

## Heindel and Noyes

P.O. Box 64709 Burlington, Vermont 05406-4709

- Consulting Hydrogeologists
- Engineers
- Environmental Scientists

802-658-0820

Fax 802-860-1014

March 17, 1997

Mr. Michael B. Smith  
Waste Management Section  
Agency of Natural Resources  
103 South Main St. (West Office)  
Waterbury, Vermont 05671-0404

Re: S.T. Griswold Concrete Products Plant  
Williston, Vermont

Dear Mr. Schwer:

Heindel and Noyes recently completed a subsurface investigation of the S.T. Griswold Concrete Products Plant in Williston. The subsurface investigation, completed as part of a Phase I/Phase II Environmental Assessment, included the installation of fourteen monitoring wells. As we discussed on the telephone March 7, tetrachloroethene (PCE) and trichloroethene (TCE) were encountered in groundwater on the property. Mr. Douglas Griswold, president of S.T. Griswold, Inc. has authorized Heindel and Noyes to submit the investigation results and a brief analysis to the Waste Management Division.

The S.T. Griswold Concrete Products plant is located at 35 Industrial Avenue in Williston (See Site Location Map, page 1 of Attachment). The site physiography is also illustrated on the Site Location Map. Fourteen monitoring wells were installed on the S.T. Griswold property as part of the Phase II site characterization process. The monitoring wells were developed and sampled for laboratory characterization immediately following installation; the real-time analytical data were employed to modify the drilling program. The monitoring well locations and top-of-pipe elevations were surveyed March 10 and water levels were measured March 11, 1997.

Soils on the site consisted predominantly of uniformly graded, fine to medium-grained sand. A clay confining unit was encountered at approximately 70 feet below grade in boring MW-9; the clay layer, which was not penetrated, was more than seven feet thick at this location. The water table occurs from approximately 45-75 feet below grade, and the groundwater flow direction is northward toward the Shelburne Shipyard, Inc. Property

March 19 10 49 AM '97

658-0201

Mr. Charles Schwer  
March 14, 1997  
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(see Water Table/ Contaminant Distribution Map, page 2 of Attachment). The horizontal hydraulic gradient averaged over the entire site (SB-1 to MW -10) is 0.018 ft/ft.

Groundwater samples were submitted for laboratory characterization by EPA method 601. The laboratory analytical reports are presented in the Attachment (pages 3 to 17). The analytical results are compiled below.

Monitoring Well	PCE ( $\mu\text{g/L}$ )	TCE ( $\mu\text{g/L}$ )	DCE ( $\mu\text{g/L}$ )
MW-9	ND <sup>1</sup>	ND	ND
MW-10	41.2	1.6	ND
MW-13	ND	ND	ND
MW-14	64.1	ND	ND
MW-15	57.0	1.1	ND
MW-16	9.0	1.7	ND
MW-17	0.8	ND	ND
MW-18	17.6	12.1	ND
MW-19	46.2	11.2	2.7
MW-20	1.8	4.0	ND
MW-21	51.7	7.9	ND
SB-1	ND	ND	ND
MW-101	ND	ND	ND
MW-102	13.6	2.0	ND
MW-103	28.1	ND	ND

<sup>1</sup>ND - Not Detected

PCE concentrations ranged from below detection to more than 50  $\mu\text{g/L}$  (MW-15; MW-21) (see Contaminant Distribution Map, page 2 of Attachment). TCE concentrations were lower, ranging from below detection to 12.1  $\mu\text{g/L}$  (MW-18). Cis-1,2-dichloroethene was

Mr. Charles Schwer

March 14, 1997

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observed only in MW-19 (2.7  $\mu\text{g/L}$ ). With the exception of 1,2-dichloropropane in MW 15 (1.8  $\mu\text{g/L}$ ), no other target or nontarget analytes were present.

Heindel and Noyes determined through historical land use research that tetrachloroethene from the IBM facility in Essex Junction was repackaged at the Lab Building on the Griswold Property (see page 2 of Attachment). This repackaging activity reportedly occurred for a few years in the late 1960s. Additional source characterization will be required to determine the extent of contamination in the area.

In summary, PCE and TCE have been identified in groundwater on the S.T. Griswold property in Williston. The chlorinated hydrocarbon contamination probably originated through solvent repackaging activities during the late 1960s. There is no field or analytical evidence available to suggest DNAPL PCE is present, but further source characterization is required. Due to extremely time-sensitive refinancing constraints, Heindel and Noyes recommends that additional characterization be conducted in an expedited fashion.

On behalf of S.T. Griswold, Heindel and Noyes would like to meet with the DEC Site Manager as soon as possible to develop a collaborative plan of study. Please contact me if you have questions or comments regarding this report.

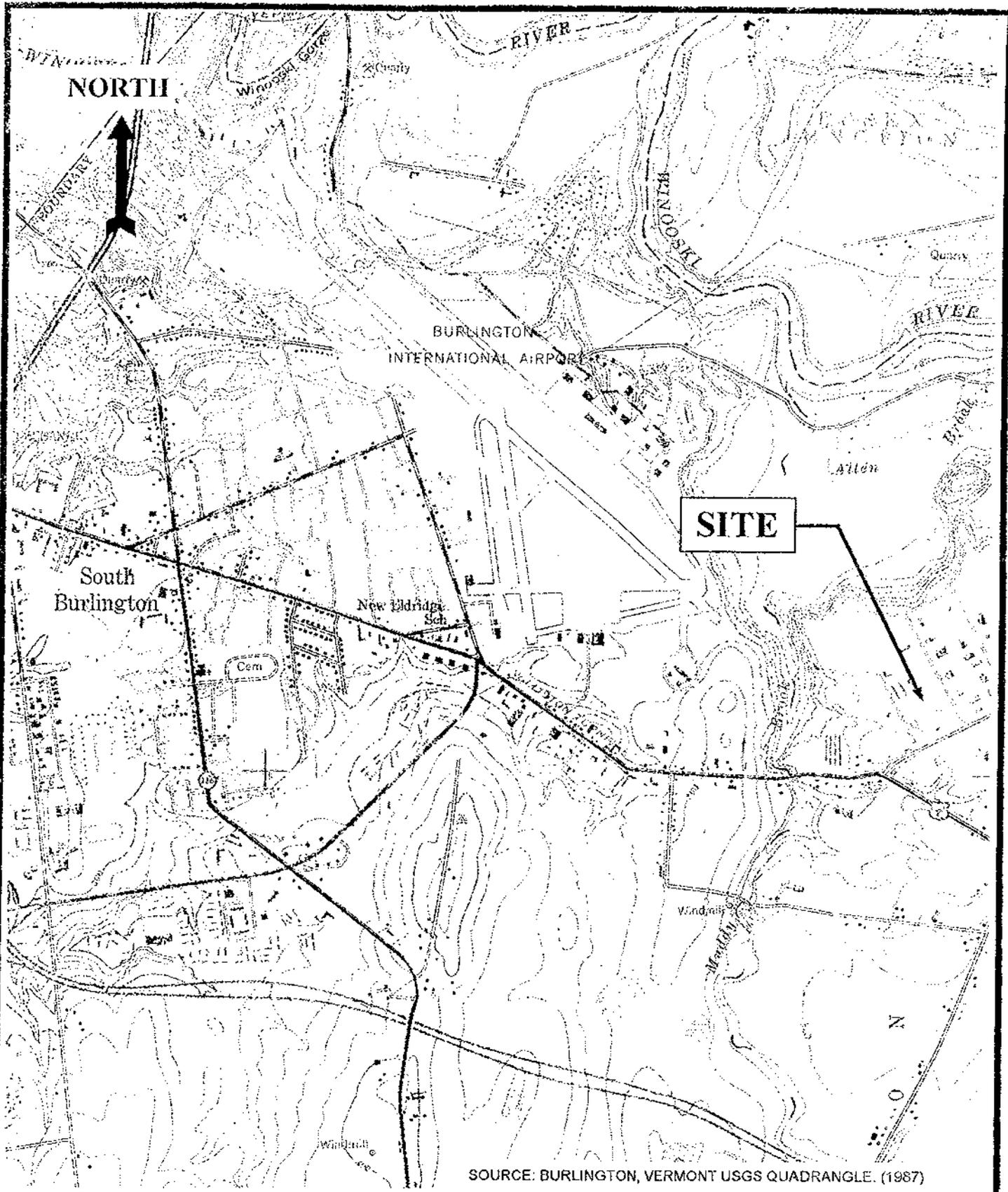
Sincerely,



Jeffrey A. Silfer, PhD  
Project Manager

Attachments

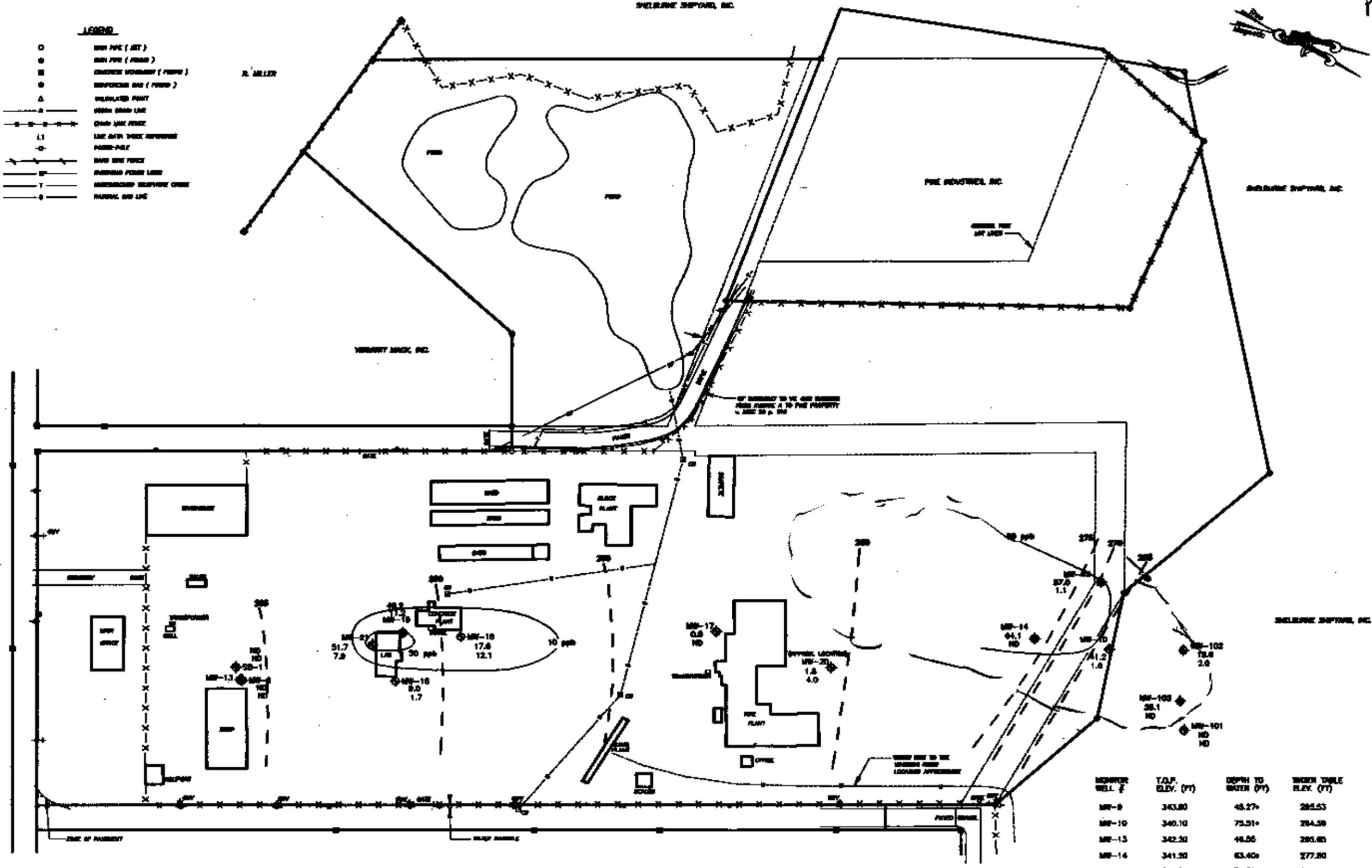
cc: Mr. Douglas Griswold (S.T. Griswold, Inc.)



SOURCE: BURLINGTON, VERMONT USGS QUADRANGLE. (1987)

<p><b>GRISWOLD - PHASE 1</b></p> <p>WILLISTON, VERMONT</p>		<p>DATE: NOVEMBER 27, 1996</p>	<p><b>Nelson, Heindel, and Noyes, Inc.</b></p>  <ul style="list-style-type: none"> <li>• Hydrogeology • Ecology •</li> <li>• Environmental Engineering •</li> </ul> <p>CONSULTING SOILISTS AND ENGINEERS</p> <p>P.O. BOX 64709 - BURLINGTON, VERMONT 05405</p> <p>PREPARED BY: INFORMATION &amp; VISUALIZATION SERVICES</p>
		<p>PROJECT NO.</p>	
<p><b>SITE LOCATION MAP</b></p>		<p>DRAWN BY: M. Luman</p>	
		<p>PROJ. MGR: G. Noyes</p>	
<p>SCALE: 1"=2000'</p>	<p>FILE: C:\GRISPLNT\SITEMAP</p>	<p>APPROVED: J. Noyes</p>	

- LEGEND**
- MON PILE (SET)
  - MON PILE (PUSH)
  - ⊖ CHECKED MONUMENT (PUSH)
  - ⊙ MONUMENT MARK (PUSH)
  - △ UNCALCULATED POINT
  - VISIBLE BOUNDARY LINE
  - DASHED BOUNDARY LINE
  - LI LINE WITH DASHED REFERENCE
  - PILE-PILE
  - MON PILE FENCE
  - BOUNDARY FENCE LINE
  - BOUNDARY SURVEY CHAIN
  - NATURAL BOUNDARY LINE



- 329 WINDSHIELD GLASS (PP)
- 64.1 PCE CONCENTRATION (µg/L)
- 12.1 TCE CONCENTRATION (µg/L)

MONITORING WELL #	T.O.P. ELEV. (FT)	DEPTH TO WATER (FT)	SCREEN TOILE ELEV. (FT)
MW-9	343.80	48.27	295.53
MW-10	340.10	75.51	264.59
MW-13	342.20	46.66	295.54
MW-14	341.20	63.60	277.60
MW-15	341.70	74.29	267.41
MW-16	338.60	47.36	291.24
MW-17	340.00	37.38	302.62
MW-18	339.80	66.28	273.52
MW-19	339.20	66.78	272.42
MW-20	NA	NA	NA
MW-21	338.60	66.26	272.34
SB-1	341.40	45.77	295.63

\* MONITORING WELL SCREEN IS BELOW WATER TABLE.  
NA - NOT AVAILABLE - WELL COVERED WITH SNOW

**Heindel and Noyes**

- Hydrogeology • Ecology •
- Environmental Engineering •
- CONSULTING SCIENTISTS AND ENGINEERS

P.O. BOX 64709  
BURLINGTON, VERMONT 05406-4709

Prepared By:  
Information & Visualization Services

DATE: MARCH 17, 1997  
PROJECT NO. 96296  
DRAWN BY: M. Luman  
PROJ. MGR: J. Siffer  
APPROVED: J. Noyes

DRAFT     FINAL

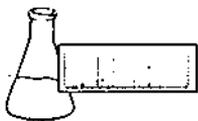
**S.T. GRISWOLD**

VERMONT

**WATER TABLE & CONTAMINANT DISTRIBUTION MAP**

SCALE: 1" = 200'

FILE: C:\STGRIS\SITEPLAN



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

### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 6, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 11, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,798  
STATION: MW 101  
TIME SAMPLED: 2:45  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)	<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	13.6
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	2.0
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

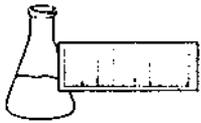
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 102.%  
Toluene-d8 : 96.%  
4-Bromofluorobenzene : 114.%

#### NOTES:

1 None detected



### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 6, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 11, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,799  
STATION: MW 102  
TIME SAMPLED: 2:55  
SAMPLER: Gerold Noyes

Parameter	Detection Limit (ug/L)	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	1	ND	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	28.1
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 106.0%  
Toluene-d8 : 95.0%  
4-Bromofluorobenzene : 113.0%

#### NOTES:

1 None detected



### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 6, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 11, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,800  
STATION: MW 103  
TIME SAMPLED: 3:10  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)	<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

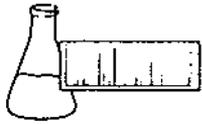
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 111.%  
Toluene-d8 : 106.%  
4-Bromofluorobenzene : 106.%

#### NOTES:

1 None detected



**ENDYNE, INC.**

Laboratory Services

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

LABORATORY REPORT

EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 7, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 16, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,650  
STATION: Garage MW-1 (SB-1) JAS  
TIME SAMPLED: 10:30  
SAMPLER: G.W.N./A.T.H.

<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)	<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

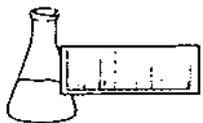
NUMBER OF UNIDENTIFIED PEAKS FOUND: >10<sup>2</sup>

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 103. %  
Toluene-d8 : 95. %  
4-Bromofluorobenzene : 98. %

NOTES:

- 1 None detected
- 2 The unidentified peaks in this sample are Aliphatic Hydrocarbons and Alkylated Benzenes ranging from 2-25ug/L.



### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 6, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 11, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,802  
STATION: MW 9  
TIME SAMPLED: 3:20  
SAMPLER: Gerold Noyes

Parameter	Detection Limit (ug/L)	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

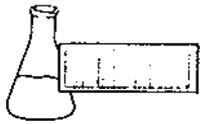
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 116.%  
Toluene-d8 : 98.%  
4-Bromofluorobenzene : 113.%

#### NOTES:

1 None detected



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### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 7, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 11, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,801  
STATION: MW 10  
TIME SAMPLED: Not Indicated  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)	<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	41.2
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	1.6
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

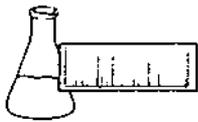
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 107. %  
Toluene-d8 : 98. %  
4-Bromofluorobenzene : 108. %

#### NOTES:

1 None detected



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### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 28, 1997  
DATE SAMPLED: February 26, 1997  
DATE RECEIVED: February 26, 1997  
ANALYSIS DATE: February 27, 1997

PROJECT CODE: HNSG1126  
REF.#: 100,311  
STATION: MW 13  
TIME SAMPLED: 9:05  
SAMPLER: Chris Aldrich

Parameter	Detection Limit (ug/L)	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

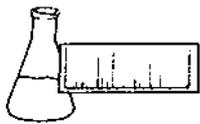
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 101.%  
Toluene-d8 : 95.%  
4-Bromofluorobenzene : 108.%

#### NOTES:

1 None detected



## LABORATORY REPORT

### EPA METHOD 601 COMPOUNDS BY EPA METHOD 8260 -- PURGEABLE HALOCARBONS

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold  
REPORT DATE: February 28, 1997  
SAMPLER: C. Aldrich  
DATE SAMPLED: February 26, 1997  
DATE RECEIVED: February 26, 1997

PROJECT CODE: HNSG1127  
ANALYSIS DATE: February 26, 1997  
STATION: MW-14  
REF.#: 100,312  
TIME SAMPLED: 3:55 p.m.

<u>Parameter</u>	<u>Minimum Detection Limit(ug/L)</u>	<u>Concentration (ug/L)</u>
Bromodichloromethane	1.	ND <sup>1</sup>
Bromoform	2.	ND
Bromomethane	2.	ND
Carbon tetrachloride	1.	ND
Chlorobenzene	1.	ND
Chloroethane	5.	ND
2-Chloroethylvinyl ether	5.	ND
Chloroform	1.	ND
Chloromethane	5.	ND
Dibromochloromethane	2.	ND
1,2-Dichlorobenzene	1.	ND
1,3-Dichlorobenzene	1.	ND
1,4-Dichlorobenzene	1.	ND
Dichlorodifluoromethane	5.	ND
1,1-Dichloroethane	1.	ND
1,2-Dichloroethane	1.	ND
1,1-Dichloroethene	1.	ND
cis-1,2-Dichloroethene	1.	ND
trans-1,2-Dichloroethene	1.	ND
1,2-Dichloropropane	1.	ND
cis-1,3-Dichloropropene	1.	ND
trans-1,3-Dichloropropene	1.	ND
Methylene Chloride	5.	ND
1,1,2,2-Tetrachloroethane	1.	ND
Tetrachloroethene	0.7	64.1
1,1,1-Trichloroethane	1.	ND
1,1,2-Trichloroethane	1.	ND
Trichloroethene	1.	ND
Trichlorofluoromethane	2.	ND
Vinyl Chloride	2.	ND

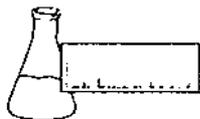
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane:	98.%
Toluene-d8:	98.%
4-Bromofluorobenzene:	102.%

#### NOTES:

1 None detected



## LABORATORY REPORT

### EPA METHOD 601 COMPOUNDS BY EPA METHOD 8260 -- PURGEABLE HALOCARBONS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST. Griswold  
REPORT DATE: March 4, 1997  
SAMPLER: Chris Aldrich  
DATE SAMPLED: February 27, 1997  
DATE RECEIVED: February 27, 1997

PROJECT CODE: HNSG1138  
ANALYSIS DATE: February 27, 1997  
STATION: MW15  
REF.#: 100,332  
TIME SAMPLED: 11:30

<u>Parameter</u>	<u>Minimum Detection Limit(ug/L)</u>	<u>Concentration (ug/L)</u>
Bromodichloromethane	1.	ND <sup>1</sup>
Bromoform	2.	ND
Bromomethane	2.	ND
Carbon tetrachloride	1.	ND
Chlorobenzene	1.	ND
Chloroethane	5.	ND
2-Chloroethylvinyl ether	5.	ND
Chloroform	1.	ND
Chloromethane	5.	ND
Dibromochloromethane	2.	ND
1,2-Dichlorobenzene	1.	ND
1,3-Dichlorobenzene	1.	ND
1,4-Dichlorobenzene	1.	ND
Dichlorodifluoromethane	5.	ND
1,1-Dichloroethane	1.	ND
1,2-Dichloroethane	1.	ND
1,1-Dichloroethene	1.	ND
cis-1,2-Dichloroethene	1.	ND
trans-1,2-Dichloroethene	1.	ND
1,2-Dichloropropane	1.	1.8
cis-1,3-Dichloropropene	1.	ND
trans-1,3-Dichloropropene	1.	ND
Methylene Chloride	5.	ND
1,1,2,2-Tetrachloroethane	1.	ND
Tetrachloroethene	0.7	57.0
1,1,1-Trichloroethane	1.	ND
1,1,2-Trichloroethane	1.	ND
Trichloroethene	1.	1.1
Trichlorofluoromethane	2.	ND
Vinyl Chloride	2.	ND

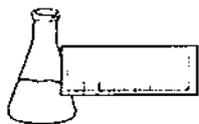
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane: 92.%  
Toluene-d8: 98.%  
4-Bromofluorobenzene: 107.%

#### NOTES:

1 None detected



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### LABORATORY REPORT

#### EPA METHOD 601 COMPOUNDS BY EPA METHOD 8260 -- PURGEABLE HALOCARBONS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST. Griswold  
REPORT DATE: March 4, 1997  
SAMPLER: JPW  
DATE SAMPLED: March 3, 1997  
DATE RECEIVED: March 3, 1997

PROJECT CODE: HNSG1184  
ANALYSIS DATE: March 3, 1997  
STATION: MW 16  
REF.#: 100,446  
TIME SAMPLED: 1440

<u>Parameter</u>	<u>Minimum Detection Limit(ug/L)</u>	<u>Concentration (ug/L)</u>
Bromodichloromethane	1.	ND <sup>1</sup>
Bromoform	2.	ND
Bromomethane	2.	ND
Carbon tetrachloride	1.	ND
Chlorobenzene	1.	ND
Chloroethane	5.	ND
2-Chloroethylvinyl ether	5.	ND
Chloroform	1.	ND
Chloromethane	5.	ND
Dibromochloromethane	2.	ND
1,2-Dichlorobenzene	1.	ND
1,3-Dichlorobenzene	1.	ND
1,4-Dichlorobenzene	1.	ND
Dichlorodifluoromethane	5.	ND
1,1-Dichloroethane	1.	ND
1,2-Dichloroethane	1.	ND
1,1-Dichloroethene	1.	ND
cis-1,2-Dichloroethene	1.	ND
trans-1,2-Dichloroethene	1.	ND
1,2-Dichloropropane	1.	ND
cis-1,3-Dichloropropene	1.	ND
trans-1,3-Dichloropropene	1.	ND
Methylene Chloride	5.	ND
1,1,2,2-Tetrachloroethane	1.	ND
Tetrachloroethene	0.7	9.0
1,1,1-Trichloroethane	1.	ND
1,1,2-Trichloroethane	1.	ND
Trichloroethene	1.	1.7
Trichlorofluoromethane	2.	ND
Vinyl Chloride	2.	ND

