TWIN STATE ENVIRONMENTAL CORP.

P.O. Box 719, Commercial Park, 1A Huntington Road, Richmond, VT 05477
Tel.: (802) 434-3350 • Fax: (802) 434-4478 • Email: tsefs@together.net

October 9, 1998

Ms. Barbara Hall
Marathon, Inc.
d/b/a Mountain View Treatment Center
609 Delfrate Road
Huntington, Vermont 05462

RE: Initial Site Investigation
Mountain View Treatment Center – Huntington, Vermont
TSEC Project #98-051, SMS Site #98-2337

Dear Ms. Hall:

Enclosed is the Initial Site Investigation Report which was prepared to evaluate subsurface conditions following the removal of a 1,000 gallon capacity No. 2 fuel oil underground storage tank (UST).

Three (3) permanent monitoring wells were installed on SITE by TSEC on June 25 and 26, 1998. Groundwater samples were collected from the wells on July 3, 1998, and were tested for volatile organic compounds (VOCs), and total petroleum hydrocarbons (TPH) as fuel oil.

Data returned from these analyses, along with field observations, indicate that petroleum-related contamination has impacted soil and groundwater beneath the SITE, primarily in the immediate vicinity of the former fuel oil UST.

We have recommended that the SITE enter into a quarterly groundwater monitoring program. SITE conditions will be reevaluated after one (1) year, and recommendations will be made accordingly.

Please call to discuss our findings or other matters of concern.

Sincerely,
TWIN STATE ENVIRONMENTAL CORPORATION

Jon Berntsen
Project Manager

cc: Mr. Chuck Schwer, Sites Management Section

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Phase (check one)	Type (check one)
✓ Site Investigation	☐ Work Scope
☐ Corrective Action Feasibility Investigation	✓ Technical Report
☐ Corrective Action Plan	☐ PCF Reimbursement Request
☐ Corrective Action Summary Report	☐ General Correspondence
☐ Operations & Monitoring Report	

INIITIAL SITE INVESTIGATION
October 9, 1998

Mountain View Treatment Center
609 Delfrate Road
Huntington, Vermont

SMS Site # 98-2337
TSEC Project # 98-051

Facility Owned By:
Marathon, Inc.
d/b/a Mountain View Treatment Center
609 Delfrate Road
Huntington, Vermont 05462
(802) 434-2929
Contact: Ms. Barbara Hall

Written By:
Jon Berntsen
Project Manager

Reviewed By:
John R. Diego
Vice President

1.0 INTRODUCTION

This Initial Site Investigation (ISI) Report has been prepared by Twin State Environmental Corporation (TSEC) to present the findings of environmental conditions encountered during a recent subsurface site investigation at the Mountain View Treatment Center, located at 609 Delfrate Road in Huntington, Vermont (SITE) (see SITE Location Map, **Figure 1**). This investigation, initiated in response to conditions encountered during the removal of a 1,000 gallon capacity No. 2 fuel oil underground storage tank (UST), was requested by the State of Vermont Sites Management Section (SMS) in a letter dated May 6, 1998 (presented as **Attachment 1**).

2.0 BACKGROUND

The treatment center's boiler went out on January 7, 1997, due to water in the oil service line. Based on measurements collected over the next several days, it was determined that water was entering the UST. The UST was inspected following removal from the ground. The UST was in fair shape with some exterior pitting and scaling, but no holes. It was determined that the water was entering through either a loose feed/return line, or through a loose tank top feature.

Soils encountered within the tank cavity consisted of gravel and green silty sand. Photoionization detector (PID) readings of soils retrieved from the tank cavity exhibited readings ranging from <1 part per million volume (ppmv) to 78.4 ppmv. Groundwater was encountered at approximately 3 ft below ground surface (bgs). There was no free product present but a sheen was observed on groundwater as it passed through the southwest corner of the tank cavity.

Based on the information obtained during the UST removal activities, TSEC recommended that a Site Investigation be conducted to define the degree and extent of petroleum contamination to soil and groundwater beneath the SITE.

3.0 SCOPE OF SERVICES

The following scope of services, approved by the SMS in an e-mail dated June 8, 1998 from Mr. Bob Butler (presented as **Attachment 2**), was performed by TSEC during this investigation:

- A health and safety plan (HASP) was prepared that conforms with OSHA 40 CFR 1910.120.
- DIG SAFE was notified and requested to provide a SITE utility markout (Clearance #982 602 627).
- Seven (7) borings were advanced using Geoprobe® drilling techniques to investigate the degree and extent of soil and groundwater contamination resulting from the former USTs. Recovered soil

samples were field screened for the presence of volatile organic compounds (VOCs) using a ThermoEnvironmental Instruments photoionization detector (PID) equipped with a 10.6 eV lamp.

- Three (3) groundwater monitoring wells were installed into these borings. The wells were developed in accordance with TSEC's standard operating procedures.

- Groundwater samples were collected from the three (3) newly installed monitoring wells, and submitted for analysis at Endyne, Inc. of Williston, Vermont by USEPA Method 8021B for VOCs and by USEPA Method 8100M for total petroleum hydrocarbons (TPH) as fuel oil.

- A water sample was collected from the SITE supply well and analyzed for VOCs and TPH via US EPA Methods 524.2 and 8100M respectively.

- Elevations and locations of the newly installed monitoring wells, the soil borings, and existing SITE features were surveyed. The data obtained has been used to create a site map (**Figure 2**), a groundwater flow map (**Figure 3**).

- A survey of sensitive receptors was conducted, focusing on surface water, basements, and private drinking water wells.

- A summary report of the above-mentioned work was prepared.

4.0 SITE LOCATION AND DESCRIPTION

SITE Owner:	Marathon, Inc. d/b/a Mountain View Treatment Center
SITE Address:	609 Delfrate Road Huntington, Vermont
Latitude:	44°20'04.8" North
Longitude:	72°57'41.0" West
Zoning:	Residential
Utilities:	Water - Private Supply (480 ft deep) Sewer – On-SITE septic Electric - Overhead connection Telephone - Overhead connection
Structures:	One (1) multi-story residence. The facility is currently operating as a substance abuse treatment facility.

The SITE is located at the north end of Delfrate Road in the town of Huntington, Vermont (see SITE Location Map, **Figure 1**). The building on-SITE is currently in use as a residential substance abuse treatment facility. The current oil storage tanks for the SITE are located in the basement of the treatment center building. These consist of two (2) 275 gallon steel aboveground storage tanks.

The SITE is residentially zoned and is situated in a residential land use area. The properties adjacent to the SITE consist of residences and wooded lots. An east to west flowing brook borders the SITE to the north, and a beaver pond borders the SITE to the west (see SITE Location Map, **Figure 1**).

The topography of the SITE is slopes from east to west. At the western edge of the SITE, the topography drops rather steeply. The nearest surface waters, and potential sensitive receptors are a beaver pond located approximately ¼-mile to the west of the SITE, and the brook bordering the SITE to the north.

5.0 SUBSURFACE EXPLORATION AND RESULTS

The subsurface exploration program was developed to gather data to provide a better understanding of the hydrogeology and contaminant distribution on SITE.

5.1 Advancement of Soil Borings

Seven (7) soil borings were advanced by TSEC in locations indicated on **Figure 2**. Logs for these borings are presented in **Appendix A**. These borings were advanced to depths ranging from 5.0 to 10.0 feet bgs. All borings were logged, describing soil strata conditions, and field analyzed with a PID using conventional headspace techniques.

General soil conditions encountered at the SITE consisted of a silty sand and gravel till layer overlying a tight weathered schist bedrock. Groundwater was encountered between 0.9 and 3.2 ft bgs in borings B-3 and B-5, respectively.

Contaminated soil was encountered during the installation of boring B-3, which was located within the former UST cavity. A headspace analysis performed on the samples collected from this boring indicated VOCs present at concentrations ranging from <1 ppmv (0-4 ft bgs) to 377.0 ppmv (7-8 ft bgs). Contamination levels decreased at the bottom of the boring (10.0 ft bgs) to <0.1 ppmv.

5.2 Monitoring Well Installation

Three (3) of the above-mentioned borings were all converted into groundwater monitoring wells. The wells were installed in the following locations and are depicted on the SITE Plan, **Figure 2**.

- Monitoring Well MW-1 (B-3) was installed within the former UST cavity. This well is constructed of a pre-packed monitoring well which is described below.
- MW-2 was installed in an apparent downgradient direction from the former tank cavity. This well is constructed of 1-inch diameter poly-vinyl chloride (PVC) well materials.

- MW-3 was also installed in an apparent downgradient direction from the tank cavity. This well is also constructed of a pre-packed monitoring well.

Further construction details of the monitoring wells are presented below and in **Appendix A**: Boring Logs.

5.2.1 Monitor Well Construction

Monitoring wells MW-1 and MW-3 are constructed of 1½ x ½-inch diameter schedule 40 polyvinylchloride (PVC) pre-packed monitoring wells with 0.010-inch machine slotted screen. These pre-packed monitoring wells consist of a ½-inch diameter inner screen surrounded by a clean sand filter pack, placed inside a 1½-inch diameter outer screen, and a ½-inch diameter schedule 40 PVC riser.

Monitoring well MW-2 was constructed using 1-in. schedule 40 PVC threaded riser pipe and 0.010 in. machine-slotted well screen. The annulus between the well screen and the borehole has been backfilled with a clean Ottawa-type filter sand, extending approximately to the top of the screened zone. A bentonite seal has been placed above the sand pack to hydraulically isolate the lower screened zone. The remainder of the annulus was backfilled with clean sand or uncontaminated test boring cuttings to approximately 0.5 ft bgs.

All monitoring wells were completed with a flush-mounted, water-tight curb box that was set in concrete, and fitted with an expansion plug to avoid surface infiltration to the aquifer. The depths of the wells range from 5.5 to 10.0 ft bgs.

