



July 13, 1993

Wehran Engineering Corporation

Andover Research Park
Six Riverside Drive, Suite 101
Andover, Massachusetts 01810-1121
Tel: 508-682-1980
Fax: 508-975-2065

Mr. Charles B. Schwer
Site Management Section
Department of Environmental Conservation
103 South Main Street, West Building
Waterbury, Vermont 05671-0404

RE: Site Investigation Reports
New England Telephone and Telegraph
Pittsford, Vermont (Site #92-1323)
Woodstock, Vermont (Site #92-1325)
Wehran Project Nos. 02501.16 and 02501.20

Dear Mr. Schwer:

On behalf of New England Telephone (NET), Wehran Engineering Corporation is submitting the enclosed two letter reports, which document the results of the site investigation activities conducted at the two NET facilities mentioned above.

If you have any questions, comments, or require additional information, please contact me at 508-682-1980.

Sincerely,

WEHRAN ENGINEERING CORPORATION

Donald W. Podsen

Donald W. Podsen
Project Manager

DWP/wlm/007

Enclosures

cc: M. LaRow, NET
J. Hamel, Wehran

JUL 16 1993



Wehran EnviroTech

Wehran Engineering Corporation

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April 22, 1993

Mr. Michael G. LaRow
New England Telephone and Telegraph Company
125 High Street, Room 1006
Boston, Massachusetts 02110

Re: Site Investigation Activities
New England Telephone
Woodstock, Vermont (Site #92-1325)
Wehran Project No. 02501.20

Dear Mr. LaRow:

The purpose of this letter report is to document the results of the site investigation activities conducted at the New England Telephone facility located at 9 Golf Avenue in Woodstock, Vermont (Figure 1). These activities were conducted due to the presence of soil which exhibited headspace concentrations of up to 122 parts per million volume per volume (ppm_v) using a photoionization detector during the removal of two underground storage tanks at the site in November 1992. Tank Number 1 was a 1,000 gallon Number 2 fuel oil storage tank located southeast of the New England Telephone building, and Tank Number 2 was a 1,000 gallon diesel fuel tank located north of the building (Figure 2).

In accordance with the Vermont Department of Environmental Conservation (DEC) approved Preliminary Work Plan prepared by Wehran Engineering Corporation (Wehran) on December 16, 1992, the following investigation activities were conducted: 1) installed two soil borings which were completed as monitoring wells; 2) field screened soil samples collected from the borings; and 3) collected groundwater samples for laboratory analyses.

On March 4, 1993, two soil borings/monitoring wells (MW-1 and MW-2) were installed by New Hampshire Boring, Inc. (Derry, New Hampshire) under Wehran supervision. One soil boring/monitoring well was located to the west of each of the former underground storage tanks (assumed downgradient side of the tanks based on

the location of the stream). The soil boring/monitoring well locations are depicted on Figure 2.

The soil borings were advanced with 6.25-inch inside diameter (ID) hollow stem augers to a depth of approximately 15 feet below ground surface. Continuous split-spoon samples were collected with a 2-inch outside diameter, 24-inch long split-spoon sampler in accordance with American Society for Testing and Materials (ASTM) procedures. The number of blows required to drive the sampler 24-inches with a 140-pound weight falling freely from 30 inches (standard penetration test) was recorded as a measure of material density. Geologic descriptions were made immediately in the field and a detailed geologic log prepared in accordance with the Modified Burmister Soil Classification System (Attachment A). The split-spoon sampler was decontaminated between uses with a tap water and non-phosphate detergent wash, followed by a tap water rinse, deionized water rinse, methanol rinse, air dry, and final deionized water rinse.

The subsurface soils encountered in the borings from ground surface to a depth of approximately 10 to 13 feet consisted primarily of loose to medium dense, brown, coarse to fine sand with variable portions of silt, clay, and gravel. Underlying this layer was a grey, fine sand and silt. The water table surface was encountered at approximately eight feet below ground surface.

Split spoon soil samples were collected continuously during borehole advancement and field screened utilizing the headspace partitioning method. The tests were performed using a MSA photoionization detector (PID) equipped with a 10.6 electron volt lamp. The PID was calibrated at the start of the day with an isobutylene standard. Soil jar headspace readings ranged from none detected to 4.9 ppm_v at soil boring MW-1, and from 1.0 to 3.9 ppm_v at soil boring MW-2. The headspace readings are provided on the soil boring logs in Attachment A.

The results of the soil jar headspace tests were compared to soil guideline concentrations provided in the DEC publication entitled Agency Guidelines for Petroleum Contaminated Soil and Carbon Media. This policy states that soils which exhibit a PID reading of 10 ppm_v or less at sites involving diesel or Number 2 fuel oil may be used as on-site backfill. Given that the PID readings of the soil samples from the two soil borings (maximum reading of 4.9 ppm_v) were well below the DEC guidance level of 10 ppm_v, soil samples were not submitted for laboratory analyses.

