



December 30, 1997

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RECEIVED
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Mr. Robert Haslam
Vermont Department of
Environmental Conservation
103 South Main Street
Waterbury, Vermont 05676

RE: Update of Gasoline Contamination in the Burnham Residence Drinking Water Well,
Route 30, Cornwall, Vermont. 972165

Dear Mr. Haslam:

Lincoln Applied Geology, Inc. (LAG) has completed additional point of entry treatment (POET) sampling at the above referenced site. As you may recall, gasoline contamination was discovered in the Burnham residence bedrock water supply well in February 1997. LAG conducted a very brief investigation which consisted of a site visit to the property on June 12, 1997 with an emphasis on identifying the source of the gasoline contamination. Results of this investigation suggest that the source of the contamination was small and short lived because samples collected from the POET system during the site visit revealed no detectable concentrations of any gasoline related constituents above background. As a result, no additional investigative work was conducted other than to sample the POET two more times (August and November 1997). Results of the additional sampling show that there are some gasoline constituents remaining in the well, but they are below State and Federal Drinking Water Standards. The presence of the low levels of contamination warrant continued use of the POET and quarterly sampling for one additional year.

LAG collected POET samples (influent, mid-treatment, and effluent) on the following dates: June 12, 1997, August 21, 1997, and November 14, 1997. All collected samples were taken to the R.A. LaRosa Laboratory for analysis by EPA method 8020 modified to include MTBE. Sample results are shown on **Table 1** and copies of laboratory results are included as **Appendix A**.

Results of the sampling show that benzene, toluene, ethylbenzene, and xylene (BTEX) and methyl tert butyl ether (MTBE) concentrations have significantly declined since they were originally quantified in February 1997 [134 part per billion (ppb) BTEX and 19 ppb MTBE]. The maximum influent concentration of BTEX and MTBE constituents detected during the additional sampling were noted on November 14, 1997 at 2 ppb toluene and 6 ppb MTBE. **Chart 1** shows the historic trend of MTBE concentrations over time. It is apparent from **Chart 1** that MTBE concentrations have significantly declined over time. As you are aware these low concentrations are below the established Primary Groundwater Quality Enforcement Standard (GQES) and Preventive Action Level for these compounds. Based on the historic data collected from the Burnham well it does not seem likely that BTEX and MTBE concentrations will increase above these previously

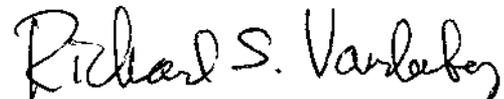
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detected concentrations.

Nonexistent concentrations of BTEX and MTBE in the POET effluent indicate that the water is safe for human consumption. It is recommended that the POET be used until more data are collected that show there is no chance that contaminant concentrations will increase significantly in the future. As result, we believe that it is also necessary to continue sampling the POET to track concentrations of contaminants and to establish when carbon canister replacement is necessary. **Appendix B** contains an estimate of the costs necessary to continue the POET sampling on a quarterly basis for one additional year. The next POET sampling visit should be conducted in January 1998. The cost estimate also includes an estimate to prepare a sites management activities completed (SMAC) report after sampling is completed.

We await your concurrence of our recommendation prior to proceeding with the January 1998 POET sampling round. Please be aware that we did not include costs to sample the other adjacent wells in the area because we believe this is a localized problem. However, if contaminant concentrations change dramatically in the Burnham well we may recommend that the surrounding wells be sampled. If you have any questions, or comments with regard to this report please do not hesitate to call me, or Stephen Revell, LAG Senior Hydrogeologist at (802) 453-4384.

Sincerely,
Lincoln Applied Geology, Inc.