All wells were developed to remove any fine particulates introduced into the formation during drilling and/or installation. In addition, well development was performed to hydraulically connect the aquifer and the well, allowing for more accurate determination of in situ conditions (i.e. water level, aquifer parameters, and chemical constituents).

5.3 SITE Geology

A summary of the predominant geological units encountered during drilling activities indicated a thin silty sand and gravel till layer overlying a tight weathered green schist. Refusal, a good indication of competent bedrock, was encountered between 5.0 and 10.0 ft bgs in borings B-4 and B-3 respectively. For a more detailed description of geological units, see Boring Logs, **Appendix A**.

Published data available indicates that the bedrock materials underlying the SITE consist of the Underhill Formation of the Cambrian age Camels Hump Group[1] (see **Figure 4**, Geologic Map). The

[1] Christman, R.A. and Secor, D.T. Jr., 1961, Geology of the Camels Hump Quadrangle, Vermont VT Geol. Surv., Bull., no. 15, 70p.,SGL, VSL

Underhill formation is comprised of phyllite and some metagraywackie with amphibolitic green stone. In some locations, the green stone has been entirely metamorphosed into the greenschist facies.

5.4 SITE Survey

A Topcon AT-G6 auto level was used to perform a stadia survey to identify the location and elevation of the newly installed monitoring wells and soil borings with respect to existing site features. The collected data was used to create the SITE Plan (**Figure 2**) which includes the location of the newly installed wells and sampling points. The SITE supply well, located to the rear of the residence building, was used as the site datum

6.0 COLLECTION OF GROUNDWATER SAMPLES

Groundwater sampling was performed at this SITE by TSEC on July 3, 1998. Samples were collected from the newly installed wells MW-1, MW-2, and MW-3. The monitoring well samples were submitted to a certified laboratory for analysis by USEPA Method 8021B for VOCs and by USEPA Method 8100M for TPH as fuel oil. Additionally, a groundwater sample was collected from the SITE supply well, located approximately 130± ft to the south of the former UST cavity. This sample was analyzed for VOCs via US EPA Method 524.2 and TPH via US EPA Method 8100M.

6.1 Monitoring Well Sample Collection

Prior to sampling, depth to groundwater measurements were made in all of the wells. Depth to water ranged from 0.88 to 3.20 ft bgs at monitoring wells MW-1 and MW-2 respectively.

To allow for a representative groundwater sample, each well was purged of three (3) volumes of water with a new disposable bailer. Purge water from the wells was discharged directly to the ground surface. Sampling at each location was conducted using the bailer which was dedicated to the well.

Quality assurance/Quality control (QA/QC) samples incorporated into this sampling round included one (1) duplicate sample taken from monitor well MW-1 and one (1) field blank. The samples were analyzed via US EPA Method 8021B for VOCs and via US EPA Method 8100M for TPH. All chemical analyses for this round of groundwater sampling were performed by Endyne Inc. of Williston, Vermont. The results of the groundwater sampling round are discussed in the following sections.

6.2 Supply Well Sampling

A groundwater sample was collected from the cold water tap in the kitchen. The tap was opened, and the water was allowed to run until the temperature equilibrated. Once equilibrium was reached (approximately 1 minute), two (2) 40ml glass vials were preserved with HCl, filled, and capped.

7.0 RESULTS OF SAMPLING ACTIVITIES

7.1 Groundwater Flow Direction

Groundwater levels on SITE were measured by TSEC personnel on July 3, 1998. As previously mentioned, depth to groundwater measurements ranged from 0.88 to 3.20 ft bgs at wells MW-2 and MW-1 respectively. A full analysis of groundwater elevation data is presented in **Table 1** (Summary of Groundwater Elevations).

Based on measured depths to groundwater observed in monitoring wells on SITE at the time of sampling, groundwater underlying the SITE has been calculated to flow to the east. Based on SITE topography, groundwater flow would be expected in a westerly direction. The lower water table elevation measured within the UST cavity may be attributed to effects of more permeable backfill and recent precipitation. A graphical interpretation of the groundwater flow direction is presented on the Groundwater Flow Plan provided as **Figure 3**.

7.2 Groundwater Analytical Results

Results received from Endyne indicate that petroleum compounds are present in monitoring wells MW-1 and MW-3, however, no compounds exceeded their respective Vermont Groundwater Enforcement Standard (VGES) in MW-3. The following compounds were detected above their respective VGES in MW-1: Naphthalene (75.3 micrograms per liter [µg/l]), 1,3,5-Trimethylbenzene (5.8 µg/l), and 1,2,4-Trimethylbenzene (18.6 µg/l). No compounds were present above method detection limits (MDLs) in MW-2.

TPH values reported as fuel oil range from TBQ<400 µg/l (present, but below MDL) in MW-2 to 10,600 µg/l in monitoring well MW-1. TPH was not present above its MDL in MW-2. Currently, there is no VGES established for TPH.

The complete analytical laboratory report from Endyne, is summarized in **Tables 2**, and is provided as **Attachment 1**.

7.3 Supply Well Analytical Results

The results received from Endyne indicate that there are no target VOCs present in the supply well sample at concentrations that are above method detection levels (MDL). TPH was also not present above its MDL

7.4 QA/QC Results

The relative percent difference (RPD) was calculated for total target VOCs present in MW-1 to be 13.2%. For duplicate samples, an RPD of less than 25% is generally considered acceptable.

8.0 RECEPTOR EVALUATION

Following the removal of the UST and the initial discovery of petroleum contamination at the SITE in January 1998, a sensitive receptor evaluation was conducted in the immediate vicinity. This investigation focused on surface water receptors, groundwater supply wells, and downgradient basements.

The results of this evaluation indicated that there were no groundwater supply wells, other that the SITE well, within ½-mile of the SITE. The SITE supply well was sampled, and the results indicated that the well has not been impacted by the release.

The nearest surface water receptors that were identified were the unnamed brook bordering the SITE to the north (crossgradient to the former UST), and the beaver pond located approximately ¼-mile west of the SITE (downgradient of the former UST). The facility's septic mound is located between the former UST cavity and the beaver pond. The likelihood of these receptors being impacted is minimal.

A visual reconnaissance was performed around the SITE in an attempt to identify groundwater seeps originating from the hillside downgradient of the former UST cavity. This reconnaissance was conducted immediately following a period of heavy precipitation. No seeps were positively identified.

Finally, there are no basements in the immediate vicinity of the SITE other than the SITE building basement. The SITE building basement showed no obvious signs of impact.

9.0 SUMMARY AND CONCLUSIONS

Based on the information and analytical data obtained during this investigation, TSEC concludes the following:

- The source of the contamination, the former fuel oil UST, has been removed from the SITE.
- Soil and groundwater beneath the SITE has been impacted by a release of petroleum to the subsurface. The contamination appears to be confined to the former UST cavity and immediate vicinity.
- Naphthalene, 1,3,5-Trimethylbenzene and 1,2,4-Trimethylbenzene were detected at levels that exceed VGES.
- No receptors in the immediate vicinity appear to be at risk from the contamination on SITE.

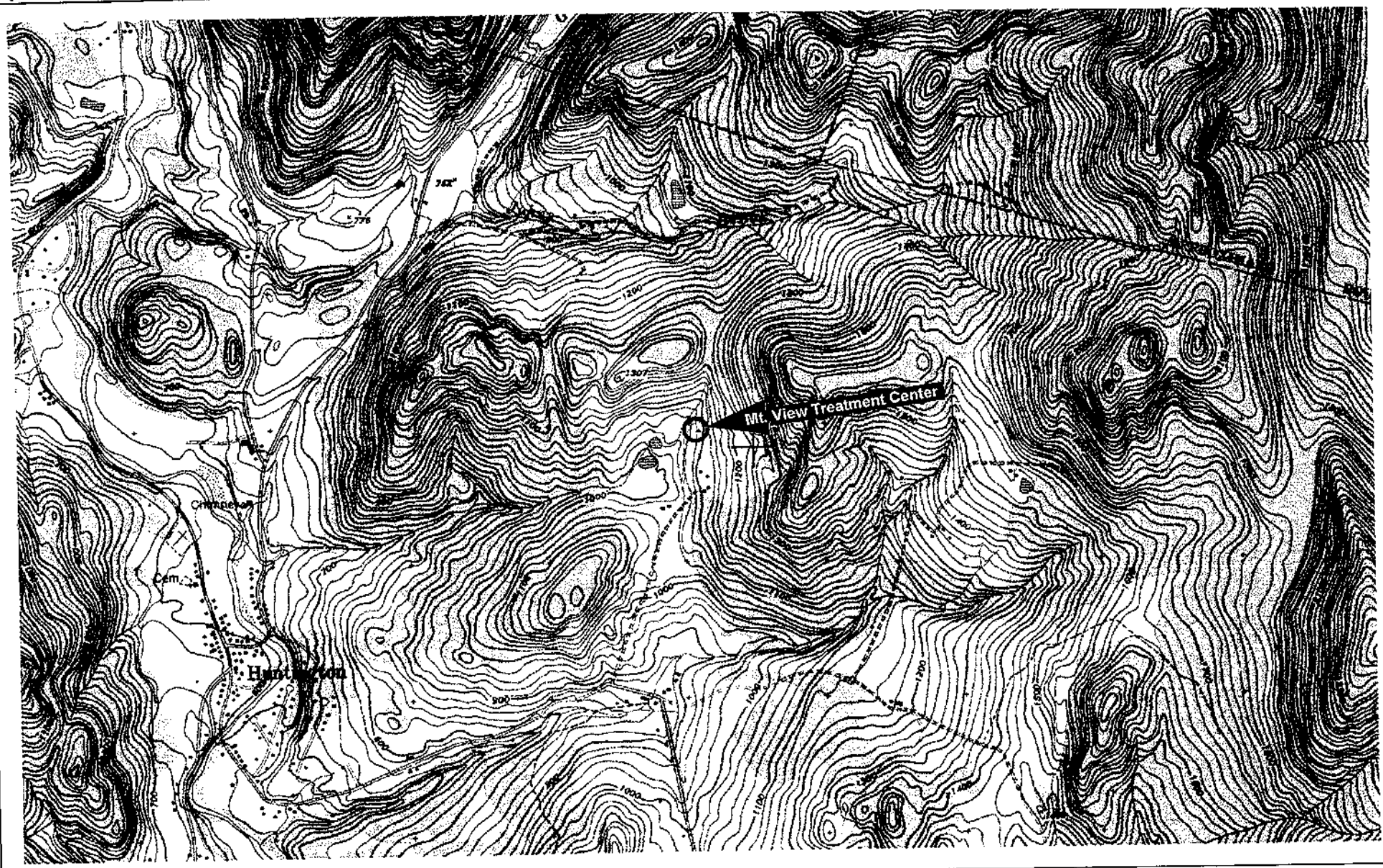
10.0 RECOMMENDATIONS

Due to the presence of contamination in both soil and groundwater at the SITE, TSEC recommends the following:

- Based on the extent of groundwater contamination present, a groundwater monitoring program is suggested. This program would include the quarterly sampling of the three (3) on-SITE groundwater monitoring wells and the SITE supply well for a period of one (1) year. Following one (1) year of sampling and the establishment of hydrogeologic and contaminant trends, the sampling frequency should be reevaluated. If hydrogeologic trends are stable and contaminant trends are stable or decreasing, a less frequent monitoring interval may be recommended.

  Monitoring well samples should be analyzed for VOCs and TPH via US EPA Methods 8021B and 8100M respectively. The SITE supply well should be sampled for VOCs and TPH, and analyzed via US EPA Method 524.2, and US EPA Method 8100M, respectively.

FIGURES



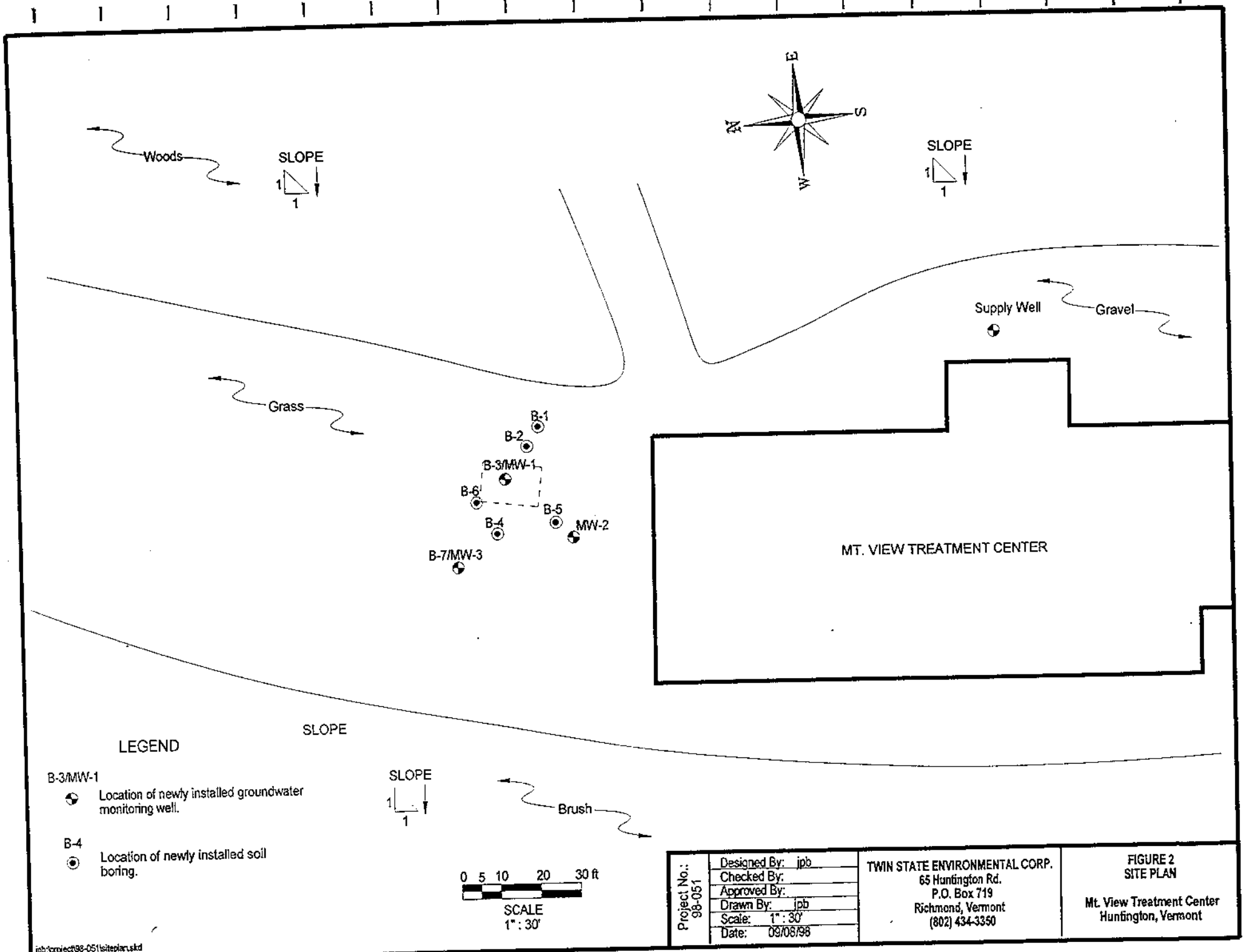
N

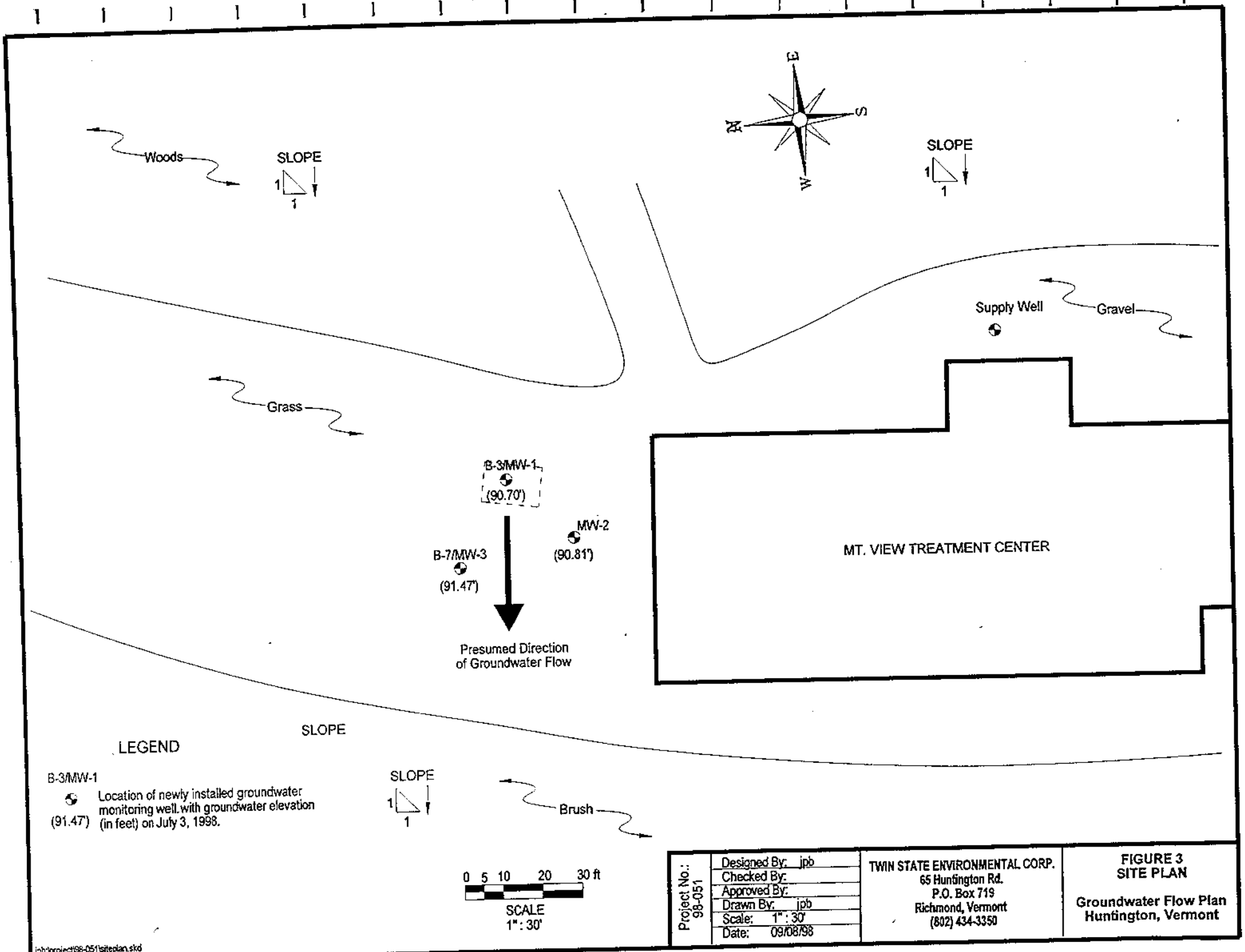
0 2000

Scale (in feet) 1"=2,000'

Source: USGS 7.5 Minute Topographic Series
Huntington, Vermont Quadrangles

Project No: 98-051	Designed By: jpb Checked By: Approved By: Drawn By: jpb Scale: as shown Date: 09/04/98	TWIN STATE ENVIRONMENTAL CORP. 65 Huntington Rd. P.O. Box 719 Richmond, Vermont (802) 434-3350	FIGURE 1 SITE LOCATION MAP Mt. View Treatment Center Huntington, Vermont


