

Wagner, Heindel, and Noyes, Inc.

- Consulting Hydrogeologists
- Engineers
- Environmental Scientists

P.O. Box 1629 Burlington, Vermont 05402-1629

802-658-0820
FAX: 802-860-1014

August 23, 1995

Mr. Richard Spiese
Sites Management Section
Hazardous Materials Management Division
Vermont Department of Environmental Conservation
103 South Main Street / West Office Building
Waterbury, VT 05671-0404 95-1987

RE: 31 West Street
Rutland, Vermont
Petroleum Contaminated Soils Stockpile Remedial Update

Dear Richard:

This interim report is an update on remedial progress of petroleum-contaminated soils (PCS) stockpiled at the 31 West Street site in Rutland, Vermont.

History

In November 1994, Wagner, Heindel, and Noyes, Inc. (WH&N) oversaw the excavation of approximately 80 cubic yards of soil contaminated with No. 2 fuel oil. The contaminated soil was stockpiled and polyencapsulated onsite.

Initial testing of these soils revealed TPH concentrations in the 120 - 170 mg/kg range and an average photoionization detector (PID) reading of 65 ppm. No quantitated volatiles were identified by EPA Method 8240 although there were a number of unidentified peaks.

Sampling Program

Beginning in May 1995, WH&N conducted PID screening and laboratory analyses incorporating EPA Method 8020 and total petroleum hydrocarbons (TPH) via EPA Method 418.1 on the contaminated soils. A subsequent sampling event was performed in July 1995. Tabular and graphical presentations, page 2 and pages 3 - 4, respectively, are found in Appendix 1 accompanying a site map, page 1. Laboratory results are compiled in Appendix 2, pages 1 - 13.

Aug 24 10 10 AM '95

Mr. Richard Spiese
August 23, 1995
Page 2

Sampling Results Summary

The 90% reduction in TPH concentration is the target goal for closure recommendation at this site. Two composite samples were collected from 8 locations at depth intervals of 0 feet to 2 feet (shallow) and 2 feet to 4 feet (deep).

WH&N stated in a letter dated June 22, 1995 that elevated measurements warranted additional treatment. During a site visit conducted in July 1995, WH&N conducted routine screening and sampling of soil composites, installed four vapor wells, and obtained initial vapor concentrations for each well.

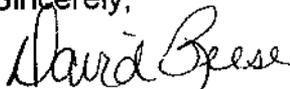
To date, total benzene remains at a non-detect level while MTBEX has elevated to a trace below quantitation (TBQ). TPH values are still high at 130 to 320 mg/kg. PID measurements have increased since May 1995, however these levels show a 54% to 75% reduction as compared to initial stockpile screening.

A quarterly soil sampling event is scheduled for October 1995. When WH&N is in the area, we are conducting periodic air quality measurements coupled with short-term air extraction at existing vent points to promote faster degradation of petroleum compounds.

Progress on bioventing procedure and laboratory assays will be provided after the fall sampling.

If you have any questions about this report, please contact me or Jeff Noyes at 658-0820.

Sincerely,



David J. Reese
Staff Hydrogeologist

DJR/ra 

Enclosure

cc: Father Tenney, Rutland, Vermont

[U:\DREESE\WPDOCS\WESTST.R1]



Wagner, Heindel, and Noyes

CONSULTING SCIENTISTS AND ENGINEERS

- Hydrogeology • Ecology •
- Environmental Engineering •

BURLINGTON, VERMONT

31 WEST STREET SOIL

RUTLAND, VERMONT

DATE: 8-1995 SCALE: NOT TO SCALE DRN: DR APPD: JEN

Wagner, Heindel and Noyes Inc.

