PROJECT NO. 365-001-89

SUBSURFACE INVESTIGATION REPORT
FOR
NORTHWAY PLAZA
ROUTE 9
QUEENSBURY, NEW YORK

Prepared for:
Kelly and Dutch Real Estate, Inc.
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NORTHWAY PLAZA
Subsurface Investigation Report
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EXECUTIVE SUMMARY

Goldman Environmental Consultants, Inc. (GEC) conducted a subsurface investigation of the property identified as the Northway Plaza, located on Route 9 in Queensbury, New York in September, 1989. The objective of the study was to determine the nature and extent of contamination on the subject property.

GEC installed 10 ground water monitoring wells on the subject property in September, 1989. Analyses were conducted for volatile organic compounds (VOCs) on ground water and on some selected soil samples via USEPA method 624. Some monitoring wells, depending on their proximity to septic systems or underground storage tanks, were also sampled and tested for Total Kjeldahl Nitrogen (TKN) and ammonia, and/or Total Petroleum Hydrocarbons (TPH). The laboratory analysis revealed elevated levels of VOCs in seven (7) of the wells and elevated levels of TKN and ammonia in two (2) of the wells. The possible sources of contamination are the former underground storage tanks associated with Montgomery Ward Automotive, the underground waste oil storage tank used by Monroe Muffler, the underground storage tanks behind the TV Data building, and the three (3) septic systems located on the property.

1.0 INTRODUCTION

This Subsurface Investigation Report was prepared by Goldman Environmental Consultants, Inc. (GEC) of Braintree, Massachusetts. The objective of this investigation was to assess a parcel of commercial property (hereafter referred to as the "property") located at Route 9 in Queensbury, New York for past releases of oil or hazardous materials within the scope of New York State Environmental Conservation Law, Article 40 and New York Navigation Law, Article 12. See Figure 1 for the Site Locus Map. This report is intended for use by Kelly and Dutch Real Estate, Inc. or their designee.

The results of this survey are based on a subsurface investigation consisting of:

* Installation of 10 ground water monitoring wells;
* Ground water elevation measurements of the 10 monitoring wells located on the subject property;
* Analysis of ground water samples for volatile organic compounds (VOCs), Total Kjeldahl Nitrogen (TKN), ammonia, Total Petroleum Hydrocarbons (TPH) by infrared spectroscopy (IR), pH and specific conductance;

The GEC scope of work was initiated in September, 1989 and completed in October, 1989.

2.0 SITE DESCRIPTION

The property identified as the Northway Plaza Shopping Center is located at the corner of U.S. Route 9 and New York State Route 254 in Queensbury, New York (Figure 1). The property consists of three (3) buildings on 20.3 acres of land (Figure 2). The first and largest building contains mostly retail space with some office space for Travelers Insurance and TV Data. Montgomery Ward and Co. formerly leased the current TV Data space. The second and smallest building is a Monroe Muffler Service Center and medical center. The Montgomery Ward and Co. Automotive Center formerly occupied this building. The third building consists of mainly office space. A large portion of the remaining land is asphalt paved parking area. Construction of the buildings began in 1964, and was completed in 1965. According to Mr Weston Turner, Superintendent of the property, the land was a vacant wooded lot prior to construction of the plaza.

Three (3) separate septic systems identified as Septic System 1,2, and 3 are located in the parking area as shown on Figure 2. Six (6) underground storage tanks are operational on the property as shown on Figure 2. One (1) 550 gallon underground waste oil tank is located north of the Monroe Muffler building. Two (2) underground tanks, one (1) 6,000 gallon fiberglass holding tank for spent solutions form TV Data; and one (1) 3,000 gallon fiberglass holding tank, also for TV Data are located east of the TV Data building. Three (3) underground storage tanks, two (2) 550 gallon steel gasoline tanks; and one (1) 550 gallon steel diesel tank, are located inside a small shed at the rear of the Traveler's Insurance building.

Three (3) 10,000 gallon underground gasoline tanks were removed from an area near the Monroe Muffler building, immediately west of the current

Convenient Medical office, in 1985. The removed tanks were stored near the eastern property boundary at the rear of the first building until October 1989.

3.0 SUBSURFACE INVESTIGATION

3.1 SOIL BORING AND MONITORING WELL CONSTRUCTION

On September 7, 8, 11, and 12, 1989, Empire Soils, Inc. under the supervision of GEC, installed 10 ground water monitoring wells designated GEC-1 through GEC-10. Each boring location was confirmed by Mr. Weston Turner and a representative of Niagara Mohawk Power Company to be sufficient distance from underground utilities and other underground obstructions. GEC-1 was installed as an upgradient background well. GEC-2 and GEC-3 were installed downgradient of Septic Systems 2 and 3 respectively. GEC-4 was installed in the vicinity of former underground gasoline storage tanks associated with the Montgomery Ward Automotive Center. GEC-5 was installed downgradient of Septic System 1. GEC-6 was installed adjacent to three (3) underground storage tanks. GEC-7 was installed in an area where the removed underground gasoline storage tanks from the Montgomery Ward Automotive Center, air conditioning units and other equipment were formerly stored. GEC-8 was installed in the vicinity of a 550 gallon underground waste oil tank used by Monroe Muffler. GEC-9 and GEC-10 are located adjacent to two (2) underground tanks containing photographic developer.

Soil borings were advanced using a rotary-driven four and one quarter inch I.D. hollow-stem auger to a depth at least five (5) feet below the water table. Soil samples were collected using a split spoon sampler at a minimum of five

(5) feet intervals in accordance with standard ASTM methods and GEC field sampling protocols presented in Appendix A, Quality Assurance/Quality Control. Ground water monitoring wells were installed in each boring. Monitoring well locations are shown on Figures 2, 3 and 4.

Monitoring wells were constructed using 2 inch I.D. Schedule 40 PVC 0.010-inch slotted screen and 2 inch I.D. Schedule 40 PVC riser. The riser was installed to extend from the top of the screen to ground level. Wells were constructed with a silica sand filter surrounding the screen, a one foot bentonite pellet seal, backfill surrounding the riser, a six (6) inch bentonite seal, a cement seal, and a cast iron road box. No glues or solvents were employed in the well construction. See Appendix B, Soil Boring Logs, for specific well construction information.

3.2 SUBSURFACE SOIL SAMPLING AND ANALYSIS

3.2.1 Screening of Boring Soil Samples

Subsurface soil samples were screened for total ionizable compounds (TICs) using an HNU photoionization detector via the head space screening method. Screening was performed in accordance with USEPA guidelines. See Appendix C for HNU protocol. The HNU detects a number of volatile and semi-volatile organic compounds as well as some inorganic compounds in air. The instrument utilizes a 10.2 eV lamp and detects compounds having an ionization potential in the vicinity of 10.2 eV or less. See Appendix D for a list of compounds and their ionization potentials. The detection limit for the HNU is approximately 1 ppm total ionizable compounds (TICs) in air. The HNU was calibrated using 100 ppm isobutylene as a benzene equivalent. HNU readings

for all soils were within normal background levels for all boring samples except those from GEC-4 and GEC-8. Soil samples collected from GEC-4 at the 19.5 to 21.5 feet interval (GEC-4/S-5), the 24.5 to 26.5 feet interval (GEC-4/S-6), and the 29.5 to 31.5 feet interval (GEC-4/S-7) yielded readings of 600 ppm, 500 ppm, and 5.0 ppm, respectively. The sample from the 25 to 27 feet interval of GEC-8 (GEC-8/S-5) yielded a reading of 170 ppm, and the sample collected from the 30 to 32 feet interval (GEC-8/S-6) yielded a reading of 7.0 ppm. See Table 1 and Appendix B, Soil Boring Logs for HNU screening data.

3.2.2 Analysis of Boring Soil Samples

Based on the elevated HNU readings recorded for soil samples from borings GEC-4 and GEC-8, further analysis was performed on the samples from those borings. Soil samples from boring GEC-4 were collected, preserved and transported to Toxikon Corporation, a New York State certified analytical laboratory in Woburn, Massachusetts, in accordance with USEPA protocols. Soil boring samples from GEC-4 were analyzed for volatile organic compounds (VOCs) by USEPA Method 8240. Sample GEC-4/S-4 (14.5 to 16.5 feet interval) yielded 3,487 parts per billion (ppb) of methyl tertiary butyl ether (MBTE) and 32 ppb of toluene. Sample GEC-4/S-5 (19.5 to 21.5 feet interval) yielded 32 ppb of toluene. See Appendix E for final Laboratory Reports.

Soil samples collected from boring GEC-8 were analyzed for VOCs by GEC personnel using a Photovac 10S55 portable gas chromatograph. See Appendix F for the gas chromatograph procedure and protocol. The following was detected in sample GEC-8/S-4 (15 to 17 feet interval): 70 to 100 ppb of benzene; 79 ppb trichloroethylene; 94 ppb tetrachloroethene; 175 ppb ortho-xylene; and 184 to 678 ppb of ethylbenzene. For each sample 10 micro-liters of

headspace was tested at a gain of 100. The detection window was set at five (5) percent. No other samples exhibited results above the detection limits. See Appendix G for gas chromatograph printouts.

