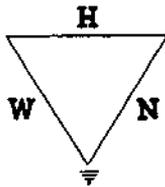


OCT 28 1993

1233



WAGNER, HEINDEL, and NOYES, Inc.

- Consulting Hydrogeologists
- Engineers
- Environmental Scientists

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

802-658-0820

FAX: 802-860-1014

October 25, 1993

Mr. Richard Spiese
Petroleum Sites Management Section
Department of Environmental Conservation
103 South Main Street, West Office Building
Waterbury, VT 05676

Re: 350 Dorset Street
South Burlington, VT
Petroleum Remediation Report for June, July and August 1993

Dear Richard:

This letter provides an update of our monitoring and maintenance activities at the 350 Dorset Street Project for the period of June 22 through September 3, 1993.

GROUNDWATER MONITORING

Water samples have been collected once since the last reported data (Report 7/19/1993). On August 19, 1993, scheduled quarterly EPA 602 samples were collected and analyzed as routine for wells V1, V3, V7, V9, TW-15 and TW-17. A 418.1 analysis was performed on well V9 as per our recommendation in the July 19, 1993 report and my letter dated August 11, 1993. The attached appendices include tables of contaminant concentration histories and all pertinent laboratory reports for samples collected. Appendix 1, pages 1-4, contains contaminant concentrations for the wells which were sampled for BTEX, MTBE and total petroleum hydrocarbons (418.1). Appendix 2, pages 1-11, contains the laboratory reports and field technician notes for the samples collected on August 19, 1993. Appendix 3, pages 1-2, contains contour maps for both BTEX and total petroleum hydrocarbons.

The overall contamination in the selected monitoring points has remained low. This confirms our previous conclusion that substantial removal of contamination has occurred.

With the exception of well V3, the wells sampled in this round still show non-detectable quantities of BTEX compounds. This is illustrated in the BTEX contour map found in Appendix 3, page 1. Well V3 is still exhibiting quantities of BTEX compounds, virtually unchanged since the last round performed on June 23, 1993. Well V3 shows benzene at 3.5 ug/l, ethyl benzene at 29.8 ug/l and xylenes at 15.9 ug/l. An 11.9 ug/l

Mr. Richard Spiese
October 25, 1993
Page 2

concentration of MTBE has appeared in well TW-15 which previously exhibited a non-detectable quantity of MTBE.

With the exception of trace free product detected in well V9 on May 21, 1993, no free product has been noted in any of the wells since that time. However, WH&N field technician Greg Leech noted a sheen present during sampling of well V9 on August 19, 1993. Further laboratory analysis of this sample exhibits the absence of EPA 602 contaminants, but lists greater than 25 unidentified peaks in the chromatogram. Total hydrocarbon analysis, EPA 418.1, reports TPH at 2.4 mg/l in the sample.

The TPH contour map found in Appendix 3, page 2, illustrates the total petroleum hydrocarbon results for the site. Please make note that, since only one (V9) 418.1 analysis was performed on August 19, 1993, this table contains data collected from June 23, 1993 (V1, V3, V7, V8, V10, and TW-15), as well as August 19, 1993 (V9). The groundwater measurements for the wells sampled on August 19, 1993 may be obtained from the technician's field notes found in Appendix 2, page 11.

The next scheduled water sampling round is not until the middle of November 1993 (per Contract activity number 3 and recent SMS request).

SOIL VENT AND SPARGING WELLS

The vacuum and sparge systems blowers have remained on continuous service since their restart in early July. It was noted by WH&N staff that both systems were off line upon his arrival to do monitoring on August 3, 1993. Oxygen concentration levels recorded on this date are indicative of biological activity at the site following the resulting stagnation of the system (i.e. lateral line influent = 9.6% and VES line influent = 6.7% oxygen). Recent air measurements show oxygen concentrations of 19.8% in both the VES and lateral lines, indicating biological activity still exists in the system. PID levels have risen significantly to above 5 ppm on the VES influent line and to above 1.5 ppm on the lateral influent line. This can be attributed to the warmer soil temperatures observed during the summer season. Field notes taken for the air systems are included in Appendix 4 and cover site visits dated July 22 through September 3, 1993.