A monitoring well was installed in each soil boring to collect groundwater samples for laboratory analyses. The monitoring wells consisted of 4-inch diameter, Schedule 40, threaded, flush-jointed, polyvinyl chloride (PVC) riser pipe with a 10-foot length of machine slotted 0.01 (10 slot) PVC well screen. The well screen was positioned to intersect the water table surface. A clean filter sand was installed in the annular space from the bottom of the boring to approximately two feet above the top of the well screen. A bentonite chip seal (1.5 feet thick) was placed above the sand pack followed by a bentonite/cement grout to the ground surface. The monitoring wells were completed with flush mounted roadbox casings. Well construction diagrams are provided on the soil boring logs in Attachment A. The monitoring wells were developed by pumping to remove any cuttings, clean the well screen, and improve the hydraulic connection between the well and the water bearing strata.

Groundwater samples were collected from the two monitoring wells on March 12, 1993. Prior to sampling, the water level and well depth of each monitoring well were measured to the nearest 0.01 foot using an electronic water sensing probe. The groundwater level measurements were used to determine the volume of water present in the well. The water sensing probe was decontaminated between uses with a deionized water and methanol rinse to prevent cross contamination.

To assure that representative formation water was being sampled, the monitoring wells were bailed a minimum of three well volumes and until the pH, specific conductance, and temperature values of the discharge stabilized to less than 10 percent variation. Groundwater samples were collected with a Teflon® bailer suspended on a

nylon rope. The bailer was decontaminated between uses with a non-phosphate detergent wash, deionized water rinse, methanol rinse, air dry, and final deionized water rinse.

Groundwater samples were transferred from the teflon bailers into their appropriate sample containers, which were provided by the laboratory. The vials for volatile organic analyses were filled carefully to minimize dissolved air in the sample and to completely fill the sample vial, leaving no headspace or air bubbles. The samples were packed, stored on ice in a shipping cooler, and accompanied by a completed chain of custody form from the time of collection until laboratory delivery. The groundwater samples were submitted to Alpha Analytical Laboratories of Westborough, Massachusetts for analysis of volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH) in accordance with United States Environmental Protection Agency Methods 8020 and 418.1, respectively.

The field chemistry results indicated pH values were 7.0 (MW-1 and MW-2) standard units, specific conductance values were 850 (MW-1) and 805 (MW-2) microsiemens per centimeter (at 25°Celsius [°C]), and water temperature values were 8.3°C (MW-1) and 8.8°C (MW-2).

The analytical results indicated that no VOCs were detected above the laboratory's minimum detection limit (one microgram per liter [$\mu\text{g}/\text{l}$]) in the groundwater samples from either monitoring well MW-1 or MW-2. The concentrations of total petroleum hydrocarbons in the groundwater samples were 1.1 milligrams per liter (mg/ℓ) for MW-1 and 0.8 (mg/ℓ) for MW-2. The complete analytical results, including chain-of-custody and detection limits are provided in Attachment B.

Based on the results of the site investigation activities, the subsurface on the downgradient side of the former underground storage tanks does not appear to be impacted by significant concentrations of petroleum contamination. In addition, as documented in Wehran's previously submitted tank closure report, no jar headspace measurements or TPH concentrations were detected in soils collected from the sidewalls and bottom of the excavation for tank number 1. At tank number 2, however, residual

Mr. LaRow
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contamination (jar headspace measurements of 102 ppm_v and TPH concentrations of up to 2,090 mg/kg) was indicated in soil collected from the ends of the excavation. An attempt was made to remove all impacted soils, but additional excavation was limited by the presence of a large concrete pad in the bottom of the excavation and the proximity of the building foundation. Based on the findings of the tank closure report and the recently collected data, Wehran recommends no further investigation in the vicinity of the former underground storage tanks.

Wehran appreciates the opportunity to provide NET with continuing services on this project. If you have any questions or require additional information, please contact Jeffrey Hamel or me.