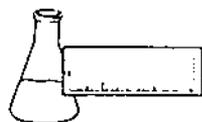
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane:	98.%
Toluene-d8:	99.%
4-Bromofluorobenzene:	102.%

#### NOTES:

1 None detected



## LABORATORY REPORT

### EPA METHOD 601 COMPOUNDS BY EPA METHOD 8260 -- PURGEABLE HALOCARBONS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST. Griswold  
REPORT DATE: March 4, 1997  
SAMPLER: Chris Aldrich  
DATE SAMPLED: March 4, 1997  
DATE RECEIVED: March 4, 1997

PROJECT CODE: HNSG1191  
ANALYSIS DATE: March 4, 1997  
STATION: MW-17  
REF.#: 100,469  
TIME SAMPLED: 8:50

<u>Parameter</u>	<u>Minimum Detection Limit(ug/L)</u>	<u>Concentration (ug/L)</u>
Bromodichloromethane	1.	ND <sup>1</sup>
Bromoform	2.	ND
Bromomethane	2.	ND
Carbon tetrachloride	1.	ND
Chlorobenzene	1.	ND
Chloroethane	5.	ND
2-Chloroethylvinyl ether	5.	ND
Chloroform	1.	ND
Chloromethane	5.	ND
Dibromochloromethane	2.	ND
1,2-Dichlorobenzene	1.	ND
1,3-Dichlorobenzene	1.	ND
1,4-Dichlorobenzene	1.	ND
Dichlorodifluoromethane	5.	ND
1,1-Dichloroethane	1.	ND
1,2-Dichloroethane	1.	ND
1,1-Dichloroethene	1.	ND
cis-1,2-Dichloroethene	1.	ND
trans-1,2-Dichloroethene	1.	ND
1,2-Dichloropropane	1.	ND
cis-1,3-Dichloropropene	1.	ND
trans-1,3-Dichloropropene	1.	ND
Methylene Chloride	5.	ND
1,1,2,2-Tetrachloroethane	1.	ND
Tetrachloroethene	0.7	0.8
1,1,1-Trichloroethane	1.	ND
1,1,2-Trichloroethane	1.	ND
Trichloroethene	1.	ND
Trichlorofluoromethane	2.	ND
Vinyl Chloride	2.	ND

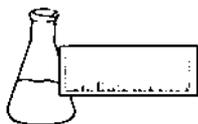
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane:	97.%
Toluene-d8:	101.%
4-Bromofluorobenzene:	104.%

#### NOTES:

1 None detected



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### LABORATORY REPORT

#### EPA METHOD 601 COMPOUNDS BY EPA METHOD 8260 -- PURGEABLE HALOCARBONS

CLIENT: March 4, 1997  
PROJECT NAME: Heindel and Noyes  
REPORT DATE: March 4, 1997  
SAMPLER: Chris Aldrich  
DATE SAMPLED: February 4, 1997  
DATE RECEIVED: February 4, 1997

PROJECT CODE: HNSG1193  
ANALYSIS DATE: March 4, 1997  
STATION: MW 18  
REF.#: 100,471  
TIME SAMPLED: 1100

<u>Parameter</u>	<u>Minimum Detection Limit(ug/L)</u>	<u>Concentration (ug/L)</u>
Bromodichloromethane	1.	ND <sup>1</sup>
Bromoform	2.	ND
Bromomethane	2.	ND
Carbon tetrachloride	1.	ND
Chlorobenzene	1.	ND
Chloroethane	5.	ND
2-Chloroethylvinyl ether	5.	ND
Chloroform	1.	ND
Chloromethane	5.	ND
Dibromochloromethane	2.	ND
1,2-Dichlorobenzene	1.	ND
1,3-Dichlorobenzene	1.	ND
1,4-Dichlorobenzene	1.	ND
Dichlorodifluoromethane	5.	ND
1,1-Dichloroethane	1.	ND
1,2-Dichloroethane	1.	ND
1,1-Dichloroethene	1.	ND
cis-1,2-Dichloroethene	1.	ND
trans-1,2-Dichloroethene	1.	ND
1,2-Dichloropropane	1.	ND
cis-1,3-Dichloropropene	1.	ND
trans-1,3-Dichloropropene	1.	ND
Methylene Chloride	5.	ND
1,1,2,2-Tetrachloroethane	1.	ND
Tetrachloroethene	0.7	17.6
1,1,1-Trichloroethane	1.	ND
1,1,2-Trichloroethane	1.	ND
Trichloroethene	1.	12.1
Trichlorofluoromethane	2.	ND
Vinyl Chloride	2.	ND

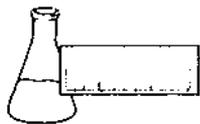
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane:	96.%
Toluene-d8:	102.%
4-Bromofluorobenzene:	106.%

#### NOTES:

1 None detected



**ENDYNE, INC.**

Laboratory Services

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LABORATORY REPORT

EPA METHOD 601 COMPOUNDS BY EPA METHOD 8260 -- PURGEABLE HALOCARBONS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST. Griswold  
REPORT DATE: March 5, 1997  
SAMPLER: Chris Aldrich  
DATE SAMPLED: March 4, 1997  
DATE RECEIVED: March 4, 1997

PROJECT CODE: HNSG1206  
ANALYSIS DATE: March 4, 1997  
STATION: MW19  
REF.#: 100,498  
TIME SAMPLED: 3:45

<u>Parameter</u>	<u>Minimum Detection Limit(ug/L)</u>	<u>Concentration (ug/L)</u>
Bromodichloromethane	1.	ND <sup>1</sup>
Bromoform	2.	ND
Bromomethane	2.	ND
Carbon tetrachloride	1.	ND
Chlorobenzene	1.	ND
Chloroethane	5.	ND
2-Chloroethylvinyl ether	5.	ND
Chloroform	1.	ND
Chloromethane	5.	ND
Dibromochloromethane	2.	ND
1,2-Dichlorobenzene	1.	ND
1,3-Dichlorobenzene	1.	ND
1,4-Dichlorobenzene	1.	ND
Dichlorodifluoromethane	5.	ND
1,1-Dichloroethane	1.	ND
1,2-Dichloroethane	1.	ND
1,1-Dichloroethene	1.	ND
cis-1,2-Dichloroethene	1.	2.7
trans-1,2-Dichloroethene	1.	ND
1,2-Dichloropropane	1.	ND
cis-1,3-Dichloropropene	1.	ND
trans-1,3-Dichloropropene	1.	ND
Methylene Chloride	5.	ND
1,1,2,2-Tetrachloroethane	1.	ND
Tetrachloroethene	0.7	46.2
1,1,1-Trichloroethane	1.	ND
1,1,2-Trichloroethane	1.	ND
Trichloroethene	1.	11.2
Trichlorofluoromethane	2.	ND
Vinyl Chloride	2.	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

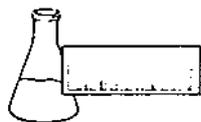
ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane: 99.0%  
Toluene-d8: 98.0%  
4-Bromofluorobenzene: 110.0%

NOTES:

1 None detected

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## LABORATORY REPORT

### EPA METHOD 601 COMPOUNDS BY EPA METHOD 8260 -- PURGEABLE HALOCARBONS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: March 7, 1997  
SAMPLER: Chris Aldrich  
DATE SAMPLED: March 5, 1997  
DATE RECEIVED: March 5, 1997

PROJECT CODE: HNSG1214  
ANALYSIS DATE: March 5, 1997  
STATION: MW-20  
REF.#: 100,523  
TIME SAMPLED: 11:05

<u>Parameter</u>	<u>Minimum Detection Limit(ug/L)</u>	<u>Concentration (ug/L)</u>
Bromodichloromethane	1.	ND <sup>1</sup>
Bromoform	2.	ND
Bromomethane	2.	ND
Carbon tetrachloride	1.	ND
Chlorobenzene	1.	ND
Chloroethane	5.	ND
2-Chloroethylvinyl ether	5.	ND
Chloroform	1.	ND
Chloromethane	5.	ND
Dibromochloromethane	2.	ND
1,2-Dichlorobenzene	1.	ND
1,3-Dichlorobenzene	1.	ND
1,4-Dichlorobenzene	1.	ND
Dichlorodifluoromethane	5.	ND
1,1-Dichloroethane	1.	ND
1,2-Dichloroethane	1.	ND
1,1-Dichloroethene	1.	ND
cis-1,2-Dichloroethene	1.	ND
trans-1,2-Dichloroethene	1.	ND
1,2-Dichloropropane	1.	ND
cis-1,3-Dichloropropene	1.	ND
trans-1,3-Dichloropropene	1.	ND
Methylene Chloride	5.	ND
1,1,2,2-Tetrachloroethane	1.	ND
Tetrachloroethene	0.7	1.8
1,1,1-Trichloroethane	1.	ND
1,1,2-Trichloroethane	1.	ND
Trichloroethene	1.	4.0
Trichlorofluoromethane	2.	ND
Vinyl Chloride	2.	ND

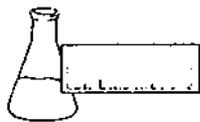
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane:	97.%
Toluene-d8:	103.%
4-Bromofluorobenzene:	103 %

NOTES:

1 None detected



**ENDYNE, INC.**

Laboratory Services

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LABORATORY REPORT

EPA METHOD 601 COMPOUNDS BY EPA METHOD 8260 -- PURGEABLE HALOCARBONS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST. Griswold  
REPORT DATE: March 6, 1997  
SAMPLER: Chris Aldrich  
DATE SAMPLED: March 5, 1997  
DATE RECEIVED: March 5, 1997

PROJECT CODE: HNSG1216  
ANALYSIS DATE: March 5, 1997  
STATION: MW21  
REF.#: 100,528  
TIME SAMPLED: 2:10

<u>Parameter</u>	<u>Minimum Detection Limit(ug/L)</u>	<u>Concentration (ug/L)</u>
Bromodichloromethane	1.	ND <sup>1</sup>
Bromoform	2.	ND
Bromomethane	2.	ND
Carbon tetrachloride	1.	ND
Chlorobenzene	1.	ND
Chloroethane	5.	ND
2-Chloroethylvinyl ether	5.	ND
Chloroform	1.	ND
Chloromethane	5.	ND
Dibromochloromethane	2.	ND
1,2-Dichlorobenzene	1.	ND
1,3-Dichlorobenzene	1.	ND
1,4-Dichlorobenzene	1.	ND
Dichlorodifluoromethane	5.	ND
1,1-Dichloroethane	1.	ND
1,2-Dichloroethane	1.	ND
1,1-Dichloroethene	1.	ND
cis-1,2-Dichloroethene	1.	ND
trans-1,2-Dichloroethene	1.	ND
1,2-Dichloropropane	1.	ND
cis-1,3-Dichloropropene	1.	ND
trans-1,3-Dichloropropene	1.	ND
Methylene Chloride	5.	ND
1,1,2,2-Tetrachloroethane	1.	ND
Tetrachloroethene	0.7	51.7
1,1,1-Trichloroethane	1.	ND
1,1,2-Trichloroethane	1.	ND
Trichloroethene	1.	7.9
Trichlorofluoromethane	2.	ND
Vinyl Chloride	2.	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

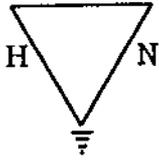
ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane: 100.%  
Toluene-d8: 102.%  
4-Bromofluorobenzene: 107.%

NOTES:

1 None detected

MAR 19 1997



**Heindel and Noyes**

P.O. Box 64709 Burlington, Vermont 05406-4709

- Consulting Hydrogeologists
- Engineers
- Environmental Scientists

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# ST GRISWOLD CONCRETE

## WILLISTON, VERMONT

### PHASE II ENVIRONMENTAL SITE ASSESSMENT

*Prepared by:*

Heindel and Noyes

*Prepared for:*

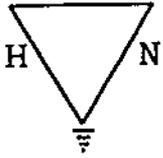


# ST Griswold Concrete Williston, Vermont

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### ST Griswold Concrete Williston, Vermont

#### PHASE II ENVIRONMENTAL SITE INVESTIGATION

##### EXECUTIVE SUMMARY

Heindel, and Noyes (H&N) has completed a Phase II investigation of the ST Griswold Concrete Products Plant at 35 Industrial Avenue in Williston, Vermont. The investigation included soil vapor testing, a soil boring/monitoring well installation program, laboratory analysis of soil, septic tank, drywell, and groundwater samples, and tracing of floor drains on the property.

The investigation was designed to define the nature and extent of soil and groundwater contamination associated with the 30+ years of operations at the concrete products plant. This work was intended to address potential areas of concern identified during an earlier Phase I Environmental Site Assessment submitted to Mr. Doug Griswold, President of ST Griswold<sup>1</sup>. An overview of the results of the NH&N investigation is presented below.

- Based on the type and concentration of compounds found in the maintenance shop and block plant septic tanks, the contaminants identified are most likely the result of hand washing using commercially available hand cleaner. No further investigation is needed at these locations.
- Drain tracing, PID screening, and lab results of a soil sample, taken from the block plant floor drain in the boiler room indicate that no further investigation is needed at this location.
- The drywell for the new part of the maintenance shop (eastern addition), which serves the paint booth and one other floor drain, was sampled and the influent pipe from the building was inspected. No residues or moisture were noted in the pipe, PID readings were at background levels. No residues or discoloration were observed on the floor of the drywell. Lab analysis of the soil in this drywell found no detectable contaminants. No additional work is required in this area.

- Lab analysis of the soil in the Pipe Plant Building #3 drainage trench and the Pipe Plant Building #1 drainage trench outfall indicate contamination with petroleum hydrocarbons. Petroleum hydrocarbon contamination was also found in the sediment at the bottom of the Building #3 west floor drain.
- Lab analysis of groundwater and soil samples near the Maintenance Shop northwest drywell found no contamination, however soil vapor pump tests indicate the probability of biodegradation of petroleum hydrocarbons. This is consistent with the petroleum contaminated water in the shop floor drains, which are connected to this drywell.
- Petroleum hydrocarbon contaminated soil was found in the Shop oil change trench floor drain. The top foot of the soil was oil saturated. A soil sample from 16 feet depth found only a trace below the quantitation limit of total petroleum hydrocarbon contamination.
- Lab analysis of soil samples near the Sakrete® Plant diesel fuel UST found no contamination, however soil vapor pump tests indicate the probability of ongoing biodegradation of petroleum hydrocarbons in the soils not encountered at the boring location.
- Lab analysis of soil samples near the Administration Building fuel oil UST found no contamination, however soil vapor tests indicate the possibility of ongoing biodegradation of petroleum hydrocarbons.
- Lab analysis of soil samples near the Sales Office fuel oil UST found no contamination, however soil vapor tests indicate the possibility of ongoing biodegradation of petroleum hydrocarbons.
- The contamination found on site at several locations is consistent with the operations on site of heavy equipment and equipment maintenance. Contamination in the Pipe Plant is a result of the use of petroleum based form oil.

## **CONCLUSIONS AND RECOMMENDATIONS**

H&N has completed a Phase II investigation of the ST Griswold Concrete products manufacturing facility in Williston, Vermont. The investigation included drain tracing, outfall identification, and a subsurface sampling and testing program. Conclusions and recommendations are presented below.

1. A number of floor drains were discovered on site, many of which are seldom used. H&N recommends that their usefulness be evaluated and that the unnecessary drains be sealed to prevent accidental contamination of their associated drywells

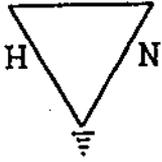
or septic systems. The other floor drains should be permitted with the Vermont Underground Injection Control program.

2. The Maintenance Shop septic tank and Block Plant leach tanks were exposed and sampled. From analysis of the septic tank contents, H&N does not believe that these septic systems pose an environmental threat to the subject property or that further investigation is necessary.
3. The Block Plant floor drain in the boiler room was investigated. A trace below quantitation level of 1,2,4- trimethylbenzene was noted in the analysis of the sediment from floor drain, however no other EPA 8260 target analytes were found. H&N believes that no further investigation is needed at this location. The plant supervisor stated that this drain is rarely used. H&N recommends that it be sealed to prevent future accidental discharges into it.
4. Analysis of the soil in the northeast drywell for Maintenance Shop found no detectable volatile organic contaminants. Because this drywell is connected to a floor drain in a spray painting booth, there is a risk of solvent contamination to the soil subsurface. H&N recommends that this drywell be filled in and the two associated floor drains be closed.
5. At the Maintenance Shop northwest drywell, soil vapor testing and the analysis of the drywell influent indicate contamination with a low volatility petroleum hydrocarbon such as motor oil or diesel fuel. It appears likely that biodegradation is occurring. H&N recommends that the shop floor drains be closed or that their discharge first go to a properly functioning oil/water separator before entering the drywell. H&N also recommends that this area be evaluated for remediation.
6. Petroleum product contamination was found below the Maintenance Shop oil change trench floor drain. The maximum extent of contamination appears to be 16 feet. H&N recommends that this area be evaluated for remediation and that this floor drain be closed to prevent further contamination.
7. Soil borings were performed in all three sections of the Pipe Plant. Since the four post holes in Buildings #1 and #2 have open bottoms to the subsurface, the potential of subsurface contamination exists from the form oil in use in the building. H&N recommends that the bottoms of these holes be sealed to prevent future soil contamination.
8. H&N recommends that the trench drain outfall at the Pipe Plant Building #1 be closed to prevent future contamination and that the soil in the vicinity of this outfall be excavated, encapsulated, and stockpiled on site to allow natural attenuation to destroy this contamination.

9. Two connected floor drains were observed in Building #2. The sediment at the bottom of the western floor drain was tested and shown to contain contamination from the form oil in use in the building. H&N recommends that the sediment in the floor drain be removed and treated on site. The floor drains should be sealed to prevent contamination from potentially migrating to and contaminating the catch basin in Building #3.
10. Building #3 contains a concrete lined drain trench, which with years of use, has filled with soil and granular absorbent spread to contain form oil spills and over spray. Lab analysis of this soil indicate that it has been contaminated with petroleum hydrocarbons. H&N recommends that the soil in this trench be excavated, mixed with manure, and composted on site until the naturally occurring soil microbes have degraded the petroleum hydrocarbons.
11. Building #3 also contains a catch basin under the concrete floor. This basin is the outfall of the two floor drains in Building #2. A soil boring at this location revealed no PID readings above background. Laboratory analysis of a soil sample did not find any detectable contamination. H&N does not recommend any further action here, other than to close the floor drains in Building #2.
12. Lab analysis of a soil sample collected during the installation of a soil vapor well at the Sakrete<sup>®</sup> diesel UST location did not show any detectable contamination. PID screening of a bagged soil did show VOC contamination after over night equilibration in a warm room. Soil vapor screening indicates probable contamination with a weathered low volatility petroleum hydrocarbon such as motor oil or diesel fuel. H&N recommends that this area be evaluated for remediation.
13. Lab analysis of a soil sample collected during the installation of a soil vapor well at the Administration Building fuel oil UST location did not show any detectable contamination. However, PID screening of a bagged soil sample after over night equilibration in a warm room did show VOC contamination. Soil vapor screening, indicates the possibility of contamination with a weathered low volatility petroleum hydrocarbon such as motor oil or diesel fuel. The readings may also indicate the biological degradation of organic matter in the soil. H&N recommends that this unused fuel oil tank be removed and the surrounding soils be analyzed for petroleum product contamination at that time.
14. Lab analysis of a soil sample collected during the installation of a soil vapor well at the Sales Office fuel oil UST location did not show any detectable contamination. On site PID screening of a bagged soil sample showed a slightly elevated reading. Soil vapor screening, indicates the possibility of contamination with a low volatility petroleum hydrocarbon such as fuel oil or diesel fuel. The readings may also indicate the biological degradation of organic matter in the soil. H&N recommends that this single walled fuel oil tank be replaced with a modern double walled tank. Alternatively this tank should be removed and the building converted to gas heat.

At the time of removal or replacement the surrounding soils should be analyzed for petroleum product contamination.

This report was prepared for the use of the Mr. Doug Griswold, President, ST Griswold. The conclusions provided by H&N in this report are based solely on the information referenced within this document. While we are unaware of any facts or circumstances which would cause us to suspect that the conclusions drawn herein are incorrect or misleading, it is possible that additional information could require refinement or modifications of our conclusions.



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### ST Griswold Concrete Williston, Vermont

## PHASE II ENVIRONMENTAL SITE INVESTIGATION

### 1.0 INTRODUCTION

#### 1.1 Historical Perspective

In December 1996, Heindel and Noyes (H&N) was retained by Mr. Doug Griswold of ST Griswold, Inc. to perform a Phase I Environmental Site Assessment of the ST Griswold facilities at 35 Industrial Avenue, a property located between Avenues A and B, north of Industrial Avenue in Williston. As a result of this investigation H&N recommended that the site receive additional characterization, based on the evidence of elevated PID signatures in floor drains and sinks, the unknown locations of floor drain outfalls, and the industrial history of the property.

The subject property consists of a concrete products manufacturing facility. The buildings on site include a concrete batch plant, a block making plant, a pipe plant, a Sakrete<sup>®</sup> bagging plant, a warehouse, a truck maintenance garage, a sales office, and administration building with associated outbuildings. Four underground storage tanks (USTs) are on site and seven USTs have been removed from the site (two of the current tanks are replacement tanks) ST Griswold is the original occupant of the site, which was first developed in 1961.

Based on the information developed in the Phase I Environmental Site Assessment, H&N determined that additional work was necessary to define the nature and extent of contamination associated with the subject property. Subsequently, the ST Griswold authorized H&N to complete a work plan for the additional site characterization. This work plan was approved and the investigation was completed in February, 1997.

## **1.2 Purpose and Scope**

The objectives of the investigation, as outlined in the December 1996 work plan, included further characterization of the nature and extent of soil and groundwater contamination through sampling and laboratory analysis, drain tracing, drilling, and excavation. This report presents the results of the additional investigation. Conclusions and recommendations are presented in the final section.

## **2.0 SITE DESCRIPTION AND BACKGROUND**

### **2.1 Site Location and Physiography**

The subject property is situated on a broad, low-relief plateau at an elevation of approximately 340 feet above sea level. This plateau is cut by both the Allen Brook 2000 feet to the north of the subject property and the Muddy Brook to the 2500 feet to the southwest of the property. Both are north flowing tributaries of the Winooski River. The Griswold property consists of a 55 acre lot with 17 manufacturing, warehouse, and office buildings. Around and between the buildings are paved roads and parking lots. Additional areas are graveled or have natural ground cover. The northern part of the lot is devoted to open air storage of cast concrete products. A recent area aerial photo of the property is attached. These are representative of site conditions at the time of this assessment.

The surficial geology map shows that the area is a thick deposit of interbedding sands and silt, underlain by a clayey layer. The 1971 State Land Use map for Chittenden County (not included) shows the subject property to be in an industrial area (this land use was confirmed during the site inspection). The subject property is not in a State designated environmentally unique or fragile area. Significant sand and gravel deposits are shown in the area.

A review of a 1973 U.S. Army Corps of Engineers flood study of the Winooski River Valley, indicates that the subject property is not in the flood plains of the Winooski River, Allen Brook or Muddy Brook.

### **2.1.1 Past Groundwater Quality Testing Results**

The Sites Management Section requested groundwater monitoring following the November 4, 1991 UST removal. H&N installed one groundwater monitoring well and took samples from this and the water supply well. Three water samples from the monitoring well and two samples from the water supply well revealed no groundwater contamination above detectable limits.

### **2.2 Neighboring Businesses**

The subject property is in a commercial area between Williston and South Burlington on Industrial Avenue. The area was first developed in 1961 as the Griswold Industrial Park. The current owner is an original tenant of this industrial park.