E
N
S
W
Woods
SLOPE
1
1
SLOPE
1
1
Supply Well
Gravel
Grass
B-1
B-2
B-3/MW-1
B-6
B-5
B-4
MW-2
B-7/MW-3
MT. VIEW TREATMENT CENTER
SLOPE
LEGEND
B-3/MW-1
Location of newly installed groundwater monitoring well.
B-4
Location of newly installed soil boring.
SLOPE
1
1
Brush
0 5 10 20 30 ft
SCALE
1" : 30'
Project No.: 98-051
Designed By: jpb
Checked By:
Approved By:
Drawn By: jpb
Scale: 1" : 30'
Date: 09/08/98
TWIN STATE ENVIRONMENTAL CORP.
65 Huntington Rd.
P.O. Box 719
Richmond, Vermont
(802) 434-3350
FIGURE 2
SITE PLAN
Mt. View Treatment Center
Huntington, Vermont
jpb:\project\98-051\siteplan.skd


E
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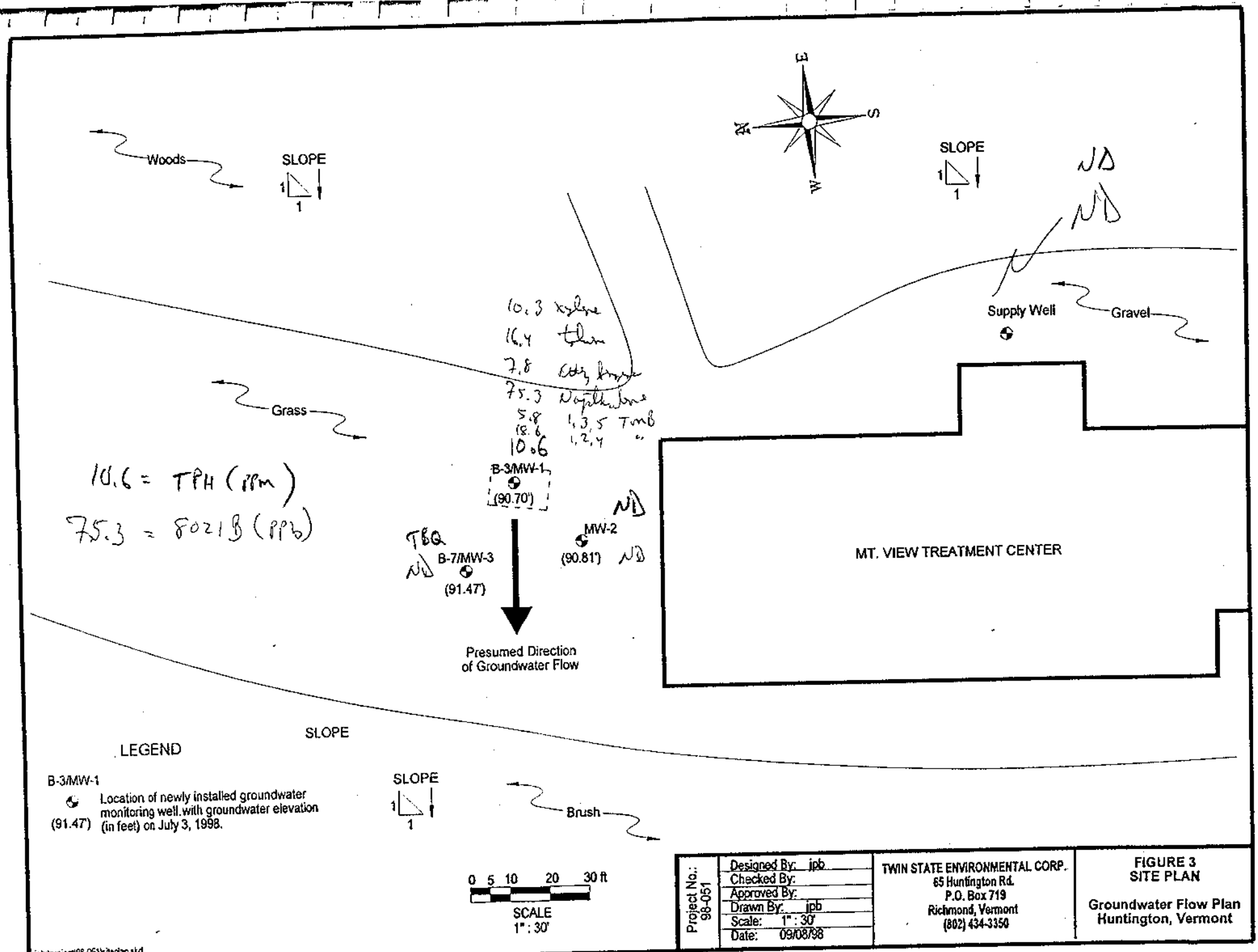
Supply Well
Gravel
Grass
B-3/MW-1
(90.70')
MW-2
(90.81')
B-7/MW-3
(91.47')
MT. VIEW TREATMENT CENTER
Presumed Direction
of Groundwater Flow
SLOPE
LEGEND
B-3/MW-1
(91.47')
Location of newly installed groundwater monitoring well with groundwater elevation (in feet) on July 3, 1998.
SLOPE
1
1
Brush
0 5 10 20 30 ft
SCALE
1" : 30'
Project No.: 98-051
Designed By: jpb
Checked By:
Approved By:
Drawn By: jpb
Scale: 1" : 30'
Date: 09/08/98
TWIN STATE ENVIRONMENTAL CORP.
65 Huntington Rd.
P.O. Box 719
Richmond, Vermont
(802) 434-3350
FIGURE 3
SITE PLAN
Groundwater Flow Plan
Huntington, Vermont
jpb:\project\98-051\siteplan.skd


Woods
SLOPE
1
1
E
S
W
N
SLOPE
1
1
ND
ND
Supply Well
Gravel
Grass
10.3 xylene
16.4 ethyl
7.8 ethyl benzene
75.3 Naphthalene
5.8 1,3,5 TMB
18.6 1,2,4 "
10.6
B-3/MW-1
(90.70')
10.6 = TPH (ppm)
75.3 = 8021B (ppb)
TBQ
ND
B-7/MW-3
(91.47')
MW-2
(90.81')
ND
MT. VIEW TREATMENT CENTER
Presumed Direction
of Groundwater Flow
SLOPE
LEGEND
B-3/MW-1
(91.47')
Location of newly installed groundwater monitoring well with groundwater elevation (in feet) on July 3, 1998.
SLOPE
1
1
Brush
0 5 10 20 30 ft
SCALE
1" : 30'
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Designed By: jpb
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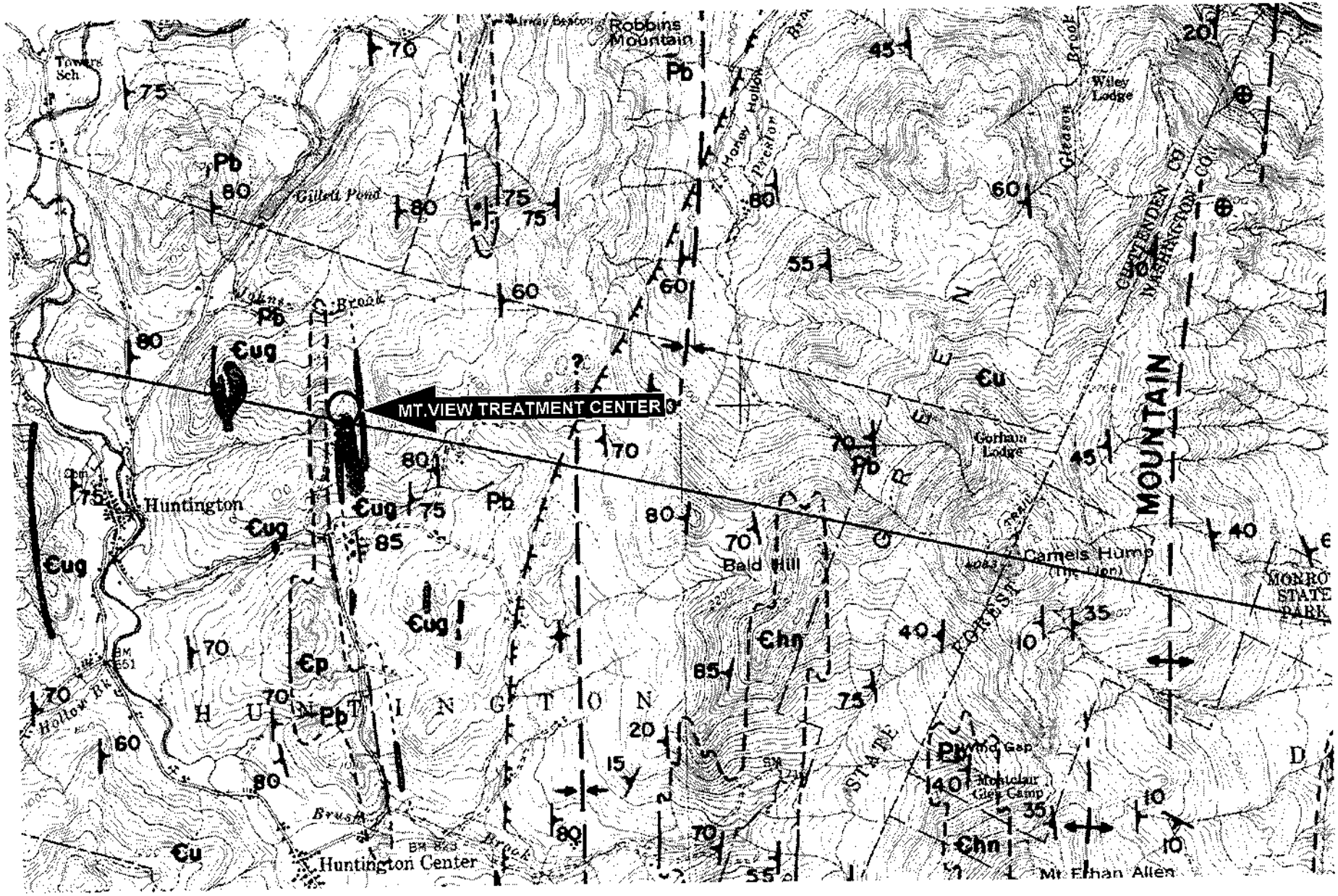
Approved By:
Drawn By: jpb
Scale: 1" : 30'
Date: 09/08/98
TWIN STATE ENVIRONMENTAL CORP.
65 Huntington Rd.
P.O. Box 719
Richmond, Vermont
(802) 434-3350
FIGURE 3
SITE PLAN
Groundwater Flow Plan
Huntington, Vermont
jpb:\project\98-051\siteplan.skd