3.3 WATER TABLE ELEVATIONS AND GROUND WATER FLOW

On September 14, 1989, GEC personnel surveyed the casing elevations of monitoring wells GEC-1 through GEC-10 relative to an assumed bench mark elevation of 100.00 feet. Depth to the water table at each well was measured from the lip of the PVC casing. The relative water table elevation survey is used to determine the gradient of the water table and the direction of ground water flow. Water table elevations are shown on Figure 4 and Table 2. Based on the water table elevation data gathered by GEC, the direction of ground water flow is toward the east.

3.4 GROUND WATER CHEMICAL AND PHYSICAL PARAMETERS

GEC recorded *in situ* measurements for temperature, specific conductance and pH of the ground water in each monitoring well using a Martek Mark XIV down hole meter. The parameters obtained are used as gross indicators of organic and inorganic pollution. The temperature levels ranged from 8.0 °C in GEC-7 to 24.2°C in GEC-5. The temperature corrected specific conductance ranged from 478 µmhos/cm in GEC-5 to 1,845 µmhos/cm in GEC-4 and pH levels ranged from 5.37 to 6.76 in GEC-5 and GEC-2, respectively. Temperature measurements were within normal ranges for ground water with the exception of GEC-5, which was higher than normal. The location of GEC-5, proximal to Septic System #1 likely influenced the elevated

temperature in GEC-5. Specific conductivity measurements were within normal ranges. The normal range for pH is 6.5 to 8.5. Ground water at GEC-4, 5, 8 and 9 exhibited pH levels slightly below this range. See Table 5 for results.

3.5 GROUND WATER AND SEPTIC SYSTEM SAMPLING AND ANALYSIS

On September 13, 1989 GEC personnel sampled the ground water from monitoring wells GEC-1 through GEC-10. In addition, GEC sampled water from Septic System 1. Septic Systems 2 and 3 were not accessible for sampling at the time of GEC's investigation. GEC field sampling protocols, presented in Appendix A, were followed. Prior to sampling, each well was purged a minimum of three (3) times the water volume in the well casing. Ground water samples from each well were collected, preserved and transported to Toxikon Corporation, a New York State certified analytical laboratory in Woburn, Massachusetts, in accordance with USEPA protocols. Ground water samples from the 10 monitoring wells and the water sample from Septic System 1 were analyzed for volatile organic compounds by USEPA Method 624. Three (3) ground water samples, from GEC-1, GEC-9, and GEC-10 were analyzed for TKN by USEPA Method 351.1 and ammonia by USEPA Method 350.1. Five ground water samples, from GEC-1, 4, 6, 7, 8, were analyzed for TPH (IR).

3.6 GROUND WATER AND SEPTIC SYSTEM ANALYTICAL DATA

Analyses for VOCs conducted on wells GEC-1 through GEC-10 revealed elevated levels of VOCs in all wells except GEC-1, GEC-5, and GEC-10. GEC-2 contained 153 ppb MTBE. GEC-3 yielded tetrachloroethene concentrations at 28 ppb. GEC-4, located near the former site of three (3) underground storage

tanks (USTs) contained 40 ppb of benzene, 12 ppb of toluene, 763 ppb of total xylenes, 802 ppb of MTBE, and 96 ppb of 2-hexanone. In a duplicate ground water sample from GEC-4, the laboratory detected toluene at 12 ppb, total xylenes at 791 ppb, MTBE at 950 ppb, 2-hexanone at 69 ppb, and 4-methyl-2-pentanone at 67 ppb. (The duplicate sample for GEC-4 is identified as KEL-12-05 in Appendix H, Analytical Results - Ground Water). 4-methyl-2-pentanone is more commonly referred to as methyl isobutyl ketone, an industrial and commercial solvent. The laboratory detected 9 ppb of trichlorofluoromethane (Freon 11) in GEC-6 and 206 ppb of MTBE in GEC-7. Ground water at GEC-8, located near a 550 gallon waste oil tank behind Monroe Muffler, contained 23 ppb of benzene, 328 ppb of toluene, 842 ppb of ethyl benzene, 2,356 ppb of total xylenes, 183 ppb of 2-hexanone, 7 ppb of trichlorofluoromethane, and 9 ppb of vinyl acetate. Ground water at GEC-9 contained 7 ppb of ethyl benzene, 31 ppb of xylenes, 39 ppb,of MTBE, and 8 ppb of trichlorofluoromethane.

The concentrations of benzene found in GEC-4 (40 ppb) and GEC-8 (23 ppb) exceeds the EPA's Maximum Contaminant Level (MCL) standards for benzene in drinking water. The concentration of ethyl benzene in GEC-8 (842 ppb) and the concentration of tetrachloroethene in GEC-3 (28 ppb) exceeds the proposed MCL standards for these substances in drinking water.

Three (3) monitoring wells were analyzed for ammonia and TKN. These analyses were conducted on ground water at GEC-9 and GEC-10 because of their location near the holding tanks located behind TV Data. GEC-1 was also analyzed for the same parameters and served as an upgradient background well. Analysis of these samples revealed 8.77 ppm of ammonia and 11.8 ppm TKN in ground water from GEC-9 and 1.30 ppm of ammonia and 4.01 ppm of TKN in ground water from GEC-10. According to New York State Water Quality Standards for all classes of waters, the upper limit for ammonia is 2 mg/L (ppm).

Ground water at GEC-9 exceeds this limit. Ammonia and TKN were not detected in GEC-1, the background well.

GEC-1, GEC-4, GEC-6, GEC-7, and GEC-8 were also analyzed for TPH, an indicator of heavier petroleum products. TPH was not detected in ground water from any of these wells.

A sample taken from the septic system nearest Monroe Muffler (septic system #1 on Figures 2, 3,and 4) was analyzed for VOCs and contained 8 ppb of xylenes, 22 ppb of carbon disulfide, and 12 ppb of chloroform. See Table 4 and Figure 4 for complete results. Final Laboratory Reports for ground water samples and the septic system sample are presented in Appendices H and I. GEC's Site Safety Plan is presented in Appendix J.

3.7 DISCUSSION OF GROUND WATER ANALYTICAL DATA

The occurrence of petroleum constituents, benzene, toluene, ethyl benzene, and xylene (BTEX) and MTBE, in ground water may be attributed to the underground storage tanks associated with the former Montgomery Ward Automotive Center and the present underground waste oil tank located behind the Monroe Muffler building. MTBE, an unleaded gasoline additive, has a relatively high solubility and is therefore highly mobile in water. The BTEX compounds, in turn, are more soluble in MTBE than they are in water and the result is both an increase in the amount of petroleum product dissolved in ground water and an increased migration of petroleum product through the ground water. (1)* In addition, the subsurface soils encountered in both the saturated and unsaturated zones are composed of moderately well sorted fine sands, which commonly exhibit good porosities and permeabilities. Downgradient migration of soluble compounds in the ground water may be

*References are presented in Appendix K

increased as a result of the increased ground water mobility within the aquifer. The source of the contamination in downgradient wells could be (but may not be limited to) the upgradient sources of contamination found in the area of the Monroe Muffler shop and the former Montgomery Ward gas station area.

The elevated levels of VOCs detected in the ground water at wells GEC-4 and GEC-8 correlates to the elevated readings observed in the soil samples collected during well installation. Toluene and MTBE were detected in both soil and ground water samples from GEC-4. Benzene, ethylbenzene, xylenes, and tetrachloroethene were detected in both the soil and ground water from GEC-8.

The remaining VOCs detected in groundwater are typically used as solvents for paints and lacquers. One possible source is the Montgomery Ward Automotive Center that once occupied the Monroe Muffler and the Convenient Medical Office building. Trichlorofluoromethane (Freon 11) is a common cooling agent used in air conditioners, and may have been released from the automotive area or from the numerous central air conditioning units that once serviced the plaza buildings. According to GEC's Site Assessment Report dated August 4,1989, the central air conditioning units were recently removed from the buildings and stored behind the Poppins Restaurant building. (2) They were removed off site in late August, 1989.

Ammonia and TKN were detected in GEC-9 and GEC-10 and indicate the presence of nitrogen based compounds in the ground water. Such compounds were not detected in the upgradient well, GEC-1. Their presence in the two wells behind TV Data (GEC-9 and GEC-10) may result from two possible sources: leakage from TV Data's holding tanks and ancillary piping; and/or possible leakage from Septic System #1. These sources are based on ground water flow direction to the east. There is insufficient analytical data generated by this investigation to pinpoint the source.