31 West Street
Soil Treatment Program Monitoring Results
08/16/95

Parameter	Cell	Nov-94 Ic *	May-95	Jul-95 Rc *	% Reduction *
Benzene	Shallow	ND	ND	ND	
	Deep	ND	ND	ND	
MBTEX	Shallow	ND	ND	ND	
	Deep	ND	ND	TBQ	
TPH	Shallow	120	75	130	-8.3
	Deep	170	720	320	-88.2
PID	Shallow	65	9.6	16.2	75.1
	Deep	65	9.2	30	53.8

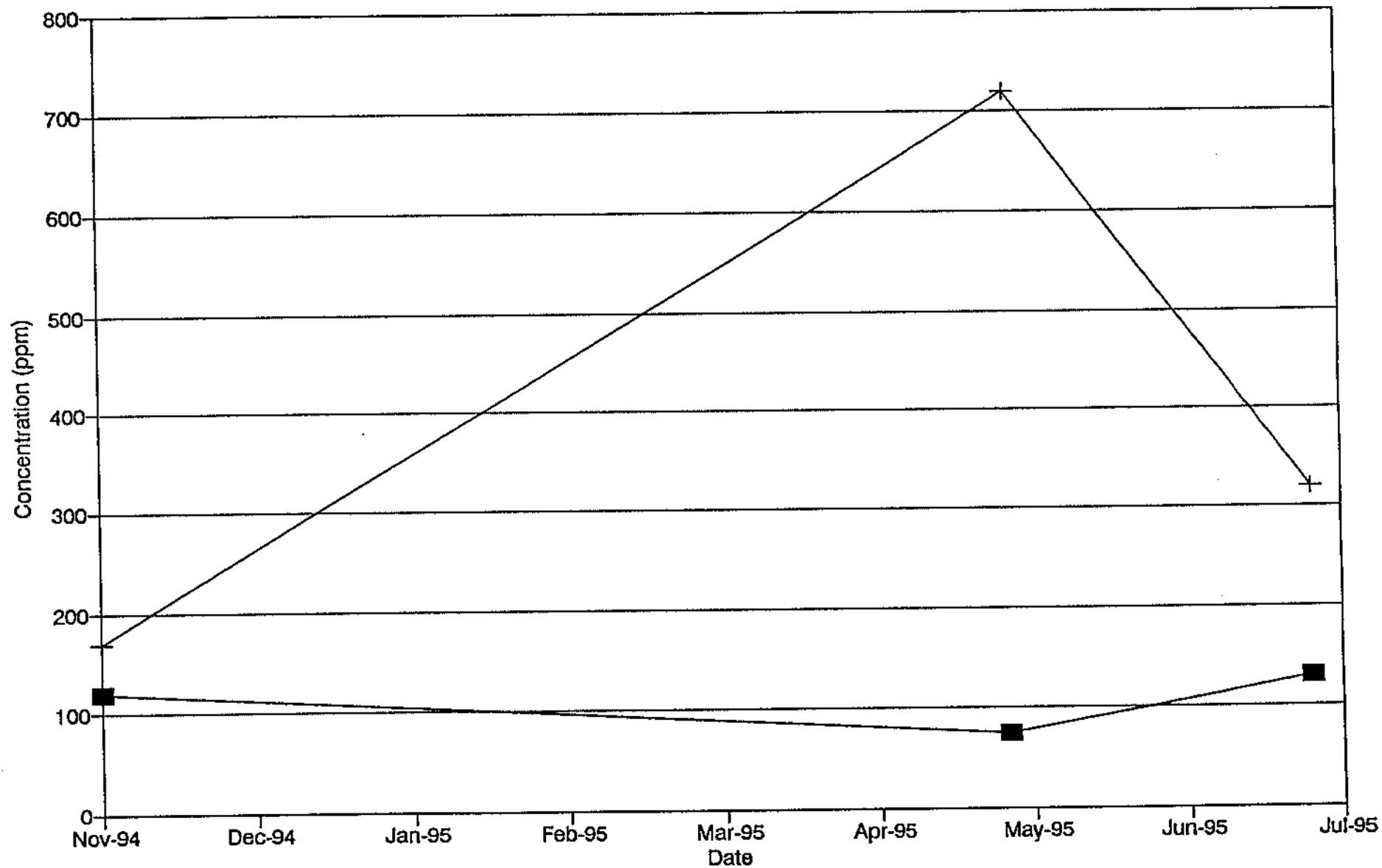
* All % Reduction Calculations Reflect Most Recent Results (Rc) Related to Initial Results (Ic).

