Compressed Air, for 1/2 Hours at 1 Gallons per minute
Measured by Bucket, Orifice pipe, Wier, Meter, Permanent Airline inst.

15. STATIC WATER LEVEL: feet below land surface, Date or Time measured, Overflows at GPM

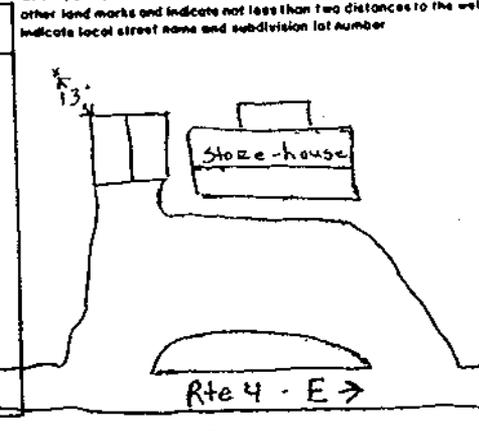
16. WATER ANALYSIS: Has the water been analyzed? Yes No, if Yes, Where

* 17. SPECIAL NOTES: The well was in a pit - we extended the casing 1/2' above ground

18. WELL LOG

19. SITE MAP
Show permanent structure such as buildings, septic tanks, and/or other land marks and indicate not less than two distances to the well. Indicate local street name and subdivision lot number.

Table with 4 columns: Depth from Land Surface (Feet), Water Sealing, Formation Description, Sketch. Rows include data for 197, 412, 415, and 447 feet depths.



20. TESTED YIELD WELL DRILLED BY: Spear & Hayward

Table with 2 columns: Feet, Gallons Per Minute. Row shows 447 feet and 1 GPM.

DOING BUSINESS AS: Ottauquechee Well Drilling Inc. Company or Business Name

REPORT FILED BY: [Signature] Authorized Signature

WELL NO. / TAG NO.

2497

(For Driller's Use)

This report must be completed and submitted to the Department of Environmental Conservation 103 South Main Street (10N), Waterbury, VT 05676 no later than 60 days after completion of the well.

State of Vermont
Dept. of Environmental Conservation
103 South Main Street (10N)
Waterbury, Vt. 05676
WELL COMPLETION REPORT

APR - 6 1988

Location map attached to WCR

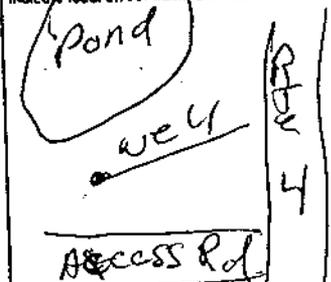
DEPARTMENT USE ONLY

E.C. 584 U.S.G.S.
Field Location Map area 46A9
Latitude Elev.
Longitude Topo.
Scale: 62,500, 25,000, 24,000
Data in Town Files

- 1. WELL OWNER Peter Robes Const. Quechee, Vt.
OR
WELL PURCHASER
2. LOCATION OF WELL: TOWN Hartford SUBDIVISION LOT NO.
3. DATE WELL WAS COMPLETED 3/20/88
4. PROPOSED USE OF WELL: Domestic, Other Pine Valley Resort Campground
5. REASON FOR DRILLING WELL: New Supply, Replace Existing Supply, Deepen Existing Well, Test or Exploration, Provide Additional Supply, Other
6. DRILLING EQUIPMENT: Cable Tool, Rotary with A-P, Other
7. TYPE OF WELL: Open Hole in Bedrock, Open End Casing, Screened or Slotted, Other
8. TOTAL DEPTH OF WELL: 350 feet below land surface.
9. CASING FINISH: Above ground, Finished, Above ground, Unfinished, Buried, In Pit, Removed, None used, Other
10. CASING DETAILS: Total length 81 ft. Length below L.S. ft. Dia. 6 in. Material Steel Wt. 19 lb./ft.
11. LINER OR INNER CASING DETAILS: Length used ft. Diameter in. Material Weight lb./ft.
12. METHOD OF SEALING CASING TO BEDROCK: Drive Shoe, Grout - type Cement, Drilled in hole 18 ft. In Bedrock
13. SCREEN DETAILS: Make and Type, Material, Length, Diameter, Slot Size, Depth to top of screen in feet below land surface, Gravel pack if used: Gravel Size or Type
14. YIELD TEST: Boiled, Pumped, Compressed Air, for 2 Hours at 80+ Gallons per minute
15. STATIC WATER LEVEL: Flows feet below land surface, Date or Time measured, Overflows at 6 G.P.M.
16. WATER ANALYSIS: Has the water been analyzed? Yes No, If Yes, Where
17. SPECIAL NOTES:
18. WELL LOG

Table with 4 columns: Depth from Land Surface (Feet), Water Bearing, Formation Description, Sketch. Rows show Sand, Clay, and Granite at various depths.

19. SITE MAP
Show permanent structure such as buildings, septic tanks, and/or other landmarks and indicate not less than two distances to the well indicate local street name and subdivision lot number.



20. TESTED YIELD

If the yield was tested at different depths during drilling, list below.

Table with 2 columns: Feet, Gallons Per Minute. Row shows 35 feet at 80+ GPM.

WELL DRILLED BY: Earl C. Waulff
DOING BUSINESS AS: Valley Artesian Well Co. Inc.
REPORT FILED BY: Earl C. Waulff

2/20/88 121

WELL NO. / TAG NO.