We are continuing to check on the system, with air flow measurements and air monitoring taking place on a bi-monthly basis.

Mr. Richard Spiese
October 25, 1993
Page 3

Please don't hesitate to contact Jeffrey Noyes or me with any questions or concerns.

Respectfully submitted,



Curtis J. Puisto
Staff Scientist

CJP/ral

Attachments

[L3-SPIESE/CJP 1-1-93]

V 1				
ANALYTE / DATE	4/20/93	5/10/93	6/23/93	8/19/93
benzene ug/l	nd	nd	nd	nd
toluene ug/l	nd	nd	nd	nd
ethyl benzene ug/l	nd	nd	nd	nd
xylenes ug/l	nd	nd	nd	nd
MTBE ug/l	107	nd	nd	nd
unknown peaks(602)	0	>25	nd	nd
TPH (418.1) mg/l	nd	*	nd	*

V 3				
ANALYTE / DATE	4/20/93	5/10/93	6/23/93	8/19/93
benzene ug/l	nd	*	nd	3.5
toluene ug/l	nd	*	nd	nd
ethyl benzene ug/l	nd	*	29.4	29.8
xylenes ug/l	nd	*	20.2	15.9
MTBE ug/l	nd	*	nd	nd
unknown peaks(602)	18	*	22	> 25
TPH (418.1) mg/l	nd	*	0.9	*

V 7				
ANALYTE / DATE	4/20/93	5/10/93	6/23/93	8/19/93
benzene ug/l	*	nd	nd	nd
toluene ug/l	*	nd	nd	nd
ethyl benzene ug/l	*	nd	nd	nd
xylenes ug/l	*	nd	nd	nd
MTBE ug/l	*	nd	nd	nd
unknown peaks(602)	*	> 25	0	0
TPH (418.1) mg/l	*	*	0.8	*

V 8				
ANALYTE / DATE	4/20/93	5/10/93	6/23/93	8/19/93
benzene ug/l	nd	*	nd	*
toluene ug/l	nd	*	nd	*
ethyl benzene ug/l	nd	*	nd	*
xylenes ug/l	nd	*	nd	*
MTBE ug/l	nd	*	nd	*
unknown peaks(602)	0	*	3	*
TPH (418.1) mg/l	nd	*	2.3	*

V 9				
ANALYTE / DATE	4/20/93	5/10/93	6/23/93	8/19/93
benzene ug/l	*	nd	*	nd
toluene ug/l	*	nd	*	nd
ethyl benzene ug/l	*	nd	*	nd
xylenes ug/l	*	2.0	*	nd
MTBE ug/l	*	nd	*	nd
unknown peaks(602)	*	> 25	*	> 25
TPH (418.1) mg/l	*	*	*	2.4

V 10				
ANALYTE / DATE	4/20/93	5/10/93	6/23/93	8/19/93
benzene ug/l	nd	*	nd	*
toluene ug/l	nd	*	nd	*
ethyl benzene ug/l	nd	*	nd	*
xylenes ug/l	nd	*	nd	*
MTBE ug/l	18	*	nd	*
unknown peaks(602)	12	*	0	*
TPH (418.1) mg/l	nd	*	TBQ	*

TW 15				
ANALYTE / DATE	4/20/93	5/10/93	6/23/93	8/19/93
benzene ug/l	*	nd	nd	nd
toluene ug/l	*	nd	nd	nd
ethyl benzene ug/l	*	nd	nd	nd
xylenes ug/l	*	26.5	nd	nd
MTBE ug/l	*	nd	nd	11.9
unknown peaks(602)	*	7	0	0
TPH (418.1) mg/l	*	*	nd	*

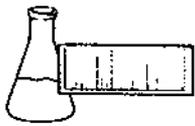
TW 16				
ANALYTE / DATE	4/20/93	5/10/93	6/23/93	8/19/93
benzene ug/l	*	nd	*	*
toluene ug/l	*	nd	*	*
ethyl benzene ug/l	*	nd	*	*
xylenes ug/l	*	nd	*	*
MTBE ug/l	*	TBQ	*	*
unknown peaks(602)	*	0	*	*
TPH (418.1) mg/l	*	*	*	*