Richard S. Vandenberg, CPG
Hydrogeologist

RSV/mcs
cc: Mr. Denny Burnham



Lincoln Applied Geology, Inc
Environmental Consultants

Ground Water Quality Results (ppb)

Data Point	Compound	02/20/97	06/12/97	08/21/97	11/14/97
Influent	Benzene	9	<1	<1	<1
	Toluene	53	<1	<1	2
	Ethylbenzene	5	<1	<1	<1
	Xylenes	67	<1	<1	<1
	MTBE	19	<1	4	6
	BTEX	134	<4	<4	5
Mid Treatment	Benzene		<1	<1	<1
	Toluene		<1	<1	<1
	Ethylbenzene		<1	<1	<1
	Xylenes		<1	<1	<1
	MTBE		<1	2	4
	BTEX		<4	<4	<4
Effluent	Benzene		<1	<1	<1
	Toluene		<1	<1	<1
	Ethylbenzene		<1	<1	<1
	Xylenes		<1	<1	<1
	MTBE		<1	<1	<1
	BTEX		<4	<4	<4

NOTES:
 < - Contaminant not detected at specified detection limit

**Burnham Residence
Cornwall, Vermont**

MTBE Concentration Trends

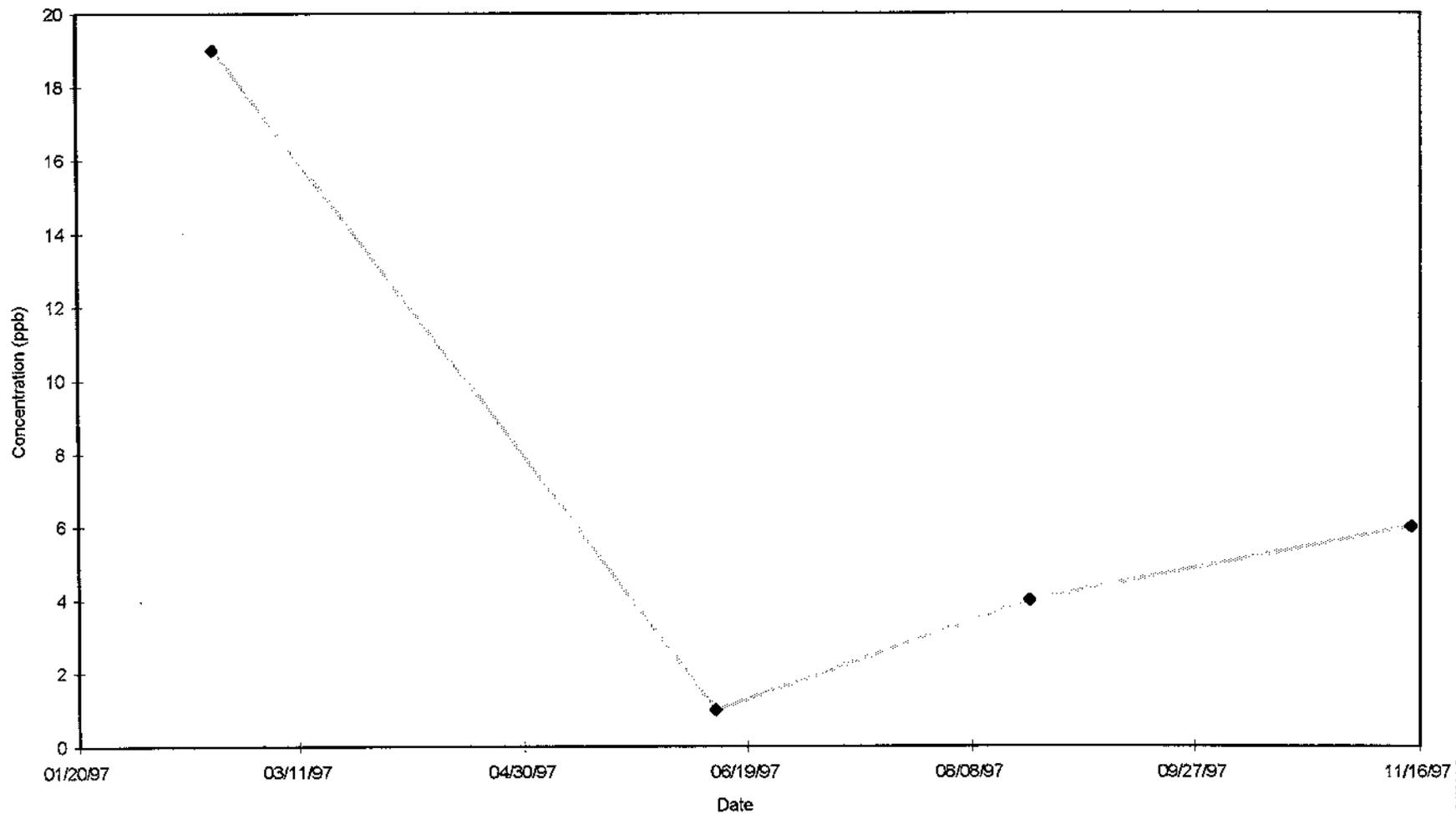


Chart 1

Appendix A

P.O.E.T. Water Quality Results

6/27/97

Department of Environmental Conservation Laboratory
Method 8020 - BTEX and MTBE in Water

SRL

Lab Id: 26867 Report To: R. Valley@LAG
Location: Cornwall, Burnham In

Phone: 453-4384 Date Collected: 6/12/97
Program: 41 2165 Chain of Custody? Yes

Notes:

Date Analyzed: 6/18/97 Over hold? No Dilution: 1

Parameter	Units are ug/l		Remark Code	Rel % Diff.	Spiked Dups ?	Percent Recovery
	PQL	Result				
Methyl-t-butylether	1	N.D.				
Benzene	1	N.D.				
Toluene	1	N.D.				
Ethylbenzene	1	N.D.				
Total Xylenes	1	N.D.				
Total Volatile Hydrocarbons	100	N.D.				

Surrogate Percent Recoveries (S=Surrogate recovery out of range)

α,α,α -Trifluorotoluene 113% 4-Bromofluorobenzene . 110%

Notes: No second column confirmation used.