TWIN STATE ENVIRONMENTAL CORPORATION 65 Huntington Road P.O. Box 719 Richmond, Vermont 05477 (802) 434-3350	FIGURE 4 GEOLOGIC MAP Mt. View Treatment Center Huntington, Vermont

TABLES

TABLE 1

MT. VIEW TREATMENT CENTER
HUNTINGTON, VERMONT
SMS SITE #98-2337

Summary of Groundwater Elevations

July 3, 1998

Well Identification	Top of Riser Elevation	Depth to Product	Depth to Water	Depth to Well	Thickness of Water in Well	Water Table Elev.
MW-1	93.9	ND	3.20	8.70	5.5	90.7
MW-2	91.69	ND	0.88	4.6	3.72	90.81
MW-3	92.62	ND	1.15	6.05	4.9	91.47

Notes:
1. Elevation data is referenced to a TBM. Units are in feet.
2. ND - not detected.
3. NA - not applicable.
4. Measurements recorded are referenced to a marking on top of PVC riser for each well.
5. Depth to fluid measurements were obtained using a Solinst Interface Probe.

jpb:\project\98-051\report tables\water table elevations.xls

TABLE 2

MT. VIEW TREATMENT CENTER
HUNTINGTON, VERMONT
SMS SITE #98-2337

Summary of Groundwater Elevations

July 3, 1998

Sample ID	VGES	MW-1	MW-2	MW-3	DUP-1	FB	Supply Well
Compound	Concentration (µg/l)						
Benzene	5.0	3.5	<1	<1	3.3	<1	<0.5
Toluene	1,000	16.4	<1	<1	14.6	<1	<0.5
Ethylbenzene	700	7.8	<1	<1	9.7	<1	<0.5
Total Xylenes	10,000	10.3	<1	<1	14.8	<1	<1
Total BTEX	ne	38.0	--	--	42.4	--	--
1,3,5-Trimethylbenzene	4.0	***5.8***	<1	<1	***8.3***	<1	<0.5
1,2,4-Trimethylbenzene	5.0	***18.6***	<1	<1	***23.4***	<1	<0.5
Naphthalene	20	***75.3***	<1	<1	***83.1***	<1	<1
MTBE	40	***<20***	<10	<10	***<20***	<10	<1
TPH as Fuel Oil	ne	10,600	<400	TBQ<400	7,870	<400	<400

Notes:
1. VGES - Vermont Groundwater Enforcement Standard.
2. ne - VGES not established for compound.
3. ***Bold and Italic*** numbers indicate concentrations that exceed VGES.
4. DUP-1 - Duplicate sample of moitoring well MW-1. Collected for Quality Assurance/Quality Control.
5. All monitoring well samples were analyzed via US EPA Method 8021B. Supply well was analyzed via US EPA Method 524.2.
6. TPH values are based upon the response of a #2 fuel oil standard. Analyses performed via US EPA Method 8100M.

jpb:\project\98-051\report tables\groundwater quality.xls

APPENDIX A

TWIN STATE ENVIRONMENTAL CORPORATION

65 Huntington Road, P.O. Box 719 Richmond, Vermont 05477
(802) 434-3350 FAX: (802) 434-4478

MONITORING WELL/SOIL BORING LOG

WELL/BORING NO:	B-1	WELL DEPTH:	NA	BORING DEPTH:	6.0 feet
PROJECT NAME:	Mt. View Tr. Ctr.	DEPTH TO WATER:	NA		
PROJECT NO:	98-051	SCREEN DIA:	NA	DEPTH:	NA
INSTALL DATE:	June 25, 1998	SCREEN TYPE/SIZE:	NA		
TSEC REP:	Jon Berntsen	RISER TYPE:	NA		
DRILLING CO:	TSEC	RISER DIA.:	NA	DEPTH:	NA
DRILLING METHOD:	Geoprobe®	GUARD TYPE:	NA		
SAMPLING METHOD:	Macrocore Sampler	RISER CAP:	NA		
REMARKS:	Borings were backfilled with bentonite, drill cuttings, and sand.				

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0	N	0-4	<0.1	3.5 ft recovery	0.0-0.5: Silty SAND and organics (topsoil). Dark brown, damp.
1	O				0.5-3.5: Weathered bedrock. Green schist (decomposition of bedrock). Dry, no odor.
2					
3	W				
4	E	4-8	<0.1	2.0 ft recovery	4.0-6.0: Weathered bedrock. Green schist (decomposition of bedrock). Dry, no odor. Competent Bedrock at 6.0 ft.
5	L				
6	L				End of Sampling = 6.0 feet. End of Boring = 6.0 feet.
7					
8	I				
9	N				
10	S				
11	T				
12	A				
13	L				
14	L				
15	E				
16	D				
17					
18					
19					
20					
21					
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

TWIN STATE ENVIRONMENTAL CORPORATION

65 Huntington Road, P.O. Box 719 Richmond, Vermont 05477
(802) 434-3350 FAX: (802) 434-4478

MONITORING WELL/SOIL BORING LOG

WELL/BORING NO:	B-2	WELL DEPTH:	NA	BORING DEPTH:	7.0 feet
PROJECT NAME:	Mt. View Tr. Ctr.	DEPTH TO WATER:	NA		
PROJECT NO:	98-051	SCREEN DIA:	NA	DEPTH:	NA
INSTALL DATE:	June 25, 1998	SCREEN TYPE/SIZE:	NA		
TSEC REP:	Jon Berntsen	RISER TYPE:	NA		
DRILLING CO:	TSEC	RISER DIA.:	NA	DEPTH:	NA
DRILLING METHOD:	Geoprobe®	GUARD TYPE:	NA		
SAMPLING METHOD:	Macrocore Sampler	RISER CAP:	NA		
REMARKS:	Borings were backfilled with bentonite, drill cuttings, and sand.				

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0	N	0-4	<0.1	3.0 ft recovery	0.0-0.7: Silty SAND and organics (topsoil). Dark brown, damp.
1	O				0.7-3.0: Weathered bedrock. Green schist (decomposition of bedrock). Dry, no odor.
2					
3	W				
4	E	4-8	<0.1	3.0 ft recovery	4.0-7.0: Weathered bedrock. Green schist (decomposition of bedrock). Dry, no odor. Competent Bedrock at 7.0 ft.
5	L				
6	L				End of Sampling = 7.0 feet. End of Boring = 7.0 feet.
7					
8	I				
9	N				
10	S				
11	T				
12	A				
13	L				
14	L				
15	E				
16	D				
17					
18					
19					
20					
21					
22					
23					
24					
25					

LEGEND

- CEMENT GROUT
- NATIVE BACKFILL
- BENTONITE SEAL
- SAND PACK
- WELL SCREEN
- RISER PIPE
- HS HEAD SPACE
- WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

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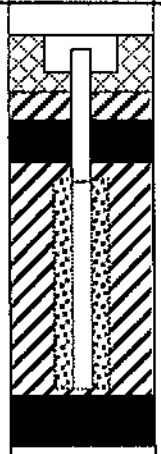
MONITORING WELL/SOIL BORING LOG

WELL/BORING NO:	B-3/MW-1	WELL DEPTH: 8.70 feet	BORING DEPTH: 10.0 feet
PROJECT NAME:	Mt. View Tr. Ctr.	DEPTH TO WATER:	3.20 ft bgs on 07/03/98
PROJECT NO:	98-051	SCREEN DIA: 1¼x¼-inch	DEPTH: 3.70-8.70 ft bgs
INSTALL DATE:	June 25, 1998	SCREEN TYPE/SIZE:	0.010-Slot Schedule 40 PVC
TSEC REP:	Jon Berntsen	RISER TYPE:	Schedule 40 PVC
DRILLING CO:	TSEC	RISER DIA.: ¼-inch	DEPTH: 0.50-3.70 ft bgs
DRILLING METHOD:	Geoprobe®	GUARD TYPE:	Flush mount road box set in concrete.
SAMPLING METHOD:	Macrocore Sampler	RISER CAP:	Locking Gripper
REMARKS:	Boring was backfilled with bentonite from 9.0 to 10.0 ft bgs. MW-1 was installed to 8.70 ft bgs.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0		0-4	<0.1	1.8 ft recovery	0.0-1.8: Silty SAND and GRAVEL fill material. Brown, dry, no odor.
1					
2					
3					
4		4-8	245.7	3.0 ft recovery	4.0-5.0: Silty SAND and GRAVEL fill material. Saturated at 5.0 ft. Fuel oil odor.
5					
6					5.0-7.0: Weathered Schist. Fuel oil odor throughout. PID of 377 ppmv at 7 ft bgs.
7			377.0		
8			68.7		8.0-10.0: Weathered schist. Saturated.
9					Competent bedrock at 10.0 ft bgs.
10			<0.1		End of Sampling = 10.0 feet. End of Boring = 10.0 feet.
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

LEGEND

- CEMENT GROUT
- NATIVE BACKFILL
- BENTONITE SEAL
- SAND PACK
- WELL SCREEN
- RISER PIPE
- HS HEAD SPACE
- WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

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MONITORING WELL/SOIL BORING LOG

WELL/BORING NO:	B-4	WELL DEPTH:	NA	BORING DEPTH:	5.0 feet
PROJECT NAME:	Mt. View Tr. Ctr.	DEPTH TO WATER:	NA		
PROJECT NO:	98-051	SCREEN DIA:	NA	DEPTH:	NA
INSTALL DATE:	June 25, 1998	SCREEN TYPE/SIZE:	NA		
TSEC REP:	Jon Berntsen	RISER TYPE:	NA		
DRILLING CO:	TSEC	RISER DIA.:	NA	DEPTH:	NA
DRILLING METHOD:	Geoprobe®	GUARD TYPE:	NA		
SAMPLING METHOD:	Macrocore Sampler	RISER CAP:	NA		
REMARKS:	Borings were backfilled with bentonite, drill cuttings, and sand.				