TW 17				
ANALYTE / DATE	4/20/93	5/10/93	6/23/93	8/19/93
benzene ug/l	*	nd	*	nd
toluene ug/l	*	nd	*	nd
ethyl benzene ug/l	*	nd	*	nd
xylenes ug/l	*	nd	*	nd
MTBE ug/l	*	nd	*	nd
unknown peaks(602)	*	0	*	o
TPH (418.1) mg/l	*	*	*	*

V 6				
ANALYTE / DATE	4/20/93	5/10/93	6/23/93	8/19/93
benzene ug/l	nd	*	*	*
toluene ug/l	nd	*	*	*
ethyl benzene ug/l	nd	*	*	*
xylenes ug/l	nd	*	*	*
MTBE ug/l	nd	*	*	*
unknown peaks(602)	0	*	*	*
TPH (418.1) mg/l	nd	*	*	*

S 5				
ANALYTE / DATE	4/20/93	5/10/93	6/23/93	8/19/93
benzene ug/l	nd	*	*	*
toluene ug/l	nd	*	*	*
ethyl benzene ug/l	nd	*	*	*
xylenes ug/l	nd	*	*	*
MTBE ug/l	nd	*	*	*
unknown peaks(602)	1	*	*	*
TPH (418.1) mg/l	nd	*	*	*

* SAMPLE NOT TAKEN - NO DATA AVAILABLE
nd NON - DETECTABLE QUANTITY
TBQ TRACE BELOW QUANTITATION LIMIT



ENDYNE, INC.

Laboratory Services

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

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 350 Dorset
REPORT DATE: September 7, 1993
DATE SAMPLED: August 19, 1993

PROJECT CODE: HNDO1389
REF.#: 50,288 - 50,293

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated preservation with NaN_3 .

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.

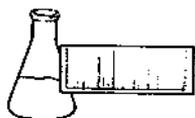
Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

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

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

LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 350 Dorset
REPORT DATE: September 7, 1993
DATE SAMPLED: August 19, 1993
DATE RECEIVED: August 19, 1993
ANALYSIS DATE: September 1, 1993

PROJECT CODE: HNDO1389
REF.#: 50,288
STATION: V1
TIME SAMPLED: Not Indicated
SAMPLER: G. Leech

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 95%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



ENDYNE, INC.

Laboratory Services

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LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 350 Dorset
REPORT DATE: September 7, 1993
DATE SAMPLED: August 19, 1993
DATE RECEIVED: August 19, 1993
ANALYSIS DATE: September 1, 1993

PROJECT CODE: HNDO1389
REF.#: 50,289
STATION: V3
TIME SAMPLED: Not Indicated
SAMPLER: G. Leech

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	3.5
Chlorobenzene	1	ND ¹
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	29.8
Toluene	1	ND
Xylenes	1	15.9
MTBE	10	ND

Bromobenzene Surrogate Recovery: 94%

NUMBER OF UNIDENTIFIED PEAKS FOUND: >25

NOTES:

1 None detected



ENDYNE, INC.

Laboratory Services

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LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 350 Dorset
REPORT DATE: September 7, 1993
DATE SAMPLED: August 19, 1993
DATE RECEIVED: August 19, 1993
ANALYSIS DATE: September 1, 1993

PROJECT CODE: HNDO1389
REF.#: 50,290
STATION: V7
TIME SAMPLED: Not Indicated
SAMPLER: G. Leech

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 95%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



ENDYNE, INC.

Laboratory Services

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LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 350 Dorset
REPORT DATE: September 7, 1993
DATE SAMPLED: August 19, 1993
DATE RECEIVED: August 19, 1993
ANALYSIS DATE: September 1, 1993

PROJECT CODE: HNDO1389
REF.#: 50,291
STATION: V9
TIME SAMPLED: Not Indicated
SAMPLER: G. Leech

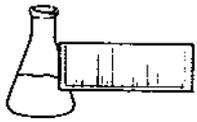
<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 93%

NUMBER OF UNIDENTIFIED PEAKS FOUND: >25

NOTES:

1 None detected



ENDYNE, INC.