APPLIED GEOLOGY, INC.

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JUN 30 1997

Remarks: E=Estimated Value J=Value may be in Error O=Value outside Standard Curve

6/27/97

Department of Environmental Conservation Laboratory
Method 8020 - BTEX and MTBE in Water

SRL

Lab Id: 26869 Report To: R. Valley@LAG
Location: Cornwall, Burnham Out

Phone: 453-4384 Date Collected: 6/12/97
Program: 41 2165 Chain of Custody? Yes

Notes:

Date Analyzed: 6/18/97 Over hold? No Dilution: 1

Parameter	Units are ug/l		Remark Code	Rel % Diff.	Spiked Dups ?	Percent Recovery
	PQL	Result				
Methyl-t-butylether	1	N.D.				
Benzene	1	N.D.				
Toluene	1	N.D.				
Ethylbenzene	1	N.D.				
Total Xylenes	1	N.D.				
Total Volatile Hydrocarbons	100	N.D.				

Surrogate Percent Recoveries (S=Surrogate recovery out of range)

α,α,α -Trifluorotoluene 112% 4-Bromofluorobenzene . 108%

Notes: No second column confirmation used.

JUN 30 1997

Remarks: E=Estimated Value J=Value may be in Error O=Value outside Standard Curve

6/27/97

Department of Environmental Conservation Laboratory
Method 8020 - BTEX and MTBE in Water

SRL

Lab Id: 26868 Report To: R. Valley@LAG
Location: Cornwall, Burnham Middle

Phone: 453-4384 Date Collected: 6/12/97
Program: 41 2165 Chain of Custody? Yes

Notes:

Date Analyzed: 6/18/97 Over hold? No Dilution: 1

Parameter	Units are ug/l		Remark Code	Rel % Diff.	Spiked Dups ?	Percent Recovery
	PQL	Result				
Methyl-t-butylether	1	N.D.				
Benzene	1	N.D.				
Toluene	1	N.D.				
Ethylbenzene	1	N.D.				
Total Xylenes	1	N.D.				
Total Volatile Hydrocarbons	100	N.D.				