$$\% \text{ Reduction} = (Ic - Rc) / Ic$$

Notes

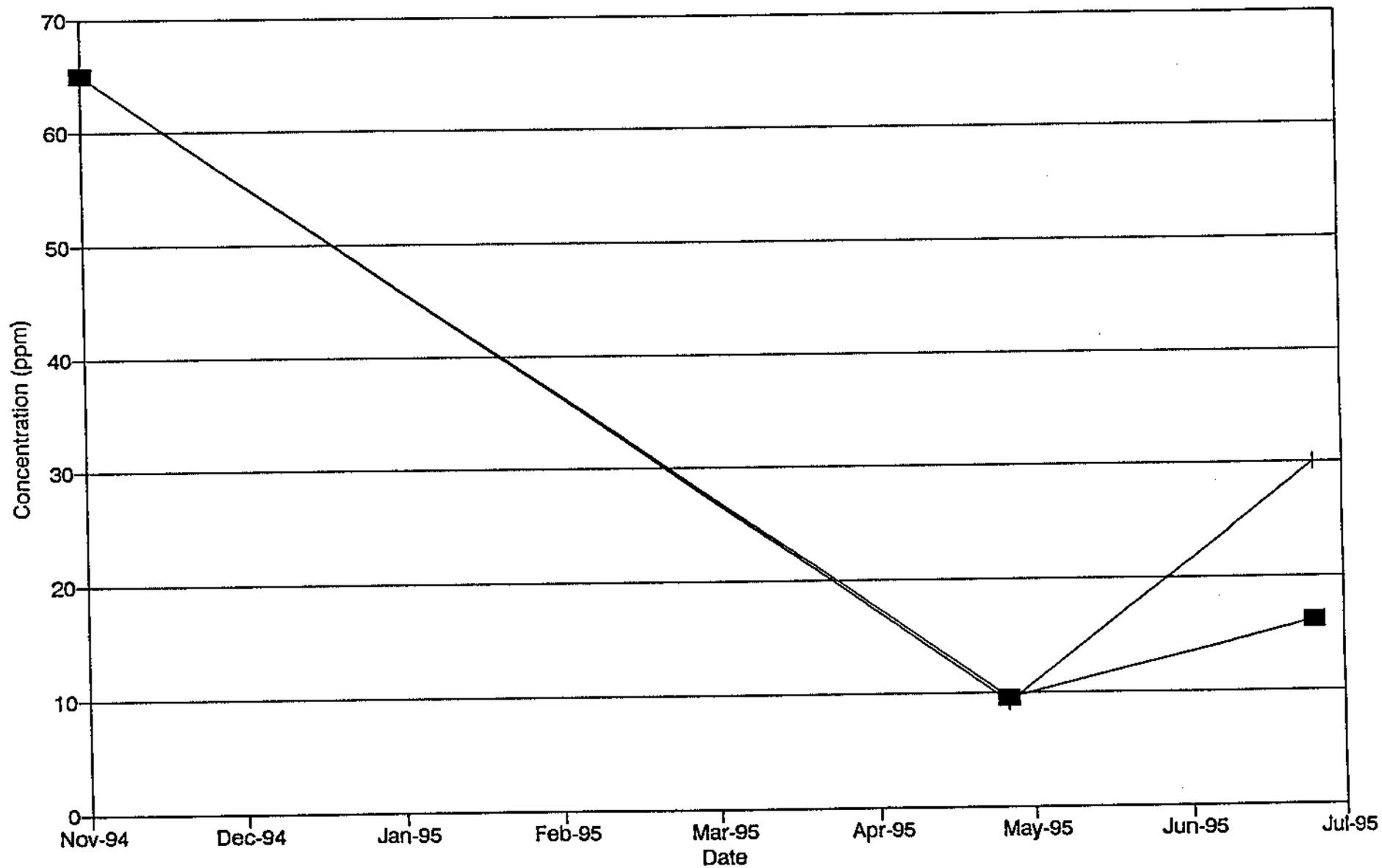
Contaminant Reduction Values are Based on Composite Samples
Benzene and MBTEX concentrations in ug/Kg, after EPA 8020.
PID vapor Concentration in ppm
MBTEX = Total MTBE, Toluene, Ethylbenzene and Xylene.
TPH Concentrations in mg/KG, EPA 418.1
TPH Total Petroleum Hydrocarbons
ND No Detection
Maximum PID reading during 12/93 tank pull and soil stockpile was 30 ppm
TPH was not analyzed in October of 1994