213/46

(For Driller's Use)

This report must be completed and submitted to the Department of Environmental Conservation 103 South Main Street (10N), Waterbury, VT 05676 no later than 60 days after completion of the well.

State of Vermont Dept. of Environmental Conservation 103 South Main Street (10N) Waterbury, Vt. 05676 WELL COMPLETION REPORT

NOV 20 1989

Location map attached to WCR

DEPARTMENT USE ONLY

E.C. 672 U.S.G.S. Field Location Map area 46A9 Latitude Elev. Longitude Topo. Scale: 62,500, 25,000, 24,000 Data in Town Files

1. WELL OWNER Al's Country Store 407 Woodstock Rd White River Jct Vt 05001 OR Name Permanent Mailing Address

WELL PURCHASER Name Permanent Mailing Address

2. LOCATION OF WELL: TOWN Hartford SUBDIVISION Rte 4 west LOT NO.

3. DATE WELL WAS COMPLETED 5-11-89

4. PROPOSED USE OF WELL: Domestic, Other Store + house

5. REASON FOR DRILLING WELL: New Supply, Replace Existing Supply, Deepen Existing Well, Test or Exploration, Provide Additional Supply, Other

6. DRILLING EQUIPMENT: Cable Tool, Rotary with A-P, Other

7. TYPE OF WELL: Open Hole in Bedrock, Open End Casing, Screened or Slotted, Other

8. TOTAL DEPTH OF WELL: 447 feet below land surface.

9. CASING FINISH: Above ground, Finished, Above ground, Unfinished, Buried, in Pit, Removed, None used, Other

10. CASING DETAILS: Total length ft Length below L.S. ft Dia. in. Material Wt. lb./ft

11. LINER OR INNER CASING DETAILS: Length used ft Diameter in. Material Weight lb./ft.

12. METHOD OF SEALING CASING TO BEDROCK: Drive Shoe, Grout - type, Drilled in hole ft in Bedrock, Other

13. SCREEN DETAILS: Make and Type, Material, Length ft, Diameter, Slot Size, Depth to top of screen in feet below land surface ft, Gravel pack if used: Gravel Size or Type

14. YIELD TEST: Bailed, Pumped, Compressed Air, for 1/2 Hours at 1 Gallons per minute Measured by Bucket, Orifice pipe, Wier, Meter, Permanent Airline insto

15. STATIC WATER LEVEL: feet below land surface, Date or Time measured, Overflows at GPM

16. WATER ANALYSIS: Has the water been analyzed? Yes No, if Yes, Where

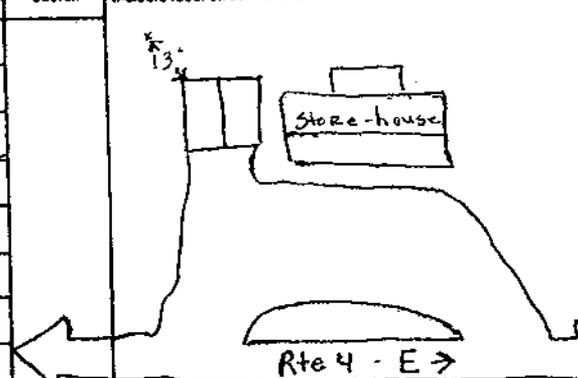
* 17. SPECIAL NOTES: The well was in a pit - we extended the casing 1/2' above ground

18. WELL LOG

Table with 4 columns: Depth from Land Surface (Feet), Land Surface (Feet), Water Bearing, Formation Description. Rows include: 197 (Ground Surface), 197-412 (Solid Black Shale Ledge), 412-415 (Softer Black shale with 1/2 gpm more), 415-447 (Black Shale).

19. SITE MAP

Show permanent structure such as buildings, septic tanks, and/or other land marks and indicate not less than two distances to the well. Indicate local street name and subdivision lot number.



20. TESTED YIELD

If the yield was tested at different depths during drilling, list below.