GEC-1, located upgradient of all the other wells, contained no concentrations of VOCs, ammonia, or TKN above detection limits suggesting that the elevated levels of those parameters are a result of onsite practices.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the investigation outlined above, Goldman Environmental Consultant's concludes that there has been a release on the subject property pursuant to New York State Environmental Conservation Law, Article 40 and New York Navigation Law, Article 12. The concentrations of benzene found in GEC-4 (40 ppb) and GEC-8 (23 ppb) exceed the EPA's Maximum Contaminant Level standards for benzene in drinking water. The concentration of ethyl benzene in GEC-8 (842 ppb) and the concentration of tetrachloroethene in GEC-3 (28 ppb) also exceed the proposed EPA Maximum Contaminant Level standards for these substances in drinking water.

The elevated levels of VOCs detected in ground water from GEC-4 have likely resulted from the release of gasoline product from the underground storage tanks once located at the former Montgomery Ward Automotive Center. Three (3) underground storage tanks were removed from this location in 1985.

The elevated levels of VOCs detected in ground water at GEC-8 have likely resulted from releases emanating from the underground waste oil storage tank adjacent to the Monroe Muffler building.

The elevated levels of ammonia and TKN detected in ground water at monitoring wells in the vicinity of TV Data's photographic developer underground holding tanks indicate one or both of the following: a leak is present in either the tanks or the ancillary piping; and/or discharge from Septic System 1 is migrating towards the affected monitoring wells. The sources of the

contaminants detected in ground water at wells placed in downgradient locations may be, but are not limited to, the release points located in the area of the former Montgomery Ward Auto center and the current Monroe Muffler shop. The concentration of ammonia detected in GEC-9 exceeds the New York State Water Quality Standards for all classes of waters.

The elevated levels of VOCs found in a single septic system sample may have resulted from contaminants being poured into drains that connect to the septic system and leaching fields.

Based on the information gathered during this investigation, GEC recommends that the New York State Department of Conservation (DEC) be promptly notified of the site conditions. Underground storage tanks presently located on the property should be tightness tested. The location of the former underground storage tanks at the old Montgomery Ward gas station should be further investigated to determine the extent of soil and ground water contamination. A plan of further investigation with the goal of a permanent remedial solution should also be submitted to DEC at the time of notification.

5.0 WARRANTY

The conclusions and recommendations contained in this report are based on the information available to GEC as of November 7, 1989. GEC provides no warranties on information provided by third parties and contained herein. Data compiled was in accordance with GEC's approved scope of services and should not be construed beyond its limitations. Any interpretations or use of this report other than those expressed herein are not warranted.

The use, partial use or duplication of this report without the express written consent of Goldman Environmental Consultants (GEC) is strictly prohibited.

Respectfully Submitted,
Goldman Environmental Consultants, Inc.

Lawrence M. Goldman
President

Goldman Environmental Consultants, Inc.

Table 1. Field Screening Results Using HNU HW-101 Photoionization Detector For Split Spoon Samples Collected During Installation of Monitoring Wells at Northway Plaza, Queensbury, New York on September 7, 8, 11, and 12, 1989.

Calibration: 100 ppm isobutylene used as span gas. Calibrated to benzene. Span setting 40.0 ppm.

BORING NUMBER	SAMPLE NUMBER	DEPTH (feet)	SOIL TYPE	HEADSPACE VOLATILES* (ppm)
GEC-1	1	0.5-2.0	Very fine & fine sand	0.4 ppm
	2	4.5-6.5	Very fine sand & silt	0
	3	9.5-11.5	Very fine sand	0
	4	15.0-17.0	Very fine sand & silt	0
	5	20.0-22.0	Silt & very fine sand	0
	6	25.0-27.0	Very fine & fine sand	0
	7	30.0-32.0	Fine & very fine sand	0
GEC-2	1	0.5-2.0	Fine & very fine sand	0
	2	5.0-7.0	Lt. brown fine & very fine sand	0
	3	10.0-12.0	Very fine sand & silt	0
	4	15.0-17.0	Silt & very fine sand	0
	5	20.0-22.0	Very fine sand & silt	0
	6	25.0-27.0	Very fine & fine sand	0
GEC-3	1	.5-2.0	Fine & very fine sand	0
	2	5.0-7.0	Lt. brown fine & very fine sand	0
	3	10.0-12.0	Very fine sand & silt	0
	4	15.0-17.0	Very fine sand; some silt	0
	5	20.0-22.0	Very fine sand & silt	0
	6	25.0-27.0	Silt & very fine sand	0
	7	30.0-32.0	Fine & very fine sand	0

Table 1 (cont.)

GEC-4	1	0.5-1.5	Very fine sand; some silt	0
	2	5.0-7.0	Fine sand	0
	3	9.5-11.5	Fine sand	0
	4	14.5 16.5	Very fine sand; brown clay	0
	5	19.5-21.5	Silt & clay	600
	6	24.5-26.5	Very fine sand; some silt	500
	7	29.5-31.5	Very fine sand	5
GEC-5	1	0.5-2.0	Top soil; some fine sand	0
	2	5.0-7.0	Dark brown fine & very sand Lt. brown fine sand	0
	3	9.5-11.5	Red fine & very fine sand	0
	4	14.5-16.5	Gray very fine sand & silt Clay lens	0
	5	19.5-20.0	Brown very fine & fine sand	0
		20.0-20.1	Black bituminous matter	
		20.1-21.5	Gray very fine sand & silt	
GEC-6	1	0.5-1.5	Very fine sand & silt	0
	2	5.0-7.0	Very fine sand and silt	0
	3	10.0-12.0	Very fine & fine sand	0
	4	15.0-17.0	Very fine sand & silt	0
	5	20.0-21.5	Silt & very fine sand	0
GEC-7	1	0.5-2.0	Fine & very fine sand	0
	2	5.0-7.0	Very fine sand and silt	0
	3	10.0-11.5	Asphalt chunks; some sand	0
	4	15.0-17.0	Medium and fine sand	0
	5	20.0-22.0	Tan very fine sand & silt	0
	6	25.0-27.0	Lt. brown very fine sand & silt	0
		30.0-32.0	No recovery/ no sample	-
	7	35.0-37.0	Very fine sand and silt	0

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Table 1 (cont.)

GEC-8	1	0.5-1.5	Med. & fine sand	0
	2	5.0-5.8	Fine, very fine & med. sand.	0
		5.8-7.0	Dark brown very fine sand	
	3	10.0-12.0	Fine &very fine sand	0
	4	15.0-17.0	Silt & clay	0
		20.0-22.0	No recovery/no sample	-
	5	25.0-27.0	Very fine & fine sand	170
	6	30.0-32.0	Very fine sand & silt	7
GEC-9	1	.5-2.0	Very fine & fine sand	0
	2	5.0-7.0	Fine & very fine sand	0
	3	10.0-11.0	Dark brown very fine sand & silt	0
		11.0-12.0	Tan very fine sand	0
	4	15.0-17.0	Fine & very fine sand	0
	5	20.0-22.0	Brown & gray clay & silt	0
	6	25.0-27.0	Brown & gray clay & silt	0
	7	30.0-32.0	Gray silt & very fine sand	0
	8	35.0-370	Very black silt.	0
			Brown very fine sand	
GEC-10	-	0.5-1.5	No recovery/no sample	-
	1	5.0-7.0	Very fine & fine sand	0
	2	10.0-12.0	Brown clay & silt	0
	3	15.0-17.0	Gray clay	0
	4	20.0-22.0	Gray clay	0
	5	25.0-27.0	very fine sand & silt	0

* Readings taken using HNU HW-101 Photoionization Detector

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Table 2 Groundwater Elevations for Northway PlazaQueensbury, New York on September 14, 1989

Well	Casing Lip Elevation	Depth to Water	Water Table Elevation
GEC-1	98.14	21.92	76.22
GEC-2	96.30	19.38	76.92
GEC-3	100.92	25.06	75.86
GEC-4	87.08	22.20	64.88
GEC-5	81.94	15.40	66.54
GEC-6	69.96	12.80	57.16
GEC-7	90.76	29.36	61.40
GEC-8	87.74	25.56	62.18
GEC-9	90.82	31.98	58.84
GEC-10	80.02	21.98	58.04

All measurements presented in feet.
Elevations measured from an assumed benchmark of 100 feet located along U.S. Route 9 approximately 100 feet south of Northway Plaza sign.

Table 3 Chemical Characteristics of Soil Samples Collected From Monitoring Wells GEC-4 and GEC-8 at Northway Plaza, Queensbury, New York on September 9 & 11, 1989.

	GEC-4[2]		GEC-8[3]
Volatile Organics[1,4]	15'-17'	20'-22'	25'-27'
Benzene	ND	ND	70-100
Toluene	32	11	ND
Ethyl Benzene	ND	ND	184-678
Ortho-xylene	ND	ND	175
Methyl Tertiary Butyl Ether	3487	ND	ND
Trichloroethene	ND	ND	79
Tetrachloroethene	ND	ND	94

ND- not detected

1 Concentrations reported in µg/kg - parts per billion (ppb).

2 Concentrations for GEC-4 via EPA Method 8240.

3 Concentrations for GEC-8 via portable gas chromatograph with 10 µl of headspace shot at a gain of 100 and a detection window of 5 percent.