Neighboring businesses include, Gracie Place (a single building containing a mix of light manufacturing, office and warehouse space, including a printer) and Rossignol ski across Industrial Avenue to the south, RSD Truck Leasing to the east, and the Burlington Airport to the north and west. Previous studies have shown groundwater flow is to the northwest. Therefore, only Gracie Place and Rossignol Ski property have the potential for affecting the subject property via subsurface pathways.

From 1974 to 1982 Rossignol Ski had a ski equipment manufacturing operation on an adjoining site. At the present time the facility, which is approximately 1000 feet cross gradient, is used primarily as a warehouse and distribution center. In 1982 several drums of hazardous waste were discovered on site and the facility was placed on the State Hazardous Sites list. In addition their leachfield was contaminated by silk screening rinse water. In 1991 an investigation of the property was completed and the site taken off the Active Sites list. This site is the only area site on the State Closed Sites List. Because of the distance and the fact that the site is cross gradient, it is unlikely to pose any environmental liability.

Gracie Place is not on the State Hazardous Sites list. H&N has completed Phase I and Phase II Site Assessments of the property.<sup>2,3</sup> The conclusion of the Phase II investigation was that injection of wastewater into the leach field had not significantly impacted soil and water quality on the site. Therefore, plume migration from the Gracie property to the Griswold site is unlikely to pose any environmental liability.

Another Griswold Industrial Park business on Avenue C is Velan Valves. Several releases have occurred at this site, and State inspectors have visited the site and filed reports. No further action has been taken by the State<sup>4</sup>. The site is approximately 1000 feet to the northeast and cross gradient and is unlikely to pose any environmental liability.

No State regulatory action is proposed for any of the above mentioned sites.

### **2.3 Current Site Regulatory Status**

Griswold is on the State Active Hazardous Sites list due to the storage of contaminated soil from two UST pulls. No groundwater contamination was found at the tank removal sites and no further action is planned<sup>5</sup>.

Potential environmental hazards in the area are depicted on the map included in Appendix 1, page 2.

There are no known environmental threats immediately up-gradient of the subject property.

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<sup>2</sup> H&N Report #1362, November 4, 1991.

<sup>3</sup> H&N Report #137, March 20, 1992.

<sup>4</sup> Telephone interview with Gary Urich, Vermont Department of Environmental Conservation, Hazardous Materials Management Division, 802-241-3487, December, 1996.

<sup>5</sup> H&N Report #3771, December 12, 1996.

## 2.4 Storage Tank History

There are four USTs and eight ASTs currently on site. These tanks contain heating oil, diesel fuel, gasoline, propane, new and used motor oil, and new hydraulic oil. In the past heating oil had been used extensively, the site is now converted to gas heat except for two of the smaller buildings. Seven USTs have been removed from the site, two of which have been replaced.

Vermont State regulations require that as part of UST removal, the soil under the tank must be inspected. There was no indication of leakage from any of the USTs. Because the water table is well below tank depth, all removed USTs have been in good condition. Contamination observed at two of the removal sites was the result of overfilling or surface spills<sup>6</sup>. As per Vermont Sites Management Section approved procedure, the contaminated soils were poly-encapsulated and stored on site until contamination levels had been reduced by natural attenuation below detection levels. This treated soil was then thin spread on site.

The ASTs all appeared to be in good condition with no obvious surface staining underneath them. According to Bob Patterson at the Williston Office of the VT Department of Labor and Industry, no permit is on file for the installation of these ASTs. These ASTs were installed before installation permits were required. The Department of Labor and Industry does not require retroactive permit applications. Modification or replacement of these tanks will require a permit from the Department of Labor and Industry.

**Storage Tank Summary**

Location	Size [gal]	Contents	Type	Installation Date	VT ID#
shop	4000	gasoline	double wall fiberglass UST	1991	#0000519
Sakrete® plant	10,000	diesel	double wall fiberglass UST	1993	#0000521
sales office	1000	heating oil	single wall steel UST	*	—

<sup>6</sup> H&N Report #3771, December 12, 1996.

Location	Size [gal]	Contents	Type	Installation Date	VT ID#
main office	1000	empty, awaiting removal	single wall steel UST	*	--
shop	500	motor oil	single wall steel AST	--	--
shop	500	hydraulic oil	single wall steel AST	--	--
shop	1000	used motor oil	single wall steel AST	--	--
lab building	4 x 100	propane	single wall steel AST	--	--
helipad building	275	heating oil	single wall steel AST	--	--

\* Exact tank age is unknown, but estimated to be 15 years old in June 1990 tank pull form

## Pulled Tanks Summary

Location	Date	Size [gal]	Contents	Contamination Found	VT ID#
shop	6/27/90	1000	gasoline	10 yd <sup>3</sup> soil stockpiled on site*	#0000519
shop	6/27/90	5000	#2 oil		#0000519
shop	11/4/91	4000	gasoline	40 yd <sup>3</sup> soil stockpiled on site*	#0000519
ready mix plant	11/26/91	5000	#2 oil	none	#0000520
block plant	12/12/91	4000	#2 oil	none	#0000523
pre-cast plant	12/12/91	5000	#2 oil	none	#0000522
Sakrete® plant	10/20/93	10,000	diesel	none	#0000521

\* November 1993, all stockpiled soil thin spread on site after PID screening, SMS has closed the site and requested no further action

## 2.5 Plant Operations Overview

As part of the manufacturing process for pre-cast concrete structures, all molds are sprayed with form oil as a release agent<sup>7</sup>. The garage foreman, Dave Sullivan, stated that used hydraulic oil is blended in with this form oil in order to improve its mold release properties. In the Pipe Plant floor stains were noted and areas were covered with absorbent granules to clean this up. Although form spraying was not observed during the inspection, it would seem that overspray is likely.

In the Pipe Plant canvas tents are sometimes erected over concrete forms and are flooded with steam to cure the cast concrete parts. These tents are supported by removable steel poles, which are secured in floor penetration. These post holes are steel lined, but have earth in the bottom to let out any accumulated water; this water drains to the subsurface.

Also on site is an six bay truck service garage. The entire ST Griswold truck fleet is maintained here including spray painting.

Other operations include a concrete block plant, batch concrete plant, Sakrete<sup>®</sup> bagging, aggregate sorting and washing operations. Scrap concrete castings and excess mixed cement from cement trucks are stockpiled in an unused sand pit. According to Mr. Griswold, the concrete has been tested and is inert. It is excavated every five years, crushed and sold as road base material.

## 3.0 METHODS OF INVESTIGATION

The objective of the subsurface investigation was to define the nature and extent of contamination associated with the floor drain systems discovered during the Phase I assessment. The subsurface investigation included a soil boring, monitoring well installation, soil vapor sampling, and test pit excavation via a backhoe. Groundwater monitoring wells were developed and sampled for laboratory characterization. Procedures

---

<sup>7</sup>

According to the MSDS sheet for this form oil, it is mostly diesel fuel containing other proprietary petroleum based mold release additives.

employed during this subsurface investigation are described below.

### **3.1 Soil Boring Completion**

A total of twelve soil borings and seven soil vapor and groundwater monitoring wells were completed at the administration building UST, Sakrete® plant UST, the pipe plant, the maintenance garage, and the sales office fuel oil UST, in order to define the nature and extent of soil contamination at these locations. The boring locations are illustrated on the site plan included in Appendix 1, page 3. The boring depths range from 12 to 75 feet bgs.

Soil samples were collected using a split spoon sampler. Soil samples were permitted to equilibrate in a ziploc plastic bag prior to headspace screening. The headspace of each sample was tested with a PhotoVac Microtip photoionization detector (PID) equipped with a 10.6 eV lamp or an HNu 101 PID equipped with a 10.2 eV lamp. Each PID was calibrated at the beginning of the day with a 100 ppm isobutylene span gas. Calibration was checked during the day. QA/QC pressures included stagnant air testing in the sample bags. Soil boring logs for these test borings and wells are included in Appendix 2, (pages 1 through 12).

Soil screening results are discussed in Section 5.1 of this report.

### **3.2 Monitoring Well Installation and Sampling**

Two H&N soil borings were advanced to the water table to evaluate the extent of soil contamination in the deeper subsurface and to install groundwater monitoring wells. The monitoring well locations are depicted on the site plan in Appendix 1, page 3. H&N monitoring wells are constructed of 2" (i.d.) PVC casing with flush-threaded joints and a ten foot, factory slotted screened section (0.020" slot). The screened section was covered with filter sock, and the borehole around the screen was filled with clean native soil. A one foot bentonite seal was placed above the screened section. Soil boring logs are included in Appendix 2.

The newly installed monitoring wells were developed after installation by bailing approximately ten well volumes. Wells were sampled with disposable bailers. The

water level in each well was measured prior to bailing.

### **3.3 Underground Storage Tanks**

The four USTs on site were investigated. The existing groundwater monitor well near the maintenance shop gasoline UST was sampled. No contamination was found at laboratory detection limits. Soil vapor wells were installed adjacent to the administration building heating oil tank, the Sakrete® plant diesel tank, and the sales office heating oil tank. Soil samples were also taken at each vapor well location for laboratory analysis.

### **3.4 Floor Drain Status**

Seven floor drain locations were investigated, four in the maintenance shop, one under the boiler of the Block Plant and one each in Buildings #1, #2 and #3 of the Pipe Plant.

#### **3.4.1 Maintenance Shop**

The four main floor drains in the shop were tested and determined to be connected to a west flowing pipe oriented in the center of the building. One drain was snaked to a drywell approximately three feet west of the building, under the northeast corner of the air conditioner pad. Excavation showed a drywell at this location. This drywell has a concrete slab cover; no access manhole was discovered. During the course of backhoe excavation the influent pipe was severed. Water poured down a shop drain confirmed the connection to the drywell. The severed influent line was repaired before back-filling the excavation.

The central drain system is not connected to the floor drain in the restroom. The restroom floor drain discharges to the septic tank.

Testing of the oil change trench floor drain determined that it discharges directly to the soil subsurface.

The two drains identified in the new section of the garage (east side) connect to a drywell at the northeast corner of the building and do not connect to the central drain system.

### **3.4.2 Block Plant Boiler Room**

The boiler room floor drain in the block plant is a 2" diameter pipe. This drain receives overflow water from a nearby water softener. A drain snake was put into the hole approximately six feet before it was blocked. Plant personnel did not know if this drain connects into any system and it appears likely that it ends in the soil subsurface. The drain snake came back dry and dusty, with no evidence of sludge or residue.

### **3.4.3 Pipe Plant**

Cast concrete products are produced in the Pipe Plant. The plant is contiguous, but referred to by the employees as Building #1, Building #2 and Building #3 with Building #1 being the oldest. Buildings #2 and #3 are additions to the west of Building #1. Concrete form oil is used in all three buildings.

A trench drain in Building #1 daylights on the north side of the building.

The floor drains in Building #2 are connected. The western drain was snaked 70' to a location in the middle of Building #3 before a blockage prevented further advancement. The shop foreman (Smitty) said that there had been a catch basin at this location before the construction of building #3. As far as he knew the basin had been paved over during new construction. These two drains receive steam condensate water from the steam curing process.

Building #3 contains a concrete lined floor trench, which is filled with soil. Hand excavation confirmed that it is concrete lined and drain lines exiting this trench were discovered.

### 3.4.4 Floor Drain Regulations

Under the State's current regulations the building floor drains must have permits. There are several options for the various building floor drains on site; these include:

1. The building owner can apply for a discharge permit in order to continue the current use.
2. The drain may be connected to a leachfield and operated with an underground injection control (UIC) permit.
3. The owner may seal the floor drain.

Because of the age of the facility, it predates the discharge permit requirement for floor drain systems. Therefore, no retroactive permits are required. A review of the systems and discharge permits would be required if new construction took place on the property or if releases to the environment were traced to these drain systems.

## 4.0 SAMPLING

Soil, groundwater and soil vapor sampling took place at locations identified as being potentially problematic by the Phase I Environmental Site Assessment<sup>8</sup>. Sample collection took place over six days in January and February.

**Pipe Plant** Water samples were collected from the Pipe Plant (Building #1 and Building #2) post holes. Soil samples were collected from soil borings adjacent to these post holes. A sediment sample was collected from the Building #2 west floor drain. An additional soil sample was collected from a boring into the catch basin under Building #3, which is the exit point for the Building #2 floor drains. The soil in the floor trenches in Building #3 and Building #1 was

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<sup>8</sup>

H&N Report #3771, 12/12/96.

sampled. Additional samples were taken at the Building #1 floor trench outfall.

**Block Plant** A soil sample was taken from the Block Plant boiler room floor drain. The block plant septic tank was uncovered and sampled; the PID reading was 2.4 ppm. The down stream leach tank was also uncovered and sampled; here the PID reading was 3.6 ppm. A third tank in series was noted but not sampled; according to plant personnel this tank is identical to the second and both are relatively new. This system is for the single bathroom in the block plant. Citrus oil hand cleaner is in use at the bathroom sink and may be the cause of the elevated PID readings.

**Soil Pile** Three soil samples were collected from the SB Collins soil pile. These samples were bagged and field screened with a PID reading. The results of 2.2, 2.6 and 4.8 ppm above background indicate that this soil is not yet ready for thin spreading.

**Shop** Water samples were taken at three of the four maintenance shop floor drains/oil traps. These traps connect to a central drain line under the shop floor. The northwest shop drywell which receives water from this central shop drain line was located. Two groundwater monitor wells were drilled down gradient of this drywell. A soil vapor well was installed adjacent to the drywell. Test pits were used to locate the drywell, soil samples from these were screened on site with a PID. Soil samples were collected by drilling into the drain at the bottom of the oil change trench in the maintenance shop. No connecting pipes were discovered. This drain discharges to the soil subsurface. The northeast shop drywell was located and sampled. This drywell services the paint booth and one other floor drain. The shop septic tank was also opened and the contents sampled.

**Diesel UST** A soil vapor well was installed at the Sakrete® diesel UST. A soil sample was also collected for lab analysis.

**Main office fuel oil UST** A soil vapor well was installed at the unused main office fuel oil UST. A soil sample was also collected for lab analysis.

**Sales office fuel oil UST** A soil vapor well was installed at the sales office fuel oil UST. A soil sample was also collected for lab analysis.

## 5.0 CONTAMINANT DISTRIBUTION

The contaminant distribution in soil and groundwater is discussed below.

### 5.1 Soil

#### 5.1.1 Field Screening Results

During the soil boring program, soils were logged and screened. The general stratigraphic sequence for the soil consists of brown, fine to medium sand. A clay confining layer was discovered at 65 feet bgs during the drilling of MW-9 at the northwest shop drywell. Soil boring logs are included in the (Appendix 2, pages 1 through 12).

Geologically the area soil sequence is a thick deltaic sequence of fine and medium sands, underlain by a confining clay layer.

The field screening results of PID testing of soil borings are compiled below.

SOIL SCREENING RESULTS			
BORING LOCATION	DEPTH (ft bgs)	PID RESPONSE (ppm)	COMMENTS
Shop test pit #1	1.0	28.8/0.5	bagged samples screened at N&H offices after overnight equilibration
"	2.5	15.9/0.4	
"	3.5	3.6/0.9	
"	6.0	14.6/0.7	
Shop test pit #2	6.0	10.8/0.5	
"	8.0	7.4/0.7	
Shop test pit #3	3.0	4.0/0.9	

SOIL SCREENING RESULTS			
BORING LOCATION	DEPTH (ft bgs)	PID RESPONSE (ppm)	COMMENTS
Pipe Plant building #1 trench drain daylight	1	32.4/0.0	
"	1	10.1/0.4	
"	1	9.8/0.4	
Sales office fuel oil UST MW-1	0-3	2.1/0.0	soil vapor well installed, split spoon samples screened on site
"	3-5	4.7/0.0	
"	5-7	2.8/0.4	
"	7-9	4.6/0.0	soil sample submitted to Endyne
"	9-11	2.4/0.3	
"	11-13	1.2/0.3	
"	13-15	1.8/0.3	
"	19-21	0.7/0.0	
"	24-26	0.2/0.0	
NW shop drywell, MW-2	9-11	11.4/0.0	oil stained gray sand, soil vapor well installed, split spoon samples screened on site
"	11-13	8.6/0.0	
"	13-15	45.1/0.0	soil sample submitted to Endyne
"	15-17	4.7/0.0	
"	17-19	6.0/0.2	
"	19-21	6.0/0.0	
"	21-23	8.0/0.1	
"	23-25	9.7/0.0	soil sample submitted to Endyne
"	29-31	9.3/0.4	
"	34-36	3.3/0.2	
Pipe Plant building #1 north post hole, MW-3	1-3	1.0/0.0	soil screened on site, no well installed
bag blank	--	1.3/0.0	
"	3-5	1.2/0.0	

SOIL SCREENING RESULTS			
BORING LOCATION	DEPTH (ft bgs)	PID RESPONSE (ppm)	COMMENTS
"	5-7	1.9/0.0	
"	7-9	1.7/0.0	
"	9-11	2.0/0.0	soil sample submitted to Endyne
"	11-13	1.8/0.0	
Pipe Plant building #1 south post hole, MW-4	1-3	0.9/0.1	soil screened on site, no well installed
"	3-5	1.1/0.0	
"	5-7	1.1/0.0	
"	7-9	1.0/0.0	
"	9-11	0.5/0.0	soil sample submitted to Endyne
"	11-13	0.6/0.0	
Pipe Plant building #3 catch basin, MW-5	1-3	5.0/0.3	soil screened on site, no well installed
"	3-5	1.2/0.0	
bag blank	--	1.8/0.0	
"	5-7	2.1/0.0	
"	9-11	1.0/0.0	
"	11-13	0.7/0.0	soil sample submitted to Endyne
Pipe Plant building #2 south post hole, MW-6	4-6	1.0/0.0	soil screened on site, no well installed, soil sample submitted to Endyne
"	6-8	0.8/0.0	
"	8-10	0.8/0.0	
"	10-12	0.8/0.0	
bag blank	--	1.2/0.0	
Pipe Plant building #2 north post hole, MW-7	1-5	1.8/1.1	soil screened on site, no well installed
bag blank	--	2.6/0.1	
"	5-7	1.0/0.6	
"	7-9	1.3/0.0	soil sample submitted to Endyne

SOIL SCREENING RESULTS			
BORING LOCATION	DEPTH (ft bgs)	PID RESPONSE (ppm)	COMMENTS
Shop oil change trench floor drain, MW-8	2-3	--	oil saturated sand, soil vapor well installed, split spoon samples screened on site
"	3-4	10.8/0.6	
"	4-6	5.0/0.0	
"	6-8	5.9/0.5	
"	8-10	6.1/0.8	
"	10-12	3.5/0.7	
"	12-14	5.9/0.5	
"	14-16	5.6/0.8	soil sample submitted to Endyne
"	27-29	4.0/0.5	soil sample submitted to Endyne
NW shop drywell, MW-9	5-7	0.6/0.2	groundwater monitor well installed, split spoon samples screened on site with 10.2 eV HNu 101 PID
"	10-12	1.5/0.2	
"	16-17	1.7/0.2	
"	20-22	2.2/0.2	
"	75	0.7/0.0	water sample submitted to Endyne
Sakrete diesel UST, MW-11	10-12	32.0/0.0	bagged sample screened at N&H offices after overnight equilibration, soil sample submitted to Endyne
Administration building fuel oil UST, MW-12	10-12	40.3/0.0	bagged sample screened at N&H offices after overnight equilibration, soil sample submitted to Endyne
NW shop drywell, MW-13	45-47	1.7/0.1	bagged sample screened at N&H offices after overnight equilibration, groundwater monitor well installed
Unless otherwise noted all soil samples were screened with a 10.6 eV Microtip PID			

### 5.1.2 Laboratory Soils Analysis

Laboratory results from the analysis of the soil samples collected are included in Appendix 3. A summary table is included on pages 1 and 2 of Appendix 3.

## 5.2 Groundwater

The existing monitor well was re-sampled as part of the current investigation and the new groundwater monitoring well (MW-9), installed down gradient of the northwest shop drywell was sampled. Lab analysis of the groundwater samples by EPA Method 8260 for volatile organic compounds detected no target analytes. The lab analyses are summarized in Appendix 3, pages 1 and 2.

At the time of sampling the water level was 45 feet below the top of well casing. During a traverse of the bottom of the plateau, below the ST Griswold site, several groundwater seeps were noted approximately 15 to 25 feet above the valley floor. These observations along with the known soil type indicate a well drained soil with a deep groundwater level. These springs and seeps were sampled. Later, a review of one site property line showed these features are off property.

## 5.3 Soil vapor testing

Soil vapor wells were installed at four locations, the main office fuel oil UST (MW-12), the Sakrete® plant diesel UST (MW-11), the sales office fuel oil UST (MW-1), and the northwest shop drywell (MW-2). The following table summarizes the results:

time	vacuum	velocity (fpm)	volume (ft <sup>3</sup> )	temp (°F)	CO <sub>2</sub> (ppm)	CH <sub>4</sub> (ppm)	O <sub>2</sub> (ppm)	PID (ppm)
<b>shop northwest drywell, MW-2 February 5, 1997</b>								
backgrd	--	--	--	32.0	0.05	0.02	20.9	0.2
9:28	7.5	1400	0	--	--	--	--	--
9:31	7.5	1300	50	70.2	0.69	0.02	20.4	0.3
9:38	7.5	1250	159	47.2	1.53	0.02	19.7	0.2
9:45	7.5	1200	264	48.0	1.77	0.02	19.4	0.4
9:55	7.5	1250	415	48.4	2.01	0.02	19.2	0.4
10:00	7.5	1250	491	48.8	2.05	0.02	19.4	0.4
<b>sales office fuel oil UST, MW-1 February 5, 1997</b>								

10:36	8.6	1100	0	45.2	--	--	--	--
10:37	8.6	1110	14	46.2	0.65	0.20	20.5	0.1
10:44	8.8	1110	109	47.2	0.69	0.20	20.4	0.2
10:54	8.7	1110	245	47.4	0.69	0.05	20.5	0.3
11:04	8.7	1110	381	47.6	0.69	0.05	20.5	0.2
<b>main office fuel oil UST, MW-12 February 11, 1997</b>								
backgrd	--	--	--	23.2	0.05	0.02	20.9	0.2
8:37	6.2	1150	0	37.2	0.91	0.02	20.4	0.2
8:41	6.2	1200	58	42.0	0.65	0.02	20.4	0.2
8:45	6.2	1200	117	42.4	0.57	0.02	20.3	0.2
8:50	6.2	1190	190	42.4	0.57	0.02	20.3	0.2
8:55	6.2	1195	263	42.4	0.57	0.02	20.3	0.2
<b>Sakrete<sup>®</sup> diesel oil UST, MW-11 February 11, 1997</b>								
9:09	--	--	--	--	--	--	--	--
9:10	7.2	1150	0	34.2	1.65	0.05	19.2	0.2
9:13	7.2	1190	43	38.0	1.93	0.02	18.8	0.2
9:18	7.2	1190	116	38.2	1.97	0.02	18.8	0.2
9:25	7.2	1190	218	38.2	1.97	0.02	18.8	0.2
9:30	7.2	1190	291	38.2	1.97	0.02	18.8	0.2

While PID levels at all locations are very low, depressed O<sub>2</sub> elevated CO<sub>2</sub> levels indicate biologic degradation of a carbon source. One possible source is petroleum hydrocarbons.

## 6.0 DISCUSSION OF RESULTS

The following section provides an interpretation of the results of the sampling and analysis campaign carried out at the ST Griswold facility.

### 6.1 Maintenance Shop Septic Tank and Block Plant Leach Tank

These tanks were opened up and sampled because of high PID readings in the

restroom sink drains. At each of the sinks there are citrus based hand cleaners in use. All three tanks have similar levels of p-isopropyltoluene; levels measured of this compound were between 217 and 260 µg/L. In addition trace levels dichlorobenzene, trimethylbenzene and naphthalene (all below State groundwater standards) were also noted as well as unidentified aliphatic hydrocarbons and alkylated benzenes. According to the Merck Index<sup>9</sup> p-isopropyltoluene (synonyms: p-cymene, dolcymene, methylisopropyl-benzene) "occurs in a number of essential oils". Because high levels of other petroleum products did not occur in these septic tanks along with the p-isopropyltoluene, it appears likely that this is a compound in the handcleaner and the hydrocarbons found, entered the system as a result of handwashing. Dr. Harry Locker<sup>10</sup>, Director of Endyne Laboratory, stated petroleum based solvents and oils are common in industrial handcleaners.