Surrogate Percent Recoveries (S=Surrogate recovery out of range)

α,α,α -Trifluorotoluene 114% 4-Bromofluorobenzene . 110%

Notes: No second column confirmation used.

JUN 30 1997

Remarks: E=Estimated Value J=Value may be in Error O=Value outside Standard Curve

8/28/97

Department of Environmental Conservation Laboratory
Method 8020 - BTEX and MTBE in Water

SRL

Lab Id: 29354 Report To: Rick Vanderberg@LAG Phone: 453-4384 Date Collected: 8/21/97
Location: Burnham Res., P.O.E.T. Inf. Program: 22 2165 Chain of Custody? Yes

Notes:

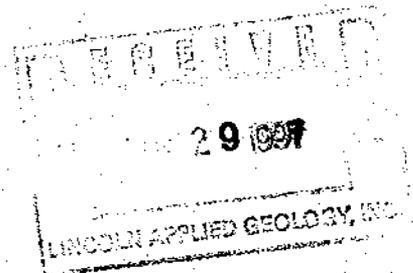
Date Analyzed: 8/25/97 Over hold? No Dilution: 1

Parameter	Units are ug/l		Remark Code	Rel % Diff.	Spiked Dups ?	Percent Recovery
	PQL	Result				
Methyl-t-butylether	1	4				
Benzene	1	N.D.				
Toluene	1	N.D.				
Ethylbenzene	1	N.D.				
Total Xylenes	1	N.D.				
Total Volatile Hydrocarbons	100	N.D.				

Surrogate Percent Recoveries (S=Surrogate recovery out of range)

α,α,α -Trifluorotoluene 109% 4-Bromofluorobenzene . 105%

Notes: No second column confirmation used.



Remarks: E=Estimated Value J=Value may be in Error O=Value outside Standard Curve

8/28/97

Department of Environmental Conservation Laboratory
Method 8020 - BTEX and MTBE in Water

SRL

Lab Id: 29353 Report To: Rick Vanderberg@LAG Phone: 453-4384 Date Collected: 8/21/97
Location: Burnham Res., P.O.E.T. Middle Program: 22 2165 Chain of Custody? Yes

Notes:

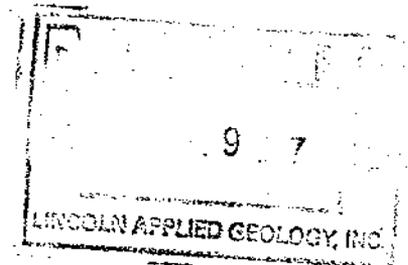
Date Analyzed: 8/25/97 Over hold? No Dilution: 1

Parameter	Units are ug/l		Remark Code	Rel % Diff.	Spiked Dups ?	Percent Recovery
	PQL	Result				
Methyl-t-butylether	1	2				
Benzene	1	N.D.				
Toluene	1	N.D.				
Ethylbenzene	1	N.D.				
Total Xylenes	1	N.D.				
Total Volatile Hydrocarbons	100	N.D.				

Surrogate Percent Recoveries (S=Surrogate recovery out of range)

α,α,α -Trifluorotoluene 113% 4-Bromofluorobenzene . 108%

Notes: No second column confirmation used.



Remarks: E=Estimated Value J=Value may be in Error O=Value outside Standard Curve

8/28/97

Department of Environmental Conservation Laboratory
Method 8020 - BTEX and MTBE in Water

SRL

Lab Id: 29352 Report To: Rick Vanderberg@LAG Phone: 453-4384 Date Collected: 8/21/97
Location: Burnham Res., P.O.E.T. Eff. Program: 22 2165 Chain of Custody? Yes

Notes:

Date Analyzed: 8/25/97 Over hold? No Dilution: 1

Parameter	Units are ug/l		Remark Code	Rel % Diff.	Spiked Dups ?	Percent Recovery
	PQL	Result				
Methyl-t-butylether	1	N.D.				
Benzene	1	N.D.		1	Y	85
Toluene	1	N.D.		2	Y	90
Ethylbenzene	1	N.D.				
Total Xylenes	1	N.D.				
Total Volatile Hydrocarbons	100	N.D.				