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LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 350 Dorset
REPORT DATE: September 7, 1993
DATE SAMPLED: August 19, 1993
DATE RECEIVED: August 19, 1993
ANALYSIS DATE: September 2, 1993

PROJECT CODE: HNDO1389
REF.#: 50,292
STATION: TW15
TIME SAMPLED: Not Indicated
SAMPLER: G. Leech

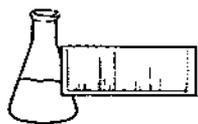
<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	11.9

Bromobenzene Surrogate Recovery: 97%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



ENDYNE, INC.

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LABORATORY REPORT

EPA METHOD 602 -- PURGEABLE AROMATICS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 350 Dorset
REPORT DATE: September 7, 1993
DATE SAMPLED: August 19, 1993
DATE RECEIVED: August 19, 1993
ANALYSIS DATE: September 2, 1993

PROJECT CODE: HNDO1389
REF.#: 50,293
STATION: TW17
TIME SAMPLED: Not Indicated
SAMPLER: G. Leech

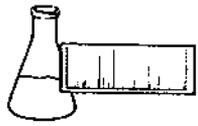
<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 96%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
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REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: 350 Dorset
DATE REPORTED: August 26, 1993
DATE SAMPLED: August 19, 1993

PROJECT CODE: HNDO1390
REF. #: 50,294

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.

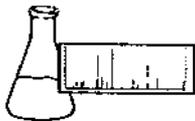
Blank contamination was not observed at levels affecting the analytical results.

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

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures



ENDYNE, INC.

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LABORATORY REPORT

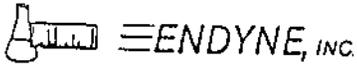
TOTAL HYDROCARBONS - EPA METHOD 418.1 (WATER)

CLIENT: Wagner, Heindel, and Noyes, Inc.
REPORT DATE: August 26, 1993
PROJECT NAME: 350 Dorset
PROJECT CODE: HNDO1390
DATE SAMPLED: August 19, 1993
DATE RECEIVED: August 19, 1993
DATE ANALYZED: August 24, 1993
SAMPLER: Greg Leech

<u>Reference #</u>	<u>Sample ID</u>	<u>Conc. (mg/L)¹</u>
50,294	V9	2.4

Notes:

1 Method detection limit is 0.8 ppm



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

CHAIN-OF-CUSTODY RECORD

007413

Project Name: 350 DORSET	Reporting Address: WHN	Billing Address:
Site Location: S. BURLINGTON, VT		
Endyne Project Number: HND01390	Company: WHN	Sampler Name: GREG WEECH
	Contact Name/Phone #: GREG WEECH	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				
	V1	H2O	X		8/19/93	Z	40 ml	VOC	602	NAN3	ZWKS
	V3	↓	↓		↓	↓	↓		↓	↓	↓
	V7	↓	↓		↓	↓	↓		↓	↓	↓
50,294	V9	↓	↓		↓	↓	↓		↓	↓	↓
	TW15	↓	↓		↓	↓	↓		602/418.1	NAN3	↓
	TW17	↓	↓		↓	↓	↓		602	NAN3	↓
		↓	↓		↓	↓	↓		↓	↓	↓

Relinquished by: Signature	Received by: Signature	Date/Time 8/19/93 12:25 pm
Relinquished by: Signature	Received by: Signature	Date/Time

