ATC ASSOCIATES INC.

Browns Trace Building, Route 2
Post Office Box 3
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Environmental, Geotechnical and Materials Professionals

September 29, 1998

Ms. Mary Scarpa
Business Manager
North Country Union High School
P.O. Box 725
Newport, VT 05855

RE: Soil Disposal
North Country Union High School
Newport, Vermont
ATC Project #08448-00005
SMS Site # 97-2241

Dear Mary:

The following letter report summarizes sampling and analysis of soils from the stockpile at the North Country Union High School (NCUHS) in Newport, Vermont. ATC Associates Inc. (ATC) was contracted by NCUHS to perform the services outlined ATC's June 15, 1998 letter to NCUHS.

Background

The soil was excavated on August 11, 1997 during the removal of two underground storage tanks (USTs). The stockpile contains approximately 60 cubic yards. The pile of excavated soils are polyencapsulated in an area with restricted access. The results of the soil screening by photoionization detector (PID) performed on April 23, 1998 are summarized in a letter to Mr. Chuck Schwer of the Vermont Department of Environmental Conservation (VT DEC) prepared by ATC dated May 14, 1998

The results of the PID soil screening indicated volatile organic compound (VOC) concentrations of less than 1 ppm in the stock piled soil. Vermont DEC Soil Guideline Thresholds for on-site polyencapsulated soil treatment options state that soils must exhibit PID readings of less than 1 ppm before thin spreading on-site may take place. As the results of the April 23, 1998 sampling indicated this to be the case, ATC recommended no further soil screening take place and that the soils be thin spread on-site in a location that will have no impact on any potential receptors.

On June 12, 1998, Mr. Joseph Duncan of ATC spoke with Mr. John Schmeltzer of the VT DEC regarding ATC's recommendations presented above. Since the site is a school, Mr. Schmeltzer required that spreading of soils should occur in a restricted access area only. Mr. Schmeltzer considered a restricted access area to be an area that prevents students from accessing that area (i.e. a fenced off area). Mr. Schmeltzer also indicated that if the soils could not be thin-spread in a limited access area on-site, then confirmatory soil samples must be collected for laboratory analysis.

As there were no locations designated by NCUHS to be restricted access areas, ATC was contracted to collect confirmatory samples for analysis by a qualified laboratory in order to determine whether or not the stockpiled soils were suitable for spreading in non-restricted areas of the NCUHS property. According to Mr. Schmeltzer, if the confirmatory sample results indicated concentrations below Vermont Groundwater Enforcement Standards (the State of Vermont does not currently maintain any soil enforcement standards), then the soils could be placed in any area of the NCUHS property.

Methodology

In accordance with Vermont DEC Guidelines for Petroleum Contaminated Soil and Debris, three soil core samples were collected from the stockpile as the total amount of soil did not exceed 100 cubic yards. The soil samples were transported under chain of custody to Endyne, Inc. for analysis. In accordance with DEC requirements, the samples were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) compounds via EPA Method 8021B and for total petroleum hydrocarbons (TPH) via EPA Method 8100 modified.

Results

No detectable concentrations of BTEX were found in any of the three samples submitted for analysis. Low concentrations of TPH, however, were detected. Concentrations of 20.4, 17.4 and 21.9 mg/Kg (ppm) were detected in samples SS-01, SS-02, and SS-03, respectively. Copies of the laboratory reports are included as Appendix A.

Conclusions and Recommendations

No detectable BTEX concentrations were found in any of the soil samples. As a result, it appears that the stockpiled soils do not contain BTEX concentrations at levels exceeding Vermont Groundwater Enforcement Standards. Slight concentrations of TPH were detected in each sample.

While these concentrations appear low, there is no comparative Groundwater Enforcement Standard for TPH.

ATC recommends that a copy of this report be submitted to the Vermont DEC for review. Following submission, the DEC should be contacted to inquire about the DEC's determination as to the suitability of the stockpiled soils for land spreading.