4 Any compound not listed was below detection limits.

Table 4 Chemical Characteristics of Ground Water Collected from 10 Monitoring Wells at the Northway Plaza, Queensbury, New York on September 13 & 14, 1989.

	GEC-1	GEC-2	GEC-3	GEC-4	GEC-5	GEC-6	GEC-7	GEC-8	GEC-9	GEC-10	SEPTIC SYSTEM #1	MDL[3]	MCL[4]
Ammonia[1]	ND	-	-	-	-	-	-	-	8.77	1.30	ND	0.05	
Total Kjeldahl Nitrogen[1]	ND	-	-	-	-	-	-	-	11.8	4.01	ND	0.05	
VOLATILE ORGANICS[2]													
Benzene	ND	ND	ND	40 (ND)	ND	ND	ND	23	ND	ND	ND	2.0	5.0
Toluene	ND	ND	ND	12 (12)	ND	ND	ND	328	ND	ND	ND	2.0	2000*
Ethyl Benzene	ND	ND	ND	ND	ND	ND	ND	842	7	ND	ND	2.0	700*
Total Xylenes	ND	ND	ND	763 (791)	ND	ND	ND	2356	31	ND	8	2.0	10,000*
Methyl Tertiary Butyl Ether (MTBE)	ND	153	ND	802 (950)	ND	ND	206	ND	39	ND	ND	2.0	
Tetrachloroethene	ND	ND	28	ND	ND	ND	ND	ND	ND	ND	ND	2.0	5.0*
2-Hexanone	ND	ND	ND	96 (69)	ND	ND	ND	183	ND	ND	ND	4.0	
Trichlorofluoromethane	ND	ND	ND	ND	ND	9	ND	7	8	ND	ND	2.0	
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND	9	ND	ND	ND	2.0	
4-Methyl-2-pentanone	ND	ND	ND	ND (67)	ND	ND	ND	ND	ND	ND	ND	4.0	
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	22	2.0	
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	12	2.0	
Total Petroleum Hydrocarbons[1]	ND	-	-	ND	-	ND	ND	ND	-	-	-	10	

[1] Concentrations reported in mg/L (ppm)

[2] Concentrations reported in µg/L (ppb)

[3] MDL - Method Detection Limit; reported in same units as concentrations.

ND - Not detected at detection limit.

Dash (-) indicates that analysis for those substances was not performed on those samples.

Any compound not listed was below detection limits.

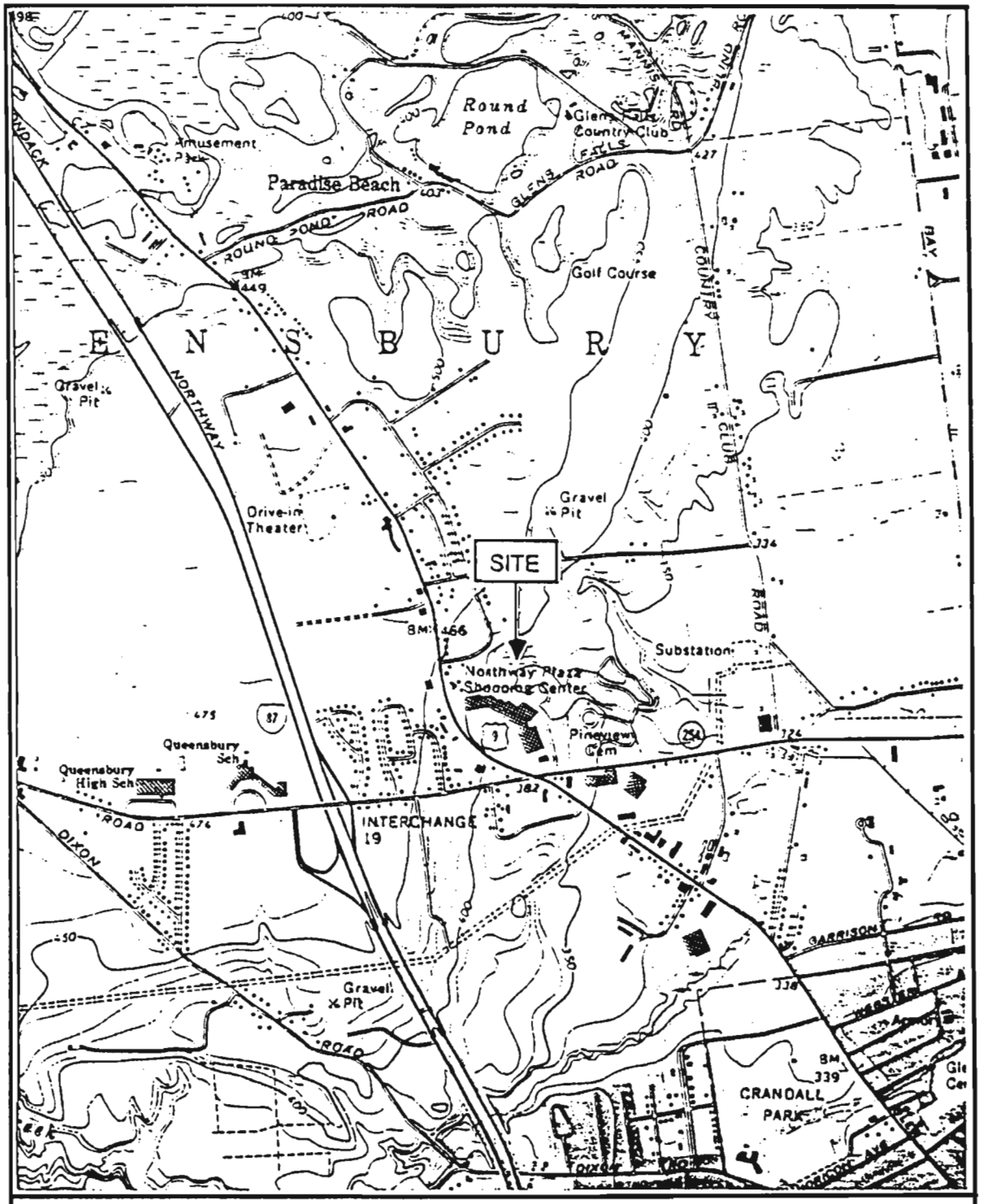
Parentheses indicate results from a duplicate sample.

[4] MCL - Maximum Contaminant Level - promulgated by EPA under Safe Drinking Water Act ; reported in same units as concentrations. Asterisk (*) indicates proposed MCL. MCLs not listed have not been established.

Goldman Environmental Consultants, Inc.

Table 5 Chemical and Physical Characteristics of Ground Water From Monitoring Wells at Northway Plaza, Queensbury, New York on September 13, 1989

Well	pH	Specific Conductance (µmhos/cm)	Temperature (degrees C)
GEC-1	6.61	537	9.2
GEC-2	6.76	578	9.5
GEC-3	6.62	1525	8.6
GEC-4	6.14	1845	10.1
GEC-5	5.37	478	24.2
GEC-6	6.56	826	10.8
GEC-7	6.62	714	8.0
GEC-8	6.30	729	10.3
GEC-9	6.25	855	10.8
GEC-10	6.66	684	10.1



USGS 7.5' Series Topographic — Glens Falls, NY Quadrangle

FIGURE 1

SCALE
2.625"=1 mile

N

SITE LOCUS MAP

NORTHWAY PLAZA SHOPPING CENTER
US ROUTE 9 AND NEW YORK ROUTE 254
QUEENSBURY, NEW YORK

GEC *Goldman Environmental Consultants, Inc.*
161 Forbes Road Suite 204
Braintree, MA 02184
(617) 848-5012

Figure 2 - Site Plan
Northway Plaza Shopping Center
US Route 9 and NY Route 254
Queensbury, New York
Scale 1" ≅ 120'

LEGEND
- Underground Storage Tank
- T Transformer
- 3 Former Underground Tanks
- D 55 Gallon Drums

NOTE: The locations of these items are approximate

N

Approximate Property Boundary

Concrete Retaining Wall

Approximate Location of Discharge from Storm Water Pipe

GEC-7

Vacant Wooded Land

Upper Level Loading Dock

Lower Level Loading Dock

GEC-6

Over Yarnder Shoppe

Fantastic Sam's

Poppin's Restaurant

Peter Harris Clothes

Peter Harris Plus

The Woodcrate

Unoccupied

Unoccupied

CVS Pharmacy

Pro Fast Photo

Unoccupied

Dry Cleaners

Unoccupied

Unoccupied

Unoccupied

Hilton Music

Post Office

Traveler's Insurance

GEC-10

Pineview Cemetery

GEC-9

TV Data

Steinbach's

Retail Plaza

Parking

GEC-3

GEC-5

GEC-8

Septic System 1

Monroe Muffler and Brakes

Convenient Med. Office

GEC-2

Septic System 3

Parking

Unoccupied

Unoccupied

Unoccupied

Unoccupied

Unoccupied

Armed Forces Recruiting

Unoccupied

NE Construction

Northway Plaza Office Center

HFC Finance

Northway Plaza Office Center

Septic System 2

GEC-1

GEC-4

Quaker Road

U. S. Route 9

Pizza Hut

Mr. Best Restaurant

Nobil True Value Hardware Store

McDonald's

Kentucky Fried Chicken

Northgate Plaza

Mobil Gas Station

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Braintree, MA 02184
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Figure 3 - Ground Water Elevation Map
Northway Plaza Shopping Center
US Route 9 and NY Route 254
Queensbury, New York
Scale 1" ≅ 120'