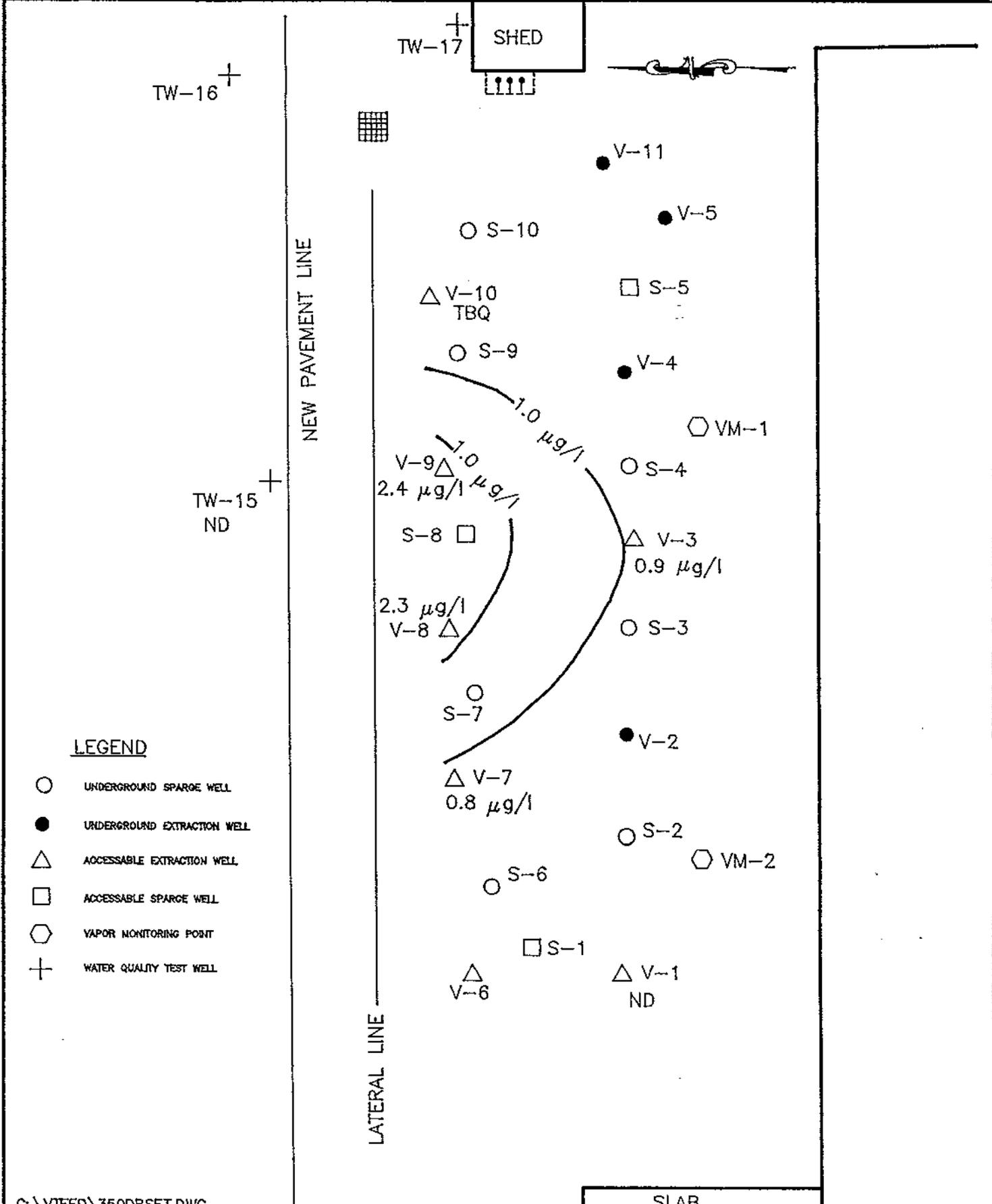
Requested Analyses

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 ₅	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify)										

350 DORSET

8-19-93

ID	∇ BTP	TDBTP	3VOLS	NOTES
V1	5.61	11.5	2.9	CLUTTER NO EDGE
V3	5.12	11 ±	2.9	CLUTTER NO EDGE
V7	5.46	14.5	4.2	EDGE, CLUTTER
V9	5.21	13 ±	5.8	SHADOW, CLUTTER
TW15	5.82	10.62	2.4	NO CLUTTER CLEAR
TW17	8.26	9.45	.60	NO CLUTTER - REVERSE



LEGEND

- UNDERGROUND SPARGE WELL
- UNDERGROUND EXTRACTION WELL
- △ ACCESSABLE EXTRACTION WELL
- ACCESSABLE SPARGE WELL
- ◇ VAPOR MONITORING POINT
- ⊕ WATER QUALITY TEST WELL