31 WEST STREET SOIL TREATMENT TPH

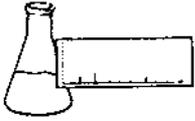


■ Shallow + Deep

31 WEST STREET SOIL TREATMENT PID



■ Shallow + Deep



ENDYNE, INC.

Laboratory Services

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

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: BOB 31 West St.
DATE REPORTED: May 18, 1995
DATE SAMPLED: May 10, 1995

PROJECT CODE: HNBO1098
REF. #: 74,388 - 74,389

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

Chain of custody indicated correct 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 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.

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

enclosures



Laboratory Services

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LABORATORY REPORT

EPA METHOD 8020 COMPOUNDS BY GC/MS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: BOB 31 West St.
REPORT DATE: May 18, 1995
SAMPLER: D. Reese
DATE SAMPLED: May 10, 1995
DATE RECEIVED: May 12, 1995

PROJECT CODE: HNBO1098
ANALYSIS DATE: May 16, 1995
STATION: 1S
REF.#: 74,388
TIME SAMPLED: 1500

<u>Parameter</u>	<u>Detection Limit (ug/kg)¹</u>	<u>Concentration As Received (ug/kg)</u>
Benzene	50	ND ²
Chlorobenzene	100	ND
1,2-Dichlorobenzene	100	ND
1,3-Dichlorobenzene	100	ND
1,4-Dichlorobenzene	100	ND
Ethylbenzene	50	ND
Toluene	100	ND
Xylene	150	ND
MTBE	150	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

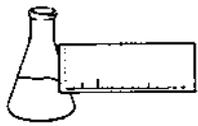
ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane: 86.%
Toluene-d8: 112.%
4-Bromofluorobenzene: 96.%

PERCENT SOLIDS: 86.%

NOTES:

- 1 Detection limit raised due to high levels of non-target contaminants. Sample run at a 20.% dilution.
- 2 None Detected



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LABORATORY REPORT

EPA METHOD 8020 COMPOUNDS BY GC/MS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: BOB 31 West St.
REPORT DATE: May 18, 1995
SAMPLER: D. Reese
DATE SAMPLED: May 10, 1995
DATE RECEIVED: May 12, 1995

PROJECT CODE: HNBO1098
ANALYSIS DATE: May 16, 1995
STATION: 1D
REF.#: 74,389
TIME SAMPLED: 1530

<u>Parameter</u>	<u>Detection Limit (ug/kg)¹</u>	<u>Concentration As Received (ug/kg)</u>
Benzene	50	ND ²
Chlorobenzene	100	ND
1,2-Dichlorobenzene	100	ND
1,3-Dichlorobenzene	100	ND
1,4-Dichlorobenzene	100	ND
Ethylbenzene	50	ND
Toluene	100	ND
Xylene	150	ND
MTBE	150	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: > 10

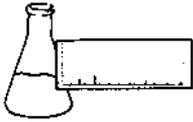
ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane:	88.%
Toluene-d8:	104.%
4-Bromofluorobenzene:	96.%

PERCENT SOLIDS: 85.%

NOTES:

- Detection limit raised due to high levels of non-target contaminants. Sample run at a 20.% dilution.
- None Detected



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REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: BOB/31 West St.
DATE REPORTED: May 24, 1995
DATE SAMPLED: May 10, 1995

PROJECT CODE: HNBO1097
REF. #: 74,386 - 74,387

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

Chain of custody indicated correct 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.