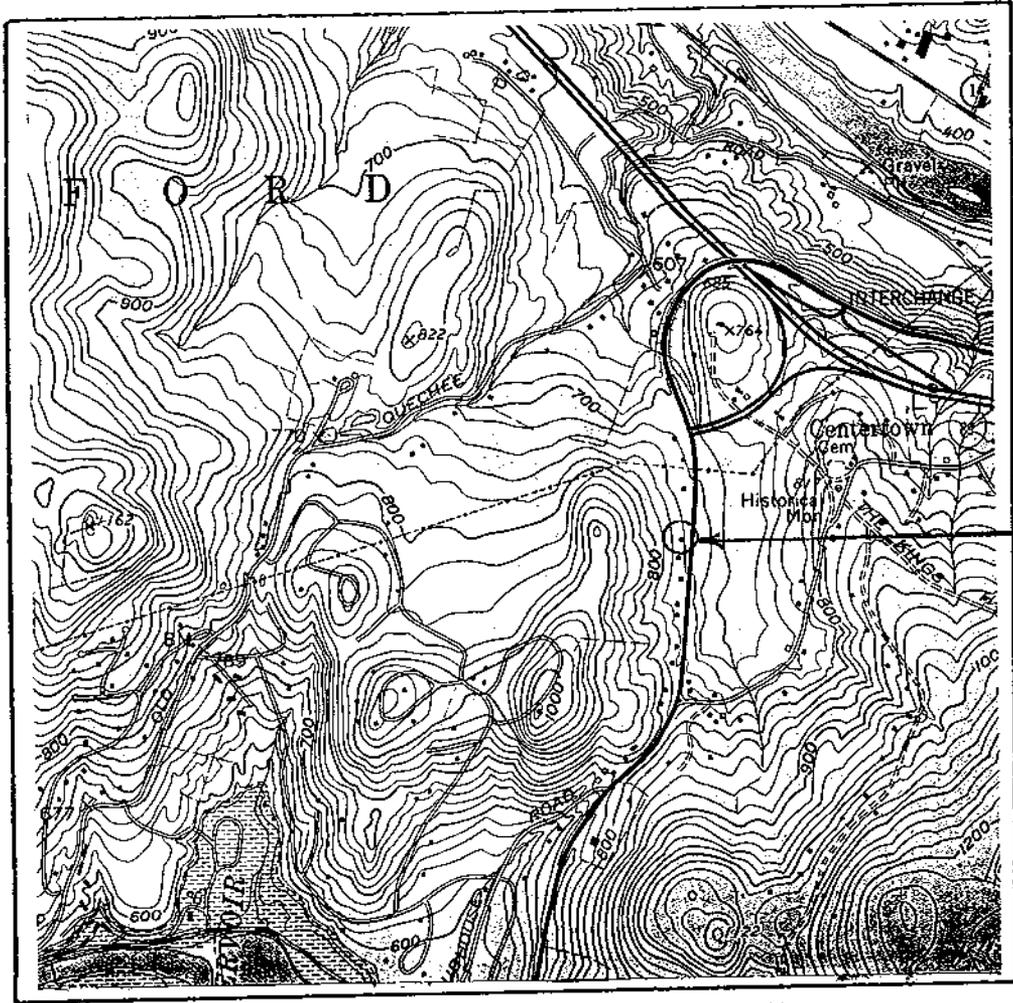
Table with 2 columns: Feet, Gallons Per Minute. Row: 447, 1.

WELL DRILLED BY: Spear & Hayward

DOING BUSINESS AS: Ottauquechee Well Drilling Inc. Company or Business Name

REPORT FILED BY: [Signature] Authorized Signature

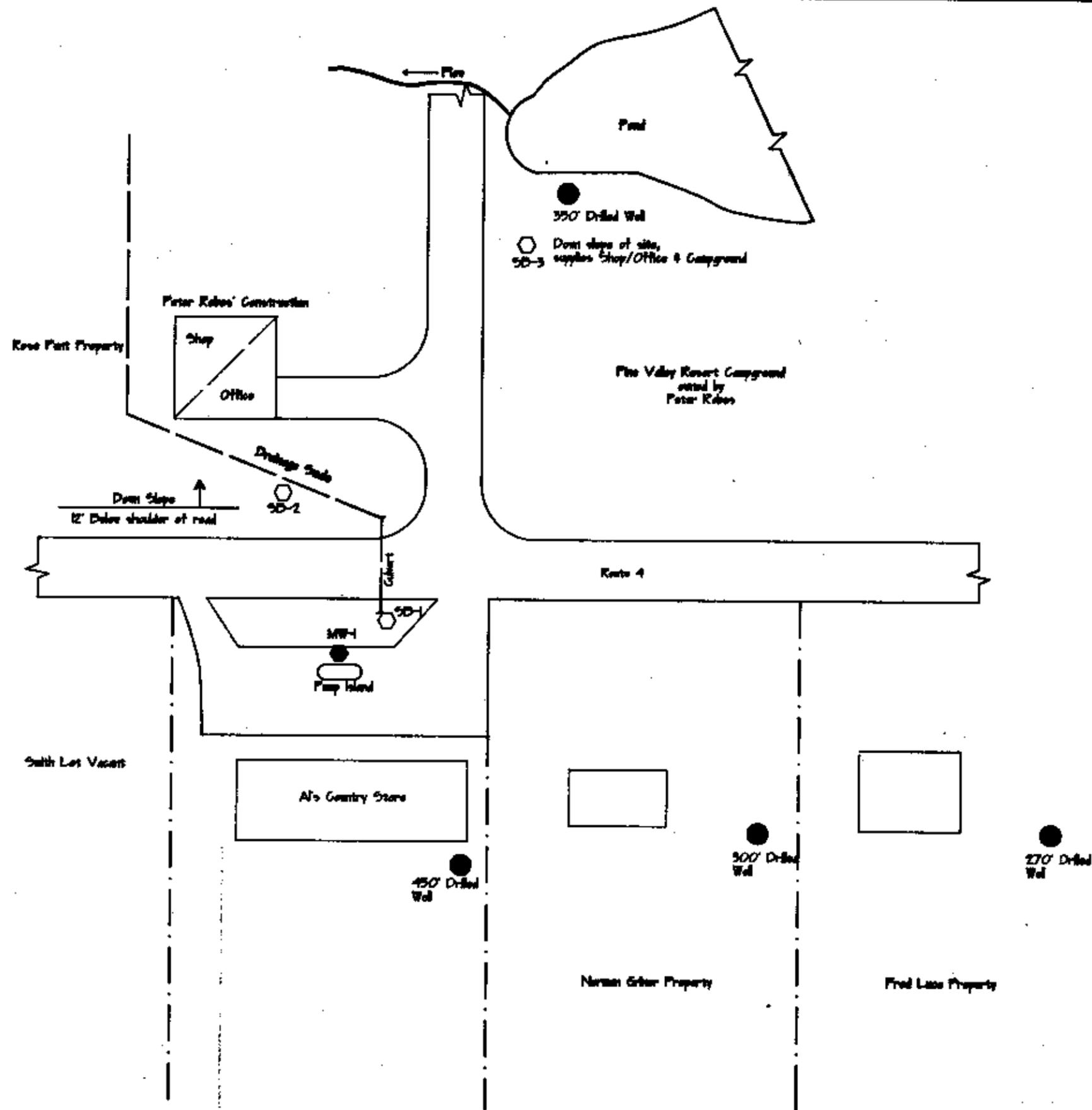
Al's Country Store GENERAL LOCATION MAP



Al's Country Store

Source: U.S.G.S. 7.5 min.
Topo Series
Queechee, VT Quad

Scale: 1" = 2000'