C:\VFED\350DRSET.DWG

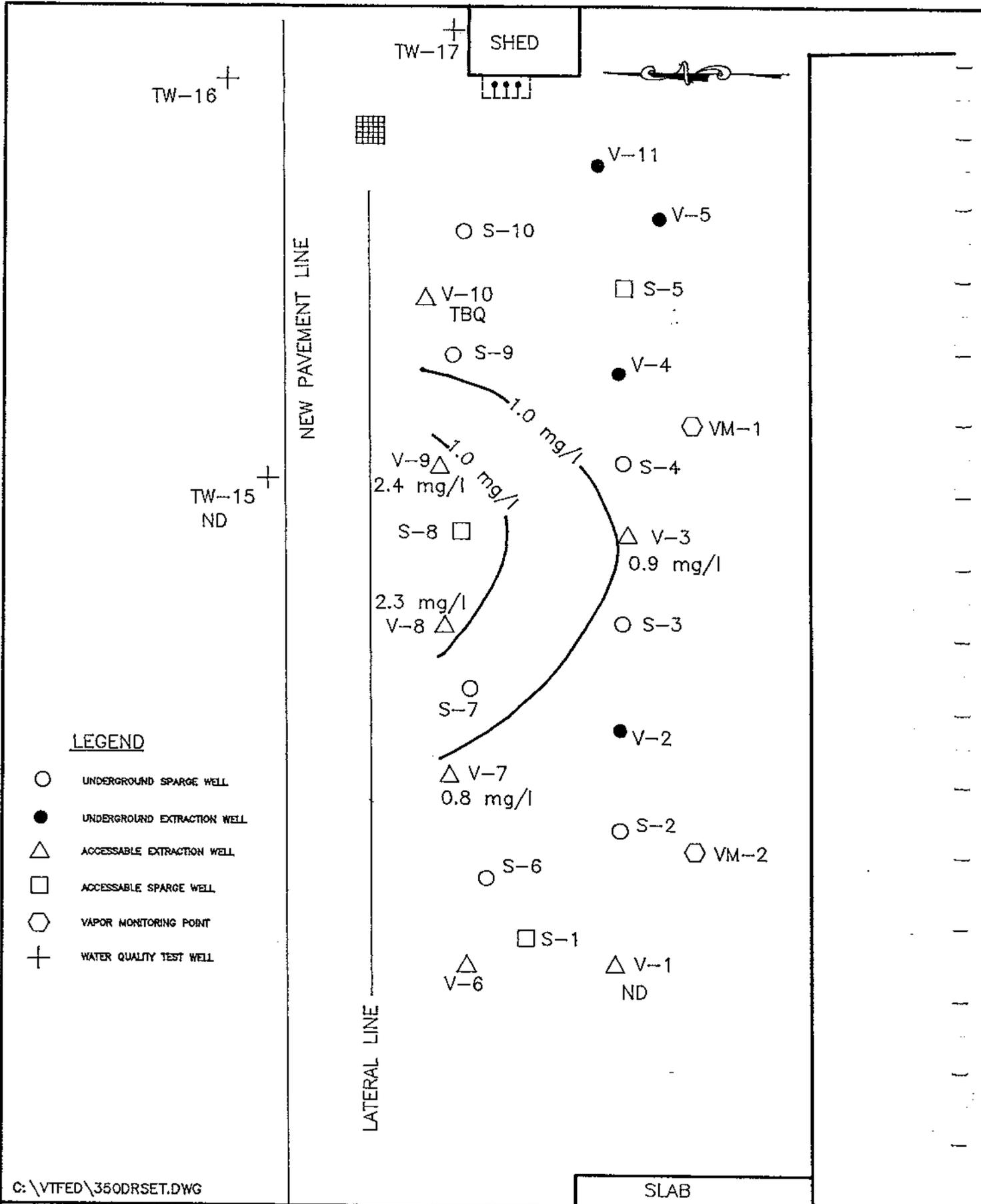
SLAB

Wagner, Heindel, and Noyes, Inc.
 CONSULTING SCIENTISTS AND ENGINEERS
 • Hydrogeology • Ecology •
 • Environmental Engineering •
 BURLINGTON, VERMONT