LEGEND
- Underground Storage Tank
- T Transformer
- 3 Former Underground Tanks
- D 55 Gallon Drums

NOTE: The locations of these items are approximate

N

Approximate Property Boundary

Vacant Wooded Land

Concrete Retaining Wall

Approximate Location of Discharge from Storm Water Pipe

GEC-7 61.40'

Upper Level Loading Dock

Lower Level Loading Dock

GEC-6 57.16'

The Woodcrate

Unoccupied

Unoccupied

CVS Pharmacy

Pro Fast Photo

Unoccupied

Dry Cleaners

Unoccupied

Unoccupied

Poppin's Restaurant

Peter Harris Clothes

Peter Harris Plus

Over Yarnder Shoppe

Fantastic Sam's

Unoccupied

Hilton Music

Steinbach's

Post Office

Traveler's Insurance

Pineview Cemetery

GEC-10 58.04'

GEC-9 58.84

TV Data

Retail Plaza

Parking

GEC-3 75.86'

Ground Water Flow

GEC-2 76.92'

GEC-8 62.18'

Septic System 1

GEC-5 66.54'

Monroe Muffler and Brakes

Convenient Med. Office

Septic System 3

Parking

Unoccupied

Unoccupied

Unoccupied

Unoccupied

Unoccupied

Armed Forces Recruiting

Unoccupied

NE Construction

Northway Plaza Office Center

HFC Finance

Northway Plaza Office Center

Septic System 2

GEC-1 76.22'

GEC-4 64.08'

Quaker Road

U. S. Route 9

Pizza Hut

Mr. Best Restaurant

Nobil True Value Hardware Store

McDonald's

Kentucky Fried Chicken

Northgate Plaza

Mobil Gas Station

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161 Forbes Road Suite 204
Braintree, MA 02184
(617) 848-5012

Figure 4 - Ground Water Data
Northway Plaza Shopping Center
US Route 9 and NY Route 254
Queensbury, New York
Scale 1" ≅ 120'

LEGEND
- Underground Storage Tank
- T Transformer
- 3 Former Underground Tanks
- D 55 Gallon Drums

NOTE: The locations of these items are approximate

N

Approximate Property Boundary

MTBE 206 ppb
GEC-7
Concrete Retaining Wall
Approximate Location of Discharge from Storm Water Pipe
Trichlorofluoromethane 9 ppb
Vacant Wooded Land
Upper Level Loading Dock
Lower Level Loading Dock
GEC-6
Over Yarnder Shoppe
Fantastic Sam's
Poppin's Restaurant
Peter Harris Clothes
Peter Harris Plus
Ammonia 1.30 ppm
Total Kjeldahl Nitrogen 4.01 ppm
Pineview Cemetery
GEC-10
GEC-9
Ammonia 8.7 ppm
Total Kjeldahl Nitrogen 11.8 ppm
Xylenes 31 ppb
MTBE 950 ppb
Ethyl Benzene 31 ppb
Trichlorofluoromethane 6 ppb
Traveler's Insurance
Post Office
The Woodcrate
Unoccupied
Hilton Music
CVS Pharmacy
Pro Fast Photo
Dry Cleaners
Steinbach's
TV Data
None Detected
GEC-5
Septic System 1
Parking
Retail Plaza
GEC-3
Tetrachloroethene 28 ppb
Septic System 3
GEC-2
MTBE 53 ppb
Parking
Toluene 328 ppb
Xylenes 2356 ppb
2-Hexanone 183 ppb
Ethyl Benzene 842 ppb
Trifluorochloromethane 7 ppb
Vinyl Acetate 9 ppb
Benzene 23 ppb
GEC-8
Monroe Muffler and Brakes
Convenient Med. Office
Armed Forces Recruiting
NE Construction
Northway Plaza Office Center
HFC Finance
Northway Plaza Office Center
Septic System 2
GEC-1
None Detected
GEC-4
Quaker Road
Duplicate
Toluene 12 ppb
Xylenes 791 ppb
2-Hexanone 69 ppb
MTBE 950 ppb
4-Methyl-2-pentanone 67 ppb
Toluene 12 ppb
Xylenes 763 ppb
2-Hexanone 96 ppb
MTBE 802 ppb
Benzene 40 ppb
U. S. Route 9
Pizza Hut
Mr. Best Restaurant
Nobil True Value Hardware Store
McDonald's
Kentucky Fried Chicken
Northgate Plaza
Mobil Gas Station

APPENDIX A
FIELD SAMPLING PROTOCOLS
QUALITY ASSURANCE/ QUALITY CONTROL
GOLDMAN ENVIRONMENTAL CONSULTANTS, INC.

PURPOSE:

The purpose of the GEC QA/QC program is to generate analytical data that is of known and defensible quality. These procedures apply to all projects in which sampling is involved. QA/QC from one project is not transferable to another.

DECONTAMINATION:

a) Decontamination should be performed on all reusable field sampling equipment and protective gear. Sampling equipment should be decontaminated before and after the collection of a sample. Protective gear should be decontaminated after the collection of a sample.

b) It is necessary to use the following decontamination solutions in the field:

1. Non-phosphate detergent plus tap water wash.
2. Distilled/ deionized water rinse.
3. 10% Nitric Acid rinse.*
4. Distilled/ deionized water rinse.*
5. Methanol or hexane and acetone rinseas appropriate.**
6. Distilled/ deionized water rinse. **

* Only if sample is to be analyzed for metals.
** Only if sample is to be analyzed for organics.

c) Sample bottles and sampling equipment should not be stored near gasoline, solvents, or other potential sources of contamination.

d) Heavy equipment should be cleaned by steam cleaning or manual scrubbing prior to use in hazardous waste investigations.

MEASURES OF QUALITY CONTROL/ QUALITY ASSURANCE

1. Trip Blanks

a)Trip blanks are used in order to detect additional sources of contamination that might affect analytical results. The following are potential sources of additional contamination:
1) Sample containers,
2) Contamination during shipment to and from the site,
3) Ambient air contact with analytical instrumentation at the laboratory during analysis, or
4) Laboratory reagent used in analytical procedures.

b) One trip blank is required for every set of samples sent to the lab regardless of job size. Generally, the trip blank should be for VOCs. If, however, VOCs are not a parameter of the sampling round, consult the laboratory as to which parameter should have an associated trip blank.

c) Trip blanks are to be kept with containers used in the sampling round at all times. More specifically, they should accompany the site specific sampling containers from the time the containers leave the laboratory until they are returned for analysis.

d) Obtain containers and trip blanks prepared specifically for each job from the laboratory. Return unused containers to the laboratory upon completion of a project.

2. Field Blanks (Not used)

a) Field blanks are used to indicate potential contamination contracted from ambient air or from sampling equipment. It also serves as a QA/QC for decontamination procedures.

b) Collect one set of field blanks for every 20 samples per project. It is not necessary to take a field blank for jobs in which less than 10 samples are collected.

c) Procedure

1) Collect two sets of sample containers to cover all sampling parameters. One set will be full of analyte free water (obtain extra analyte free water to fill two VOA vials). The other set is empty.
2) Go to the most contaminated area and run the water from the full containers, through the sampling equipment and into the associated empty containers.
3) Send to the lab for analysis.

d) Use containers and field blanks prepared specifically for job.

3.Duplicate Samples

a) Duplicate samples are collected in order to serve as a laboratory check. Therefore, it is important that the lab does not know which samples are to serve for this purpose.

a) Frequency
1) Obtain one (1) duplicate sample for every 10 samples of each matrix. If less than ten samples are collected of a given matrix, a duplicate must be collected anyway.
2) If a total of less than 10 samples are collected, collect one (1) duplicate of the majority medium.

3) If a total of less than five (5) samples are collected, it is not necessary to collect a duplicate sample.

* Note that the frequency as outlined here pertains to the number of samples collected per project, not per location of a given project.

b)Procedures

The idea behind the duplicate sample is to collect two samples as close to identical as possible.

1)For water

Alternately fill containers for the same parameter with equal amounts of liquid per bailer. Fill duplicate VOC vials from the same bailer of liquid.

2)For soil

a) VOC samples must be taken from the discreet sampling locations.
b) For all other samples, mix the applicable soil in a decontaminated stainless steel or polyethylene bowl or tray. Then fill sample containers with the soil mix.
c) When confronted with the option of collecting a water sample or a soil sample, choose the water sample.

c) Labeling for the laboratory

1) Label the containers normally and give the duplicate samples different reference numbers.