Sincerely,

WEHRAN ENGINEERING CORPORATION

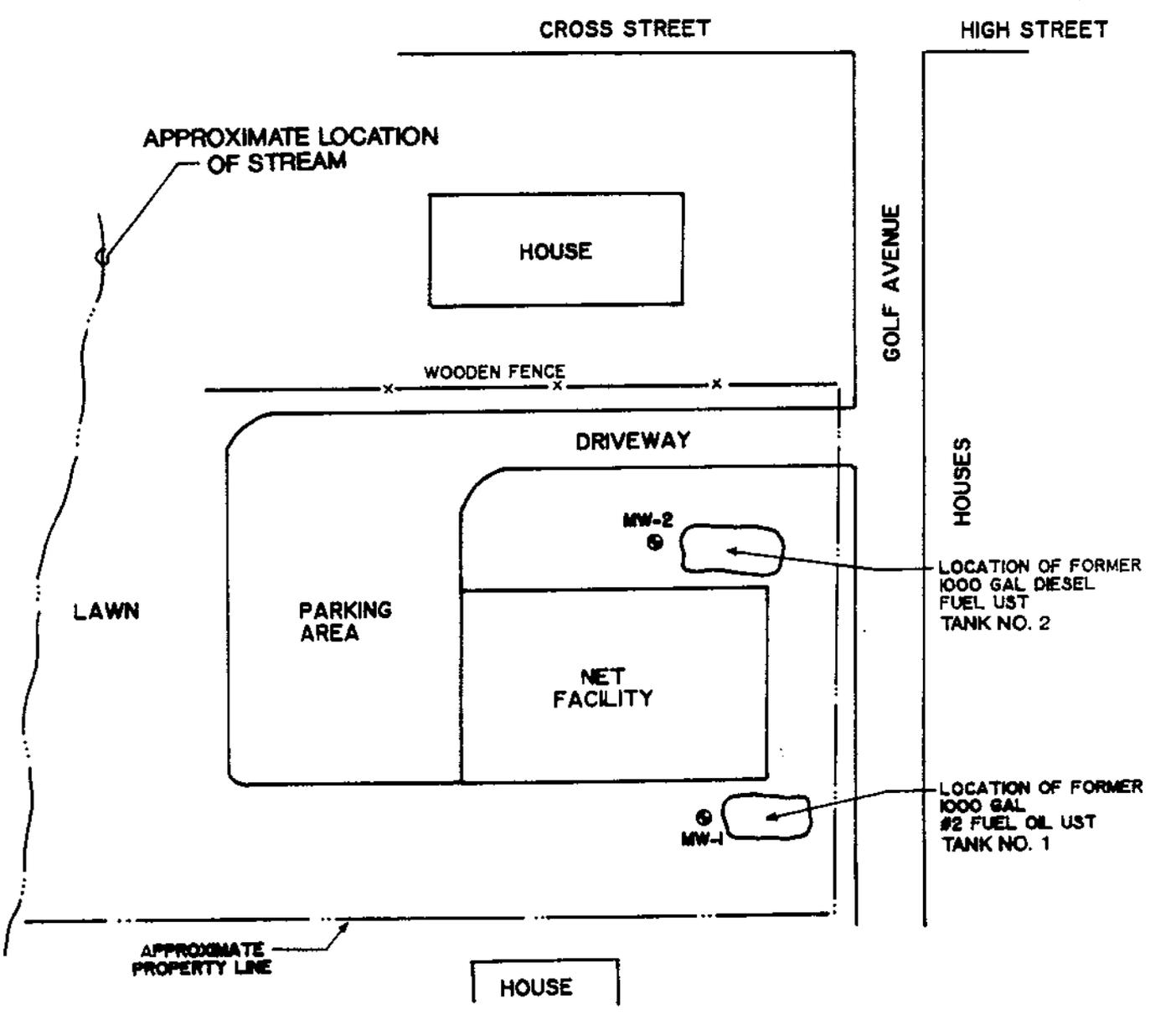
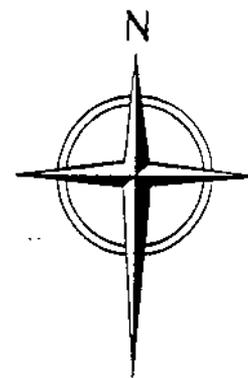
Donald W. Podsen

Donald W. Podsen
Project Manager

DWP/wlm/005
cc: J. Hamel

Attachments

- Figure 1 - Site Location Plan
- Figure 2 - Site Plan
- Attachment A - Soil Boring Logs/Monitoring Well Construction Details
- Attachment B - Analytical Results - Groundwater Samples



LEGEND
 ● MW-1 MONITORING WELL LOCATION AND IDENTIFIER

SITE PLAN

**NEW ENGLAND TELEPHONE
 WOODSTOCK VERMONT**

FIGURE 2
 Scale: NOT TO SCALE
 Date: 4-1-93
 Project No: 02501.20



BUREAU OF ENVIRONMENTAL ENGINEERING

ATTACHMENT A
SOIL BORING LOGS/MONITORING WELL CONSTRUCTION DETAILS



LEGEND FOR BORING LOGS

PROJECT: New England Telephone, Woodstock, Vermont

PROJECT NO.: 02501.20

BORING NO.: MW-1 and MW-2

GRAPHIC SYMBOL	SOIL/ROCK CODE	DESCRIPTION OF SYMBOLS USED IN LITHOLOGIC LOG COLUMN	SYMBOL or PATTERN	DESCRIPTION OF SYMBOLS USED IN WELL CONSTRUCTION AND SAMPLE SYMBOLS
		Loose to medium dense, brown, coarse to fine SAND, some Silt, little Clay trace Gravel		Split Spoon Sample
		Medium dense, olive green, fine SAND and SILT, some to trace Clay and Sand, trace weathered rock		4-inch ID, Sched. 40 PVC Riser Pipe
				4-inch ID, 0.010 Slot, Sched. 40 PVC Well Screen
				Bentonite Seal
				Filter Sand Pack
				Bentonite Cement Grout
				Flush-Grade Protective Roadbox