LEGEND

- Property Line
- Drainage Scale
- Drilled Well
- Sol Doring / Well
- SD-1
- Monitoring Well



Figure 2

Al's Country Store	
Location	Scale
Hartford, VT	1" = 50'
Regional Site Map	
Date	Job Type
Aug 93	Site Assessment

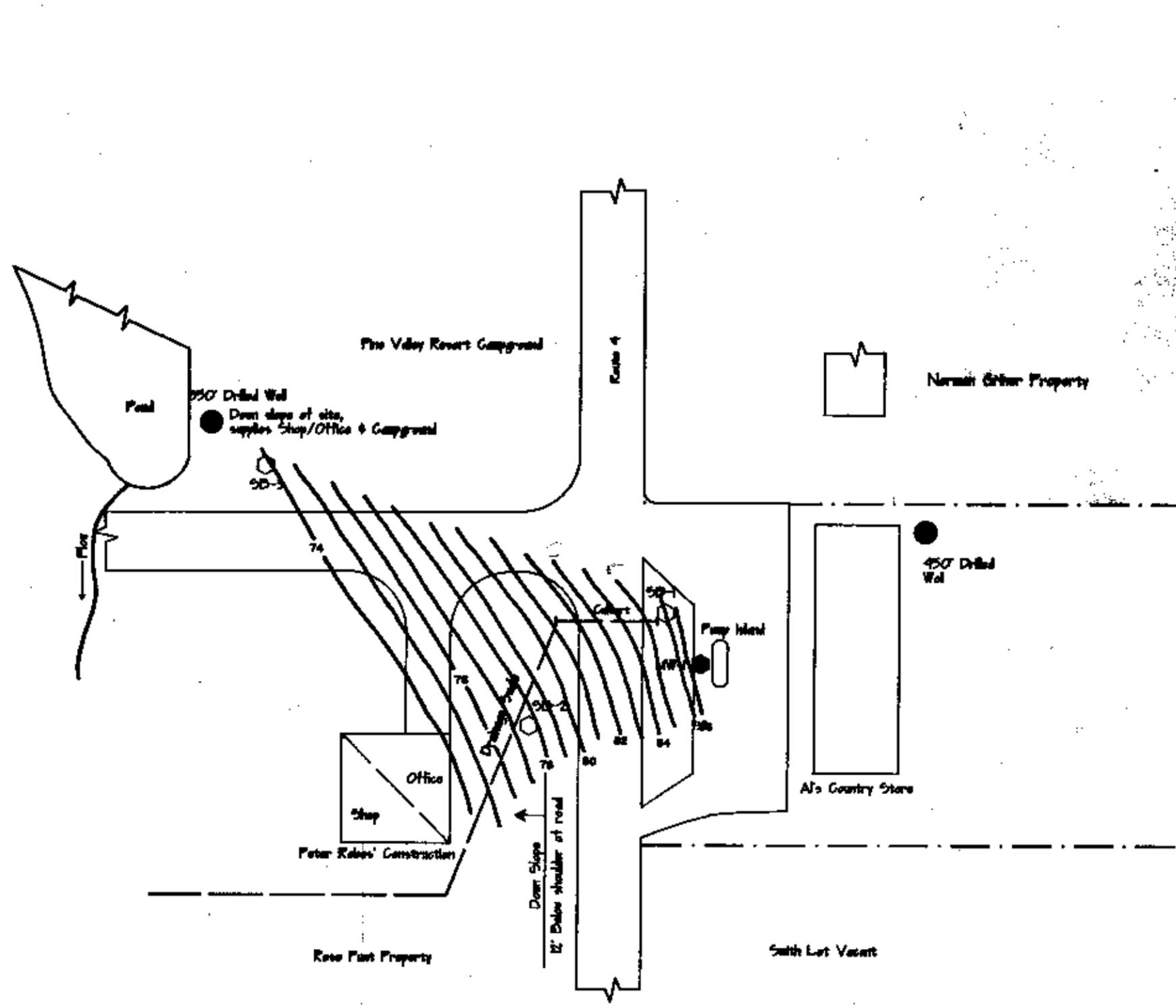
Project: Al's Country Store
Location: Hartford, Vermont

Table 1
Job Number: 9103
Sheet 1 of 1

Ground Water Elevation/Product Level (feet)

Data Point	TOC	3-11-92	4-23-92	7-31-92	1-7-93		
MW-1	97.45	86.95	89.87	87.15	86.04		
SB-1	89.76	85.91	85.89	<83.10	<83.10		
SB-2	81.56	77.26	77.10	76.41	76.69		
SB-3	78.06	73.61	73.35	71.93	73.26		

NOTES:
1 - Elevation datum assumed
2 - Reference elevation is elevation of top of PVC well casing
* - Water entering at top of casing



LEGEND

- Property Line
- Drainage Swale
- Drilled Well
- Soil Boring / Well
- SD-1
- Monitoring Well



Figure 3

A's Country Store	
Location	Scale
Hartford, VT	1" = 50'
Ground Water Contour Map for March 11, 1992	
Date	Job Type
Aug 93	Site Assessment

APPENDIX B
Water Quality Results



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: L.A.G.