From an analysis of the septic tank contents, H&N does not believe that these septic systems pose an environmental threat to the subject property or that further investigation is necessary.

## 6.2 Block Plant Floor Drain

The block plant floor drain in the boiler room was investigated. The drain under the building boiler was traced approximately six feet using a drain snake. When the drain snake was withdrawn no sludge or residue was found on the tip. A PID test of this hole showed a background reading. A trace below quantitation level of 1,2,4-trimethylbenzene was noted in the analysis of the sediment from floor drain, however no other EPA 8260 target analytes were found. H&N believes that no further investigation is needed at this location.

The plant supervisor stated that this drain is rarely used. Since it appears to be essentially clean now, H&N recommends that it be sealed to prevent future accidental discharges into it. At closure a permitting strategy for the drain needs to be developed.

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<sup>9</sup> The Merck Index - Encyclopedia of Chemicals, Drugs, and Biologicals, 10th edition, 1983.

<sup>10</sup> Telephone conversation, January, 1997.

### 6.3 Northeast Maintenance Shop Drywell

The drywell for the new part of the shop (eastern addition) serves the paint booth and one other floor drain. No residues or moisture were noted, PID readings were at background levels. No residues or discoloration was observed on the floor of the drywell. Analysis of the soil in this drywell found no detectable volatile organic contaminants.

Because this drywell is connected to a floor drain in a spray painting booth, there is a risk of solvent contamination to the soil subsurface. H&N recommends that this drywell be filled in and the two associated floor drains be closed. If these drains are excessive in business operations, an appropriate design will be submitted to the Agency of Natural Resources.

### 6.4 Northwest Maintenance Shop Drywell

At the northwest drywell MW-2, elevated PID levels were noted. These levels fall off with increasing depth. No EPA 8260 target analytes were found in the soil samples (13-15', 23-25' or 29-31').

At the northwest drywell MW-9, no elevated PID levels were noted. No EPA 8260 target analytes were found in the soil sample from 20 to 22'.

PID screening of a soil sample from MW-13 at 45 to 47' found only a background PID level.

Groundwater sampling of MW-9 and the old shop monitoring well showed no identifiable EPA 8260 target compounds.

Soil vapor screening at MW-2, showed elevated CO<sub>2</sub> and depressed O<sub>2</sub> levels. PID measurements of soil vapor using the 10.2 eV HNu PID showed only slightly elevated levels. PID measurement of bagged soil samples from well boring using the 10.6 eV PhotoVac Microtip PID had levels between a 3.3 and 45.1 ppm. These readings indicate contamination with a weathered low volatility petroleum

hydrocarbon such as fuel oil or diesel fuel.

H&N recommends that the shop floor drains be closed or that their discharge first go to a properly functioning oil/water separator before entering the drywell. H&N also recommends that this area be evaluated for remediation by excavation and soil vapor extraction as required.

### **6.5 Maintenance Shop Oil Change Trench Floor Drain**

The top foot of soil in the garage oil change trench boring, MW-8, was darkly stained and oil saturated. PID levels fell off with increasing depth. Lab analysis of the soils showed the 3' sample to contain 10,400 mg/kg of total petroleum hydrocarbons. The 16 to 18' sample contained a trace below quantitation level of TPH. The 29 to 31' sample was analyzed for volatile organic compounds (EPA 8260) and none were found. It appears that soil contamination has been limited to the upper levels of soil under the oil change trench.

H&N recommends that this area be evaluated for remediation and that this floor drain be closed to prevent further contamination. Excavation of highly contaminated materials followed by soil vapor extraction is recommended.

### **6.6 Pipe Plant**

Soil borings were performed in all three sections of the Pipe Plant.

#### **6.6.1 Building #1**

Field screening of the drill cuttings during soil borings next to the two post holes in Building #1 using a PID did not reveal any above background readings. Lab analysis of a soil sample did not find any detectable contamination.

Since the two post holes have open bottoms to the subsurface, the potential of subsurface contamination exists from the form oil in use in the building. H&N recommends that the bottom of these holes be sealed to prevent future

soil contamination.

The trench drain outfall was excavated with a backhoe to the north of the building. After approximately 18 inches of soil, a concrete slab was discovered. Plant employees confirmed that a concrete slab was at this location. The surface has been filled and graded. Three frozen soil samples were acquired and thawed prior to PID screening at the H&N offices. Elevated PID levels were noted and two of these samples were submitted for laboratory analysis. One of these samples showed elevated total petroleum hydrocarbon (TPH) levels of 1610 ppm.

Because of the underlying cement slab, subsurface contamination is not likely. H&N recommends that the trench drain outfall be closed to prevent future contamination and that the soil in the vicinity of this outfall be excavated, encapsulated and stockpiled on site to allow natural attenuation to destroy this contamination.

#### **6.6.2 Building #2**

Building #2 contains two additional post holes identical to those found in Building #1. Field screening of the drill cuttings during soil borings next to the two post holes using a PID did not reveal any above background readings. Lab analysis of a soil sample did not find any detectable contamination.

Since the two post holes have open bottoms to the subsurface the potential of subsurface contamination exists from the form oil in use in the building. H&N recommends that the bottom of these holes be sealed to prevent future soil contamination.

In addition, two connected floor drains were observed. The sediment at the bottom of west floor drain was tested and contained 11,800 ppm total petroleum hydrocarbons as well as various individual compounds normally associated with hydrocarbon mixes. This indicates some contamination with the form oil in use in the building.

H&N recommends that the sediment in the floor drains be removed and treated on site. The floor drains should be sealed to prevent contamination from potentially traveling to and contaminating the catch basin in Building #3.

### 6.6.3 Building #3

Building #3 contains a drain trench, which is concrete lined. With years of use, this trench has filled with soil and granular absorbent spread to contain from oil spills and over spray. Lab analysis of this soil indicate that it has been heavily contaminated with petroleum hydrocarbons. High levels of various benzene compounds and a total petroleum hydrocarbon concentration of 156,000 mg/kg were detected.

H&N recommends that the soil in this trench be excavated, mixed with manure, and composted on site until the naturally occurring soil microbes have degraded the petroleum hydrocarbons.

Building #3 also contains a catch basin under the concrete floor. This basin is the outfall of the two floor drains in Building #2. A rotary drill was used to bore through the concrete floor at the basin location. Some fill was encountered before native soil was reached. No PID readings above background were noted and a soil sample was collected for laboratory analysis. This soil analysis did not find any detectable contamination.

### 6.7 Sakrete® diesel UST

Lab analysis of a soil sample collected during the installation of a soil vapor well at this location did not show any detectable contamination. PID screening of a bagged soil sample using the 10.6 eV PhotoVac Microtip PID had a 32.0 ppm level after over night equilibration in a warm room.

Soil vapor screening, showed elevated CO<sub>2</sub> and depressed O<sub>2</sub> levels. PID measurements of a soil vapor using the 10.2 eV HNu PID showed only background levels. These readings indicate contamination with a weathered low volatility

petroleum hydrocarbon such as motor oil or diesel fuel.

H&N recommends that this area be evaluated for remediation. Excavation combined with soil vapor extraction (bioventing) would be a reasonable recommendation.

### **6.8 Administration Building Fuel Oil UST**

Lab analysis of a soil sample collected during the installation of a soil vapor well at this location did not show any detectable contamination. PID screening of a bagged soil sample using the 10.6 eV PhotoVac Microtip PID had a 40.3 ppm level after over night equilibration in a warm room.

Soil vapor screening, showed somewhat elevated CO<sub>2</sub> and slightly depressed O<sub>2</sub> levels. PID measurements of a soil vapor using the 10.2 eV HNu PID showed only background levels. These readings may indicate contamination with a weathered low volatility petroleum hydrocarbon such as motor oil or diesel fuel. The readings may also indicate the biological degradation of organic matter in the soil. H&N recommends that this unused fuel oil tank be removed and the surrounding soils be analyzed for petroleum product contamination at that time.

### **6.9 Sales Office Fuel Oil UST**

Lab analysis of a soil sample collected during the installation of a soil vapor well at this location did not show any detectable contamination. On site PID screening of bagged soil samples using the 10.6 eV PhotoVac Microtip PID showed a maximum reading of 4.6 ppm.

Soil vapor screening, showed somewhat elevated CO<sub>2</sub> and slightly depressed O<sub>2</sub> levels. PID measurements of a soil vapor using the 10.2 eV HNu PID showed only background levels. These readings may indicate contamination with a weathered low volatility petroleum hydrocarbon such as fuel oil.

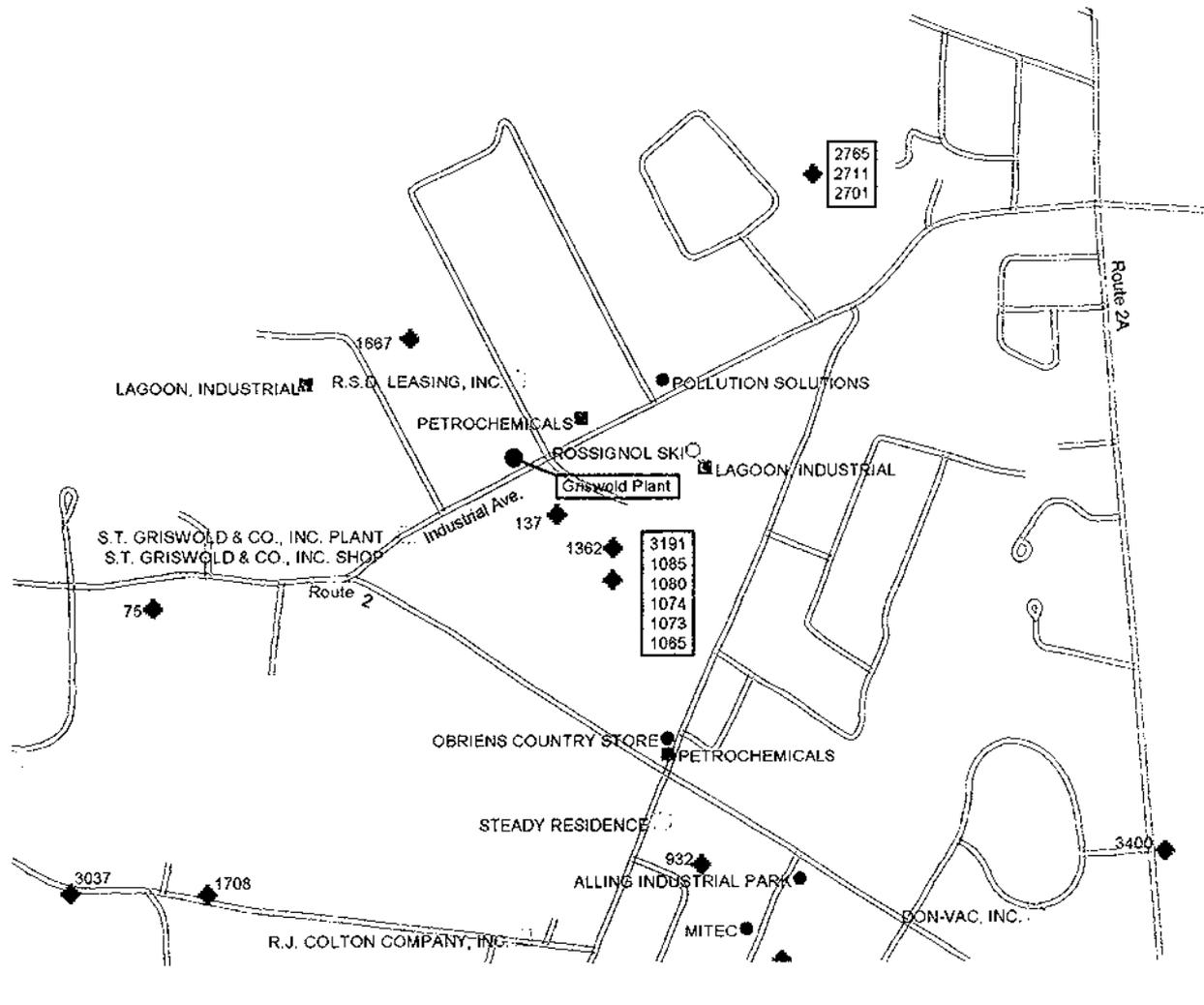
H&N recommends that this single walled fuel oil tank be replaced with a modern double walled tank. Alternatively this tank should be removed and the building

converted to gas heat. At the time of removal or replacement the surrounding soils should be analyzed for petroleum product contamination.

[C:\OFFICE\WPWIN\WPDOCS\IGRISWOLD.PH2]

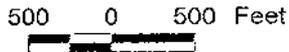


# Environmental Hazards and Locations With Test Data Surrounding Griswold Plant, Industrial Ave., S. Burlington, VT



- STATE DESIGNATED HAZARDOUS WASTE SITE. (Last updated 11/96, next update 1/97)
- OLD STATE DESIGNATED HAZARDOUS WASTE SITE. (No longer on the State HWS List as of 11/96)
- UNDERGROUND STORAGE TANK (On the 7-96 State UST List, all sites are not located)
- ◆ SITE SPECIFIC DATA AVAILABLE. (Last updated 10-1-96, next update 1-7-96) NOT NECESSARILY INDICATIVE OF AN ENVIRONMENTAL HAZARD.
- POTENTIAL SOURCE OF GROUNDWATER POLLUTION. (1980) (IE. LANDFILL, INDUSTRIAL WASTE, FARMING, SALT, JUNK YARD, ETC.)

**INFORMATION & VISUALIZATION SERVICES**



NOTE: TEST DATA SITES INDICATE PRESENCE OF AN ENVIRONMENTAL HAZARD. (IE. TOXIC, BIOLOGICAL, OR CHEMICAL NATURE)

M & W Soils Engineering Inc.  
Main St. Charlestown, NH 03603

SHEET 1 OF 1  
DATE 2/4/97  
HOLE NO. MW-1  
LINE & STA.  
OFFSET

TO HEINDEL & NOYES  
PROJECT NAME ST. GRISWOLD  
REPORT SENT TO GERALD NOYES  
SAMPLES RETAINED BY HEINDEL & NOYES  
ADDRESS BURLINGTON, VT  
LOCATION WILLISTON, VT  
PROJ. NO.  
OUR JOB NO. 6945-97

GROUND WATER OBSERVATIONS		CASING SAMPLER CORE BAR.		SURFACE ELEV.	
AT DRY	AT IMMEDIATELY	HOURS	Type	FA	SS
			Size I. D.	4"	2"
			Hammer Wt.		140#
			Hammer Fall		30"
					BIT
					DATE STARTED 2/4/97
					DATE COMPL. 2/4/97
					BORING FORMAN M.D. & M.H.
					INSPECTOR G. NOYES
					SOILS ENGR.

LOCATION OF BORING NEXT TO SALES OFFICE

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ecl	SAMPLE		
							NO.	PEN	REC
				LOOSE		BROWN FINE TO COARSE SANDS AND FINE GRAVELS (FILL)			
	3' - 5'	SS	9 11		3'		1	24"	18"
			11 12	MED. DENSE	4'	BROWN FINE SANDS - TRACE OF TOPSOIL	2	24"	13"
5'	5' - 7'	SS	8 11	MED. DENSE		BROWN FINE TO MEDIUM SANDS - TRACE OF FINE GRAVELS	3	24"	24"
	7' - 9'	SS	9 6						
			5 7		7'6"		4	24"	18"
	9' - 11'	SS	5 4	MED. DENSE		LIGHT BROWN FINE SANDS - THIN LAYERS OF FINE GRAVELS OCCASIONAL MOIST SILTY FINE SAND LAYER	5	24"	20"
10'	11' - 13'	SS	8 8				6	24"	24"
			10 10						
	13' - 15'	SS	8 8						
			8 10						
15'						SAME MATERIAL			
	19' - 21'	SS	4 5				7	24"	24"
20'			5 6			SAME MATERIAL			
	24' - 26'	SS	4 4				8	24"	24"
25'			5 5			SAME MATERIAL			
30'						(SET VAPOR WELL)			

GROUND SURFACE TO 26' USED 4" FA CASING THEN DROVE SS 24"

<p>Sample Type</p> <p>D-Dry C-Cored W-Washed</p> <p>UP-Unfinished Piston</p> <p>TP-Test Pit A-Auger V-Vane Test</p> <p>UT-Undisturbed Thinwall</p>	<p>Proportions Used</p> <p>trace 0 to 10%</p> <p>little 10 to 20%</p> <p>some 20 to 35%</p> <p>and 35 to 50%</p>	<p>140 lb. wt. x 30"-fall an 2" O.D. Sampler</p> <p>Cohesionless Density</p> <p>0-10 Loose</p> <p>10-30 Med. Dense</p> <p>30-50 Dense</p> <p>50+ Very Dense</p>	<p>Cohesive Consistency</p> <p>0-4 Soft 30 + Hard</p> <p>4-8 M/Stiff</p> <p>8-15 Stiff</p> <p>15-30 V-Stiff</p>	<p>summary</p> <p>EARTH BORING 26'</p> <p>ROCK CORING</p> <p>SAMPLES 8</p> <p>HOLE NO. MW-1</p>
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M & W Soils Engineering Inc.  
Main St. Charlestown, NH 03603

TO HEINDEL & NOYES  
PROJECT NAME ST. GRISWOLD  
REPORT SENT TO GERALD NOYES  
SAMPLES RETAINED BY HEINDEL & NOYES

ADDRESS BURLINGTON, VT  
LOCATION WILLISTON, VT  
PROJ. NO.  
OUR JOB NO. 6945-97

SHEET 1 OF 1  
DATE 2/4/97  
HOLE NO. MW-2  
LINE & STA.  
OFFSET

GROUND WATER OBSERVATIONS		CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT DRY	AT IMMEDIATELY	Type	FA	SS	DATE STARTED 2/4/97
	HOURS	Size I. D.	4"	2"	DATE COMPL. 2/4/97
		Hammer Wt.		140#	BORING FORMAN M.D. & M.H.
		Hammer Fall		30"	INSPECTOR G. NOYES
					SOILS ENGR.

LOCATION OF BORING OFF MAINTENANCE BUILDING - SOUTH OF DRY WELL

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler		MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE		
								NO.	PEN	REC
						8'	CRUSHED STONE			
5'					LOOSE		BROWN DISTURBED SILTY FINE SANDS			
						7'	SAME MATERIAL			
	9' - 11'	SS	6	7	MED. DENSE		GREY BROWN FINE SANDS	1	24"	21"
10'	11' - 13'	SS	13	13			OXIDATION LAYERS	2	24"	24"
			10	10				3	24"	24"
	13' - 15'	SS	4	5				4	24"	24"
15'	15' - 17'	SS	6	7			SAME MATERIAL	5	24"	24"
			6	6				6	24"	24"
	17' - 19'	SS	5	6				7	24"	24"
20'	19' - 21'	SS	8	10			SAME MATERIAL	8	24"	24"
			11	10				9	24"	24"
	21' - 23'	SS	7	8			SAME MATERIAL	10	24"	24"
25'	23' - 25'	SS	8	9	MED. DENSE		LIGHT BROWN FINE SANDS			
			9	10						
							SAME MATERIAL (9 PPM)	9	24"	24"
30'	29' - 31'	SS	7	8						
			8	7						
							SAME MATERIAL	10	24"	24"
35'	34' - 36'	SS	7	9						
			10	10						
						36'	(SET WELL)			

GROUND SURFACE TO 36'

USED 4" FA CASING THEN DROVE SS 24"

Sample Type

D-Dry C-Cored W-Washed  
UP-Unfinished Piston  
TP-Test Pit A-Auger V-Vane Test  
UT-Undisturbed Thinwall

Proportions Used  
trace 0 to 10%  
little 10 to 20%  
some 20 to 35%  
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler  
Cohesionless Density  
0-10 Loose  
10-30 Med. Dense  
30-50 Dense  
50+ Very Dense

Cohesive Consistency  
0-4 Soft 30 + Hard  
4-8 M/Stiff  
8-15 Stiff  
15-30 V-Stiff

summary

EARTH BORING 36'  
ROCK CORING  
SAMPLES 10  
HOLE NO. MW-2

M & W Soils Engineering Inc.  
Main St. Charlestown, NH 03603

SHEET 1 OF 1  
DATE 2/5/97  
HOLE NO. MW-3  
LINE & STA.  
OFFSET

TO HEINDEL & NOYES ADDRESS BURLINGTON, VT  
PROJECT NAME ST. GRISWOLD LOCATION WILLISTON, VT  
REPORT SENT TO GERALD NOYES PROJ. NO.  
SAMPLES RETAINED BY HEINDEL & NOYES OUR JOB NO. 6945-97

GROUND WATER OBSERVATIONS		CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT DRY	AT IMMEDIATELY	FA	SS		DATE STARTED 2/5/97
	HOURS	Size I. D. 4"	2"		DATE COMPL. 2/5/97
		Hammer Wt.	140#	BIT	BORING FORMAN M.D. & M.H.
AT	AT	Hammer Fall	30"		INSPECTOR G. NOYES
	HOURS				SOILS ENGR

LOCATION OF BORING PIPE PLANT #1 - INSIDE

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect.	SAMPLE			
							NO.	PEN	REC	
					8"	CONCRETE FLOOR	1	24"	18"	
	1' - 3'	SS	4	2	LOOSE TO MED. DENSE	BROWN FINE TO MEDIUM SANDS - TRACE OF GRAVELS				
			2	2						
	3' - 5'	SS	2	3				2	24"	24"
			4	6						
5'	5' - 7'	SS	5	6				3	24"	24"
			6	9						
	7' - 9'	SS	6	6				4	24"	24"
			7	7						
10'	9' - 11'	SS	11	11				5	24"	24"
			11	9						
	11' - 13'	SS	9	9				6	24"	24"
			10	11						
15'							13'	SAME MATERIAL		

GROUND SURFACE TO 13' USED 4" FA CASING THEN DROVE SS 24"

Sample Type  
D-Dry C-Cored W-Washed  
UP-Unfinished Piston  
TP-Test Pit A-Auger V-Vane Test  
UT-Undisturbed Thinwall

Proportions Used  
trace 0 to 10%  
little 10 to 20%  
some 20 to 35%  
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler  
Cohesionless Density  
0-10 Loose  
10-30 Med. Dense  
30-50 Dense  
50+ Very Dense  
Cohensive Consistency  
0-4 Soft 30 + Hard  
4-8 M/Stiff  
8-15 Stiff  
15-30 V-Stiff

summary
EARTH BORING 13'
ROCK CORING
SAMPLES 6
HOLE NO. MW-3



**ENDYNE, INC.**

Laboratory Services

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

REPORT OF LABORATORY ANALYSIS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 20, 1997  
DATE SAMPLED: February 7, 1997

PROJECT CODE: HNST1991  
REF. #: 99,974 - 99,975

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

Chain of custody did not indicate sample preservation.

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.

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

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

enclosures

M & W Soils Engineering Inc.  
Main St. Charlestown, NH 03603

SHEET 1 OF 1  
DATE 2/5/97  
HOLE NO. MW-5  
LINE & STA.  
OFFSET

TO HEINDEL & NOYES ADDRESS BURLINGTON, VT  
PROJECT NAME ST. GRISWOLD LOCATION WILLISTON, VT  
REPORT SENT TO GERALD NOYES PROJ. NO.  
SAMPLES RETAINED BY HEINDEL & NOYES OUR JOB NO. 6945-97

GROUND WATER OBSERVATIONS		Type FA SS Size I. D. 4" 2" Hammer Wt. 140# BIT Hammer Fall 30"	CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT DRY	AT IMMEDIATELY		HOURS			
AT _____		HOURS				DATE COMPL. 2/5/97
						BORING FORMAN M.D. & M.H.
						INSPECTOR
						SOILS ENGR.