If you have any questions concerning this correspondence, please feel free to contact us at 802-434-2113.

Sincerely,

ATC ASSOCIATES INC.

Chad Farrell
Project Engineer

attachments

CRF/imh/08448 NCUHS/08448-00005 soils/08448-00005 soil analysis ltr

APPENDIX A

Analytical Laboratory Reports

ENDYNE, INC.

Laboratory Services

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

REPORT OF LABORATORY ANALYSIS

CLIENT: ATC Associates, Inc.
PROJECT NAME: NCUHS Soil Monitoring
DATE REPORTED: September 24, 1998
DATE SAMPLED: September 17, 1998

PROJECT CODE: ATCA1382
REF. #: 127,302 - 127,304

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

Chain of custody did not indicate sample preservation.

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

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

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

Analytical method precision and accuracy were 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.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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ENDYNE, INC.

Laboratory Services

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

LABORATORY REPORT

EPA METHOD 8021B COMPOUNDS BY EPA METHOD 8260

CLIENT: ATC Associates, Inc.
PROJECT NAME: NCUHS Soil Monitoring
REPORT DATE: September 24, 1998
DATE SAMPLED: September 17, 1998
DATE RECEIVED: September 17, 1998
ANALYSIS DATE: September 22, 1998

PROJECT CODE: ATCA1382
REF.#: 127,302
STATION: SS-01 Soil Pile Composite
TIME SAMPLED: 0945
SAMPLER: Joe Duncan

Parameter	Detection Limit (µg/kg)	Concentration As Received (µg/kg)
Benzene	10	ND[1]
Ethylbenzene	10	ND
Toluene	10	ND
Xylenes	20	ND
MTBE	20	ND
1,3,5-Trimethylbenzene	10	ND
1,2,4-Trimethylbenzene	10	ND
Naphthalene	50	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane:	96.%
Toluene-d8:	96.%
4-Bromofluorobenzene:	98.%

PERCENT SOLIDS: 88.%

NOTES:
1. None detected

ENDYNE, INC.

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LABORATORY REPORT

EPA METHOD 8021B COMPOUNDS BY EPA METHOD 8260

CLIENT: ATC Associates, Inc.
PROJECT NAME: NCUHS Soil Monitoring
REPORT DATE: September 24, 1998
DATE SAMPLED: September 17, 1998
DATE RECEIVED: September 17, 1998
ANALYSIS DATE: September 22, 1998

PROJECT CODE: ATCA1382
REF.#: 127,303
STATION: SS-02 Soil Pile Composite
TIME SAMPLED: 0948
SAMPLER: Joe Duncan

Parameter	Detection Limit (µg/kg)	Concentration As Received (µg/kg)
Benzene	10	ND[1]
Ethylbenzene	10	ND
Toluene	10	ND
Xylenes	20	ND
MTBE	20	ND
1,3,5-Trimethylbenzene	10	ND
1,2,4-Trimethylbenzene	10	ND
Naphthalene	50	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane:	98.%
Toluene-d8:	97.%
4-Bromofluorobenzene:	97.%

PERCENT SOLIDS: 87.%

NOTES:
1. None detected

ENDYNE, INC.

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LABORATORY REPORT

EPA METHOD 8021B COMPOUNDS BY EPA METHOD 8260

CLIENT: ATC Associates, Inc.
PROJECT NAME: NCUHS Soil Monitoring
REPORT DATE: September 24, 1998
DATE SAMPLED: September 17, 1998
DATE RECEIVED: September 17, 1998
ANALYSIS DATE: September 22, 1998

PROJECT CODE: ATCA1382
REF.#: 127,304
STATION: SS-03 Soil Pile Composite
TIME SAMPLED: 0950
SAMPLER: Joe Duncan

Parameter	Detection Limit (µg/kg)	Concentration As Received (µg/kg)
Benzene	10	ND[1]
Ethylbenzene	10	ND
Toluene	10	ND
Xylenes	20	ND
MTBE	20	ND
1,3,5-Trimethylbenzene	10	ND
1,2,4-Trimethylbenzene	10	ND
Naphthalene	50	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane:	99.%
Toluene-d8:	98.%
4-Bromofluorobenzene:	97.%

PERCENT SOLIDS: 88.%

NOTES:
1 None detected

ENDYNE, INC.