2) Indicate the quantity of duplicates in the "special instructions" or "remarks" portion of the chain of custody and laboratory services sheet, however, do not indicate the reference numbers of the duplicates.

3) Upon receipt of analytical results, contact the laboratory and convey all data pertaining to the duplicates for their QA/QC. This is a cooperation we wish to form with the laboratory.

4. Background samples (Not used)

Background samples are taken only if it is required for comparison of site conditions to the surrounding environment. This is to be dictated by client needs on a site by site basis.

5. Performance Evaluation Samples (Not used)

The project manger should consider the use of the following performance evaluation samples on a periodic basis. Typically, these will be reserved for larger jobs:

1) Laboratory performance evaluation samples

   a) Collect duplicate samples and send to two different laboratories for comparison. Avoid using soil samples for this procedure.
   b) Send a sample of known quantity and quality to the laboratory in order to determine laboratory performance. Such samples can be prepared by any laboratory.

2) Gas chromatograph (GC) performance evaluation samples

   a) Acquire a sample of known quantity and quality from a laboratory. Analyze the sample with the gas chromatograph in order to determine the integrity of GC results.

FIELD SAMPLING QA/QC

1) When sampling a well, collect VOA samples first and oil & grease samples last.

2) Start sampling at the presumed least contaminated areas, proceeding to the more contaminated areas.

3) Preservatives

   a) Consult the laboratory in order to determine which sampling parameters require preservatives. The laboratory will provide sampling containers specific for each job.
   b) It is necessary to fill the sample container when using preserved bottles; preservative is added with this assumption
   c) If samples are not collected correctly, they will not pass GEC QA/QC.

4) A chain-of-custody must accompany each set of samples from the job site to the laboratory. Be sure to identify the presence of trip blanks on the chain-of-custody sheets.

5) If possible, use the numbering system outlined on the attached sheet for identifying samples.

GEC *Goldman Environmental Consultants, Inc.*

GROUNDWATER OBSERVATION WELL REPORT

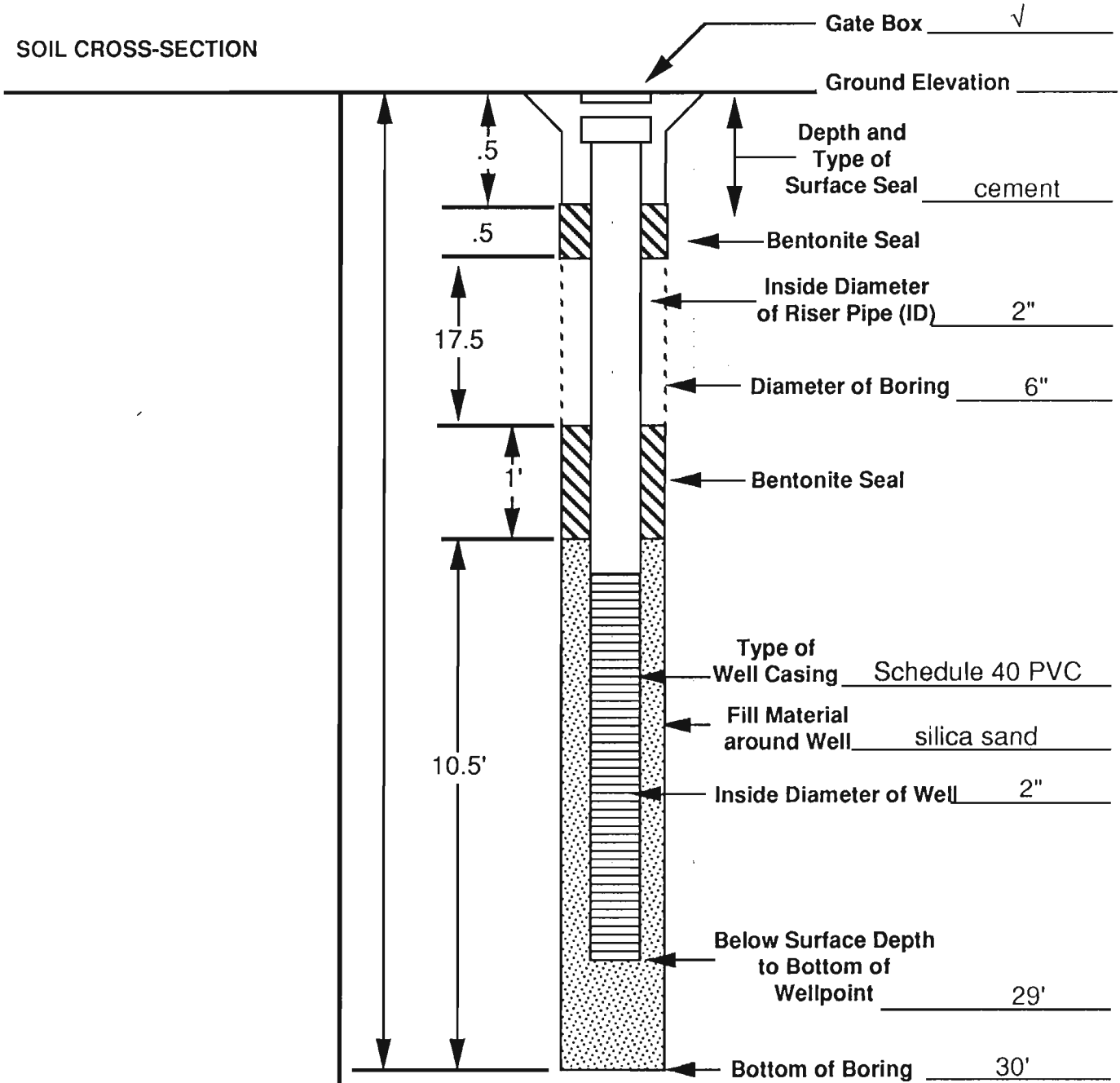
PROJECT: Northway Plaza **PROJECT #** 365-001-89

LOCATION: Route 9, Queensbury, New York

CONTRACTOR: Empire Soils **DRILLER:** M. Walpole **INSPECTOR:** Brad Carso/Patty Bryan

BORING # B-1 **WELL #** GEC-1 **INSTALLATION DATE:** 9/8/89

SOIL CROSS-SECTION



NOT TO SCALE

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-1
Northway Plaza	Date
# 365-001-89	Sheet 1 of 2

Boring Contractor Empire Soils **Boring Location** Along Rt. 9 next to Northway Plaza sign

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80°Sunny

GEC Engineer Brad Carso/Patty Bryan **Date Started** 9/7/89 **Date Completed** 9/7/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time
9/7	23'		30 min.
9/13	21'		6 days

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
				4-6"	off auger	2" Black Top			.4 ppm
1		S1	18/8	.5					
						Brown fine & very fine sand			
				2.0	25				
2					18				
3					16				
4									
		S2	24/16	4.5'	17	Brownvery fine sand and some silt			0 ppm
5					10				
					7				
6				6.5	4				
7									
8									
9									
		S3	24/18	9.5'	10	1"-3"Dark very fine sand with some gravel 3"-18"Brown sand			0 ppm
10					5				
				11.5'	14				
11					14				
12									
13									
14									
		S4	24/15	15	43	Brown very fine sand and silt			
15					48		water table		0 ppm
					59				
16					56				
17				17					
18									
19									
20									

GEC *Goldman Environmental Consultants, Inc.*

PROJECT Northway Plaza
365-001-89

BORING LOG # B-1
Date 9/7/89
Sheet 2 **of** 2

Boring Contractor Empire Soils
Boring Location
Foreman M. Walpole
Ground Elev.
Weather 80°Sunny
GEC Engineer Brad Carso/Patty Bryan
Date Started 9/7/89
Date Completed 9/7/89

CASING
Size: HSA 4.25"
Hammer: lb.
Fall:

SAMPLER
Type: Split Spoon **Other:**
Hammer: 140 lb.
Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
		S5	24/18	20	13	Brown silt and very fine sand and gravel			0 ppm
					40				
				22	20				
22					18				
23									
24									
		S6	18/12	25	16	1-6 Silt and very fine sand 6-12 Very fine sand and silt			0 ppm
25					21				
					14				
26									
27				27					
28									
29									
		S7	24/22	30	7	Fine and medium sand some very fine sand wet			0 ppm
30					4				
					5				
31				32	4				
32									
33									
34									
35									
36									
37									
38									
39									
40									