VT FED/350 DORSET
 SO. BURLINGTON, VERMONT

TPH CONTOUR MAP

DATE: 10/21/93 | SCALE: 1"=10' | DRN: MRL | APPD: JEN



LEGEND

- UNDERGROUND SPARGE WELL
- UNDERGROUND EXTRACTION WELL
- △ ACCESSIBLE EXTRACTION WELL
- ACCESSIBLE SPARGE WELL
- ⬡ VAPOR MONITORING POINT
- ⊕ WATER QUALITY TEST WELL

C:\VTFED\350DRSET.DWG

SLAB

Wagner, Heindel, and Noyes, Inc.
 CONSULTING SCIENTISTS AND ENGINEERS
 • Hydrogeology • Ecology •
 • Environmental Engineering •
 BURLINGTON, VERMONT

VT FED/350 DORSET
 SO. BURLINGTON, VERMONT

TPH CONTOUR MAP

DATE: 10/21/93 SCALE: 1"=10' DRN: MRL APPD: JEN

350 DORSET STREET
V.E.S. SYSTEM MONITORING

DATE: 9/3/93
SITE CONDITIONS: OVERCAST 80°F ±
VERY HUMID

VACUUM BLOWER PERFORMANCE

LOCATION:	VACUUM PRESSURE	PID PPM	FID PPM	VELOCITY FPM	O2 %	CO2 %	CH4 %
PRE-BLOWER:	████████	████████	████████	████████	████████	████████	████████
LATERAL LINE	24" H ₂ O	1.6		300±	19.8	0.65	25.
V.E.S. LINE	27	52		2100	19.8	0.72	50
COMBINED	24	3.2		2600	19.8	71	24
POST-BLOWER:	████████	████████	████████	████████	████████	████████	████████
CARBON INF	12 (NOT VAC)	1.4		2900	20.2	—	—
CARBON EFF	2 (")	1.1		3400	20.2	—	—

BLOWER VACUUM: 37 INCHES OF H₂O
MOISTURE TRAPS: LATERAL LINE 1 QT SVS LINE 1 QT

SYSTEM MONITORING POINTS

LOCATION	VACUUM	LOCATION	VACUUM
TW-15		V-5	
TW-16		V-6	
TW-17		V-7	
V-1		V-8	
V-2		V-9	
V-3		V-10	
V-4			

PID READINGS

PARKING LOT	
BAGEL BAKERY	
NET RESULT	
PEGTONS	
HAIR CONCEPTS	

PKGR

O₂ - (21.0)
CO₂ - (0.09)
CH₄ - (0.02)
PID (0.2)

TECHNICIAN SIGNATURE

[Handwritten Signature]

SPARKS 1100 FPM
43" H₂O

350 DORSET STREET
V.E.S. SYSTEM MONITORING

DATE: Aug 19
SITE CONDITIONS: 75° F, Humid

VACUUM BLOWER PERFORMANCE

LOCATION:	VACUUM PRESSURE	PID PPM	FID PPM	VELOCITY FPM	O2 %	CO2 %	CH4 %
PRE-BLOWER:	████████	████████	████████	████████	████████	████████	████████
LATERAL LINE	24" H2O	6.8		200-500	19.9	0.73	0.21 ± 32
V.E.S. LINE	24" H2O	5.4		2100	19.9	0.85	0.77
COMBINED	25" H2O	2.8		2600	19.9	0.82	0.77
POST-BLOWER:	████████	████████	████████	████████	████████	████████	████████
CARBON INF	11 (NOT VAC)	1.6		2900	20.1	0.53	0.05
CARBON EFF	2 (")	0.9		3400	20.2	0.45	0.02

BLOWER VACUUM: 36 INCHES OF H2O
MOISTURE TRAPS: LATERAL LINE | QT ± SVS LINE | QT ±

SYSTEM MONITORING POINTS

LOCATION	VACUUM	LOCATION	VACUUM
TW-15		V-5	
TW-16		V-6	
TW-17		V-7	
V-1		V-8	
V-2		V-9	
V-3		V-10	
V-4			

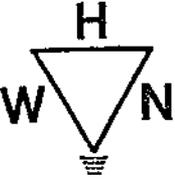
PID READINGS	
PARKING LOT	████████
BAGEL BAKERY	████████
NET RESULT	████████
REGIONS	████████
HAIR CONCEPTS	████████