Surrogate Percent Recoveries (S=Surrogate recovery out of range)

α,α,α -Trifluorotoluene 111% 4-Bromofluorobenzene . 107%

Notes: No second column confirmation used.

Remarks: E=Estimated Value J=Value may be in Error O=Value outside Standard Curve

11/24/97

Department of Environmental Conservation Laboratory
Method 8020 - BTEX and MTBE in Water

GJD

Lab Id: 30892 Report To: L.A.G.
Location: P.O.E.T. Influent

Phone: 453-4384 Date Collected: 11/14/97
Program: 41 1998 Chain of Custody? No

Notes:

Date Analyzed: 11/18/97 Over hold? No Dilution: 1

Parameter	Units are ug/l		Remark Code	Rel % Diff.	Spiked Dups ?	Percent Recovery
	PQL	Result				
Methyl-t-butylether	1	6				
Benzene	1	N.D.				
Toluene	1	2				
Ethylbenzene	1	N.D.				
Total Xylenes	1	N.D.				
Total Volatile Hydrocarbons	100	N.D.				

Surrogate Percent Recoveries (S=Surrogate recovery out of range)

α,α,α -Trifluorotoluene 110% 4-Bromofluorobenzene . 110%

Notes: No second column confirmation used.

NOV 25 1997

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Remarks: E=Estimated Value J=Value may be in Error O=Value outside Standard Curve

11/24/97

Department of Environmental Conservation Laboratory
Method 8020 - BTEX and MTBE in Water

GJD

Lab Id: 30893 Report To: L.A.G.
Location: P.O.E.T. Between

Phone: 453-4384 Date Collected: 11/14/97
Program: 41 1998 Chain of Custody? No

Notes:

Date Analyzed: 11/18/97 Over hold? No Dilution: 1

Parameter	Units are ug/l		Remark Code	Rel % Diff.	Spiked Dups ?	Percent Recovery
	PQL	Result				
Methyl-t-butylether	1	N.D.				
Benzene	1	N.D.				
Toluene	1	N.D.				
Ethylbenzene	1	N.D.				
Total Xylenes	1	N.D.				
Total Volatile Hydrocarbons	100	N.D.				

Surrogate Percent Recoveries (S=Surrogate recovery out of range)

α,α,α -Trifluorotoluene 109% 4-Bromofluorobenzene . 108%

Notes: No second column confirmation used.

NOV 26 1997

NOV 26 1997

Remarks: E=Estimated Value J=Value may be in Error O=Value outside Standard Curve

11/24/97

Department of Environmental Conservation Laboratory
Method 8020 - BTEX and MTBE in Water

GJD

Lab Id: 30894 Report To: L.A.G.
Location: P.O.E.T. Effluent

Phone: 453-4384 Date Collected: 11/14/97
Program: 41 1998 Chain of Custody? No

Notes:

Date Analyzed: 11/18/97 Over hold? No Dilution: 1

Parameter	Units are ug/l		Remark Code	Rel % Diff.	Spiked Dups ?	Percent Recovery
	PQL	Result				
Methyl-t-butylether	1	4		29		
Benzene	1	N.D.		1	Y	81
Toluene	1	N.D.		3	Y	92
Ethylbenzene	1	N.D.				
Total Xylenes	1	N.D.				
Total Volatile Hydrocarbons	100	N.D.				

Surrogate Percent Recoveries (S=Surrogate recovery out of range)

α,α,α -Trifluorotoluene 110% 4-Bromofluorobenzene . 109%

Notes: No second column confirmation used.

NOV 26 1997

NOV 26 1997

Remarks: E=Estimated Value J=Value may be in Error O=Value outside Standard Curve

Appendix B
Cost Estimate