GEC *Goldman Environmental Consultants, Inc.*

GROUNDWATER OBSERVATION WELL REPORT

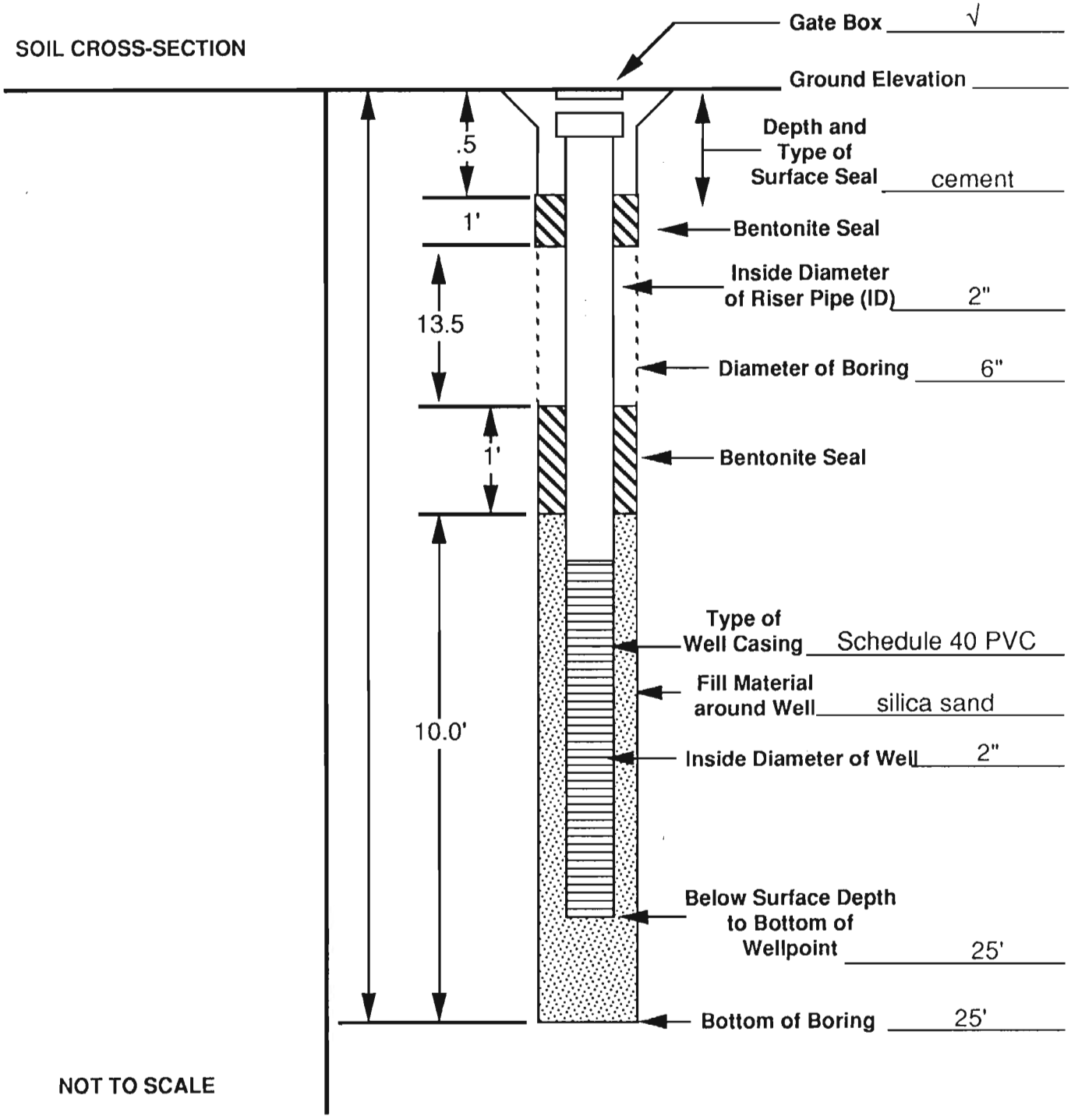
PROJECT: Northway Plaza **PROJECT #** 365-001-89

LOCATION: Route 9, Queensbury, New York

CONTRACTOR: Empire Soils **DRILLER:** M. Walpole **INSPECTOR:** Brad Carso/Patty Bryan

BORING # B-2 **WELL #** GEC-2 **INSTALLATION DATE:** 9/8/89

SOIL CROSS-SECTION



NOT TO SCALE

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-2
Northway Plaza	Date 9/7/89
# 365-001-89	Sheet 1 of 2

Boring Contractor Empire Soils **Boring Location** Down gadient to septic # 2

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80°Sunny

GEC Engineer Brad Carso/ Patty Bryan **Date Started** 9/7/89 3:00 pm **Date Completed** 9/7/89 5:30 pm

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time
9/7	16'		0
9/13	19'		6 days

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	SAMPLE Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
1				.5		Black Top			0 ppm
			24/12			Brown fine & very fine sand			
2				2.0	8				
					16				
3					21				
					26				
4		S1	off auger			1-3 overburden			0 ppm
		S2	24/15	5	5	3-15 light brown fine and very fine sand			
5					7				
					6				
6					7				
7				7					
8									
9									
10		S3	24/15	10	5	1-3 overburden			0 ppm
					7	Brown very fine sand and silt			
11					7				
12				12					
13									
14									
		S4	24/15	15	9	1-3 overburden			0 ppm
15					13	3-15 brown sand silt and very fine sand	water table ▼		
					8				
16					9				
17				17					
18									
19									
20									

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-2
Northway Plaza	Date 9/7/89
# 365-001-89	Sheet 2 of 2

Boring Contractor Empire Soils **Boring Location** Down gradient of septic #2

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80°Sunny

GEC Engineer Brad Carso/ Patty Bryan **Date Started** 9/7/89 3:00 pm **Date Completed** 9/7/89 5:30 pm

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
20		S5	24/14	20	6	Brown very fine sand and silt			0ppm
21					7				
				22	12				
22					5				
23									
24									
25		S6	24/15	25	5	Brown very fine sand; wet			0 ppm
					7				
26					8				
					13				
27				27					
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

GEC *Goldman Environmental Consultants, Inc.*

GROUNDWATER OBSERVATION WELL REPORT

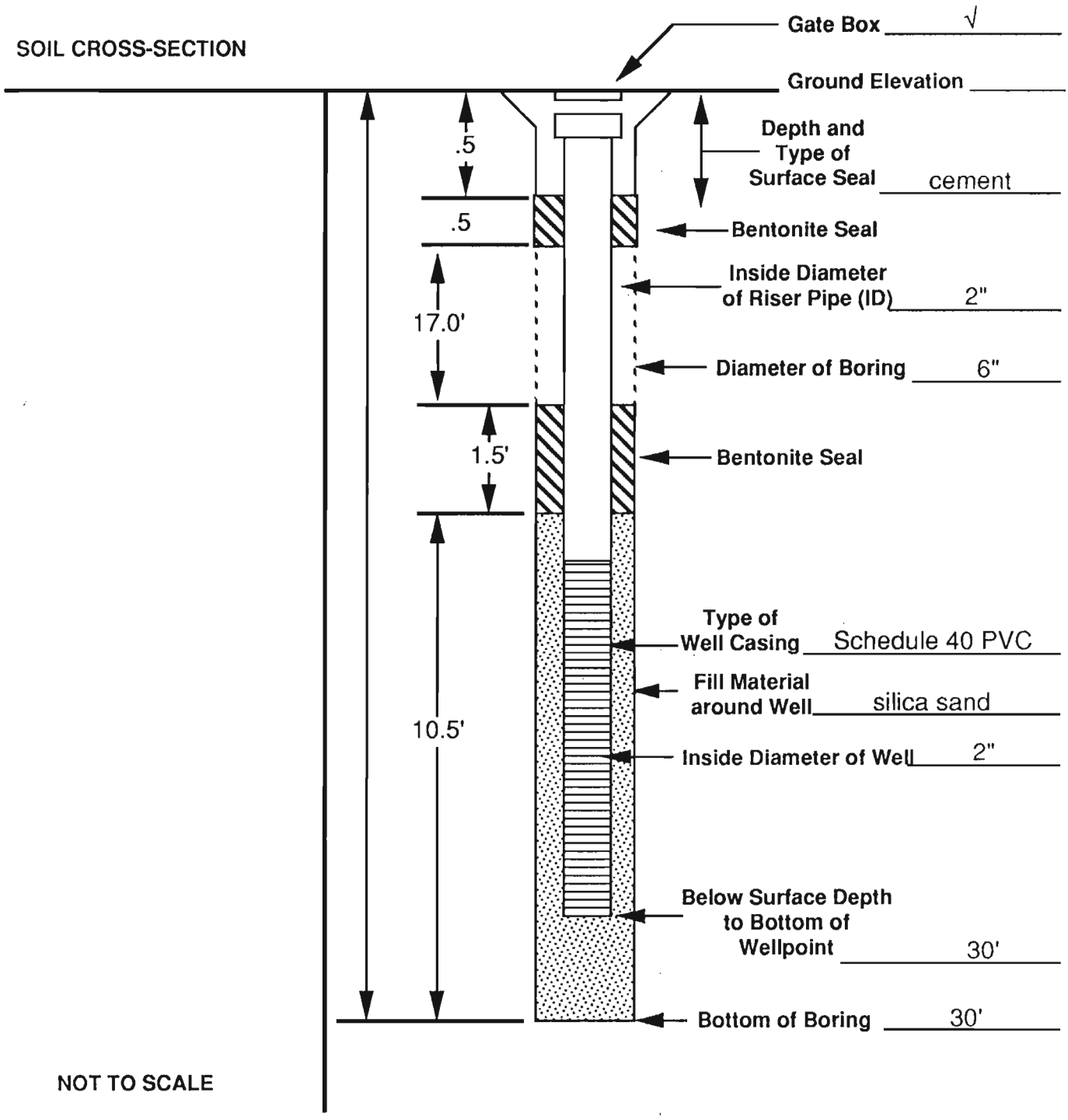
PROJECT: Northway Plaza **PROJECT #** 365-001-89