PROJECT NAME: Al's Store

REPORT DATE: February 28, 1992

SAMPLER: John Amadon

DATE SAMPLED: February 13, 1992

DATE RECEIVED: February 14, 1992

PROJECT CODE: LAAS6886

ANALYSIS DATE: February 24, 1992

STATION: Robe

REF.#: 28,239

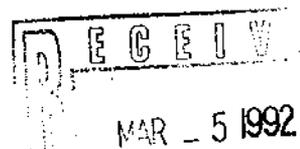
TIME SAMPLED: 2:03

<u>Parameter</u>	<u>Minimum Detection Limit</u>	<u>Concentration (ug/L)</u>
Benzene	2.	ND ¹
Chlorobenzene	1.	ND
1,2-Dichlorobenzene	2.	ND
1,3-Dichlorobenzene	2.	ND
1,4-Dichlorobenzene	2.	ND
Ethylbenzene	1.	ND
Toluene	1.	ND
Xylenes	5.	ND
MTBE	1.	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

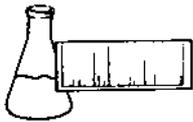
1 None detected



INCOLN APPLIED GEOLOGY

Reviewed by

Suzanne Fendler



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: L.A.G.
PROJECT NAME: Al's Store
REPORT DATE: February 28, 1992
SAMPLER: John Amadon
DATE SAMPLED: February 13, 1992
DATE RECEIVED: February 14, 1992

PROJECT CODE: LAAS6886
ANALYSIS DATE: February 24, 1992
STATION: Al's
REF.#: 28,240
TIME SAMPLED: 2:27

<u>Parameter</u>	<u>Minimum Detection Limit</u>	<u>Concentration (ug/L)</u>
Benzene	2.	ND ¹
Chlorobenzene	1.	ND
1,2-Dichlorobenzene	2.	ND
1,3-Dichlorobenzene	2.	ND
1,4-Dichlorobenzene	2.	ND
Ethylbenzene	1.	ND
Toluene	1.	ND
Xylenes	5.	ND
MTBE	1.	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

RECEIVED

MAR - 5 1992

Reviewed by

Suzanne Stoddard



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: L.A.G.

PROJECT NAME: Al's Store

REPORT DATE: February 28, 1992

SAMPLER: John Amadon

DATE SAMPLED: February 13, 1992

DATE RECEIVED: February 14, 1992

PROJECT CODE: LAAS6886

ANALYSIS DATE: February 24, 1992

STATION: MW 1

REF.#: 28,241

TIME SAMPLED: 2:15

<u>Parameter</u>	<u>Minimum Detection Limit</u>	<u>Concentration (ug/L)</u>
Benzene	2.	4.53
Chlorobenzene	1.	ND ¹
1,2-Dichlorobenzene	2.	ND
1,3-Dichlorobenzene	2.	ND
1,4-Dichlorobenzene	2.	ND
Ethylbenzene	1.	ND
Toluene	1.	2.88
Xylenes	5.	14.1
MTBE	1.	32.4

NUMBER OF UNIDENTIFIED PEAKS FOUND: 5

NOTES:

1 None detected

Reviewed by Suzanne Bentz



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

GC METHOD -- BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Store
REPORT DATE: March 20, 1992
SAMPLER: Jim Holman
DATE SAMPLED: March 11, 1992
DATE RECEIVED: March 11, 1992

PROJECT CODE: LAAS7051
ANALYSIS DATE: March 18, 1992
STATION: MW 1
REF.#: 28,899
TIME SAMPLED: 11:30

<u>Parameter</u>	<u>Concentration (ug/L)</u>
Benzene	TBQ ²
Toluene	ND ¹
Ethylbenzene	ND
Xylenes	TBQ
MTBE	3.52

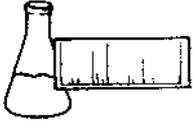
NUMBER OF UNIDENTIFIED PEAKS FOUND: 4



NOTES:

- 1 Compound not detected in analysis
- 2 Trace below quantitation limits

Reviewed by _____



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

GC METHOD -- BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Store
REPORT DATE: March 20, 1992
SAMPLER: Jim Holman
DATE SAMPLED: March 11, 1992
DATE RECEIVED: March 11, 1992

PROJECT CODE: LAAS7051
ANALYSIS DATE: March 18, 1992
STATION: SB 1
REF.#: 28,900
TIME SAMPLED: 11:45

<u>Parameter</u>	<u>Concentration (ug/L)</u>
Benzene	ND ¹
Toluene	ND
Ethylbenzene	ND
Xylenes	ND
MTBE	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

RECEIVED

NOTES:

1 Compound not detected in analysis

Reviewed by _____



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

GC METHOD -- BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Store
REPORT DATE: March 20, 1992
SAMPLER: Jim Holman
DATE SAMPLED: March 11, 1992
DATE RECEIVED: March 11, 1992

PROJECT CODE: LAAS7051
ANALYSIS DATE: March 18, 1992
STATION: SB 2
REF.#: 28,901
TIME SAMPLED: 12:10

<u>Parameter</u>	<u>Concentration (ug/L)</u>
Benzene	ND ¹
Toluene	ND
Ethylbenzene	ND
Xylenes	ND
MTBE	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

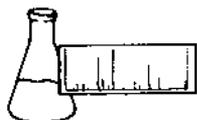
RECEIVED

2 7 1992

NOTES:

1 Compound not detected in analysis

Reviewed by _____



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

GC METHOD -- BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Store
REPORT DATE: March 20, 1992
SAMPLER: Jim Holman
DATE SAMPLED: March 11, 1992
DATE RECEIVED: March 11, 1992

PROJECT CODE: LAAS7051
ANALYSIS DATE: March 18, 1992
STATION: SB 3
REF.#: 28,902
TIME SAMPLED: 12:00

<u>Parameter</u>	<u>Concentration (ug/L)</u>
Benzene	ND ¹
Toluene	ND
Ethylbenzene	ND
Xylenes	ND
MTBE	1.23

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

RECEIVED

MAR 20 1992

NOTES:

- 1 Compound not detected in analysis

Reviewed by _____



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

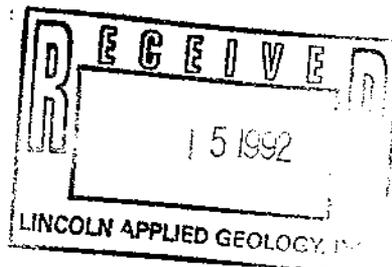
LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Country Store
REPORT DATE: May 11, 1992
DATE SAMPLED: April 23, 1992
DATE RECEIVED: April 23, 1992
ANALYSIS DATE: May 5, 1992

PROJECT CODE: LAAL7463
REF.#: 30,157
STATION: SB-1
TIME SAMPLED: 11:10
SAMPLER: John Amadon

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	1	TBQ ²



NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

- 1 None detected
- 2 Trace below quantitation limit

Reviewed by Susan J. Adde



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

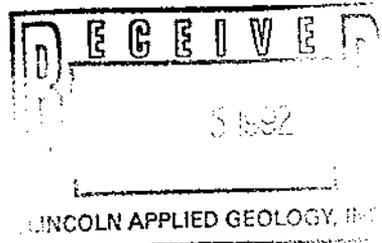
LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Country Store
REPORT DATE: May 11, 1992
DATE SAMPLED: April 23, 1992
DATE RECEIVED: April 23, 1992
ANALYSIS DATE: May 5, 1992

PROJECT CODE: LAAL7463
REF.#: 30,158
STATION: SB-2
TIME SAMPLED: 11:00
SAMPLER: John Amadon

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	1	ND



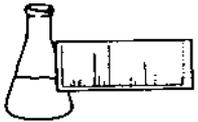
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

Reviewed by

Suzanne J. Dowd



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

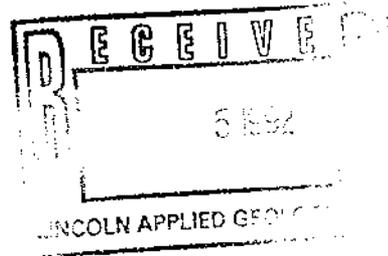
LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Country Store
REPORT DATE: May 11, 1992
DATE SAMPLED: April 23, 1992
DATE RECEIVED: April 23, 1992
ANALYSIS DATE: May 5, 1992

PROJECT CODE: LAAL7463
REF.#: 30,159
STATION: SB-3
TIME SAMPLED: 10:55
SAMPLER: John Amadon

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	1	16.3



NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

Reviewed by Susan Dubois



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

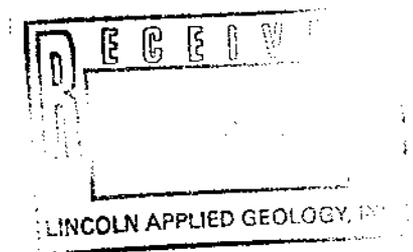
LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Country Store
REPORT DATE: May 11, 1992
DATE SAMPLED: April 23, 1992
DATE RECEIVED: April 23, 1992
ANALYSIS DATE: May 1, 1992

PROJECT CODE: LAAL7463
REF.#: 30,160
STATION: MW #1
TIME SAMPLED: 11:20
SAMPLER: John Amadon

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	1	ND



NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

Reviewed by *John G. Giddell*



Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

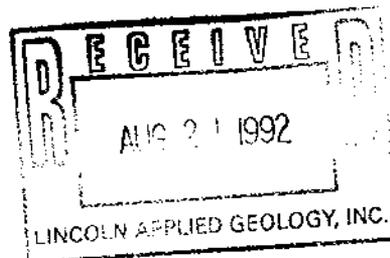
LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Store
REPORT DATE: August 14, 1992
DATE SAMPLED: July 31, 1992
DATE RECEIVED: July 31, 1992
ANALYSIS DATE: August 12, 1992

PROJECT CODE: LAAL1824
REF.#: 33,822
STATION: Trip
TIME SAMPLED: 5:50
SAMPLER: Jim Holman

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	5	ND

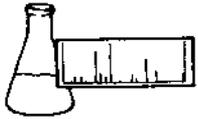


NUMBER OF UNIDENTIFIED PEAKS FOUND: 2

NOTES:

1 None detected

Reviewed by Stacy Hinkle



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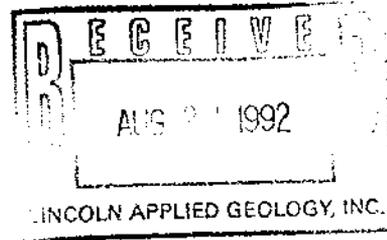
LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: AJ's Store
REPORT DATE: August 14, 1992
DATE SAMPLED: July 31, 1992
DATE RECEIVED: July 31, 1992
ANALYSIS DATE: August 12, 1992