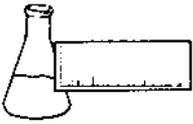
Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy 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

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LABORATORY REPORT

TOTAL HYDROCARBONS - EPA METHOD 418.1 (SOIL)

CLIENT: Wagner, Heindel, and Noyes, Inc.
REPORT DATE: May 24, 1995
PROJECT NAME: BOB/31 West St.
PROJECT CODE: HNBO1097
DATE SAMPLED: May 10, 1995
DATE RECEIVED: May 12, 1995
DATE EXTRACTED: May 19, 1995
DATE ANALYZED: May 22, 1995
SAMPLER: D. Reese

<u>Reference #:</u>	<u>Station ID:</u>	<u>Concentration (mg/kg)¹</u>
74,386	1S; 15:00	75.
74,387	1D; 15:30	720.

Notes:

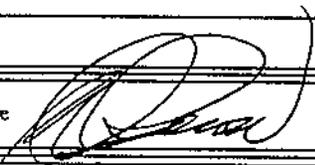
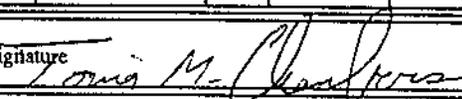
1 Method detection limit is 6.1 ppm.

CHAIN-OF-CUSTODY RECORD

008641

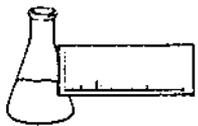
Project Name: BOB 31 WEST ST,	Reporting Address:	Billing Address:
Site Location: RAND, VT		
Endyne Project Number: HNBO1098	Company: WGN	Sampler Name: D. Reese
	Contact Name/Phone #: C. ADRIAN	Phone #: WGN

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
74,388	IS	SOIL		X	5-10-95 1500	1	250ml	9.6 ppm	23,27	Cool	
74,389	ID	↓		↓	1530	1	↓	9.2 ppm	23,27	↓	

Relinquished by: Signature 	Received by: Signature 	Date/Time 5-12-95
Relinquished by: Signature	Received by: Signature	Date/Time 10:30

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	YDS	18	COD	23	EPA 418.1	28	EPA 8080 Pests/PCB
4	Nitrite N	9	BOD ₅	14	Turbidity	19	BTEX	24	EPA 608 Pests/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCPLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										



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REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 31 West Street
DATE REPORTED: August 1, 1995
DATE SAMPLED: July 12, 1995

PROJECT CODE: HWS1570A
REF. #: 76,787A - 76,788A

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

Chain of custody indicated correct 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.

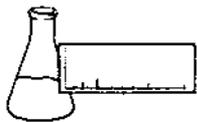
Blank contamination was not observed at levels affecting the analytical results.

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.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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LABORATORY REPORT

TOTAL HYDROCARBONS - EPA METHOD 418.1 (SOIL)

CLIENT: Wagner, Heindel, and Noyes, Inc.
REPORT DATE: August 1, 1995
PROJECT NAME: 31 West Street
PROJECT CODE: HWS1570A
DATE SAMPLED: July 12, 1995
DATE RECEIVED: July 13, 1995
DATE EXTRACTED: July 31, 1995
DATE ANALYZED: August 1, 1995
SAMPLER: D. Reese

<u>Reference #:</u>	<u>Station ID:</u>	<u>Concentration (mg/kg)¹</u>
76,787A	A Shallow; 11:00	130.
76,788A	B Deep; 11:30	320.

Notes:

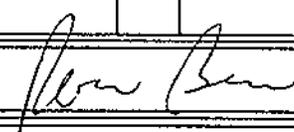
1 Method detection limit is 6.1 ppm.