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0	N	0-4	<0.1	2.0 ft recovery	0.0-1.0: Silty SAND topsoil and grass. Black, damp.
1	O				1.0-2.0: Fine and medium silty SAND. Tan, dry. Weathered bedrock at bottom.
2					
3	W				
4	E	4-8	<0.1	2.0 ft recovery	4.0-6.0: Weathered SCHIST. Refusal at 5.0 ft bgs. Wet at 4.0 ft bgs.
5	L				
6	L				
7					
8	I				End of Sampling = 5.0 feet.
9	N				End of Boring = 5.0 feet.
10	S				
11	T				
12	A				
13	L				
14	L				
15	E				
16	D				
17					
18					
19					
20					
21					
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

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MONITORING WELL/SOIL BORING LOG

WELL/BORING NO:	B-5	WELL DEPTH:	NA	BORING DEPTH:	5.5 feet
PROJECT NAME:	Mt. View Tr. Ctr.	DEPTH TO WATER:	NA		
PROJECT NO:	98-051	SCREEN DIA:	NA	DEPTH:	NA
INSTALL DATE:	June 25, 1998	SCREEN TYPE/SIZE:	NA		
TSEC REP:	Jon Berntsen	RISER TYPE:	NA		
DRILLING CO:	TSEC	RISER DIA.:	NA	DEPTH:	NA
DRILLING METHOD:	Geoprobe®	GUARD TYPE:	NA		
SAMPLING METHOD:	Macrocore Sampler	RISER CAP:	NA		
REMARKS:	Borings were backfilled with bentonite, drill cuttings, and sand.				

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0	N	0-4	<0.1	3.0 ft recovery	0.0-1.0: Silty SAND topsoil and grass. Black, damp.
1	O				1.0-3.0: Fine and medium silty SAND. Tan, dry. 2 layers of fine to medium sand, that were saturated.
2					
3	W				
4	E	4-8	<0.1	2.0 ft recovery	4.0-5.0: Fine and medium silty SAND as above.
5	L				5.0-6.0: Weathered SCHIST. Refusal at 5..5 ft bgs.
6	L				
7					
8	I				End of Sampling = 5.5 feet.
9	N				End of Boring = 5.0 feet.
10	S				
11	T				
12	A				
13	L				
14	L				
15	E				
16	D				
17					
18					
19					
20					
21					
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See Figure 2, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

TWIN STATE ENVIRONMENTAL CORPORATION

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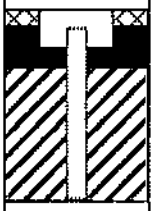
(802) 434-3350 FAX: (802) 434-4478

MONITORING WELL/SOIL BORING LOG

WELL/BORING NO:	MW-2	WELL DEPTH: 5.0 feet	BORING DEPTH: 5.0 feet
PROJECT NAME:	Mt. View Tr. Ctr.	DEPTH TO WATER:	0.88 ft bgs on 07/03/98
PROJECT NO:	98-051	SCREEN DIA: 1½x½-inch	DEPTH: 0.5-5.0 ft bgs
INSTALL DATE:	June 26, 1998	SCREEN TYPE/SIZE:	0.010-Slot Schedule 40 PVC
TSEC REP:	Jon Berntsen	RISER TYPE:	N/A
DRILLING CO:	TSEC	RISER DIA.: N/A	DEPTH: N/A
DRILLING METHOD:	Geoprobe®	GUARD TYPE:	Flush mount road box set in concrete.
SAMPLING METHOD:	Macrocore Sampler	RISER CAP:	Locking Gripper
REMARKS:	Boring was completed as MW-2		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0					Monitoring well MW-2 was installed 2 ft to the south of B-5. The boring was advanced using a pre-probe attachment in place of the macrocore.
1					
2					
3					
4					
5					
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20					
21					
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

TWIN STATE ENVIRONMENTAL CORPORATION

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MONITORING WELL/SOIL BORING LOG

WELL/BORING NO:	B-6	WELL DEPTH:	NA	BORING DEPTH:	6.0 feet
PROJECT NAME:	Mt. View Tr. Ctr.	DEPTH TO WATER:	NA		
PROJECT NO:	98-051	SCREEN DIA:	NA	DEPTH:	NA
INSTALL DATE:	June 25, 1998	SCREEN TYPE/SIZE:	NA		
TSEC REP:	Jon Berntsen	RISER TYPE:	NA		
DRILLING CO:	TSEC	RISER DIA.:	NA	DEPTH:	NA
DRILLING METHOD:	Geoprobe®	GUARD TYPE:	NA		
SAMPLING METHOD:	Macrocore Sampler	RISER CAP:	NA		
REMARKS:	Borings were backfilled with bentonite, drill cuttings, and sand.				

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0	N	0-4	<0.1	3.5 ft recovery	0.0-1.0: Silty SAND topsoil and grass. Black, damp.
1	O				1.0-2.0: Fine and medium silty SAND. Tan, dry. Weathered bedrock at bottom.
2					2.0-3.5: Weathered SCHIST bedrock. Green, damp.
3	W				
4	E	4-8	<0.1	2.0 ft recovery	4.0-6.0: Weathered SCHIST. Refusal at 5.0 ft bgs.
5	L				
6	L				
7					
8	I				End of Sampling = 6.0 feet.
9	N				End of Boring = 6.0 feet.
10	S				
11	T				
12	A				
13	L				
14	L				
15	E				
16	D				
17					
18					
19					
20					
21					
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

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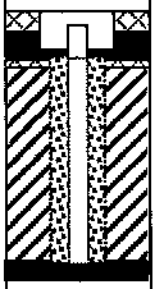
MONITORING WELL/SOIL BORING LOG

WELL/BORING NO:	B-7/MW-3	WELL DEPTH: 6.05 feet	BORING DEPTH: 10.0 feet
PROJECT NAME:	Mt. View Tr. Ctr.	DEPTH TO WATER:	1.15 ft bgs on 07/03/98
PROJECT NO:	98-051	SCREEN DIA: 1½x½-inch	DEPTH: 1.05-6.05 ft bgs
INSTALL DATE:	June 25-26, 1998	SCREEN TYPE/SIZE:	0.010-Slot Schedule 40 PVC
TSEC REP:	Jon Berntsen	RISER TYPE:	Schedule 40 PVC
DRILLING CO:	TSEC	RISER DIA.: ½-inch	DEPTH: 0.50-1.05 ft bgs
DRILLING METHOD:	Geoprobe®	GUARD TYPE:	Flush mount road box set in concrete.
SAMPLING METHOD:	Macrocore Sampler	RISER CAP:	Locking Gripper
REMARKS:	Boring was completed as MW-3.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES
0		0-4	<0.1	3.0 ft recovery	0.0-0.5: Silty SAND topsoil and grass. Brown, dry, no odor. 0.5-2.0: Very fine silty SAND and GRAVEL. Tan, damp. 2.0-3.0: Weathered SCHIST bedrock.
1					
2					
3					
4		4-8	<0.1	1.0 ft recovery	4.0-5.0: Weathered SCHIST bedrock. Damp, green.
5					
6					End of Sampling = 6.0 feet. End of Boring = 6.0 feet.
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

LEGEND: CEMENT GROUT; NATIVE BACKFILL; BENTONITE SEAL; SAND PACK; WELL SCREEN; RISER PIPE; HS HEAD SPACE; WATER LEVEL (APPROXIMATE)

GRANULAR SOILS	
BLOWS/FT	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	M.DENSE
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT	DENSITY
<2	V.SOFT
2-4	SOFT
4-8	M.STIFF
8-15	STIFF
15-30	V.STIFF
>30	HARD

PROPORTIONS USED	
TRACE	0-10%
LITTLE	10-20%
SOME	20-35%
AND	35-50%

NOTES:
1. See **Figure 2**, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

ATTACHMENT 1

MAY 8 1998

State of Vermont

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
Waste Management Division
103 South Main Street/West Office
Waterbury, Vermont 05671-0404
(802) 241-3888
FAX (802) 241-3296

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
RELAY SERVICE FOR THE HEARING IMPAIRED
1-800-253-0191 TDD>Voice
1-800-253-0195 Voice>TDD

May 6, 1998

Ms. Barbara Hall
Marathon, Inc.
d/b/a/ Mountain View Treatment Center
609 Delfrate Rd.
Huntington, Vermont 05462

RE: Petroleum Contamination at Mountain View Treatment Center
Huntington, Vermont
SMS Site # 98-2337

Dear Ms. Hall:

The Sites Management Section (SMS) has received the Underground Storage Tank (UST) closure report which outlines the subsurface conditions for the above referenced site. The fieldwork was conducted by Twin State Environmental Corporation on January 12, 1998. The report is dated January 15, 1998 and summarizes the degree and extent of contamination encountered . The USTs removed include:

- UST #1 - 1,000 gallon No.2 fuel oil UST

During the site activities, screened soils had concentrations up to 78 parts per million (ppm) as measured by a photoionization detector (PID). The peak PID readings were measured at depths of 3 to 6 feet below ground surface (fbgs) in the excavation. The limits of soil contamination were not defined. All soil was used for backfill at the conclusion of the UST removal program .