PROJECT CODE: LAAL1824
REF.#: 33,823
STATION: MW 1
TIME SAMPLED: 8:00
SAMPLER: Jim Holman

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	5	ND



NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

Reviewed by Susan Hyde



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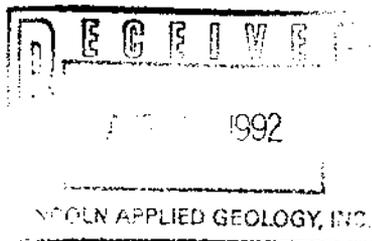
LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Store
REPORT DATE: August 14, 1992
DATE SAMPLED: July 31, 1992
DATE RECEIVED: July 31, 1992
ANALYSIS DATE: August 12, 1992

PROJECT CODE: LAAL1824
REF.#: 33,824
STATION: SB 2
TIME SAMPLED: 8:20
SAMPLER: Jim Holman

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	5	53.4



NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

Reviewed by



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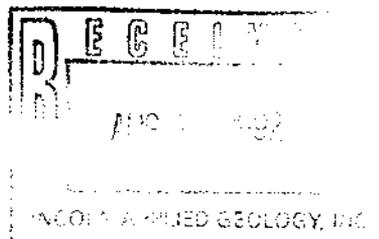
LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Store
REPORT DATE: August 14, 1992
DATE SAMPLED: July 31, 1992
DATE RECEIVED: July 31, 1992
ANALYSIS DATE: August 12, 1992

PROJECT CODE: LAAL1824
REF.#: 33,825
STATION: SB 3
TIME SAMPLED: 8:30
SAMPLER: Jim Holman

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	5	ND



NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

Reviewed by *Susan D. [Signature]*



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LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Store
REPORT DATE: August 14, 1992
DATE SAMPLED: July 31, 1992
DATE RECEIVED: July 31, 1992
ANALYSIS DATE: August 13, 1992

PROJECT CODE: LAAL1824
REF.#: 33,826
STATION: Al's Well
TIME SAMPLED: 7:55
SAMPLER: Jim Holman

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	5	ND

RECEIVED
AUG 14 1992
LINCOLN APPLIED GEOLOGY, INC.

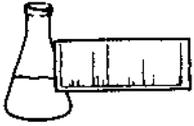
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

Reviewed by

Susan D. White



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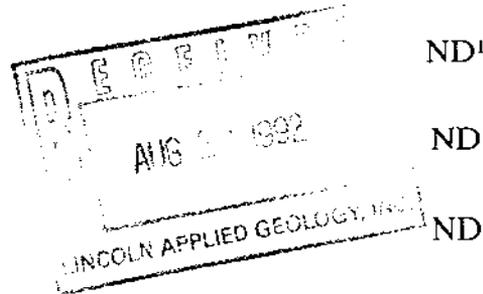
LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Al's Store
REPORT DATE: August 14, 1992
DATE SAMPLED: July 31, 1992
DATE RECEIVED: July 31, 1992
ANALYSIS DATE: August 13, 1992

PROJECT CODE: LAAL1824
REF.#: 33,827
STATION: Robbes Well
TIME SAMPLED: 8:40
SAMPLER: JIM HOLMAN

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	5	TBQ ²



NUMBER OF UNIDENTIFIED PEAKS FOUND: 3

NOTES:

- 1 None detected
- 2 Trace below quantitation limit

Reviewed by Susan D. [Signature]



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REPORT OF LABORATORY ANALYSIS

CLIENT: Lincoln Applied Geology
PROJECT NAME: Als Store
REPORT DATE: January 21, 1993
DATE SAMPLED: January 7, 1993

PROJECT CODE: LAAS1705
REF.#: 40,811 - 40,816

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody.

Chain of custody indicated samples were preserved with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method.

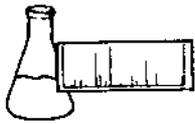
Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures



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LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Als Store
REPORT DATE: January 21, 1993
DATE SAMPLED: January 7, 1993
DATE RECEIVED: January 7, 1993
ANALYSIS DATE: January 21, 1993

PROJECT CODE: LAAS1705
REF.#: 40,811
STATION: Trip
TIME SAMPLED: 8:00
SAMPLER: Jim Holman

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	5	ND

Bromobenzene Surrogate Recovery: 103%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



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LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Als Store
REPORT DATE: January 21, 1993
DATE SAMPLED: January 7, 1993
DATE RECEIVED: January 7, 1993
ANALYSIS DATE: January 21, 1993

PROJECT CODE: LAAS1705
REF.#: 40,812
STATION: MW 1
TIME SAMPLED: 9:00
SAMPLER: Jim Holman

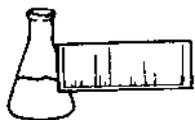
<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	5	ND

Bromobenzene Surrogate Recovery: 114%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



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LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Als Store
REPORT DATE: January 21, 1993
DATE SAMPLED: January 7, 1993
DATE RECEIVED: January 7, 1993
ANALYSIS DATE: January 21, 1993

PROJECT CODE: LAAS1705
REF.#: 40,813
STATION: SB-2
TIME SAMPLED: 8:50
SAMPLER: Jim Holman

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	5	ND

Bromobenzene Surrogate Recovery: 115%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



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LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Als Store
REPORT DATE: January 21, 1993
DATE SAMPLED: January 7, 1993
DATE RECEIVED: January 7, 1993
ANALYSIS DATE: January 21, 1993