LOCATION OF BORING INSIDE - BUILDING #3 - PIPE PLANT

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6"		MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect.	SAMPLE		
			on sampler					NO.	PEN	REC
5'	1' - 3'	SS	10	11	MED. DENSE	6'	CONCRETE FLOOR	1	24"	14"
			12	12		1'	BROWN SANDY COARSE GRAVELS			
					MED. DENSE		BROWN SILTY FINE SANDS - DISTURBED- TRACE OF GRAVEL			
	3' - 5'	SS	8	10				2	24"	12"
				12	12					
							SAME MATERIAL			
	5' - 7'	SS	6	5				3	24"	8"
				5	5					
							SAME MATERIAL			
10'	7' - 9'	SS	4	4				4	24"	6"
			3	3						
	9' - 11'	SS	4	3			(DISTURBED) SAME MATERIAL	5	24"	6"
			3	5						
15'	11' - 13'	SS	6	7		11'		6	24"	14"
			12	21						
					MED. DENSE		BROWN FINE SANDS			
						13'				

GROUND SURFACE TO 13' USED 4" FA CASING THEN DROVE SS 24"

Sample Type D-Dry C-Cored W-Washed UP-Unfinished Piston TP-Test Pit A-Auger V-Vane Test UT-Undisturbed Thinwall	Proportions Used trace 0 to 10% little 10 to 20% some 20 to 35% and 35 to 50%	140 lb. wt. x 30"-fall an 2" O.D. Sampler Cohesionless Density 0-10 Loose 10-30 Med. Dense 30-50 Dense 50+ Very Dense	Cohesive Consistency 0-4 Soft 30 + Hard 4-8 M/Stiff 8-15 Stiff 15-30 V-Stiff	summary
				EARTH BORING 13' ROCK CORING SAMPLES 6 HOLE NO. MW-5

M & W Soils Engineering Inc.  
Main St. Charlestown, NH 03603

SHEET 1 OF 1  
DATE 2/5/97  
HOLE NO. MW-6  
LINE & STA.  
OFFSET

TO HEINDEL & NOYES ADDRESS BURLINGTON, VT  
PROJECT NAME ST. GRISWOLD LOCATION WILLISTON, VT  
REPORT SENT TO GERALD NOYES PROJ. NO.  
SAMPLES RETAINED BY HEINDEL & NOYES OUR JOB NO. 6945-97

GROUND WATER OBSERVATIONS		CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT DRY	AT IMMEDIATELY	FA	SS		DATE STARTED 2/5/97
HOURS		Type	Size I. D.	4"	DATE COMPL. 2/5/97
AT _____ AT _____ HOURS		Hammer Wt.	140#	BIT	BORING FORMAN M.D. & M.H.
		Hammer Fall	30"		INSPECTOR G. NOYES
					SOILS ENGR.

LOCATION OF BORING INSIDE - BUILDING #2 - PIPE PLANT

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE		
							NO.	PEN	REC
					8"	CONCRETE FLOOR			
					3'+/-	CONCRETE SLABS - PIECES OF CONCRETE			
	4' - 6'	SS	20 21	20 17	DENSE	BROWN SILTY FINE SANDS - TRACE OF GRAVELS (FILL)	1	24"	18"
5'	6' - 8'	SS	15 11	14 12	MED. DENSE TO DENSE	BROWN MEDIUM SANDS	2	24"	24"
	8' - 10'	SS	10 10	10 9		SAME MATERIAL	3	24"	24"
10'	10' - 12'	SS	10 20	14 17		SAME MATERIAL	4	24"	24"
					12'				
15'									

GROUND SURFACE TO 12'

USED 4" FA CASING THEN DROVE SS 24"

Sample Type  
D-Dry C-Cored W-Washed  
UP-Unfinished Piston  
TP-Test Pit A-Auger V-Vane Test  
UT-Undisturbed Thinwall

Proportions Used  
trace 0 to 10%  
little 10 to 20%  
some 20 to 35%  
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler  
Cohesionless Density  
0-10 Loose  
10-30 Med. Dense  
30-50 Dense  
50+ Very Dense  
Cohesive Consistency  
0-4 Soft 30 + Hard  
4-8 M/Stiff  
8-15 Stiff  
15-30 V-Stiff

summary
EARTH BORING 12'
ROCK CORING
SAMPLES 4
HOLE NO. MW-6

M & W Soils Engineering Inc.  
Main St. Charlestown, NH 03603

TO HEINDEL & NOYES  
PROJECT NAME ST. GRISWOLD  
REPORT SENT TO GERALD NOYES  
SAMPLES RETAINED BY HEINDEL & NOYES

ADDRESS BURLINGTON, VT  
LOCATION WILLISTON, VT  
PROJ. NO.  
OUR JOB NO. 6945-97

SHEET 1 OF 1  
DATE 2/5/97  
HOLE NO. MW-7  
LINE & STA.  
OFFSET

GROUND WATER OBSERVATIONS		Type	CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT DRY	AT IMMEDIATELY	FA		SS		DATE STARTED 2/5/97
HOURS		Size I. D.	4"	2"		DATE COMPL. 2/5/97
AT _____ AT _____ HOURS		Hammer Wt.		140#	BIT	BORING FORMAN M.D. & M.H.
		Hammer Fall		30"		INSPECTOR G. NOYES
						SOILS ENGR.

LOCATION OF BORING INSIDE - BUILDING #2 - PIPE PLANT

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler		MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE		
								NO.	PEN	REC
5'	1' - 3'	SS	1	2		1'	CONCRETE FLOOR	1	24"	12"
			1	-	VERY LOOSE		BROWN FINE SANDS - TRACE OF FINE GRAVELS (FILL)			
	3' - 5'	SS	2	1				2	24"	12"
				1	20					
5'	5' - 7'	SS	10	15		4'6"	SAME MATERIAL	3	24"	20"
			12	12	MED. DENSE		BROWN FINE TO MEDIUM SANDS			
	7' - 9'	SS	10	10				4	24"	24"
				9	8					
10'						9'				

GROUND SURFACE TO 9'

USED 4" FA CASING THEN DROVE SS 24"

Sample Type  
D-Dry C-Cored W-Washed  
UP-Unfinished Piston  
TP-Test Pit A-Auger V-Vane Test  
UT-Undisturbed Thinwall

Proportions Used  
trace 0 to 10%  
little 10 to 20%  
some 20 to 35%  
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler  
Cohesionless Density  
0-10 Loose  
10-30 Med. Dense  
30-50 Dense  
50+ Very Dense  
Cohesive Consistency  
0-4 Soft 30 + Hard  
4-8 M/Stiff  
8-15 Stiff  
15-30 V-Stiff

summary  
EARTH BORING 9'  
ROCK CORING  
SAMPLES 4  
HOLE NO. MW-7

M & W Soils Engineering Inc.  
Main St. Charlestown, NH 03603

SHEET 1 OF 1  
DATE 2/5/97  
HOLE NO. MW-8  
LINE & STA.  
OFFSET

TO HEINDEL & NOYES ADDRESS BURLINGTON, VT  
PROJECT NAME ST. GRISWOLD LOCATION WILLISTON, VT  
REPORT SENT TO GERALD NOYES PROJ. NO.  
SAMPLES RETAINED BY HEINDEL & NOYES OUR JOB NO. 6945-97

GROUND WATER OBSERVATIONS AT DRY AT IMMEDIATELY HOURS	Type	CASING	SAMPLER	CORE BAR	SURFACE ELEV.
	Size I. D.	FA	SS		DATE STARTED 2/5/97
AT _____ AT _____ HOURS	Hammer Wt.	4"	2"		DATE COMPL. 2/5/97
	Hammer Fall		140#	BIT	BORING FORMAN M.D. & M.H.
			30"		INSPECTOR G. NOYES
					SOILS ENGR.

LOCATION OF BORING INSIDE - MAINTENANCE GARAGE - BOTTOM OF GREASE PIT

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect.	SAMPLE		
							NO.	PEN	REC
						-----BOTTOM OF PIT----- OIL SOAKED FINE SANDS AND QUICK DRY			
5'	4' - 6'	SS	3	5	4'		1	24"	24"
	6' - 8'	SS	6	8	5'	OIL SOAKED FINE SANDS	2	24"	20"
10'	8' - 10'	SS	11	13		MED. DENSE LIGHT BROWN FINE SANDS	3	24"	15"
	10' - 12'	SS	12	10			4	24"	20"
	12' - 14'	SS	9	11		SAME MATERIAL	5	24"	21"
	14' - 16'	SS	14	18			6	24"	24"
15'	16' - 18'	SS	17	16		SAME MATEIRAL	7	24"	24"
			10	9					
20'						SAME MATERIAL			
25'						SAME MATERIAL			
30'	29' - 31'	SS	7	9	31'	MED. DENSE BROWN FINE SANDS	8	24"	24"
			10	14					
35'						(SET WELL)			

GROUND SURFACE TO 31' USED 4" FA CASING THEN DROVE SS 24"

<b>Sample Type</b> D-Dry C-Cored W-Washed UP-Unfinished Piston TP-Test Pit A-Auger V-Vane Test UT-Undisturbed Thinwall	<b>Proportions Used</b> trace 0 to 10% little 10 to 20% some 20 to 35% and 35 to 50%	140 lb. wt. x 30"-fall an 2" O.D. Sampler Cohesionless Density 0-10 Loose 10-30 Med. Dense 30-50 Dense 50+ Very Dense	Cohesive Consistency 0-4 Soft 30 + Hard 4-8 M/Stiff 8-15 Stiff 15-30 V-Stiff	summary EARTH BORING 31' ROCK CORING SAMPLES 8 HOLE NO. MW-8
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M & W Soils Engineering Inc.  
Main St. Charlestown, NH 03603

SHEET 1 OF 1  
DATE 2/6/97  
HOLE NO. MW-9  
LINE & STA.  
OFFSET

TO HEINDEL & NOYES ADDRESS BURLINGTON, VT  
PROJECT NAME ST. GRISWOLD LOCATION WILLISTON, VT  
REPORT SENT TO GERALD NOYES PROJ. NO.  
SAMPLES RETAINED BY HEINDEL & NOYES OUR JOB NO. 6945-97

GROUND WATER OBSERVATIONS		Type	CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT 46'6"	AT 24 HOURS	Size I. D.	HSA	SS		DATE STARTED 2/6/97
AT	AT HOURS	Hammer Wt.	4 1/4"	2"		DATE COMPL. 2/6/97
		Hammer Fall		140#	BIT	BORING FORMAN M.D. & M.H.
				30"		INSPECTOR G. NOYES
						SOILS ENGR.

LOCATION OF BORING OUTSIDE OF MAINTENANCE BUILDING - NORTH OF DRY WELL

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and etc.	SAMPLE		
							NO.	PEN	REC
					10'	CRUSHED STONE			
10'	5' - 7'	SS	4	6	MED. DENSE	LIGHT BROWN FINE TO MEDIUM SANDS (LAYERED)	1	24"	14"
			6	6					
	10' - 12'	SS	7	10			2	24"	24"
			10	12					
20'	15' - 17'	SS	4	5	SAME MATERIAL	SAME MATERIAL	3	24"	20"
			5	4					
	20' - 22'	SS	5	6			4	24"	24"
			7	7					
30'					SAME MATERIAL				
40'					SAME MATERIAL				
50'					SAME MATERIAL				
60'					SAME MATERIAL				
70'				VERY STIFF	68'	BLUE GREY CLAYS (VERY STICKY)			
					75'	(SET WELL)			

GROUND SURFACE TO 75'

USED HSA CASING THEN

Sample Type  
D-Dry C-Cored W-Washed  
UP-Unfinished Piston  
TP-Test Pit A-Auger V-Vane Test  
UT-Undisturbed Thinwall

Proportions Used  
trace 0 to 10%  
little 10 to 20%  
some 20 to 35%  
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler  
Cohesionless Density  
0-10 Loose  
10-30 Med. Dense  
30-50 Dense  
50+ Very Dense  
Cohesive Consistency  
0-4 Soft 30+ Hard  
4-8 M/Stiff  
8-15 Stiff  
15-30 V-Stiff

summary  
EARTH BORING 75'  
ROCK CORING  
SAMPLES 4  
HOLE NO. MW-9

M & W Soils Engineering Inc.  
Main St. Charlestown, NH 03603

TO HEINDEL & NOYES  
PROJECT NAME ST. GRISWOLD  
REPORT SENT TO GERALD NOYES  
SAMPLES RETAINED BY HEINDEL & NOYES  
ADDRESS BURLINGTON, VT  
LOCATION WILLISTON, VT  
PROJ. NO.  
OUR JOB NO. 6945-97

SHEET 1 OF 1  
DATE 2/7/97  
HOLE NO. MW-11  
LINE & STA.  
OFFSET

GROUND WATER OBSERVATIONS		CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT DRY	AT IMMEDIATELY	Type	FA	SS	DATE STARTED 2/7/97
		Size I. D.	4"	2"	DATE COMPL. 2/7/97
		Hammer Wt.		140#	BORING FORMAN M.D. & M.H.
		Hammer Fall		30"	INSPECTOR C. ALDRICH
					SOILS ENGR.

LOCATION OF BORING NEAR FUEL PUMPS - AT SAKRETE PLANT - ON SITE

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and etc.	SAMPLE		
							NO.	PEN	REC
				FROZEN		BROWN FINE TO COARSE SANDS - TRACE OF FINE GRAVELS			
					3'	SAME MATERIAL			
5'				MED. DENSE		BROWN FINE SANDS - TRACE OF SILTS			
						SAME MATERIAL			
						SAME MATERIAL			
10'						SAME MATERIAL			
					12'	(SET VAPOR WELL)			
15'									

GROUND SURFACE TO 12'

USED 4" FA CASING THEN

Sample Type  
D-Dry C-Cored W-Washed  
UP-Unfinished Piston  
TP-Test Pit A-Auger V-Vane Test  
UT-Undisturbed Thinwall

Proportions Used  
trace 0 to 10%  
little 10 to 20%  
some 20 to 35%  
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler  
Cohesionless Density  
0-10 Loose  
10-30 Med. Dense  
30-50 Dense  
50+ Very Dense  
Cohesive Consistency  
0-4 Soft 30 + Hard  
4-8 M/Stiff  
8-15 Stiff  
15-30 V-Stiff

summary

EARTH BORING 12'  
ROCK CORING  
SAMPLES 0  
HOLE NO. MW-11

M & W Soils Engineering Inc.  
Main St. Charlestown, NH 03603

SHEET 1 OF 1  
DATE 2/7/97  
HOLE NO. MW-12  
LINE & STA.  
OFFSET

TO HEINDEL & NOYES ADDRESS BURLINGTON, VT  
PROJECT NAME ST. GRISWOLD LOCATION WILLISTON, VT  
REPORT SENT TO GERALD NOYES PROJ. NO.  
SAMPLES RETAINED BY HEINDEL & NOYES OUR JOB NO. 6945-97

GROUND WATER OBSERVATIONS		Type	CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT DRY	AT IMMEDIATELY	FA	SS			DATE STARTED 2/7/97
	HOURS	Size I. D.	4"	2"		DATE COMPL. 2/7/97
		Hammer Wt.		140#	BIT	BORING FORMAN M.D. & M.H.
		Hammer Fall		30"		INSPECTOR J. NOYES
						SOILS ENGR.

LOCATION OF BORING ADMINISTRATION - OIL UST

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and ect	SAMPLE		
							NO.	PEN	REC
				FROZEN	1'	BROWN SILTY LOAMY TOPSOIL			
				MED. DENSE		BROWN FINE TO MEDIUM SANDS			
					4'	SAME MATERIAL			
5'				MED. DENSE		BROWN FINE SANDS			
						SAME MATERIAL			
						SAME MATERIAL			
10'					12'	SAME MATERIAL			
						(SET VAPOR WELL)			
15'									

GROUND SURFACE TO 12'

USED 4" FA CASING THEN

Sample Type  
D-Dry C-Cored W-Washed  
UP-Unfinished Piston  
TP-Test Pit A-Augur V-Vane Test  
UT-Undisturbed Thinwall

Proportions Used  
trace 0 to 10%  
little 10 to 20%  
some 20 to 35%  
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler  
Cohesionless Density  
0-10 Loose  
10-30 Med. Dense  
30-50 Dense  
50+ Very Dense  
Cohesive Consistency  
0-4 Soft 30 + Hard  
4-8 M/Stiff  
8-15 Stiff  
15-30 V-Stiff

summary  
EARTH BORING 12'  
ROCK CORING  
SAMPLES 0  
HOLE NO. MW-12

M & W Soils Engineering Inc.  
Main St. Charlestown, NH 03603

SHEET. 1 OF 1  
DATE 2/7/97  
HOLE NO. MW-13  
LINE & STA.  
OFFSET

TO HEINDEL & NOYES ADDRESS BURLINGTON, VT  
PROJECT NAME ST. GRISWOLD LOCATION WILLISTON, VT  
REPORT SENT TO GERALD NOYES PROJ. NO.  
SAMPLES RETAINED BY HEINDEL & NOYES OUR JOB NO. 6945-97

GROUND WATER OBSERVATIONS		CASING	SAMPLER	CORE BAR	SURFACE ELEV.
AT 46'6"	AT IMMEDIATELY HOURS	Type HSA	SS		DATE STARTED 2/7/97
		Size I. D. 4 1/4"	2"		DATE COMPL. 2/7/97
		Hammer Wt.	140#	BIT	BORING FORMAN M.D. & M.H.
AT	AT HOURS	Hammer Fall	30"		INSPECTOR G. NOYES
					SOILS ENGR.

LOCATION OF BORING NORTH OF DRY WELL - OFF MAINTENANCE BUILDING

Depth	SAMPLE DEPTHS FROM-TO	TYPE OF SAMPLE	Blows per 6" on sampler	MOISTURE DENSITY OR CONSIST.	STRATA CHANGE ELEV.	SOIL IDENTIFICATION Remarks include color, gradation, Type of soil etc. Rock-color, type, cond., hardness, Drilling time, seams and art	SAMPLE		
							NO.	PEN	REC
				MED. DENSE		BROWN FINE SANDS AND MEDIUM SANDS			
10'						SAME MATERIAL			
20'						SAME MATERIAL			
30'						SAME MATERIAL			
40'						SAME MATERIAL			
	46' - 47'	SS	7	7				1	24" 24"
			8	8					
50'					50'	(INSTALLED WELL)			

GROUND SURFACE TO 50'

USED HSA CASING THEN

Sample Type  
D-Dry C-Cored W-Washed  
UP-Unfinished Piston  
TP-Test Pit A-Auger V-Vane Test  
UT-Undisturbed Thinwall

Proportions Used  
trace 0 to 10%  
little 10 to 20%  
some 20 to 35%  
and 35 to 50%

140 lb. wt. x 30"-fall an 2" O.D. Sampler  
Cohesionless Density  
0-10 Loose  
10-30 Med. Dense  
30-50 Dense  
50+ Very Dense  
Cohesive Consistency  
0-4 Soft 30 + Hard  
4-8 M/Stiff  
8-15 Stiff  
15-30 V-Stiff

summary  
EARTH BORING 50'  
ROCK CORING  
SAMPLES 1  
HOLE NO. MW-13

**ST Griswold laboratory results from January 7 and 8 sampling**

Summary listing of results received as of 24-Feb-97

Compound concentration (ug/L)	State groundwater standards	Detection Limit ( ug/L)	Field blank 1/7/97	Block Plant septic tank #1	Block Plant septic tank #2	Shop septic tank	Old shop monitor well	Shop oil change trench 3'	Pipe Plant building #1 trench drain daylight	Pipe Plant building #1 north post hole	Pipe Plant building #2 north post hole	Pipe Plant building #2 south post hole
<b>EPA 8260</b>												
Benzene	5	1	ND	ND	ND	ND	ND	--	--	--	--	--
sec-Butylbenzene	--	1	ND	ND	ND	ND	ND	--	--	--	--	--
Chlorobenzene	100	1	ND	ND	ND	ND	ND	--	--	--	--	--
Choloroform	100	1	ND	ND	ND	ND	ND	--	--	--	--	--
1,3-Dichlorobenzene	600	1	ND	ND	ND	ND	ND	--	--	--	--	--
1,4-Dichlorobenzene	75	1	ND	1.1	1.5	ND	ND	--	--	--	--	--
Isopropylbenzene	--	1	ND	ND	ND	ND	ND	--	--	--	--	--
p-Isopropyltoluene	--	1	ND	260	217	258	ND	--	--	--	--	--
Napthalene	20	5	ND	ND	ND	9.7	ND	--	--	--	--	--
n-Propylbenzene	--	1	ND	ND	ND	ND	ND	--	--	--	--	--
Tetrachloroethene	5	1	ND	ND	ND	ND	ND	--	--	--	--	--
Trichloroethene	5	1	ND	ND	ND	ND	ND	--	--	--	--	--
1,2,4-Trimethylbenzene	5	1	ND	1.2	ND	TBQ	ND	--	--	--	--	--
1,3,5-Trimethylbenzene	4	1	ND	ND	ND	ND	ND	--	--	--	--	--
Ethylbenzene	700	1	ND	ND	ND	ND	ND	--	--	--	--	--
Toluene	1000	1	ND	ND	ND	43.1	ND	--	--	--	--	--
Xylenes	1000	2	ND	ND	ND	ND	ND	--	--	--	--	--
MTBE	40	2	ND	ND	ND	ND	ND	--	--	--	--	--
Unidentified Peaks	--	--	0	>10	>10	>10	>10	--	--	--	--	--
<b>EPA 8100 Total</b>	water 0.8 mg/L		--	--	--	--	--	--	--	7.86	1.10	1.61
<b>Petroleum Hydrocarbons</b>	soil 5 mg/kg		--	--	--	--	--	10400	114	--	--	--

Compound concentration (ug/L)	Detection Limit ( ug/L)	SE shop drain	Detection Limit ( ug/L)	Block Plant boiler room drain	NW shop drain	NE shop drywell	Pipe Plant building #2 west floor drain	Pipe Plant building #1 trench drain	Detection Limit ( ug/L)	Pipe Plant building #3 floor trench	Detection Limit ( ug/L)	SW shop drain
<b>EPA 8260</b>												
Benzene	2	ND	10	ND	ND	ND	ND	ND	100	ND	200	ND
sec-Butylbenzene	2	ND	10	ND	TBQ	ND	ND	ND	100	289	200	960
Chlorobenzene	2	ND	10	ND	ND	ND	ND	ND	100	ND	200	ND
Choloroform	2	4.2	10	ND	ND	ND	ND	ND	100	ND	200	ND
1,3-Dichlorobenzene	2	ND	10	ND	ND	ND	ND	ND	100	ND	200	ND
1,4-Dichlorobenzene	2	ND	10	ND	ND	ND	ND	ND	100	ND	200	ND
Isopropylbenzene	2	ND	10	ND	ND	ND	ND	ND	100	ND	200	ND
p-Isopropyltoluene	2	2.7	10	ND	17.5	ND	17.9	ND	100	734	200	1390
Napthalene	10	ND	50	ND	TBQ	ND	ND	ND	500	579	1000	11700
n-Propylbenzene	2	ND	10	ND	ND	ND	ND	ND	100	141	200	764
Tetrachloroethene	2	ND	10	ND	ND	ND	ND	ND	100	ND	200	ND
Trichloroethene	2	ND	10	ND	ND	ND	ND	ND	100	ND	200	ND
1,2,4-Trimethylbenzene	2	2.9	10	TBQ	42.5	ND	13	ND	100	1340	200	5900
1,3,5-Trimethylbenzene	2	ND	10	ND	36.6	ND	13.8	ND	100	593	200	1470
Ethylbenzene	2	ND	10	ND	ND	ND	ND	ND	100	ND	200	ND
Toluene	2	ND	10	ND	TBQ	ND	ND	ND	100	ND	200	ND
Xylenes	4	TBQ	20	ND	TBQ	ND	27.4	ND	200	413	400	TBQ
MTBE	4	ND	20	ND	TBQ	ND	ND	ND	ND	ND	400	ND
Unidentified Peaks	--	>10	--	0	>10	0	>10	>10	>10	>10	--	>10
<b>EPA 8100 Total</b>	water 0.8 mg/L		--	--	--	--	--	--	--	--	--	--
<b>Petroleum Hydrocarbons</b>	soil 5 mg/kg		--	--	--	--	11,800	--	--	156,000	--	--

ND = not detected

TBQ = trace below quantitation limit

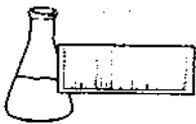
'-' = sample not analyzed for this compound