CHAIN-OF-CUSTODY RECORD

14356

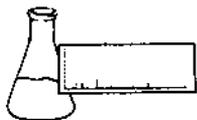
Project Name: <u>31 WEST STREET</u>	Reporting Address:	Billing Address:
Site Location: <u>RUTLAND VT</u>		
Endyne Project Number: <u>HWS 1570A</u>	Company: <u>WATN</u>	Sampler Name: <u>D. REESE</u>
	Contact Name/Phone #: <u>D. REESE</u>	Phone #: <u>WATN</u>

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
76.787A	A SHALLOW	SOIL		X	7-12-95 1100	1	250 ml AG		8020/418.1	COLD	
76.788A	B DEEP	↓		↓	1130	1	↓		↓	↓	

Relinquished by: Signature 	Received by: Signature 	Date/Time <u>7/13/95 9:10 A.M.</u>
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):										



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REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 31 West Street
DATE REPORTED: July 26, 1995
DATE SAMPLED: July 12, 1995

PROJECT CODE: HNWS1570
REF. #: 76,787 - 76,788

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

Chain of custody indicated correct 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.

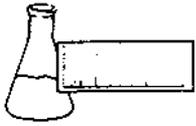
Analytical method precision and accuracy were monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

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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Williston, Vermont 05495
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FAX 879-7103

LABORATORY REPORT

EPA METHOD 8020 COMPOUNDS BY EPA METHOD 8240

CLIENT: Wagner, Heindel, and Noyes, Inc. PROJECT CODE: HNWS1570
PROJECT NAME: 31 West Street ANALYSIS DATE: July 19, 1995
REPORT DATE: July 26, 1995 STATION: A Shallow
SAMPLER: D. Reese REF.#: 76,787
DATE SAMPLED: July 12, 1995 TIME SAMPLED: 11:00
DATE RECEIVED: July 13, 1995

<u>Parameter</u>	<u>Detection Limit (ug/kg)</u>	<u>Concentration As Received (ug/kg)</u>
Benzene	10	ND ¹
Chlorobenzene	20	ND
1,2-Dichlorobenzene	20	ND
1,3-Dichlorobenzene	20	ND
1,4-Dichlorobenzene	20	ND
Ethylbenzene	10	ND
Toluene	10	ND
Total Xylenes	30	ND
MTBE	30	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

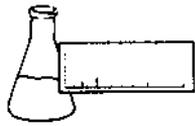
ANALYTICAL SURROGATE RECOVERY:

1,2 Dichloroethane-d4: 113.%
Toluene-d8: 107.%
4-Bromofluorobenzene: 93.%

PERCENT SOLIDS: 85.%

NOTES:

1 None detected



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LABORATORY REPORT

EPA METHOD 8020 COMPOUNDS BY EPA METHOD 8240

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 31 West Street
REPORT DATE: July 26, 1995
SAMPLER: D. Reese
DATE SAMPLED: July 12, 1995
DATE RECEIVED: July 13, 1995

PROJECT CODE: HNWS1570
ANALYSIS DATE: July 19, 1995
STATION: B Deep
REF.#: 76,788
TIME SAMPLED: 11:30

<u>Parameter</u>	<u>Detection Limit (ug/kg)</u>	<u>Concentration As Received (ug/kg)</u>
Benzene	10	ND ¹
Chlorobenzene	20	ND
1,2-Dichlorobenzene	20	ND
1,3-Dichlorobenzene	20	ND
1,4-Dichlorobenzene	20	ND
Ethylbenzene	10	ND
Toluene	10	ND
Total Xylenes	30	TBQ ²
MTBE	30	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

ANALYTICAL SURROGATE RECOVERY:

1,2 Dichloroethane-d4:	94.%
Toluene-d8:	107.%
4-Bromofluorobenzene:	100.%

PERCENT SOLIDS: 83.%

NOTES:

- 1 None detected
- 2 Trace below quantitation limit