Site soils consisted of primarily silt/sand and gravel. Groundwater was encountered at a depth of approximately 3 fbgs. A sheen was observed on groundwater during the UST removal.

The Mountain View Treatment Center was inspected for sensitive receptors. The possible receptors potentially affected include groundwater and soil.

Based on the report information, the SMS has determined additional work is necessary to determine the severity of contamination. Due to possible contamination to nearby receptors, the SMS requests that Marathon, Inc. retain the services of a qualified environmental consultant to perform the following:

- ☐ Further define the degree and extent of contamination to the soil.
- ☐ If appropriate, determine if the ambient airspace beneath the site building(s) (e.g. basements) has been impacted by the release using a PID. If the ambient airspace has been impacted, SMS requests confirmatory sampling and laboratory analyses be performed using EPA Method TO-2.
- ☐ Determine the degree and extent of contamination, if any, to groundwater. A sufficient number of monitoring sites should be installed to adequately define the severity of site contamination. Analyze groundwater samples for BTEX and MTBE. At sites proximal to water supply sources, determine the hydrologic relationship of the contaminated area to the water supply source. Pumping influences should be considered in the evaluation.

- ☐ Assess the potential for contaminant impact on sensitive receptors. Base this update on all available information and include basements of adjacent buildings, nearby surface water, any proximal drinking water sources, wetlands, sensitive ecologic areas, outdoor or indoor air, sewers, or utility corridors. Sample and analyze any at-risk water supplies for BTEX, TPH and MTBE compounds.

- ☐ Determine the need for long-term treatment and/or monitoring that addresses groundwater contamination.

- ☐ Submit a summary report that outlines the work performed, as well as provides conclusions and recommendations. As appropriate include analytical data; a site map showing the location of any potential sensitive receptors, stockpiled soils and monitoring or sa mple locations; an area map; detailed well logs; and a groundwater contour map.

- ☐ As soon as practical, submit a site location map at an approximate scale of 1:24000 showing the location of the site. Please include a scale, a north arrow, the SMS site number, and a citation of the source map. The purpose of this map is to enable the SMS to enter the site location into a Geographical Information Systems database.

Please have your consultant submit a preliminary work plan and cost estimate or a site investigation expressway notification for m within fifteen days of your receipt of this letter, so it may be approved prior to the initiation of onsite work. Enclosed please find a list of consultants who perform this type of work as well as the brochure "*Selecting Your UST Cleanup Contractor*," which will help you in choosing an environmental consultant.

Based on current information, the underground storage tanks at Mountain View Treatment Center are eligible for participation in the Petroleum Cleanup Fund (PCF). You must provide written proof to the SMS that you hold no other applica ble insurance in order to receive reimbursement from the PCF. The owner or permittee must pay for the removal and/or repair of the failed tank(s). The fund will reimburse the tank owner or permittee for 100 percent of all eligible cleanup costs of up to $1 million. All expenditures must be pre-approved by the Agency or performed in accordance with the "*Site Investigation Guidance*" expressway program. Please refer to the enclosed guidance document titled, "*Procedures for Reimbursement from the Petroleu m Cleanup Fund*" for additional information concerning the PCF.

The Secretary of the Agency of Natural Resources reserves the right to seek cost recovery of fund monies spent at the Mountai n View Treatment Center site if the Secretary concludes that Marathon, Inc. is in significant violation of the Vermont Underground Storage Tank Regulations or the Underground Storage Tank statute (10 V.S.A., Chapter 59).

We realize this may be a lot to absorb and respond to. We are here to help make this process as effective and uncomplicated as possible. Please review the enclosed documents and call me with any questions you may have. I can be reached at (802) 241-3876.

Sincerely,

Bob Bowker for

Chuck Schwer, Supervisor
Sites Management Section

Enclosures (3)

cc: Huntington Selectboard w/o enclosure
Huntington Health Officer w/o enclosure
DEC Regional Office w/o enclosure
Brian Wagner, Twin State Environmental Corporation w/o enclosure

CS:rgb
D:\Bobsfiles\Wp\\12337.wpd

ATTACHMENT 2

From - Mon Jun 08 11:14:35 1998
Received: from anrnt2.anr.state.vt.us (anrnt2.anr.state.vt.us [159.105.47.6])
by sequoia.together.net (8.8.6/8.8.6) with SMTP id KAA15239
for <tsefs@together.net>; Thu, 4 Jun 1998 10:23:01 -0400 (EDT)
Received: from dec.anr.state.vt.us [159.105.46.4] by anrnt2.anr.state.vt.us with ESMTP
(SMTPD32-4.04) id AF154404C8; Thu, 04 Jun 1998 10:28:37 EST5EDT
Received: from Spooler by dec.anr.state.vt.us (Mercury/32 v2.11);
4 Jun 98 10:22:19 -0500
Received: from spooler by dec.anr.state.vt.us (Mercury/32 v2.10); 4 Jun 98 10:22:08 -0500
From: "Bob Butler" <BOBB@dec.anr.state.vt.us>
To: tsefs@together.net
Date: Thu, 4 Jun 1998 10:18:16 -0500
MIME-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7BIT
Subject: 97-2337 / Marathon DRAFT work plan approval
CC: chucks
Priority: normal
X-mailer: Pegasus Mail for Win32 (v2.54)
Message-ID: <9660D1D03A72@dec.anr.state.vt.us>
X-UIDL: 8a8b532094a02957b602e3907ed24497
X-Mozilla-Status: 0001
Content-Length: 2196

Please deliver to John Diego.

Enclosed in the text body of this email is a DRAFT copy of our provisional work plan approval for the above site. Call or email by June 11, 1998 if you wish to discuss.

Thanks
Bob

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

RE: Work Plan Approval
Petroleum Contamination at Mountain View Treatment Center
Huntington, Vermont
SMS Site # 98-2337

Dear Ms. Hall:

The Sites Management Section (SMS) has received and reviewed the workplan to address petroleum contamination at the above referenced site. The workplan was submitted by Twin State Environmental, Corp. and is dated May 28, 1998.

The SMS concurs with the elements of the workplan and approves its implementation subject to the following caveats:

Installation of a minimum of four monitoring wells: 1 upgradient monitoring well, 1 monitoring well in or immediately downgradient of the former UST grave and 2 downgradient monitoring wells to characterize the limits of extent. SMS makes this stipulation because we are concerned about the efficacy of vibratory technology to install monitoring wells in an upland setting.

If less than 6 borings are installed at the site, the cost shall be decreased on a unitized basis.

Consultant costs shall not exceed $2,000. The estimate provided was for $2,581 in consultant related costs. As such $581 is not approvable.

Please note that reimbursement of the costs associated with this work is subject to:

No deductible per our letter of May 6, 1998;
stipulations of the Consultants Fee Schedule contained in the Sites Investigation Guidance Document dated August 1996; and
the provisions of the Procedures for Reimbursement from the Petroleum Cleanup Fund date September 1995 that was included in our letter of May 6, 1998.

If you have any questions, please feel free to call me at (802) 241-3892.

Sincerely,

DRAFT

Robert G. Butler, Jr.
Sites Management Section

cc: Mr. John Diego, Twin State Environmental, Corp.

Bob Butler
Sites Management Section
Department of Environmental Conservation
bobb@dec.anr.state.vt.us
(802) 241-3892

ATTACHMENT 3

ENDYNE, INC.

Laboratory Services

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

REPORT OF LABORATORY ANALYSIS

CLIENT: Twin State Environmental Corp.
PROJECT NAME: Mt. View/98051
DATE REPORTED: July 15, 1998
DATE SAMPLED: July 3, 1998

PROJECT CODE: TSEC1539
REF. #: 123,620 - 123,625

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

Chain of custody indicated sample preservation with HCl.

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

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

LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: July 15, 1998
CLIENT: Twin State Environmental Corp.
PROJECT: Mt. View/98051
PROJECT CODE: TSEC1539
COLLECTED BY: R. Lindsay
DATE SAMPLED: July 3, 1998
DATE RECEIVED: July 8, 1998

Reference #	Sample ID	Concentration (mg/L)[1]
123,620	MW-1; 0930	10.6
123,621	MW-2; 0950	ND[2]
123,622	MW-3; 1030	TBQ[3]
123,623	Tap-1; 1100	ND
123,624	Dup-1; 1130	7.87
123,625	F.B.; 0900	ND

Notes:

1 Values quantitated based on the response of #2 Fuel Oil. Method detection limit is 0.4 mg/L.
2 None detected
3 Trace below quantitation limit

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

9805 1

CHAIN-OF-CUSTODY RECORD

27930

Project Name: MT. View Site Location: Huntington, VT	Reporting Address: Same as →	Billing Address: 65 Huntington Rd Richmond, VT 05401
Endyne Project Number: TSEC1539	Company: Twin State Env. Corp Contact Name/Phone #: Ken Bisson	Sampler Name: R. Cudney et Phone #: 434-3350

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 7.3.98	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
123620	MW-1	L	X		0930	2	40ml VOA		8021B 8100m TPH	HCl/Ice	
123621	MW-2	L	X		0950	2			8021B 8100m TPH		
123622	MW-3	L	X		1030	2			8021B 8100m TPH		
123623	Tap-1	L	X		1100	2			524.2 8100m TPH	Ice	
123624	Dup-1	L	X		1130	2			8021B 8100m TPH		
123625	F.B.	L	X		0900	2	↓		8021B 8100m TPH	↓	
								Temp = 4.0°C 7/7 SS			

Relinquished by: Signature	Received by: Signature	Date/Time
Relinquished by: Signature	Received by: Signature	Date/Time 7-8-98 1515

New York State Project: Yes ____ No ____

Requested Analyses

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

ENDYNE, INC.