ST Griswold laboratory results from January 30, February 5, 6, and 7

Compound concentration (ug/L)	State standards	Detection Limit ( ug/L)	MW-6 Pipe Plant building #2 south post hole 4-6'	MW-7 Pipe Plant building #2 north post hole 7-8'	MW-4 Pipe Plant bujlding #1 south post hole 8-11'	MW-3 Pipe Plant building #1 north post hole 9-11'	MW-5 Pipe Plant building #3 catch basin 11-13'	MW-1 Sales office UST 7-9'	MW-8 Shop oil change trench 16-18'	MW-8 Shop oil change trench 29-31'	MW-9 shop drywell monitor well 20-22'	MW-2 shop drywell monitor well 13-15'	MW-2 shop drywell monitor well 23-25'	Pipe Plant building #1 trench drain outfall soil #2	Pipe Plant building #1 slab soil #1	MW-11 Sakrete diesel UST 10-12'	MW-12 office fuel oil UST 10-12'
<b>EPA 8260</b>																	
Benzene	5	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
sec-Butylbenzene	--	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Chlorobenzene	100	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Chloroform	100	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
1,3-Dichlorobenzene	600	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
1,4-Dichlorobenzene	75	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Isopropylbenzene	--	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
p-Isopropyltoluene	--	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Napthalene	20	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
n-Propylbenzene	--	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Tetrachloroethene	5	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Trichloroethene	5	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
1,2,4-Trimethylbenzene	5	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
1,3,5-Trimethylbenzene	4	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Ethylbenzene	700	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Toluene	1000	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Xylenes	1000	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
MTBE	40	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	--	ND	ND
Unidentified Peaks	--	--	0	0	0	0	0	0	--	0	0	0	0	--	--	0	0
<b>EPA 8100 (ug/kg)</b>																	
Unidentified Peaks	--	50	ND	ND	ND	ND	ND	ND	--	--	--	--	--	ND	ND	--	--
<b>EPA 8100 Total Petroleum Hydrocarbons</b>																	
	water	0.8 mg/L	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	soil	5 mg/kg	--	--	--	--	--	--	TBQ	--	--	--	--	ND	1610**	--	--

Compound concentration (ug/L)	State standards	Detection Limit ( ug/L)	MW-9 shop drywell monitor well
Benzene	5	1	ND
sec-Butylbenzene	--	1	ND
Chlorobenzene	100	1	ND
Chloroform	100	1	ND
1,3-Dichlorobenzene	600	1	ND
1,4-Dichlorobenzene	75	1	ND
Isopropylbenzene	--	1	ND
p-Isopropyltoluene	--	1	ND
Napthalene	20	5	ND
n-Propylbenzene	--	1	ND
Tetrachloroethene	5	1	ND
Trichloroethene	5	1	ND
1,2,4-Trimethylbenzene	5	1	ND
1,3,5-Trimethylbenzene	4	1	ND
Ethylbenzene	700	1	ND
Toluene	1000	1	ND
Xylenes	1000	2	ND
MTBE	40	2	ND
Unidentified Peaks	--	--	0

\*\* product identification was similar to motor oil



**ENDYNE, INC.**

Laboratory Services

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

REPORT OF LABORATORY ANALYSIS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
DATE REPORTED: February 18, 1997  
DATE SAMPLED: January 30, 1997

PROJECT CODE: HNSG1783  
REF. #: 99,416 - 99,417

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

Chain of custody indicated no 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

enclosures



**ENDYNE, INC.**

Laboratory Services

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Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

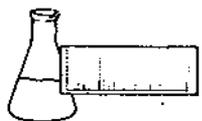
DATE: February 18, 1997  
CLIENT: Heindel and Noyes  
PROJECT: ST Griswold  
PROJECT CODE: HNSG1783  
COLLECTED BY: Gerold Noyes  
DATE SAMPLED: January 30, 1997  
DATE RECEIVED: January 31, 1997

Reference #	Sample ID	Concentration (mg/kg) <sup>1</sup>	Fuel ID <sup>2</sup>
99,416	Plant #1 Slab Soil #1; 1330	1,610.	Oil <sup>3</sup>
99,417	Plant #1 Outfall Soil #2; 1340	ND <sup>4</sup>	NA <sup>5</sup>

Notes:

- 1 Method detection limit is 5.0 mg/kg.
- 2 Petroleum identification is determined by comparison of the chromatographic fingerprint of the sample with a laboratory generated library of chromatographic fingerprints of assorted Petroleum standards.
- 3 Product similar in volatility to motor oil.
- 4 None Detected
- 5 Not available, no sample signature present for comparison.





**ENDYNE, INC.**

**Laboratory Services**

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Williston, Vermont 05495  
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FAX 879-7103

**REPORT OF LABORATORY ANALYSIS**

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold PH II  
DATE REPORTED: January 17, 1997  
DATE SAMPLED: January 6, 1997

PROJECT CODE: HNSB1660  
REF. #: 98,655 - 98,661

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 proper sample preservation for water samples. Chain of custody indicated proper sample preservation for soil samples.

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.

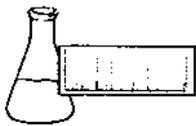
Blank contamination was not observed at levels affecting the analytical results.

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



LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: January 17, 1997  
CLIENT: Heindel and Noyes  
PROJECT: S.T. Griswold PH II  
PROJECT CODE: HNSG1660  
COLLECTED BY: GWN/ATH  
DATE SAMPLED: January 6, 1997  
DATE RECEIVED: January 8, 1997

Reference #	Sample ID	Concentration
98,655	NW Garage Trench; 12:00	10,400. (mg/kg) <sup>1</sup>
98,656	South Post Hole Plant 2	1.61 mg/L <sup>2</sup>
98,657	East Post Hole Plant 1	7.86 mg/L
98,658	North Post Hole Plant 2	1.10 mg/L
98,659	Plant 2 West Floor Drain; 3:20	11,800. mg/kg
98,660	Building 3 Trench	156,000. mg/kg
98,661	Plant 1 Drain Daylight; 2:30	114. mg/kg

Notes:

- 1 Method detection limit is 5.0 mg/kg for soil samples.
- 2 Method detection limit is 0.8 mg/L for water samples.
- 3 Trace below detection limit

**CHAIN-OF-CUSTODY RECORD**

1/2

10714

Project Name: <b>S.T. GRISWOLD PH II</b>	Reporting Address: <b>H &amp; N</b>	Billing Address: <b>H &amp; N</b>
Site Location: <b>WILLISTON, VT</b>		
Endyne Project Number: <b>HNSG-1660</b>	Company:	Sampler Name: <b>GWN / ATH</b>
	Contact Name/Phone #:	Phone #: <b>658-0820</b>

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				
	BLOCK PLANT SEPTIC #1	H <sub>2</sub> O	✓		1/6/97	2	40mL		8260	NO COOL	
	BLOCK PLANT DRAIN	SOIL	✓		1/6/97 1:30	2	40mL		8260	NO COOL	
	BLOCK PLANT SEPTIC #2	SLUDGE	✓		1/6/97	2	40mL		8260	COOL	
	SHOP NE DRYWELL	SOIL	✓		1/6/97	2	40mL		8260	NO COOL	
	SE GARAGE DRAIN	H <sub>2</sub> O	✓		1/6/97 10:50	2	40mL		8260	NO COOL	
	NW GARAGE DRAIN	H <sub>2</sub> O	✓		1/6/97 12:00	2	40mL		8260	COOL	
	SW GARAGE DRAIN	H <sub>2</sub> O	✓		1/6/97 11:30	2	40mL		8260	COOL	
98,655	NW GARAGE TRENCH	SOIL	✓		1/6/97 12:00	2	40mL		8100 +TPH	COOL	
	SE SHOP SEPTIC	H <sub>2</sub> O	✓		1/6/97 11:40	2	40mL		8260	COOL	
	GARAGE MW-1	H <sub>2</sub> O	✓		1/7/97 10:30	2	40mL		8260	AZIDE +COOL	
	BLANK	H <sub>2</sub> O	✓		1/7/97 9:00	2	40mL		8260	AZIDE +COOL	

Relinquished by: Signature <i>Gerald Hays</i>	Received by: Signature <i>M. Chambers</i>	Date/Time <b>1-8-97</b> <b>4:30</b>
Relinquished by: Signature	Received by: Signature	Date/Time

**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 <sub>5</sub>	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):										

EE:YNT, E

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

CHAIN-OF-CUSTODY RECORD

12, 2

10715

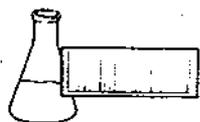
Project Name: ST. GRISWOLD P#4 Site Location: WILLISTON VT	Reporting Address: HCN	Billing Address: H & N
Endyne Project Number: HNSG1660	Company: Contact Name/Phone #:	Sampler Name: GWN / ATH Phone #: 658-0820

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				
98,656	SOUTH POST HOLE PLANT 2	H <sub>2</sub> O	✓		1/6/97	2	40 ml		8100 TPH	COOL	
98,657	EAST POST HOLE PLANT 1	H <sub>2</sub> O	✓		1/6/97	2	40 ml		8100 TPH	COOL	
98,658	NORTH POST HOLE PLANT 2	H <sub>2</sub> O	✓		1/6/97	2	40 ml		8100 TPH	COOL	
98,659	PLANT 2 WEST FLOOR DRAIN	SOIL/H <sub>2</sub> O	✓		1/6/97 3:20	2	40 ml	8260+	8100 TPH	COOL	
98,660	BUILDING 3 TRENCH	SOIL	✓		1/6/97	2	40 ml	8260+	8100 TPH	COOL	
	PLANT 1 DRAIN	SOIL	✓		1/6/97 2:30	2	40 ml		8260	COOL	
98,661	PLANT 1 DRAIN DAYLIGHT	SOIL	✓		1/6/97 2:30	2	40 ml		8100 TPH	COOL	

Relinquished by: Signature <i>Bob Hayes</i>	Received by: Signature <i>Tom M. Chamberlain</i>	Date/Time 1-8-97 4:30
Relinquished by: Signature	Received by: Signature	Date/Time

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 <sub>5</sub>	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):										



**ENDYNE, INC.**

Laboratory Services

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REPORT OF LABORATORY ANALYSIS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
DATE REPORTED: February 18, 1997  
DATE SAMPLED: February 5, 1997

PROJECT CODE: HNSG1929  
REF. #: 99,808

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.

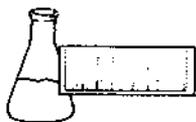
Blank contamination was not observed at levels affecting the analytical results.

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.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

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LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: February 18, 1997  
CLIENT: Heindel and Noyes  
PROJECT: ST Griswold  
PROJECT CODE: HNSG1929  
COLLECTED BY: Gerold Noyes  
DATE SAMPLED: February 5, 1997  
DATE RECEIVED: February 7, 1997

Reference #	Sample ID	Concentration (mg/kg) <sup>1</sup>
99,808	Garage Oil Change 16'-18'; 1630	TBQ <sup>2</sup>

Notes:

- 1 Method detection limit is 5.0 mg/kg.
- 2 Trace Below Quantitation Limit

**CHAIN-OF-CUSTODY RECORD**

10336

Project Name: <b>ST GRISWOLD</b> Site Location: <b>WILLISTON</b>	Reporting Address: <b>HCN</b>	Billing Address: <b>HRW</b>
Endyne Project Number: <b>HNSG1929</b>	Company: Contact Name/Phone #:	Sampler Name: <b>GEROLD NOYES</b> Phone #: <b>658-0820</b>

Lab #	Sample Location	Matrix	GRA B	COMP	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
	MW 103	H <sub>2</sub> O	✓	2/6	2/6 3:10	2	40 mL		8260	HCL	
	MW 103	H <sub>2</sub> O	✓	2/6	2/6 3:10		250 PLASTIC		1 PH	+HARDNESS	
	MW 103	H <sub>2</sub> O	✓	2/6	2/6 3:10		500 PLASTIC	FIELD FILTERED	30	#NO <sub>2</sub>	
	MW 10	H <sub>2</sub> O	✓		2/7/17	2	40 mL		8260	HCL	
	MW 9	H <sub>2</sub> O	✓		2/6 3:20	2	40 mL		8260	AZIDE	
	SALES OFFICE 7-9'	SOIL	✓		2/4 2:00	2	40 mL		8108	+8260	
99808	GARAGE OIL CHANGE 16'-18'	SOIL	✓		2/5 4:30	1	250 GLASS		8100 TPH		
	GARAGE OIL CHANGE 29'-31'	SOIL	✓		2/5 5:15	1	" "		8260		
	GARAGE MW-9 20-22'	SOIL	✓		2/6 9:30	1	" "		8260		
	GARAGE MW-2 13-15'	SOIL	✓		2/4 4:00	2	40 mL		8260		
	GARAGE MW-2 23-25'	SOIL	✓		2/4 4:30	2	40 mL		8260		

Relinquished by: Signature <b>G. J. Noyes</b>	Received by: Signature <b>ML Farnell</b>	Date/Time <b>2/7/97 4:05 pm</b>
Relinquished by: Signature	Received by: Signature	Date/Time

**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 <sub>5</sub>	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): <b>ASBESTOS, RCRA METALS, DISSOLVED, PH + HARDNESS</b>										

CHAIN-OF-CUSTODY RECORD

10555

Project Name: <b>ST GRISWOLD</b> Site Location: <b>WILLISTON</b>	Reporting Address: <b>HRN</b>	Billing Address: <b>HRN</b>
Endyne Project Number: <b>HNS61929</b>	Company: Contact Name/Phone #:	Sampler Name: <b>GEROLD NOYES</b> Phone #: <b>658-0820</b>

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				
	PIPE PLANT BLDG #2 S. HOLE 4-6'	Soil	/		2/5/97 12:00	1	250 GLASS	8100 + 8260		/	
	PIPE PLANT BLDG #2 N. HOLE 7-9'	"	/		2/5/97 2:00	1	250 GLASS	8100 + 8260		/	
	PIPE PLANT BLDG #1 S. HOLE 9-11'	"	/		2/5/97 <sup>10:10</sup> 11:00	1	250 GLASS	8100 + 8260		/	
	PIPE PLANT BLDG #1 N. HOLE 9-11'	"	/		2/5/97 9:30	1	" "	8100 + 8260		/	
	PIPE PLANT BLDG #3 CATCH BASIN	"	/		2/5/97 11:30	1	" "	8100 + 8260		/	
	MW 101	H <sub>2</sub> O	/	2/6	2/17/97 2:45	2	40 ml	8260	HCL	/	
	MW 101	H <sub>2</sub> O	/	2/6	2/17/97 2:45	1	250 PLASTIC		PH + HARDNESS		
	MW 101	H <sub>2</sub> O	/	2/6	2/17/97 2:45	1	500 PLASTIC FIELD FILTERED	RCA metal 30	HNO <sub>3</sub>		
	MW 102	H <sub>2</sub> O	/	2/6	2/17/97 2:55	2	40 ml	8260	HCL	/	
	MW 102	H <sub>2</sub> O	/	2/6	2/17/97 2:55	1	250 PLASTIC		PH + HARDNESS		
	MW 102	H <sub>2</sub> O	/	2/6	2/17/97 2:55	1	500 PLASTIC FIELD FILTERED		30	HNO <sub>3</sub>	

Relinquished by: Signature <b>Gerold Noyes</b>	Received by: Signature <b>MJ Farnell</b>	Date/Time <b>2/17/97 4:05 pm</b>
Relinquished by: Signature	Received by: Signature	Date/Time

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 <sub>5</sub>	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): <b>DISSOLVED RCA METALS, PH + HARDNESS</b>										



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REPORT OF LABORATORY ANALYSIS

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 6-7, 1997

PROJECT CODE: HNSG1659  
REF. #: 98,642 - 98,654

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

Chain of custody indicated proper sample preservation.

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.

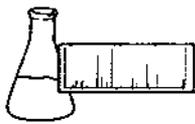
Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery 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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### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 6, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 15, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,642  
STATION: Block Plant Septic #1  
TIME SAMPLED: Not Indicated  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit (ug/L)	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	260.
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	1.1	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	1.2
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10<sup>2</sup>

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 101.%  
Toluene-d8 : 93.%  
4-Bromofluorobenzene : 90.%

#### NOTES:

- 1 None detected
- 2 The unidentified peaks in this sample are Aliphatic Hydrocarbons and Alkylated Benzenes ranging from 2-1000ug/L.



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### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 6, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 15, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,644  
STATION: Block Plant Septic #2  
TIME SAMPLED: Not Indicated  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit (ug/L)	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	217.
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	1.5	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10<sup>2</sup>

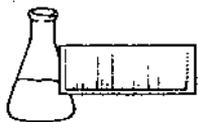
#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 83.%  
Toluene-d8 : 97.%  
4-Bromofluorobenzene : 93.%

#### NOTES:

1 None detected

2 The unidentified peaks in this sample are Aliphatic Hydrocarbons and Alkylated Benzenes ranging from 2-1000ug/L.



### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 6, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 16, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,649  
STATION: SE Shop Septic  
TIME SAMPLED: 11:40  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit (ug/L)	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	258.
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	9.7
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	43.1
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	TBQ <sup>2</sup>
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

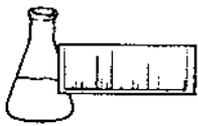
NUMBER OF UNIDENTIFIED PEAKS FOUND: >10<sup>3</sup>

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 106. %  
Toluene-d8 : 94. %  
4-Bromofluorobenzene : 98. %

#### NOTES:

- 1 None detected
- 2 Trace below quantitation limit
- 3 The unidentified peaks in this sample are Aliphatic Hydrocarbons and Alkylated Benzenes ranging from 2-200ug/L.



### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 7, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 16, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,650  
STATION: Garage MW-1  
TIME SAMPLED: 10:30  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit (ug/L)	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10<sup>2</sup>

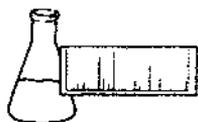
#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 103.%  
Toluene-d8 : 95.%  
4-Bromofluorobenzene : 98.%

#### NOTES:

1 None detected

2 The unidentified peaks in this sample are Aliphatic Hydrocarbons and Alkylated Benzenes ranging from 2-25ug/L.



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### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 7, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 16, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,651  
STATION: Blank  
TIME SAMPLED: 8:00  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit (ug/L)	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

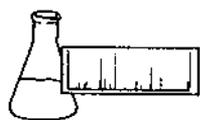
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 109.%  
Toluene-d8 : 98.%  
4-Bromofluorobenzene : 99.%

#### NOTES:

1 None detected



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### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 6, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 16, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,646  
STATION: SE Garage Drain  
TIME SAMPLED: 10:50  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit (ug/L) <sup>1</sup>	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	2	ND <sup>2</sup>	1,3-Dichloropropane	2	ND
Bromobenzene	2	ND	2,2-Dichloropropane	2	ND
Bromochloromethane	4	ND	1,1-Dichloropropene	2	ND
Bromodichloromethane	2	ND	cis-1,3-Dichloropropene	2	ND
Bromoform	2	ND	trans-1,3-Dichloropropene	2	ND
Bromomethane	10	ND	Ethylbenzene	2	ND
n-Butylbenzene	2	ND	Hexachlorobutadiene	10	ND
sec-Butylbenzene	2	ND	Isopropylbenzene	2	ND
tert-Butylbenzene	2	ND	p-Isopropyltoluene	2	2.7
Carbon Tetrachloride	2	ND	Methylene Chloride	10	ND
Chlorobenzene	2	ND	Naphthalene	10	ND
Chloroethane	10	ND	n-Propylbenzene	2	ND
Chloroform	2	4.2	Styrene	4	ND
Chloromethane	20	ND	1,1,1,2-Tetrachloroethane	4	ND
2&4-Chlorotoluene	4	ND	1,1,2,2-Tetrachloroethane	4	ND
Dibromochloromethane	2	ND	Tetrachloroethene	2	ND
1,2-Dibromo-3-Chloropropane	4	ND	Toluene	2	ND
1,2-Dibromoethane	4	ND	1,2,3-Trichlorobenzene	4	ND
Dibromomethane	4	ND	1,2,4-Trichlorobenzene	4	ND
1,2-Dichlorobenzene	2	ND	1,1,1-Trichloroethane	2	ND
1,3-Dichlorobenzene	2	ND	1,1,2-Trichloroethane	2	ND
1,4-Dichlorobenzene	2	ND	Trichloroethene	2	ND
Dichlorodifluoromethane	20	ND	Trichlorofluoromethane	4	ND
1,1-Dichloroethane	2	ND	1,2,3-Trichloropropane	2	ND
1,2-Dichloroethane	2	ND	1,2,4-Trimethylbenzene	2	2.9
1,1-Dichloroethene	2	ND	1,3,5-Trimethylbenzene	2	ND
cis-1,2-Dichloroethene	2	ND	Vinyl Chloride	10	ND
trans-1,2-Dichloroethene	2	ND	Total Xylenes	4	TBQ <sup>3</sup>
1,2-Dichloropropane	2	ND	MTBE	4	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 10<sup>4</sup>

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 108.%  
Toluene-d8 : 98.%  
4-Bromofluorobenzene : 100.%

#### NOTES:

- Detection limit raised due to high levels of foaming agents. Sample run at a 50% dilution.
- None detected
- Trace below quantitation limit
- The unidentified peaks in this sample are Aliphatic Hydrocarbons ranging from 2-1000ug/L.



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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 6, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 16, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,643  
STATION: Block Plant Drain  
TIME SAMPLED: 1:30  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit	Result	Parameter	Detection Limit	Result
	(ug/kg)	as received(ug/kg)		(ug/kg)	as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	TBQ <sup>2</sup>
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

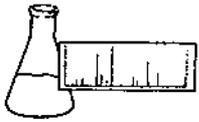
PERCENT SOLIDS: 97.%

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 87. %  
Toluene-d8 : 95. %  
4-Bromofluorobenzene : 88. %

#### NOTES:

- 1 None detected
- 2 Trace below quantitation limit



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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 6, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 16, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,645  
STATION: Shop NE Drywell  
TIME SAMPLED: Not Indicated  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit	Result	Parameter	Detection Limit	Result
	(ug/kg)	as received(ug/kg)		(ug/kg)	as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

PERCENT SOLIDS: 97.%

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 84. %  
Toluene-d8 : 100. %  
4-Bromofluorobenzene : 91. %

#### NOTES:

1 None detected



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### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 6, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 16, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,647  
STATION: NW Garage Drain  
TIME SAMPLED: 12:00  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit (ug/L) <sup>1</sup>	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	10	ND <sup>2</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	TBQ <sup>3</sup>	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	17.5
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	TBQ
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	TBQ
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	42.5
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	36.6
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	TBQ
1,2-Dichloropropane	10	ND	MTBE	20	TBQ

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10<sup>4</sup>

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 107. %  
Toluene-d8 : 101. %  
4-Bromofluorobenzene : 99. %

#### NOTES:

1 Detection limit raised due to high levels of contaminants. Sample run at a 10% dilution.

2 None detected

3 Trace below quantitation limit

4 The unidentified peaks in this sample are Aliphatic Hydrocarbons and Alkylated Benzenes ranging from 2-1000ug/L.



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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 6, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 16, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,652  
STATION: Plant 2 West Floor Drain  
TIME SAMPLED: 3:20  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit	Result	Parameter	Detection Limit	Result
	(ug/kg)	as received(ug/kg)		(ug/kg)	as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	17.9
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	13.0
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	13.8
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	27.4
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10<sup>2</sup>

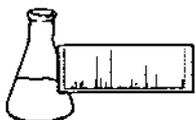
PERCENT SOLID: 76.%

#### ANALYTICAL SURROGATE RECOVERY:

- Dibromofluoromethane : 83.%
- Toluene-d8 : 99.%
- 4-Bromofluorobenzene : 95.%

#### NOTES:

- 1 None detected
- 2 The unidentified peaks in this sample are Aliphatic Hydrocarbons and Alkylated Benzenes ranging from 20-250ug/kg.



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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 6, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 16, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,654  
STATION: Plant 1 Drain  
TIME SAMPLED: 2:30  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit (ug/kg)	Result as received(ug/kg)	Parameter	Detection Limit (ug/kg)	Result as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10<sup>2</sup>

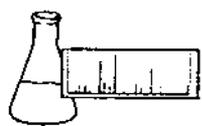
PERCENT SOLID: 82.%

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 83.%  
Toluene-d8 : 99.%  
4-Bromofluorobenzene : 95.%

#### NOTES:

- 1 None detected
- 2 The unidentified peaks in this sample are Aliphatic Hydrocarbons and Alkylated Benzenes ranging from 20-500ug/kg.