PROJECT CODE: LAAS1705
REF.#: 40,814
STATION: SB-3
TIME SAMPLED: 8:47
SAMPLER: Jim Holman

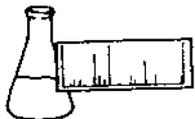
<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	5	ND

Bromobenzene Surrogate Recovery: 114%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



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LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Als Store
REPORT DATE: January 21, 1993
DATE SAMPLED: January 7, 1993
DATE RECEIVED: January 7, 1993
ANALYSIS DATE: January 21, 1993

PROJECT CODE: LAAS1705
REF.#: 40,815
STATION: AI's
TIME SAMPLED: 8:10
SAMPLER: Jim Holman

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	5	ND

Bromobenzene Surrogate Recovery: 107%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



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LABORATORY REPORT

GC METHOD--BTEX (BENZENE, TOLUENE, ETHYLBENZENE,XYLENES)

CLIENT: Lincoln Applied Geology
PROJECT NAME: Als Store
REPORT DATE: January 21, 1993
DATE SAMPLED: January 7, 1993
DATE RECEIVED: January 7, 1993
ANALYSIS DATE: January 21, 1993

PROJECT CODE: LAAS1705
REF.#: 40,816
STATION: Robe
TIME SAMPLED: 8:15
SAMPLER: Jim Holman

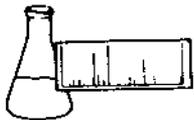
<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	1	ND
MTBE	5	ND

Bromobenzene Surrogate Recovery: 111%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



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EPA METHOD 602 LABORATORY REPORT

MATRIX SPIKE AND DUPLICATE LABORATORY CONTROL DATA

CLIENT: Lincoln Applied Geology
PROJECT NAME: Als Store
REPORT DATE: January 21, 1993
DATE SAMPLED: January 7, 1993
DATE RECEIVED: January 7, 1993
ANALYSIS DATE: January 21, 1993

PROJECT CODE: LAAS1705
REF.#: 40,811
STATION: Trip
TIME SAMPLED: 8:00
SAMPLER: Jim Holman

<u>Parameter</u>	<u>Sample(ug/L)</u>	<u>Spike(ug/L)</u>	<u>Dup1(ug/L)</u>	<u>Dup2(ug/L)</u>	<u>Avg % Rec</u>
Benzene	0	10	7.9	8.7	83%
Toluene	0	10	8.2	9.0	86%
Ethylbenzene	0	10	7.9	8.6	82%
Xylenes	0	30	23.2	25.9	82%

CHAIN-OF-CUSTODY RECORD

00583

Project Name: <i>Als STORE</i>	Reporting Address: <i>RD 1 Box 710 BRISTOL</i>	Billing Address: <i>RD 1 Box 710 BRISTOL VT</i>
Site Location: <i>HARTFORD VT</i>	Contact Name: <i>LAC</i>	Sampler Name: <i>Jim H... ..</i>
Endyne Project Number: <i>LAP 1705</i>	Company/Phone #: <i>453-4384</i>	Company/Phone #: <i>453-4384</i>

Lab #	Sample Description	Matrix	Date/Time	Container		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
				No.	Type/Size				
<i>40,811</i>	<i>TRIP</i>		<i>17 93 8:00</i>	<i>1</i>	<i>40ML</i>		<i>BTEX MTBE</i>	<i>HCL</i>	
<i>40,812</i>	<i>MW 1</i>		<i>9:00</i>	<i>2</i>	<i> </i>		<i> </i>	<i> </i>	
<i>40,813</i>	<i>SB-2</i>		<i>350</i>	<i>2</i>	<i> </i>		<i> </i>	<i> </i>	
<i>40,814</i>	<i>SB-3</i>		<i>347</i>	<i>2</i>	<i> </i>		<i> </i>	<i> </i>	
<i>40,815</i>	<i>AI's</i>		<i>8:10 8:15</i>	<i>2</i>	<i> </i>		<i> </i>	<i> </i>	
<i>40,816</i>	<i>ROBE</i>		<i>8:15</i>	<i>2</i>	<i> </i>		<i> </i>	<i> </i>	

Relinquished by: Signature <i>Jim H...</i>	Received by: Signature <i>Tonia H. Chamberlain</i>	Date/Time <i>1/17/93 2:30</i>
Relinquished by: Signature	Received by: Signature	Date/Time

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals ICP/AA	21	EPA 624	26	EPA 8270
2	Chloride	7	Total P	12	TSS	17	Fecal and/or Tot.	22	EPA 625 B/N or A	27	EPA 8010
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8020
4	Nitrite N	9	BOD ₅	14	Turbidity	19	BTEX	24	EPA 606 Pest/PCB	29	EPA 8080
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240	30	EPTOX
31	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
32	Other (Specify):										

LABORATORY: WHITE

PROJECT MANAGER: YELLOW

SAMPLER: PINK

Ground Water Quality Results (ppb)

Data Point	11-8-91	2-13-92	3-11-92	4-23-92	7-31-92	1-7-93	
MW-1	4232 154	21.5 32.4	<4 3.5	<4 <1	<4 <5	<4 <5	
SB-1	---	---	<4 <1	<4 <1	---	---	
SB-2	---	---	<4 <1	<4 <1	53.4 <5	<4 <5	
SB-3	---	---	<4 1.2	<4 16.3	<4 <5	<4 <5	
Robe's Well	---	<9 <1	---	---	<4 <5	<4 <5	
Al's Well	---	<9 <1	---	---	<4 <5	<4 <5	

NOTES:

MTBE in upper right corner of cell

BTEX in lower left corner of cell

< - Contaminant not detected at specified detection limit