Laboratory Services

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

REPORT OF LABORATORY ANALYSIS

CLIENT: Twin State Environmental Corp.
PROJECT NAME: Mountain View
REPORT DATE: July 13, 1998
DATE SAMPLED: July 3, 1998

PROJECT CODE: TSEC1537
REF.#: 123,614 - 123,618

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

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

EPA METHOD 8021B--PURGEABLE AROMATICS

CLIENT: Twin State Environmental Corp.
PROJECT NAME: Mountain View
CLIENT PROJ. #: 98051

DATE RECEIVED: July 8, 1998
REPORT DATE: July 13, 1998
PROJECT CODE: TSEC1537

Ref. #:	123,614	123,615	123,616	123,617	123,618
Site:	MW-1	MW-2	MW-3	Dup-1	F.B.
Date Sampled:	7/3/98	7/3/98	7/3/98	7/3/98	7/3/98
Time Sampled:	9:30	9:50	10:30	11:30	9:00
Sampler:	R. Lindsay II	R. Lindsay II	R. Lindsay II	R. Lindsay II	R. Lindsay II
Date Analyzed:	7/13/98	7/10/98	7/10/98	7/13/98	7/10/98
UIP Count:	>10	0	0	>10	0
Dil. Factor (%):	50	100	100	50	100
Surr % Rec. (%):	101	99	99	105	93
Parameter	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)
Benzene	3.5	<1	<1	3.3	<1
Naphthalene	75.3	<1	<1	83.1	<1
1,3,5, Trimethyl Benzene	5.8	<1	<1	8.3	<1
1,2,4 Trimethyl Benzene	18.6	<1	<1	23.4	<1
Ethylbenzene	7.8	<1	<1	9.7	<1
Toluene	16.4	<1	<1	14.6	<1
Xylenes	10.3	<1	<1	14.8	<1
MTBE	<20	<10	<10	<20	<10

Note: UIP = Unidentified Peaks TBQ = Trace Below Quantitation NI = Not Indicated

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

TSEC1538 – TSEC1539   98051

CHAIN-OF-CUSTODY RECORD

27930

123,614 — 123,625

Project Name: MT. View Site Location: Huntington, VT	Reporting Address: SAME AS →	Billing Address: 65 Huntington Rd Richmond VT 05401
Endyne Project Number: TSEC1537	Company: Twin State Env. Corp Contact Name/Phone #: Ken Bisceglio	Sampler Name: L. Lindsay Phone #: 434-3350

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 7-3-98	Sample Containers No.	Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
123,614	MW-1	L	X		0930	2	40ml VOA		8021B 8100m TPH	HCl/ice	
123,615	MW-2	L	X		0950	2	↓		8021B 8100m TPH	↓	
123,616	MW-3	L	X		1030	2	↓		8021B 8100m TPH	↓	
123,617	TAP-1	L	X		1100	2	Al		524.2 8100m TPH	HC	
123,618	Dup-1	L	X		1130	2	↓		8021B 8100m TPH	↓	
123,619	F.B.	L	X		0900	2	↓		8021B 8100m TPH	↓	

Relinquished by: Signature	Received by: Signature	Date/Time
[signature]	[signature]	7-8-98 1515

New York State Project: Yes ____ No __–__

Requested Analyses

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

ENDYNE, INC.

Laboratory Services

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

JUL 23 1998

REPORT OF LABORATORY ANALYSIS

CLIENT: Twin State Environmental Corp.
PROJECT NAME: Mt. View/#98051
DATE REPORTED: July 20, 1998
DATE SAMPLED: July 3, 1998

PROJECT CODE: TSEC1538
REF. #: 123,619

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

Chain of custody indicated sample preservation with HCl.

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

enclosures

ENDYNE, INC.

Laboratory Services

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

LABORATORY REPORT

EPA METHOD 524.2

CLIENT: Twin State Environmental Corp.
PROJECT NAME: Mt. View/#98051
REPORT DATE: July 20, 1998
DATE SAMPLED: July 3, 1998
DATE RECEIVED: July 8, 1998
ANALYSIS DATE: July 17, 1998

PROJECT CODE: TSEC1538
STATION: Tap-1
REF. #: 123,619
TIME SAMPLED: 11:00
SAMPLER: R. Lindsay

Parameter	Detection Limit (µg/L)	Maximum Contaminant Level (µg/L)	Concentration (µg/L)
Benzene	0.5	5.0	ND[1]
Bromobenzene	0.5	------	ND
Bromochloromethane	0.5	------	ND
Bromomethane	0.5	------	ND
n-Butylbenzene	0.5	------	ND
sec-Butylbenzene	0.5	------	ND
tert-Butylbenzene	0.5	------	ND
Carbon tetrachloride	0.5	5.0	ND
Chlorobenzene	0.5	100.	ND
Chloroethane	0.5	------	ND
Chloromethane	0.5	------	ND
(2&4)Chlorotoluene	1.0	------	ND
1,2-Dibromo-3-chloropropane	1.0	0.2	ND
1,2-Dibromoethane	0.5	0.05	ND
Dibromomethane	1.0	------	ND
1,2-Dichlorobenzene	0.5	600.	ND
1,3-Dichlorobenzene	0.5	------	ND
1,4-Dichlorobenzene	0.5	75.0	ND
Dichlorodifluoromethane	0.5	------	ND
1,1-Dichloroethane	0.5	------	ND
1,2-Dichloroethane	0.5	5.0	ND
1,1-Dichloroethene	0.5	7.0	ND
cis-1,2-Dichloroethene	0.5	70.0	ND
trans-1,2-Dichloroethene	0.5	100.	ND
Dichloromethane	2.0	5.0	ND
1,2-Dichloropropane	0.5	5.0	ND

ENDYNE, INC.

Laboratory Services

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

REF.#: 123,619

Parameter	Detection Limit (µg/L)	Maximum Contamination Level (µg/L)	Concentration (µg/L)
1,3-Dichloropropane	0.5	------	ND
2,2-Dichloropropane	0.5	------	ND
1,1-Dichloropropene	0.5	------	ND
cis-1,3-Dichloropropene	0.5	------	ND
trans-1,3-Dichloropropene	0.5	------	ND
Ethylbenzene	0.5	700.	ND
Hexachlorobutadiene	0.5	------	ND
Isopropylbenzene	0.5	------	ND
4-Isopropyltoluene	0.5	------	ND
Naphthalene	1.0	------	ND
n-Propylbenzene	0.5	------	ND
Styrene	0.5	100.	ND
1,1,1,2-Tetrachloroethane	0.5	------	ND
1,1,2,2-Tetrachloroethane	1.0	------	ND
Tetrachloroethene	0.5	5.0	ND
Toluene	0.5	1,000.	ND
1,2,3-Trichlorobenzene	0.5	------	ND
1,2,4-Trichlorobenzene	0.5	70.0	ND
1,1,1-Trichloroethane	0.5	200.	ND
1,1,2-Trichloroethane	0.5	------	ND
Trichloroethene	0.5	5.0	ND
Trichlorofluoromethane	1.0	------	ND
1,2,3-Trichloropropane	0.5	------	ND
1,2,4-Trimethylbenzene	0.5	------	ND
1,3,5-Trimethylbenzene	0.5	------	ND
Vinyl Chloride	0.5	2.0	ND
Total Xylenes	1.0	10,000.	ND
MTBE	1.0	------	ND

NUMBER OF UNIDENTIFIED PEAKS: 0

Analytical Surrogate Recovery:

4-Bromofluorobenzene:	100.%
1,2-dichlorobenzene-d4:	104.%

NOTES:

1 None Detected

ENDYNE, INC.

Laboratory Services

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

LABORATORY REPORT

TRIHALOMETHANES BY EPA METHOD 524.2

CLIENT: Twin State Environmental Corp.
PROJECT NAME: Mt. View/#98051
REPORT DATE: July 20, 1998
DATE SAMPLED: July 3, 1998
DATE RECEIVED: July 8, 1998
ANALYSIS DATE: July 17, 1998

PROJECT CODE: TSEC1538
STATION: Tap-1
REF. #: 123,619
TIME SAMPLED: 11:00
SAMPLER: R. Lindsay

Parameter	Detection Limit (µg/L)	Maximum Contamination Level (µg/L)	Concentration (µg/L)
Bromodichloromethane	0.5	----	ND[1]
Bromoform	0.5	----	ND
Chloroform	0.5	----	ND
Dibromochloromethane	0.5	----	ND
Total Trihalomethanes		100.	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

ANALYTICAL SURROGATE RECOVERY:

4-Bromofluorobenzene:	100.%
1,2-Dichlorobenzene-d4:	104.%

NOTES:

1 None Detected

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

98051

CHAIN-OF-CUSTODY RECORD

27930

Project Name: MT. View Site Location: Huntington, VT	Reporting Address: Same as →	Billing Address: 65 Huntington Rd Richmond VT 05401
Endyne Project Number: TSEC1538	Company: Twin State Env. Corp Contact Name/Phone #: Ken B. 3C00/10	Sampler Name: A. Cudsay Phone #: 434-3350

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time 7-3-98	Sample Containers No.	Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
	MW-1	L	X		0930	2	40ml VOA		8021B 8100m TPH	HCl/Ice	
	MW-2	L	X		0950	2	↓		8021B 8100m TPH	↓	
	MW-3	L	X		1030	2			8021B 8100m TPH		
123619	TAP-1	L	X		1100	2			524.2; 8100m TPH		pH < 2
	Dup-1	L	X		1130	2			8021B 8100m TPH		
	F.B.	L	X		0900	2	↓		8021B 8100m TPH	↓	
								Temp 7.7 °C / 7/7 SS			

Relinquished by: Signature	Received by: Signature	Date/Time
Relinquished by: Signature	Received by: Signature	Date/Time 7-8-98 1515

New York State Project: Yes ____ No __✓__

Requested Analyses

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