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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 6, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 16, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,653  
STATION: Building #3 Trench  
TIME SAMPLED: Not Indicated  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit (ug/kg) <sup>1</sup>	Result as received(ug/kg)	Parameter	Detection Limit (ug/kg)	Result as received(ug/kg)
Benzene	100	ND <sup>2</sup>	1,3-Dichloropropane	100	ND
Bromobenzene	100	ND	2,2-Dichloropropane	100	ND
Bromochloromethane	200	ND	1,1-Dichloropropene	100	ND
Bromodichloromethane	100	ND	cis-1,3-Dichloropropene	100	ND
Bromoform	100	ND	trans-1,3-Dichloropropene	100	ND
Bromomethane	500	ND	Ethylbenzene	100	ND
n-Butylbenzene	100	ND	Hexachlorobutadiene	500	ND
sec-Butylbenzene	100	289.	Isopropylbenzene	100	ND
tert-Butylbenzene	100	ND	p-Isopropyltoluene	100	734.
Carbon Tetrachloride	100	ND	Methylene Chloride	500	ND
Chlorobenzene	100	ND	Naphthalene	500	579.
Chloroethane	500	ND	n-Propylbenzene	100	141.
Chloroform	100	ND	Styrene	200	ND
Chloromethane	1000	ND	1,1,1,2-Tetrachloroethane	200	ND
2&4-Chlorotoluene	200	ND	1,1,2,2-Tetrachloroethane	200	ND
Dibromochloromethane	100	ND	Tetrachloroethene	100	ND
1,2-Dibromo-3-Chloropropane	200	ND	Toluene	100	ND
1,2-Dibromoethane	200	ND	1,2,3-Trichlorobenzene	200	ND
Dibromomethane	200	ND	1,2,4-Trichlorobenzene	200	ND
1,2-Dichlorobenzene	100	ND	1,1,1-Trichloroethane	100	ND
1,3-Dichlorobenzene	100	ND	1,1,2-Trichloroethane	100	ND
1,4-Dichlorobenzene	100	ND	Trichloroethene	100	ND
Dichlorodifluoromethane	1000	ND	Trichlorofluoromethane	200	ND
1,1-Dichloroethane	100	ND	1,2,3-Trichloropropane	100	ND
1,2-Dichloroethane	100	ND	1,2,4-Trimethylbenzene	100	1,340.
1,1-Dichloroethene	100	ND	1,3,5-Trimethylbenzene	100	593.
cis-1,2-Dichloroethene	100	ND	Vinyl Chloride	500	ND
trans-1,2-Dichloroethene	100	ND	Total Xylenes	200	413.
1,2-Dichloropropane	100	ND	MTBE	200	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10<sup>3</sup>

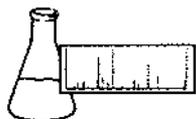
PERCENT SOLID: 92.%

#### ANALYTICAL SURROGATE RECOVERY:

- Dibromofluoromethane : 87.%
- Toluene-d8 : 98.%
- 4-Bromofluorobenzene : 99.%

#### NOTES:

- 1 Detection limit raised due to high levels of contaminants. Sample run at a 10% dilution.
- 2 None detected
- 3 The unidentified peaks in this sample are Aliphatic Hydrocarbons and Alkylated Benzenes ranging from 200-4000ug/kg.



### LABORATORY REPORT

### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: S.T. Griswold Ph. II  
REPORT DATE: January 16, 1997  
DATE SAMPLED: January 6, 1997  
DATE RECEIVED: January 8, 1997  
ANALYSIS DATE: January 15, 1997

PROJECT CODE: HNSG1659  
REF.#: 98,648  
STATION: SW Garage Drain  
TIME SAMPLED: 11:30  
SAMPLER: G.W.N./A.T.H.

Parameter	Detection Limit (ug/L) <sup>1</sup>	Result (ug/L)	Parameter	Detection Limit (ug/L)	Result (ug/L)
Benzene	200	ND <sup>2</sup>	1,3-Dichloropropane	200	ND
Bromobenzene	200	ND	2,2-Dichloropropane	200	ND
Bromochloromethane	400	ND	1,1-Dichloropropene	200	ND
Bromodichloromethane	200	ND	cis-1,3-Dichloropropene	200	ND
Bromoform	200	ND	trans-1,3-Dichloropropene	200	ND
Bromomethane	1000	ND	Ethylbenzene	200	ND
n-Butylbenzene	200	ND	Hexachlorobutadiene	1000	ND
sec-Butylbenzene	200	960.	Isopropylbenzene	200	TBQ <sup>3</sup>
tert-Butylbenzene	200	ND	p-Isopropyltoluene	200	1,390.
Carbon Tetrachloride	200	ND	Methylene Chloride	1000	ND
Chlorobenzene	200	ND	Naphthalene	1000	11,700.
Chloroethane	1000	ND	n-Propylbenzene	200	764.
Chloroform	200	ND	Styrene	400	ND
Chloromethane	2000	ND	1,1,1,2-Tetrachloroethane	400	ND
2&4-Chlorotoluene	400	ND	1,1,2,2-Tetrachloroethane	400	ND
Dibromochloromethane	200	ND	Tetrachloroethene	200	ND
1,2-Dibromo-3-Chloropropane	400	ND	Toluene	200	ND
1,2-Dibromoethane	400	ND	1,2,3-Trichlorobenzene	400	ND
Dibromomethane	400	ND	1,2,4-Trichlorobenzene	400	ND
1,2-Dichlorobenzene	200	ND	1,1,1-Trichloroethane	200	ND
1,3-Dichlorobenzene	200	ND	1,1,2-Trichloroethane	200	ND
1,4-Dichlorobenzene	200	ND	Trichloroethene	200	ND
Dichlorodifluoromethane	2000	ND	Trichlorofluoromethane	400	ND
1,1-Dichloroethane	200	ND	1,2,3-Trichloropropane	200	ND
1,2-Dichloroethane	200	ND	1,2,4-Trimethylbenzene	200	5,900.
1,1-Dichloroethene	200	ND	1,3,5-Trimethylbenzene	200	1,470.
cis-1,2-Dichloroethene	200	ND	Vinyl Chloride	1000	ND
trans-1,2-Dichloroethene	200	ND	Total Xylenes	400	TBQ
1,2-Dichloropropane	200	ND	MTBE	400	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10<sup>4</sup>

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 104.%  
Toluene-d8 : 95.%  
4-Bromofluorobenzene : 99.%

#### NOTES:

1 Detection limit raised due to high levels of contaminants. Sample run at a 0.5% dilution.

2 None detected

3 Trace below quantitation limit

4 The unidentified peaks in this sample are Aliphatic Hydrocarbons and Alkylated Benzenes ranging from 200-5000ug/L.

98,642 — 98,661

Project Name: <b>S.T. GRIWOLD PH II</b> Site Location: <b>WILLISTON, VT</b>	Reporting Address: <b>H &amp; N</b>	Billing Address: <b>H &amp; N</b>
Endyne Project Number: <b>HNSG 1659</b>	Company: Contact Name/Phone #:	Sampler Name: <b>GWN / ATH</b> Phone #: <b>658-0820</b>

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				
98,642	BLOCK PLANT SEPTIC #1	H <sub>2</sub> O	✓		1/6/97	2	40mL		8260	NO COOL	
98,643	BLOCK PLANT DRAIN	SOIL	✓		1/6/97 1:30	2	40mL		8260	NO COOL	
98,644	BLOCK PLANT SEPTIC #2	SLUDGE	✓		1/6/97	2	40mL		8260	COOL	
98,645	SHOP NE DRYWELL	SOIL	✓		1/6/97	2	40mL		8260	NO COOL	
98,646	SE GARAGE DRAIN	H <sub>2</sub> O	✓		1/6/97 10:50	2	40mL		8260	NO COOL	
98,647	NW GARAGE DRAIN	H <sub>2</sub> O	✓		1/6/97 12:00	2	40mL		8260	COOL	
98,648	SW GARAGE DRAIN	H <sub>2</sub> O	✓		1/6/97 11:30	2	40mL		8260	COOL	
	NW GARAGE TRENCH	SOIL	✓		1/6/97 12:00	2	40mL		8100 ATH	COOL	
98,649	SE SHOP SEPTIC	H <sub>2</sub> O	✓		1/6/97 11:40	2	40mL		8260	COOL	
98,650	GARAGE MW-1	H <sub>2</sub> O	✓		1/7/97 10:30	2	40mL		8260	AZIDE + COOL	
98,651	BLANK	H <sub>2</sub> O	✓		1/7/97 9:00	2	40mL		8260	AZIDE + COOL	

Relinquished by: Signature <i>Gerald Hays</i>	Received by: Signature <i>M. [Signature]</i>	Date/Time <b>1-8-97</b> <span style="float:right">11:30</span>
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Relinquished by: Signature	Received by: Signature	Date/Time
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**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 <sub>5</sub>	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):										

**CHAIN-OF-CUSTODY RECORD**

12/2  
10715

Project Name: <b>ST. GRISWOLD PH II</b>	Reporting Address: <b>H &amp; N</b>	Billing Address: <b>H &amp; N</b>
Site Location: <b>WILLISTON VT</b>		
Endyne Project Number: <b>HNSG 1659</b>	Company: Contact Name/Phone #:	Sampler Name: <b>GWN / ATH</b> Phone #: <b>658-0820</b>

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				
	SOUTH POST HOLE PLANT 2	H <sub>2</sub> O	✓		1/6/97	2	40ml		8100TPH	COOL	
	EAST POST HOLE PLANT 1	H <sub>2</sub> O	✓		1/6/97	2	40 ml		8100TPH	COOL	
	NORTH POST HOLE PLANT 2	H <sub>2</sub> O	✓		1/6/97	2	40 ml		8100 TPH	COOL	
78,652	PLANT 2 WEST FLOOR DRAIN	SOIL	✓		1/6/97 3:20	2	40 ml	please use 8260+	8100TPH	COOL	
78,653	BUILDING 3 TRENCH	SOIL	✓		1/6/97	2	40 ml	this is 8260+	8100TPH	COOL	
78,654	PLANT 1 DRAIN	SOIL	✓		1/6/97 2:30	2	40 ml	these are 8260's.	8260	COOL	
	PLANT 1 DRAIN DAYLIGHT	SOIL	✓		1/6/97 2:30	2	40ml	also 8260's.	8100TPH	COOL	
								soil MC			

Relinquished by: Signature <b>Gord Hays</b>	Received by: Signature <b>Tom M. Chamberlain</b>	Date/Time <b>1-8-97</b>	<b>4:30</b>
Relinquished by: Signature	Received by: Signature	Date/Time	

**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 Pests/PCB
4	Nitrite N	9	BOD <sub>5</sub>	14	Turbidity	19	BTEX	24	EPA 608 Pests/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):										



**ENDYNE, INC.**

**Laboratory Services**

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

REPORT OF LABORATORY ANALYSIS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 5, 1997

PROJECT CODE: HNSG1928  
REF. #: 99,793 - 99,807

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

Chain of custody indicated the water 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.

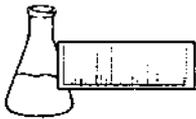
Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

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

Reviewed by, 

Harry B. Locker, Ph.D.  
Laboratory Director

enclosures



# ENDYNE, INC.

## Laboratory Services

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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 5, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 11, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,793  
STATION: Pipe Plant Bldg.#2 S.Hole 4-6'  
TIME SAMPLED: 12:00  
SAMPLER: Gerold Noyes

Parameter	Detection Limit	Result	Parameter	Detection Limit	Result
	(ug/kg)	as received(ug/kg)		(ug/kg)	as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

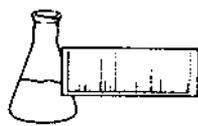
PERCENT SOLID: 95.%

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 86. %  
Toluene-d8 : 100. %  
4-Bromofluorobenzene : 102. %

#### NOTES:

1 None detected



# ENDYNE, INC.

## Laboratory Services

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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

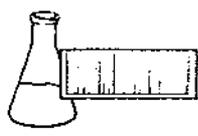
CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 5, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 11, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,794  
STATION: Pipe Plant Bldg.#2 N.Hole 7-9'  
TIME SAMPLED: 2:00  
SAMPLER: Gerold Noyes

Parameter	Detection Limit	Result	Parameter	Detection Limit	Result
	(ug/kg)	as received(ug/kg)		(ug/kg)	as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0  
 PERCENT SOLID: 97.0%  
 ANALYTICAL SURROGATE RECOVERY:  
 Dibromofluoromethane : 84.0%  
 Toluene-d8 : 102.0%  
 4-Bromofluorobenzene : 99.0%

NOTES:  
 1 None detected



# ENDYNE, INC.

## Laboratory Services

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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 5, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 11, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,795  
STATION: Pipe Plant Bldg.#1 S.Hole 9-11'  
TIME SAMPLED: 10:10  
SAMPLER: Gerold Noyes

Parameter	Detection Limit	Result	Parameter	Detection Limit	Result
	(ug/kg)	as received(ug/kg)		(ug/kg)	as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

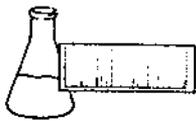
PERCENT SOLID: 97.%

ANALYTICAL SURROGATE RECOVERY:

- Dibromofluoromethane : 80.%
- Toluene-d8 : 95.%
- 4-Bromofluorobenzene : 105.%

NOTES:

1 None detected



## Laboratory Services

32 James Brown Drive  
 Williston, Vermont 05495  
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 FAX 879-7103

### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
 PROJECT NAME: ST Griswold  
 REPORT DATE: February 12, 1997  
 DATE SAMPLED: February 5, 1997  
 DATE RECEIVED: February 7, 1997  
 ANALYSIS DATE: February 11, 1997

PROJECT CODE: HNSG1928  
 REF.#: 99,796  
 STATION: Pipe Plant Bldg.#1 N.Hole 9-11'  
 TIME SAMPLED: 9:30  
 SAMPLER: Gerold Noyes

Parameter	Detection Limit (ug/kg)	Result as received(ug/kg)	Parameter	Detection Limit (ug/kg)	Result as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

PERCENT SOLID: 97.%

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 81.%

Toluene-d8 : 104.%

4-Bromofluorobenzene : 105.%

#### NOTES:

1 None detected



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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 5, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 11, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,797  
STATION: Pipe Plant Bldg.#3 Catch Basin  
TIME SAMPLED: 11:30  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Detection Limit</u> (ug/kg)	<u>Result</u> as received(ug/kg)	<u>Parameter</u>	<u>Detection Limit</u> (ug/kg)	<u>Result</u> as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

PERCENT SOLID: 95.%

#### ANALYTICAL SURROGATE RECOVERY:

- Dibromofluoromethane : 83.%
- Toluene-d8 : 100.%
- 4-Bromofluorobenzene : 100.%

#### NOTES:

1 None detected



### LABORATORY REPORT

#### EPA METHOD 8260 WATER MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 6, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 11, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,802  
STATION: MW 9  
TIME SAMPLED: 3:20  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)	<u>Parameter</u>	<u>Detection Limit</u> (ug/L)	<u>Result</u> (ug/L)
Benzene	1	ND <sup>1</sup>	1,3-Dichloropropane	1	ND
Bromobenzene	1	ND	2,2-Dichloropropane	1	ND
Bromochloromethane	2	ND	1,1-Dichloropropene	1	ND
Bromodichloromethane	1	ND	cis-1,3-Dichloropropene	1	ND
Bromoform	1	ND	trans-1,3-Dichloropropene	1	ND
Bromomethane	5	ND	Ethylbenzene	1	ND
n-Butylbenzene	1	ND	Hexachlorobutadiene	5	ND
sec-Butylbenzene	1	ND	Isopropylbenzene	1	ND
tert-Butylbenzene	1	ND	p-Isopropyltoluene	1	ND
Carbon Tetrachloride	1	ND	Methylene Chloride	5	ND
Chlorobenzene	1	ND	Naphthalene	5	ND
Chloroethane	5	ND	n-Propylbenzene	1	ND
Chloroform	1	ND	Styrene	2	ND
Chloromethane	10	ND	1,1,1,2-Tetrachloroethane	2	ND
2&4-Chlorotoluene	2	ND	1,1,2,2-Tetrachloroethane	2	ND
Dibromochloromethane	1	ND	Tetrachloroethene	1	ND
1,2-Dibromo-3-Chloropropane	2	ND	Toluene	1	ND
1,2-Dibromoethane	2	ND	1,2,3-Trichlorobenzene	2	ND
Dibromomethane	2	ND	1,2,4-Trichlorobenzene	2	ND
1,2-Dichlorobenzene	1	ND	1,1,1-Trichloroethane	1	ND
1,3-Dichlorobenzene	1	ND	1,1,2-Trichloroethane	1	ND
1,4-Dichlorobenzene	1	ND	Trichloroethene	1	ND
Dichlorodifluoromethane	10	ND	Trichlorofluoromethane	2	ND
1,1-Dichloroethane	1	ND	1,2,3-Trichloropropane	1	ND
1,2-Dichloroethane	1	ND	1,2,4-Trimethylbenzene	1	ND
1,1-Dichloroethene	1	ND	1,3,5-Trimethylbenzene	1	ND
cis-1,2-Dichloroethene	1	ND	Vinyl Chloride	5	ND
trans-1,2-Dichloroethene	1	ND	Total Xylenes	2	ND
1,2-Dichloropropane	1	ND	MTBE	2	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

#### ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 116. %  
Toluene-d8 : 98. %  
4-Bromofluorobenzene : 113. %

#### NOTES:

1 None detected



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## Laboratory Services

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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

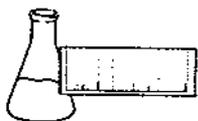
CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 4, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 11, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,803  
STATION: Sales Office 7-9'  
TIME SAMPLED: 2:00  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Detection Limit</u> (ug/kg)	<u>Result</u> as received(ug/kg)	<u>Parameter</u>	<u>Detection Limit</u> (ug/kg)	<u>Result</u> as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0  
PERCENT SOLID: 96.0%  
ANALYTICAL SURROGATE RECOVERY:  
Dibromofluoromethane : 89.0%  
Toluene-d8 : 102.0%  
4-Bromofluorobenzene : 101.0%

NOTES:  
1 None detected



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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 5, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 12, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,804  
STATION: Garage Oil Change 29-31'  
TIME SAMPLED: 5:15  
SAMPLER: Gerold Noyes

Parameter	Detection Limit (ug/kg)	Result as received(ug/kg)	Parameter	Detection Limit (ug/kg)	Result as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

PERCENT SOLID: 95.%

ANALYTICAL SURROGATE RECOVERY:

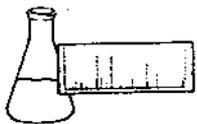
Dibromofluoromethane : 82.%

Toluene-d8 : 95.%

4-Bromofluorobenzene : 107.%

NOTES:

1 None detected



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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 6, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 12, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,805  
STATION: Garage MW-9 20-22'  
TIME SAMPLED: 9:30  
SAMPLER: Gerold Noyes

Parameter	Detection Limit (ug/kg)	Result as received(ug/kg)	Parameter	Detection Limit (ug/kg)	Result as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

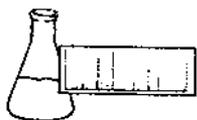
PERCENT SOLID: 95.%

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 82. %  
Toluene-d8 : 103. %  
4-Bromofluorobenzene : 105. %

NOTES:

1 None detected



## Laboratory Services

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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 4, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 12, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,806  
STATION: Garage MW-2 13-15'  
TIME SAMPLED: 4:00  
SAMPLER: Gerold Noyes

Parameter	Detection Limit (ug/kg)	Result as received(ug/kg)	Parameter	Detection Limit (ug/kg)	Result as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

PERCENT SOLID: 95.%

ANALYTICAL SURROGATE RECOVERY:

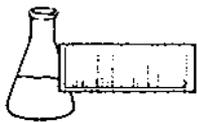
Dibromofluoromethane : 86.%

Toluene-d8 : 101.%

4-Bromofluorobenzene : 96.%

#### NOTES:

1 None detected



LABORATORY REPORT

EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 12, 1997  
DATE SAMPLED: February 4, 1997  
DATE RECEIVED: February 7, 1997  
ANALYSIS DATE: February 12, 1997

PROJECT CODE: HNSG1928  
REF.#: 99,807  
STATION: Garage MW-2 23-25'  
TIME SAMPLED: 4:30  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Detection Limit</u> (ug/kg)	<u>Result</u> as received(ug/kg)	<u>Parameter</u>	<u>Detection Limit</u> (ug/kg)	<u>Result</u> as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

PERCENT SOLID: 96.%

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 84.%

Toluene-d8 : 105.%

4-Bromofluorobenzene : 103.%

NOTES:

1 None detected

**CHAIN-OF-CUSTODY RECORD**

10335

Project Name: <b>ST GRISWOLD</b>	Reporting Address: <b>H&amp;N</b>	Billing Address: <b>H&amp;N</b>
Site Location: <b>WILLISTON</b>		
Endyne Project Number: <b>HNS6-1928</b>	Company: Contact Name/Phone #:	Sampler Name: <b>GEROLD NOYES</b> Phone #: <b>658-0820</b>

Lab #	Sample Location	Matrix	GRA B	COMP	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
99793	PIPE PLANT BLDG #2 S. HOLE	Soil	/		2/5/97 12:00	1	250 GLASS	8100 + 8260		/	
99794	PIPE PLANT BLDG #2 N. HOLE 7-9'	"	/		2/5/97 2:00	1	250 GLASS	8100 + 8260		/	
99795	PIPE PLANT BLDG #1 S. HOLE 9-11'	"	/		2/5/97 <sup>10:10</sup> 10:10	1	250 GLASS	8100 + 8260		/	
99796	PIPE PLANT BLDG #1 N. HOLE 9-11'	"	/		2/5/97 9:30	1	" "	8100 + 8260		/	
99797	PIPE PLANT BLDG #3 CATCH BASIN	"	/		2/5/97 11:30	1	" "	8100 + 8260		/	
99798	MW 101	H <sub>2</sub> O	/	2/6	2/6/97 2:45	2	40 ml	8260	HCL	/	
	MW 101	H <sub>2</sub> O	/	2/6	2/6/97 2:45	1	250 PLASTIC		1 PH + HARDNESS		
	MW 101	H <sub>2</sub> O	/	2/6	2/6/97 2:45	1	500 PLASTIC	FIELD FILTERED RCRA metal	30	HNO <sub>3</sub>	
99799	MW 102	H <sub>2</sub> O	/	2/6	2/6/97 2:55	2	40 ml	8260	HCL		
	MW 102	H <sub>2</sub> O	/	2/6	2/6/97 2:55	1	250 PLASTIC		1 PH + HARDNESS		
	MW 102	H <sub>2</sub> O	/	2/6	2/6/97 2:55	1	500 PLASTIC	FIELD FILTERED	30	HNO <sub>3</sub>	

Relinquished by: Signature <b>Gerold Noyes</b>	Received by: Signature <b>M. Farnell</b>	Date/Time <b>2/7/97 4:05 pm</b>
Relinquished by: Signature	Received by: Signature	Date/Time

**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 <sub>5</sub>	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): <b>DISSOLVED RCRA METALS, PH + HARDNESS</b>										

CHAIN-OF-CUSTODY RECORD

Project Name: <b>ST GRISWOLD</b> Site Location: <b>WILLISTON</b>	Reporting Address: <b>HEN</b>	Billing Address: <b>HRW</b>
Endyne Project Number: <b>HUS61928</b>	Company: Contact Name/Phone #:	Sampler Name: <b>GEROLD NOYES</b> Phone #: <b>658-0820</b>

Lab #	Sample Location	Matrix	GRA B	COMP	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
99800	MW 103	H <sub>2</sub> O	✓		2/6 3:10	2	40 mL		8260	HCL	
	MW 103	H <sub>2</sub> O	✓		2/6 3:10		250 PLASTIC		1 PH	HARDNESS	
	MW 103	H <sub>2</sub> O	✓		2/6 3:10		500 PLASTIC	FIELD FILTERED	30	HNO <sub>3</sub>	
99801	MW 10	H <sub>2</sub> O	✓		2/3/17	2	40 mL		8260	HCL	
99802	MW 9	H <sub>2</sub> O	✓		2/6 3:20	2	40 mL		8260	AZIDE	
99802	SALES OFFICE 7-9'	SOIL	✓		2/4 2:00	2	40 mL	8106	+8260	-	
	GARAGE OIL CHANGE 16'-18' SOIL	SOIL	✓		2/6 4:30	1	250 GLASS		8100 TPH	-	
99804	GARAGE OIL CHANGE 29'-31' SOIL	SOIL	✓		2/5 5:15	1	" "		8260	-	
99805	GARAGE MW-9 20-22'	SOIL	✓		2/6 9:30	1	" "		8260	-	
99805	GARAGE MW-2 13-15'	SOIL	✓		2/4 4:00	2	40 mL		8260	-	
99807	GARAGE MW-2 23-25'	SOIL	✓		2/4 4:30	2	40 mL		8260	-	

Relinquished by: Signature <b>Gerold Noyes</b>	Received by: Signature <b>ML Farnell</b>	Date/Time <b>2/7/97 4:05 pm</b>
Relinquished by: Signature	Received by: Signature	Date/Time

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 <sub>5</sub>	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): <b>DISSOLVED METALS, DISSOLVED, PH + HARDNESS</b>										



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REPORT OF LABORATORY ANALYSIS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 20, 1997  
DATE SAMPLED: February 7, 1997

PROJECT CODE: HNST1991  
REF. #: 99,974 - 99,975

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

Chain of custody did not indicate sample preservation.