Temps LATERAL SVS VES

BKGRD
O2 21.0
CO2 0.09
CH4 0.02
PID 0.2

TECHNICIAN SIGNATURE [Signature]

SPARGE ~~(A) (B) (C) (D)~~ → 1100 FPM
43" H2O



Wagner, Heindel, and Noyes, Inc.

Consulting Geologists

Burlington, Vermont

PAGE _____ OF _____

PROJECT: _____

DATE: 8/3

350 DORSET ST.
VES & SPARGING SYSTEM MONITORING
TANK REMEDIATION

SAMPLER: GREG LEECH
SITE COND: HUMID - 89°F

VACUUM BLOWER PERFORMANCE

LOCATION:	VAC/PRESS "H ₂ O	VEL FPM	PID	O ₂	CO ₂	FID	CH ₄
PRE BLOWER	████████	████████	████████	████████	████████	████████	████████
• LATERAL LINE	25	40	1.2	96 ████████	338 ████████		35.6 ████████ 0.35
• V.E.S. LINE	24	3000	1.0	6.7	4.66		6.0
• COMBINED	24		1.0/1.1	8.5	4.46		6.0
POST BLOWER	████████	████████	████████	████████	████████	████████	████████
• INFLUENT	26		1.1	8.5	4.46		6.0
• EFFLUENT			0.8	—	—		—

BLOWER VACUUM: 37 "H₂O (GAUGE)

MOISTURE TRAPS: LATERAL φ V.E.S. LINE φ

SPARGER BLOWER PERFORMANCE

PRESSURE: 40 "H₂O VELOCITY 700 FPM

SYSTEM MONITORING POINTS

VAPOR EXTRACTION PTS.				MONITOR PTS		SPARGE PTS.	
LOC	VAC	LOC	VAC	LOC	VAC	LOC	PRESS.
V-1		V-6		TW-15		S1	
V-2		V-7		TW-16		S5	
V-3		V-8		TW-17		S8	
V-4		V-9		VM-1			
V-5		V-10		VM-2			

NOTES

SYSTEM OFF ON AR - RUN 20 MINUTES THEN TESTS

VES TEMP 85°F
LAT. " 89°F

350 DORSET STREET
 V.E.S. SYSTEM MONITORING

DATE: 7/22/93
 SITE CONDITIONS: @ RAINING, 75

VACUUM BLOWER PERFORMANCE				TEMPS °F			
LOCATION:	VACUUM PRESSURE	PID PPM	FID PPM	VELOCITY FPM	O2 %	CO2 %	CH4 %
PRE-BLOWER:							
LATERAL LINE -	22	0.6	87	600	20.8	0.08	0.17
V.E.S. LINE -	22	0.8	85	2000	20.2	0.65	0.23
COMBINED -	22	0.8	—	2900	20.2	0.61	0.05
	—	—	—	—	—	—	—
POST-BLOWER:	—	—	—	—	—	—	—
CARBON INF +	12	—	133	3400	—	—	—
CARBON EFF -	2	0.5	149	2600	—	—	—

BLOWER VACUUM: 32 INCHES OF H2O
 MOISTURE TRAPS: LATERAL LINE 1QT SVS LINE 1QT

NOT CHECKED

SYSTEM MONITORING POINTS			
LOCATION	VACUUM	LOCATION	VACUUM
TW-15		V-5	
TW-16		V-6	
TW-17		V-7	
V-1		V-8	
V-2		V-9	
V-3		V-10	
V-4			

PID READINGS	
PARKING LOT	0.2
BAGEL BAKERY	
NET RESULT	
PEGTONS	
HAIR CONCEPTS	

BACKGROUND

PID 0.2
 CO2 0.01
 CH4 0.19
 O2 20.9

TECHNICIAN SIGNATURE 