ATTACHMENT B
ANALYTICAL RESULTS - GROUNDWATER SAMPLES

ALPHA ANALYTICAL LABORATORIES
 CERTIFICATE OF ANALYSIS

MA 086 NH 198958-A CT PH-0574 NY 11148 NC 320 SC 88006

Laboratory Sample Number: L9302135-02 Date Received: 18-MAR-93
 Sample Matrix: NET-WOODSTOCK WE-1 W1 Date Reported: 30-MAR-93
 Condition of Sample: Satisfactory Field Prep: None
 Number & Type of Containers: 2 Amber Glass, 1 Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATES PREP ANALYSIS
Hydrocarbons, Total	1.1	mg/l	0.50	1 418.1	22-Mar 23-Mar
Aromatic Volatile Organics				1 8020	25-MAR
Benzene	ND	ug/l	1.0		
Toluene	ND	ug/l	1.0		
Ethylbenzene	ND	ug/l	1.0		
Xylenes	ND	ug/l	1.0		
1,2-Dichlorobenzene	ND	ug/l	1.0		
1,3-Dichlorobenzene	ND	ug/l	1.0		
1,4-Dichlorobenzene	ND	ug/l	1.0		
Chlorobenzene	ND	ug/l	1.0		
Methyl tert butyl ether	ND	ug/l	1.0		

Comments: * Complete list of References found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE DUPLICATE ANALYSIS

Laboratory Job Number: L9302135

Parameter	Value 1	Value 2	RPD	Units
Hydrocarbons, Total	DUPLICATE for sample(s) 01-03			
	1.3	1.3	0	mg/l

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE SPIKE ANALYSES

Laboratory Job Number: L9302135

Parameter	% Recovery
Hydrocarbons, Total	SPIKE for sample(s) 01-03
	100

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE MS/MSD ANALYSIS

Laboratory Job Number: L9302135

Parameter	MS %	MSD %	RPD
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Volatile Organics Spike Recovery by GC MS/MSD for sample(s) 01-03

1,1-Dichloroethene	88	103	16
Trichloroethene	93	115	21
Chlorobenzene	103	112	8
Benzene	106	137	26
Toluene	87	109	22
Ethylbenzene	89	108	19

ALPHA ANALYTICAL LABS
ADDENDUM I
REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. 1986.

ALPHA

Analytical Laboratories, Inc.

Eight Walkup Drive
Westborough, MA 01581-1019
508-898-9220 FAX 508-898-9193

CHAIN OF CUSTODY RECORD and ANALYSIS REQUEST RECORD

No. 19459

Sheet 1 of 1

Company Name:
WEHMAN ENUMOTECH

Project Number:
02501.16
P.O. Number:

Project Name/Location:
NET-WOODSTOCK, VT.
NET-PITTSFORD, VT.

Date Received in Lab:
3/18
Date Due:
4/1
STANDARD

Company Address:
CLACE MILL 3-20, 1 MILL ST.
BURLINGTON, VT. 05401

Phone Number:
(862) 658-6884
FAX No.:

Project Manager:
DON RODSEY/GENE MARTIN

Alpha Job Number: (Lab use only)
9302135

ALPHA Lab# (Lab Use Only)	Sample I.D.	Containers (number/type)	Matrix / Source	Method Preserve. (number of containers)						Solubles - F.I.	Sampling		Analysis Requested
				Unpres.	Ice	Nitric	Sulfuric	HCl	Other		Date	Time	
2135	NET-PITTSFORD AT WE-1W	(1) 40 mL (2) 500 mL	W		X				X		3/12	9:00 AM	8020 / 418.1
2	NET-WOODSTOCK WE-1 W1	(1) 40 mL (2) 500 mL	W		X				X		3/12	12:45 P.M.	8020 / 418.1
3	NET WOODSTOCK WE-2 W1	(1) 40 mL (2) 500 mL	W		X				X		3/12	12:45 P.M.	8020 / 418.1

Sampler's Signature: *Gene Martin* Allocation: Date: 3/12 Time: 2:00 PM

ADDITIONAL COMMENTS:

NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	UP Fed et	C Johnson	3/18	AM
2				
3				
4				