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.

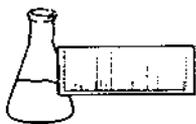
Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery 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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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 20, 1997  
DATE SAMPLED: February 7, 1997  
DATE RECEIVED: February 14, 1997  
ANALYSIS DATE: February 19, 1997

PROJECT CODE: HNST1991  
REF.#: 99,975  
STATION: MW-11 Sakrete Diesel  
TIME SAMPLED: 9:00  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Detection Limit</u> (ug/kg)	<u>Result</u> as received(ug/kg)	<u>Parameter</u>	<u>Detection Limit</u> (ug/kg)	<u>Result</u> as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

PERCENT SOLID: 96.%

ANALYTICAL SURROGATE RECOVERY:

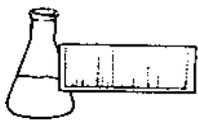
Dibromofluoromethane : 84.%

Toluene-d8 : 102.%

4-Bromofluorobenzene : 100.%

#### NOTES:

1 None detected



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### LABORATORY REPORT

#### EPA METHOD 8260 SOIL MATRIX

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 20, 1997  
DATE SAMPLED: February 7, 1997  
DATE RECEIVED: February 14, 1997  
ANALYSIS DATE: February 19, 1997

PROJECT CODE: HNST1991  
REF.#: 99,974  
STATION: MW-12 Admin. Bldg.  
TIME SAMPLED: 10:00  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Detection Limit</u> (ug/kg)	<u>Result</u> as received(ug/kg)	<u>Parameter</u>	<u>Detection Limit</u> (ug/kg)	<u>Result</u> as received(ug/kg)
Benzene	10	ND <sup>1</sup>	1,3-Dichloropropane	10	ND
Bromobenzene	10	ND	2,2-Dichloropropane	10	ND
Bromochloromethane	20	ND	1,1-Dichloropropene	10	ND
Bromodichloromethane	10	ND	cis-1,3-Dichloropropene	10	ND
Bromoform	10	ND	trans-1,3-Dichloropropene	10	ND
Bromomethane	50	ND	Ethylbenzene	10	ND
n-Butylbenzene	10	ND	Hexachlorobutadiene	50	ND
sec-Butylbenzene	10	ND	Isopropylbenzene	10	ND
tert-Butylbenzene	10	ND	p-Isopropyltoluene	10	ND
Carbon Tetrachloride	10	ND	Methylene Chloride	50	ND
Chlorobenzene	10	ND	Naphthalene	50	ND
Chloroethane	50	ND	n-Propylbenzene	10	ND
Chloroform	10	ND	Styrene	20	ND
Chloromethane	100	ND	1,1,1,2-Tetrachloroethane	20	ND
2&4-Chlorotoluene	20	ND	1,1,2,2-Tetrachloroethane	20	ND
Dibromochloromethane	10	ND	Tetrachloroethene	10	ND
1,2-Dibromo-3-Chloropropane	20	ND	Toluene	10	ND
1,2-Dibromoethane	20	ND	1,2,3-Trichlorobenzene	20	ND
Dibromomethane	20	ND	1,2,4-Trichlorobenzene	20	ND
1,2-Dichlorobenzene	10	ND	1,1,1-Trichloroethane	10	ND
1,3-Dichlorobenzene	10	ND	1,1,2-Trichloroethane	10	ND
1,4-Dichlorobenzene	10	ND	Trichloroethene	10	ND
Dichlorodifluoromethane	100	ND	Trichlorofluoromethane	20	ND
1,1-Dichloroethane	10	ND	1,2,3-Trichloropropane	10	ND
1,2-Dichloroethane	10	ND	1,2,4-Trimethylbenzene	10	ND
1,1-Dichloroethene	10	ND	1,3,5-Trimethylbenzene	10	ND
cis-1,2-Dichloroethene	10	ND	Vinyl Chloride	50	ND
trans-1,2-Dichloroethene	10	ND	Total Xylenes	20	ND
1,2-Dichloropropane	10	ND	MTBE	20	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

PERCENT SOLID: 94.%

ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane : 90.%

Toluene-d8 : 104.%

4-Bromofluorobenzene : 105.%

#### NOTES:

1 None detected





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REPORT OF LABORATORY ANALYSIS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
DATE REPORTED: February 14, 1997  
DATE SAMPLED: January 30, 1997

PROJECT CODE: HNSG1782  
REF. #: 99,414 - 99,415

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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LABORATORY REPORT  
EPA METHOD 8100 BY GC/MS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 14, 1997  
DATE SAMPLED: January 30, 1997  
DATE RECEIVED: January 31, 1997  
DATE EXTRACTED: February 6, 1997

PROJECT CODE: HNSG1782  
ANALYSIS DATE: February 12, 1997  
STATION: Plant #1, Slab Soil #1  
REF. #: 99,414  
TIME SAMPLED: 1:30  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Quantitation</u> <u>Limit (ug/kg)</u>	<u>Concentration</u> <u>as received(ug/kg)</u>
Acenaphthene	50	ND <sup>1</sup>
Acenaphthylene	50	ND
Anthracene	50	ND
Benzo(a)anthracene	50	ND
Benzo(b&k)fluoranthene	50	ND
Benzo(a)pyrene	50	ND
Benzo(g,h,i)perylene	50	ND
Chrysene	50	ND
Dibenzo(a,h)anthracene	50	ND
Fluoranthene	50	ND
Fluorene	50	ND
Indeno(1,2,3-cd)pyrene	50	ND
1-Methylnaphthalene	50	ND
2-Methylnaphthalene	50	ND
Naphthalene	50	ND
Phenanthrene	50	ND
Pyrene	50	ND

NUMBER OF UNIDENTIFIED PEAKS:  $>10^2$

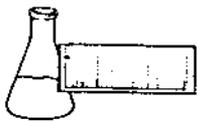
Analytical Surrogate Recovery:

Nitrobenzene-d 5: NR<sup>3</sup>  
2-Fluorobiphenyl: 66.0%  
Terphenyl-d 14: 60.0%

PERCENT SOLIDS: 86.0%

NOTES:

- 1 None detected
- 2 Unidentified peaks in this sample consists of Aliphatic Hydrocarbons ranging from 50-100,000 ug/kg.
- 3 Not recovered. Poor surrogate recovery attributed to rigorous sample clean-up procedure.



## Laboratory Services

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### LABORATORY REPORT EPA METHOD 8100 BY GC/MS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 14, 1997  
DATE SAMPLED: January 30, 1997  
DATE RECEIVED: January 31, 1997  
DATE EXTRACTED: February 6, 1997

PROJECT CODE: HNSG1782  
ANALYSIS DATE: February 12, 1997  
STATION: Plant #1, Outfall Soil #2  
REF. #: 99,415  
TIME SAMPLED: 1:40  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Quantitation</u> <u>Limit (ug/kg)</u>	<u>Concentration</u> <u>as received(ug/kg)</u>
Acenaphthene	50	ND <sup>1</sup>
Acenaphthylene	50	ND
Anthracene	50	ND
Benzo(a)anthracene	50	ND
Benzo(b&k)fluoranthene	50	ND
Benzo(a)pyrene	50	ND
Benzo(g,h,i)perylene	50	ND
Chrysene	50	ND
Dibenzo(a,h)anthracene	50	ND
Fluoranthene	50	ND
Fluorene	50	ND
Indeno(1,2,3-cd)pyrene	50	ND
1-Methylnaphthalene	50	ND
2-Methylnaphthalene	50	ND
Naphthalene	50	ND
Phenanthrene	50	ND
Pyrene	50	ND

NUMBER OF UNIDENTIFIED PEAKS: >10<sup>2</sup>

#### Analytical Surrogate Recovery:

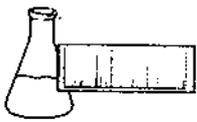
Nitrobenzene-d 5:	NR <sup>3</sup>
2-Fluorobiphenyl:	67.%
Terphenyl-d 14:	61.%

PERCENT SOLIDS: 84.%

#### NOTES:

- 1 None detected
- 2 Unidentified peaks in this sample consists of Aliphatic Hydrocarbons ranging from 50-1,000 ug/kg.
- 3 Not recovered. Poor surrogate recovery attributed to rigorous sample clean-up procedure.





**ENDYNE, INC.**

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REPORT OF LABORATORY ANALYSIS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
DATE REPORTED: February 17, 1997  
DATE SAMPLED: February 4-5, 1997

PROJECT CODE: HNSG1927  
REF. #: 99,787 - 99,792

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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LABORATORY REPORT  
EPA METHOD 8100 BY GC/MS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 17, 1997  
DATE SAMPLED: February 5, 1997  
DATE RECEIVED: February 7, 1997  
DATE EXTRACTED: February 12, 1997

PROJECT CODE: HNSG1927  
ANALYSIS DATE: February 13, 1997  
STATION: P.P. Bldg #2, S. Hole 4-6'  
REF. #: 99,787  
TIME SAMPLED: 12:00  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Quantitation</u> <u>Limit (ug/kg)</u>	<u>Concentration</u> <u>as received(ug/kg)</u>
Acenaphthene	50	ND <sup>1</sup>
Acenaphthylene	50	ND
Anthracene	50	ND
Benzo(a)anthracene	50	ND
Benzo(b&k)fluoranthene	50	ND
Benzo(a)pyrene	50	ND
Benzo(g,h,i)perylene	50	ND
Chrysene	50	ND
Dibenzo(a,h)anthracene	50	ND
Fluoranthene	50	ND
Fluorene	50	ND
Indeno(1,2,3-cd)pyrene	50	ND
1-Methylnaphthalene	50	ND
2-Methylnaphthalene	50	ND
Naphthalene	50	ND
Phenanthrene	50	ND
Pyrene	50	ND

NUMBER OF UNIDENTIFIED PEAKS: >10<sup>2</sup>

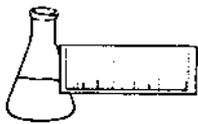
Analytical Surrogate Recovery:

Nitrobenzene-d 5:	37.0%
2-Fluorobiphenyl:	77.0%
Terphenyl-d 14:	100.0%

PERCENT SOLIDS: 95.0%

NOTES:

- 1 None detected
- 2 Unidentified peaks in this sample consist of aliphatic hydrocarbons ranging in concentration from 20 to 100 ug/kg.



LABORATORY REPORT  
EPA METHOD 8100 BY GC/MS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 17, 1997  
DATE SAMPLED: February 5, 1997  
DATE RECEIVED: February 7, 1997  
DATE EXTRACTED: February 12, 1997

PROJECT CODE: HNSG1927  
ANALYSIS DATE: February 13, 1997  
STATION: P.P. Bldg #2, N. Hole 7-9'  
REF. #: 99,788  
TIME SAMPLED: 2:00  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Quantitation</u> <u>Limit (ug/kg)</u>	<u>Concentration</u> <u>as received(ug/kg)</u>
Acenaphthene	50	ND <sup>1</sup>
Acenaphthylene	50	ND
Anthracene	50	ND
Benzo(a)anthracene	50	ND
Benzo(b&k)fluoranthene	50	ND
Benzo(a)pyrene	50	ND
Benzo(g,h,i)perylene	50	ND
Chrysene	50	ND
Dibenzo(a,h)anthracene	50	ND
Fluoranthene	50	ND
Fluorene	50	ND
Indeno(1,2,3-cd)pyrene	50	ND
1-Methylnaphthalene	50	ND
2-Methylnaphthalene	50	ND
Naphthalene	50	ND
Phenanthrene	50	ND
Pyrene	50	ND

NUMBER OF UNIDENTIFIED PEAKS: 0

Analytical Surrogate Recovery:

Nitrobenzene-d 5:	42.%
2-Fluorobiphenyl:	80.%
Terphenyl-d 14:	97.%

PERCENT SOLIDS: 97.%

NOTES:

1 None detected



# ENDYNE, INC.

## Laboratory Services

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

### LABORATORY REPORT EPA METHOD 8100 BY GC/MS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 17, 1997  
DATE SAMPLED: February 5, 1997  
DATE RECEIVED: February 7, 1997  
DATE EXTRACTED: February 12, 1997

PROJECT CODE: HNSG1927  
ANALYSIS DATE: February 13, 1997  
STATION: P.P. Bldg #1, S. Hole 9-11'  
REF. #: 99,789  
TIME SAMPLED: 10:10  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Quantitation</u> <u>Limit (ug/kg)</u>	<u>Concentration</u> <u>as received(ug/kg)</u>
Acenaphthene	50	ND <sup>1</sup>
Acenaphthylene	50	ND
Anthracene	50	ND
Benzo(a)anthracene	50	ND
Benzo(b&k)fluoranthene	50	ND
Benzo(a)pyrene	50	ND
Benzo(g,h,i)perylene	50	ND
Chrysene	50	ND
Dibenzo(a,h)anthracene	50	ND
Fluoranthene	50	ND
Fluorene	50	ND
Indeno(1,2,3-cd)pyrene	50	ND
1-Methylnaphthalene	50	ND
2-Methylnaphthalene	50	ND
Naphthalene	50	ND
Phenanthrene	50	ND
Pyrene	50	ND

NUMBER OF UNIDENTIFIED PEAKS: 0

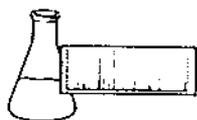
Analytical Surrogate Recovery:

Nitrobenzene-d 5:	41.0%
2-Fluorobiphenyl:	79.0%
Terphenyl-d 14:	103.0%

PERCENT SOLIDS: 97.0%

NOTES:

1 None detected



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FAX 879-7103

LABORATORY REPORT  
EPA METHOD 8100 BY GC/MS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 17, 1997  
DATE SAMPLED: February 5, 1997  
DATE RECEIVED: February 7, 1997  
DATE EXTRACTED: February 12, 1997

PROJECT CODE: HNSG1927  
ANALYSIS DATE: February 13, 1997  
STATION: P.P. Bldg #1, N. Hole 9-11'  
REF. #: 99,790  
TIME SAMPLED: 9:30  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Quantitation</u> <u>Limit (ug/kg)</u>	<u>Concentration</u> <u>as received(ug/kg)</u>
Acenaphthene	50	ND <sup>1</sup>
Acenaphthylene	50	ND
Anthracene	50	ND
Benzo(a)anthracene	50	ND
Benzo(b&k)fluoranthene	50	ND
Benzo(a)pyrene	50	ND
Benzo(g,h,i)perylene	50	ND
Chrysene	50	ND
Dibenzo(a,h)anthracene	50	ND
Fluoranthene	50	ND
Fluorene	50	ND
Indeno(1,2,3-cd)pyrene	50	ND
1-Methylnaphthalene	50	ND
2-Methylnaphthalene	50	ND
Naphthalene	50	ND
Phenanthrene	50	ND
Pyrene	50	ND

NUMBER OF UNIDENTIFIED PEAKS: 0

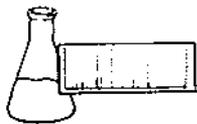
Analytical Surrogate Recovery:

Nitrobenzene-d 5: 29.%  
2-Fluorobiphenyl: 61.%  
Terphenyl-d 14: 91.%

PERCENT SOLIDS: 97.%

NOTES:

1 None detected



**ENDYNE, INC.**

Laboratory Services

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FAX 879-7103

LABORATORY REPORT  
EPA METHOD 8100 BY GC/MS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 17, 1997  
DATE SAMPLED: February 5, 1997  
DATE RECEIVED: February 7, 1997  
DATE EXTRACTED: February 12, 1997

PROJECT CODE: HNSG1927  
ANALYSIS DATE: February 13, 1997  
STATION: P.P. Bldg #3, Catch Basin  
REF. #: 99,791  
TIME SAMPLED: 11:30  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Quantitation</u> <u>Limit (ug/kg)</u>	<u>Concentration</u> <u>as received(ug/kg)</u>
Acenaphthene	50	ND <sup>1</sup>
Acenaphthylene	50	ND
Anthracene	50	ND
Benzo(a)anthracene	50	ND
Benzo(b&k)fluoranthene	50	ND
Benzo(a)pyrene	50	ND
Benzo(g,h,i)perylene	50	ND
Chrysene	50	ND
Dibenzo(a,h)anthracene	50	ND
Fluoranthene	50	ND
Fluorene	50	ND
Indeno(1,2,3-cd)pyrene	50	ND
1-Methylnaphthalene	50	ND
2-Methylnaphthalene	50	ND
Naphthalene	50	ND
Phenanthrene	50	ND
Pyrene	50	ND

NUMBER OF UNIDENTIFIED PEAKS: 0

Analytical Surrogate Recovery:

Nitrobenzene-d 5: 43.%  
2-Fluorobiphenyl: 90.%  
Terphenyl-d 14: 95.%

PERCENT SOLIDS: 95.%

NOTES:

1 None detected



LABORATORY REPORT  
EPA METHOD 8100 BY GC/MS

CLIENT: Heindel and Noyes  
PROJECT NAME: ST Griswold  
REPORT DATE: February 17, 1997  
DATE SAMPLED: February 4, 1997  
DATE RECEIVED: February 7, 1997  
DATE EXTRACTED: February 12, 1997

PROJECT CODE: HNSG1927  
ANALYSIS DATE: February 13, 1997  
STATION: Sales Office 7-9'  
REF. #: 99,792  
TIME SAMPLED: 2:00  
SAMPLER: Gerold Noyes

<u>Parameter</u>	<u>Quantitation</u> <u>Limit (ug/kg)</u>	<u>Concentration</u> <u>as received(ug/kg)</u>
Acenaphthene	50	ND <sup>1</sup>
Acenaphthylene	50	ND
Anthracene	50	ND
Benzo(a)anthracene	50	ND
Benzo(b&k)fluoranthene	50	ND
Benzo(a)pyrene	50	ND
Benzo(g,h,i)perylene	50	ND
Chrysene	50	ND
Dibenzo(a,h)anthracene	50	ND
Fluoranthene	50	ND
Fluorene	50	ND
Indeno(1,2,3-cd)pyrene	50	ND
1-Methylnaphthalene	50	ND
2-Methylnaphthalene	50	ND
Naphthalene	50	ND
Phenanthrene	50	ND
Pyrene	50	ND

NUMBER OF UNIDENTIFIED PEAKS: 0

Analytical Surrogate Recovery:

Nitrobenzene-d 5:	49.%
2-Fluorobiphenyl:	92.%
Terphenyl-d 14:	101.%

PERCENT SOLIDS: 96.%

NOTES:

1 None detected

**CHAIN-OF-CUSTODY RECORD**

10335

99787-99814

Project Name: <b>ST GRISWOLD</b>	Reporting Address: <b>H&amp;N</b>	Billing Address: <b>H&amp;N</b>
Site Location: <b>WILLISTON</b>		
Endyne Project Number: <b>HNSG-1927</b>	Company: Contact Name/Phone #:	Sampler Name: <b>GEROLD NOYES</b> Phone #: <b>658-0820</b>

Lab #	Sample Location	Matrix	GRA B	COMP	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
99787	PIPE PLANT BLDG #2 S. HOLE	Soil	/		2/5/97 12:00	1	250 GLASS	8100 + 8260		/	
99788	PIPE PLANT BLDG #2 N. HOLE 7-9'	"	/		2/5/97 2:00	1	250 GLASS	8100 + 8260		/	
99789	PIPE PLANT BLDG #1 S. HOLE 9-11'	"	/		2/5/97 <sup>10:10</sup> 10:10	1	250 GLASS	8100 + 8260		/	
99790	PIPE PLANT BLDG #1 N. HOLE 9-11'	"	/		2/5/97 9:30	1	" "	8100 + 8260		/	
99791	PIPE PLANT BLDG #3 CATCH BASIN	"	/		2/5/97 11:30	1	" "	8100 + 8260		/	
	MW 101	H <sub>2</sub> O	/	2/6	2/6/97 2:45	2	40 ml	8260	HCL	/	
	MW 101	H <sub>2</sub> O	/	2/6	2/6/97 2:45	1	350 PLASTIC		1 PH + HARDNESS		
	MW 101	H <sub>2</sub> O	/	2/6	2/6/97 2:45	1	500 PLASTIC FIELD FILTERED	RCRA METALS	30	HNO <sub>3</sub>	
	MW 102	H <sub>2</sub> O	/	2/6	2/6/97 2:55	2	40 ml	8260	HCL	/	
	MW 102	H <sub>2</sub> O	/	2/6	2/6/97 2:55	1	250 PLASTIC		1 PH + HARDNESS		
	MW 102	H <sub>2</sub> O	/	2/6	2/6/97 2:55	1	500 PLASTIC FIELD FILTERED		30	HNO <sub>3</sub>	

Relinquished by: Signature <b>Gerold Noyes</b>	Received by: Signature <b>M. J. Laurel</b>	Date/Time <b>2/7/97 4:05 pm</b>
Relinquished by: Signature	Received by: Signature	Date/Time

**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 <sub>5</sub>	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): <b>DISSOLVED RCRA METALS, PH + HARDNESS</b>										

**CHAIN-OF-CUSTODY RECORD**

10336

99787-99814

Project Name: <b>ST GRISWOLD</b>	Reporting Address: <b>HEN</b>	Billing Address: <b>HEN</b>
Site Location: <b>WILLISTON</b>		
Endyne Project Number: <b>HNSG1927</b>	Company: Contact Name/Phone #:	Sampler Name: <b>GEROLD JOYES</b> Phone #: <b>658-8920</b>

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				
	MW 103	H <sub>2</sub> O	/	2/6	<del>2/6</del> 3:10	2	40 mL		8260	HCL	
	MW 103	H <sub>2</sub> O	/	7/6	<del>2/6</del> 3:10		250 PLASTIC		1 PH	+ HARDNESS	
	MW 103	H <sub>2</sub> O	/	2/6	<del>2/6</del> 3:10		500 PLASTIC	FIELD FILTERED	30	HNO <sub>3</sub>	
	MW 10	H <sub>2</sub> O	/		2/7/97	2	40 mL		8260	HCL	
	MW 9	H <sub>2</sub> O	/		2/6 3:20	2	40 mL		8260	AZIDE	
99792	SALES OFFICE 7-9'	SOIL	-		2/4 2:00	2	40 mL		8108	+8260	
	GARAGE OIL CHANGE 16'-18' SOIL	SOIL	-		2/4 4:30	1	250 GLASS		8108 TPH	-	
	GARAGE OIL CHANGE 29'-31' SOIL	SOIL	-		2/4 5:15	1	" "		8260	-	
	GARAGE MW-9 20-22'	SOIL	-		2/6 9:30	1	" "		8260		
	GARAGE MW-2 13-15'	SOIL	-		2/4 4:00	2	40 mL		8260		
	GARAGE MW-2 23-25'	SOIL	-		2/4 4:30	2	40 mL		8260		

Relinquished by: Signature <b>Gerold Joyes</b>	Received by: Signature <b>ML Fankel</b>	Date/Time <b>2/7/97 4:05 pm</b>
Relinquished by: Signature	Received by: Signature	Date/Time

**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 <sub>5</sub>	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): <b>MSD, KRA METALS, DISSOLVED, PH + HARDNESS</b>										