32 James Brown Drive
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ATCA 1383

127,302 — 127,307

CHAIN-OF-CUSTODY RECORD

27267

Project Name: NCUHS Soil Monitoring Site Location: NCUHS, Newport, VT	Reporting Address: PO Box 3 Richmond VT 05477	Billing Address: ATC PO Box 3 Richmond VT 05477
Endyne Project Number: ATCA 1382	Company: ATC Associates Inc Contact Name/Phone #: Mark Fuller / 434-2113	Sampler Name: Joe Duncan Phone #: 434-2113

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
127,302	SS-01 Soil Pile Composite	Soil		✓	0945 9/17/98	1	8oz		8021B		
127,303	SS-02 Soil Pile Composite	↓		✓	0948 9/17/98	1	8oz		↓		
127,304	SS-03 Soil Pile Composite			✓	0950 9/17/98	1	8oz				
	SS-01			✓	0945 9/17/98	1	8oz		8100 modified TPH		
	SS-02			✓	0948 9/17/98	1	8oz		↓		
	SS-03	↓		✓	0950 9/17/98	1	8oz		↓		

Relinquished by: Signature	Received by: Signature	Date/Time 9/17/98 12:45
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ____ No ____

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): 8021B and 8100 modified										

ENDYNE, INC.

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REPORT OF LABORATORY ANALYSIS

CLIENT: ATC Associates, Inc.
PROJECT NAME: NCUHS Soil Monitoring
DATE REPORTED: September 25, 1998
DATE SAMPLED: September 17, 1998

PROJECT CODE: ATCA1383
REF. #: 127,305 - 127,307

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

Chain of custody indicated sample preservation upon arrival at the laboratory.

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

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

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

Analytical method precision and accuracy were 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 Services

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

LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: September 25, 1998
CLIENT: ATC Associates, Inc.
PROJECT: NCUHS Soil Monitoring
PROJECT CODE: ATCA1383
COLLECTED BY: Joe Duncan
DATE SAMPLED: September 17, 1998
DATE RECEIVED: September 17, 1998

Reference #	Sample ID	Concentration (mg/kg)[1]
127,305	SS-01; 9:45	20.4
127,306	SS-02; 9:48	17.4
127,307	SS-03; 9:50	21.9

Notes:

1 Values quantitated based on the response of #2 Fuel Oil. Method detection limit is 5.0 mg/kg.

ENDYNE, INC.

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

CHAIN-OF-CUSTODY RECORD

27267

Project Name: NCUHS Soil Monitoring Site Location: NCUHS, Newport, VT	Reporting Address: PO Box 3 Richmond VT 05477	Billing Address: ATC PO Box 3 Richmond VT 05477
Endyne Project Number: ATCA1383	Company: ATC Associates Inc Contact Name/Phone #: Mark Fuller / 434-3113	Sampler Name: Joe Duncan Phone #: 434-3113

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
	SS-01 Soil Pile Composite	Soil		✓	0945 9/17/98	1	8oz		8021B		
	SS-02 Soil Pile Composite	↓		✓	0948 9/17/98	1	8oz		↓		
	SS-03 Soil Pile Composite			✓	0950 9/17/98	1	8oz				
187,305	SS-01			✓	0945 9/17/98	1	8oz		8100 mod for TPH		
187,306	SS-02			✓	0948 9/17/98	1	8oz				
187,307	SS-03	↓		✓	0950 9/17/98	1	8oz		↓		

Relinquished by: Signature	Received by: Signature	Date/Time 9/17/98 12:45
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ____ No ____

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010/8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify): 8021B and 8100 modified										