LOCATION: Route 9, Queensbury, New York

CONTRACTOR: Empire Soils **DRILLER:** M. Walpole **INSPECTOR:** Brad Carso/Patty Bryan

BORING # B-3 **WELL #** GEC-3 **INSTALLATION DATE:** 9/9/89

SOIL CROSS-SECTION



NOT TO SCALE

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-3
Northway Plaza	Date 9/8/89
# 365-001-89	Sheet 1 of 2

Boring Contractor Empire Soils **Boring Location** Parking lot septic #3

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80°Sunny

GEC Engineer Brad Carso/Patty Bryan **Date Started** 9/8/89 7:40 am **Date Completed** 9/8/89 11:30 am

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time
9/8	24'		0
9/13	22'		5 days

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
				3		Asphalt			0 ppm
1		S1	18/14	.5	26				
					20	Brown fine & very fine sand; some gravel			
2				2	23				
3									
4									
5		S2	24/14	5	65	1-6 silt and very fine sand			0 ppm
					72				
6					40	6-14 fine & very fine sand			
7				7					
8									
9									
10		S3	24/14	10	12	Very fine sand & silt			0 ppm
					20				
11					20				
					22				
12				12					
13									
14									
15		S4	24/15	15	17	Very fine sand; some silt			0 ppm
					10				
16					11				
					12				
17				17					
18									
19									
20									

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-3
Northway Plaza	Date 9/8/89
# 365-001-89	Sheet 2 of 2

Boring Contractor Empire Soils **Boring Location** septic #3

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80°Sunny

GEC Engineer Brad Carso **Date Started** 9/8/89 7:40 am **Date Completed** 9/8/89 11:30 am

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
20		S5	24/14	20	9	Brown very fine sand and silt			0ppm
21					16				
				22	17				
22					18				
23							water table		
24									
25		S6	24/12	25	4	Brown silt and very fine sand			0 ppm
					4				
26					5				
					11				
27				27					
28									
29									
30		S7	24/23	30		wet fine and very fine sand			0 ppm
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

GEC *Goldman Environmental Consultants, Inc.*

GROUNDWATER OBSERVATION WELL REPORT

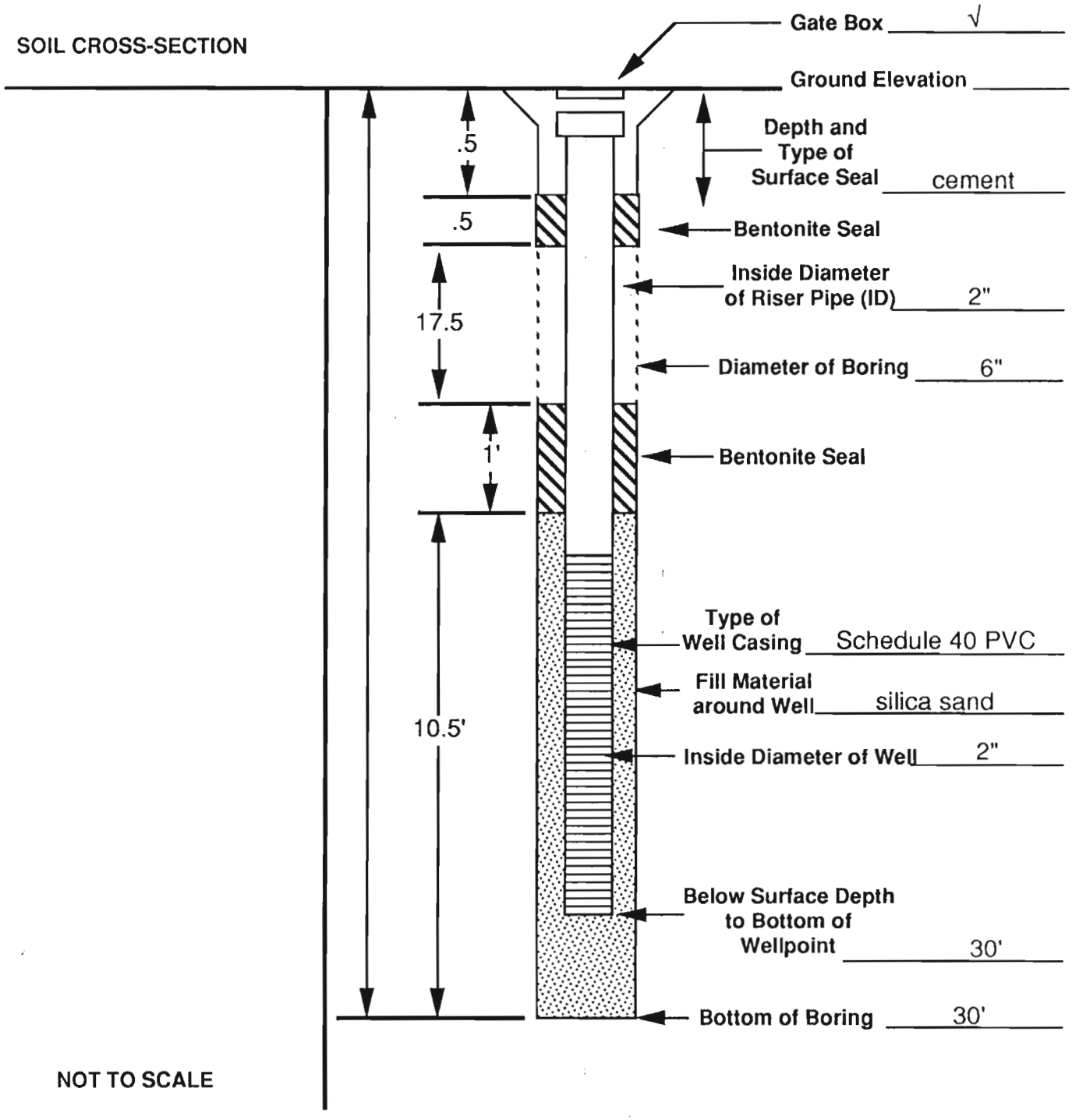
PROJECT: Northway Plaza **PROJECT #** 365-001-89

LOCATION: Route 9, Queensbury, New York

CONTRACTOR: Empire Soils **DRILLER:** M. Walpole **INSPECTOR:** Brad Carso/Patty Bryan

BORING # B-4 **WELL #** GEC-4 **INSTALLATION DATE:** 9/9/89

SOIL CROSS-SECTION



NOT TO SCALE

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-4
Northway Plaza	Date 9/8/89
# 365-001-89	Sheet 1 of 2

Boring Contractor Empire Soils **Boring Location** Near Convenient Medical Care/ old UST site

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80°Sunny

GEC Engineer Brad Carso/ Patty Bryan **Date Started** 9/8/89 **Date Completed** 9/8/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time
9/8	24'		0
9/13	22"		5 days

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
				0		Asphalt			0 ppm
1		S1	24/6		4	very fine sand			
					6	some silt with			
2				2	10	dark brown stains			
					8				
3									
4									
5		S2	24/14	5	4	Brown to lt. brown			0 ppm
					3	fine sand			
6					2				
					2				
7				7					
8									
9									
		S3	24/18	9.5	4	Brown to lt. brown			0 ppm
10					4	fine sand			
					6				
11					9				
				11.5					
12									
13									
14									
		S4	24/18	14.5	5	brown very fine sand			0 ppm
15					10				
					11				
16					10	brown clay some silt			
				16.5					
17									
18									
19									
20									

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-4
Northway Plaza	Date 9/8/89
# 365-001-89	Sheet 2 of 2

Boring Contractor Empire Soils **Boring Location** Near Convenient Medical Center

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80°Sunny

GEC Engineer Brad Carso/Patty Bryan **Date Started** 9/8/89 **Date Completed** 9/8/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
20		S5	24/12	19.5	13	Silt and clay grading to tan very fine sand moist			600 ppm
21				21.5	28				
					35				
22					40				
23									
24							water table ▼		
25		S6	24/18	24.5	7	Brown very fine sand; some silt: very moist			500ppm
					10				
26					19				
				26.5	15				
27									
28									
29									
		S7	24/8"	29.5	5	wet brown very fine sand; some silt			5 ppm
30					8				
					8				
31					7				
				31.5					
32									
33									
34									
35									
36									
37				37					
38									
39									
40									

GEC *Goldman Environmental Consultants, Inc.*

GROUNDWATER OBSERVATION WELL REPORT

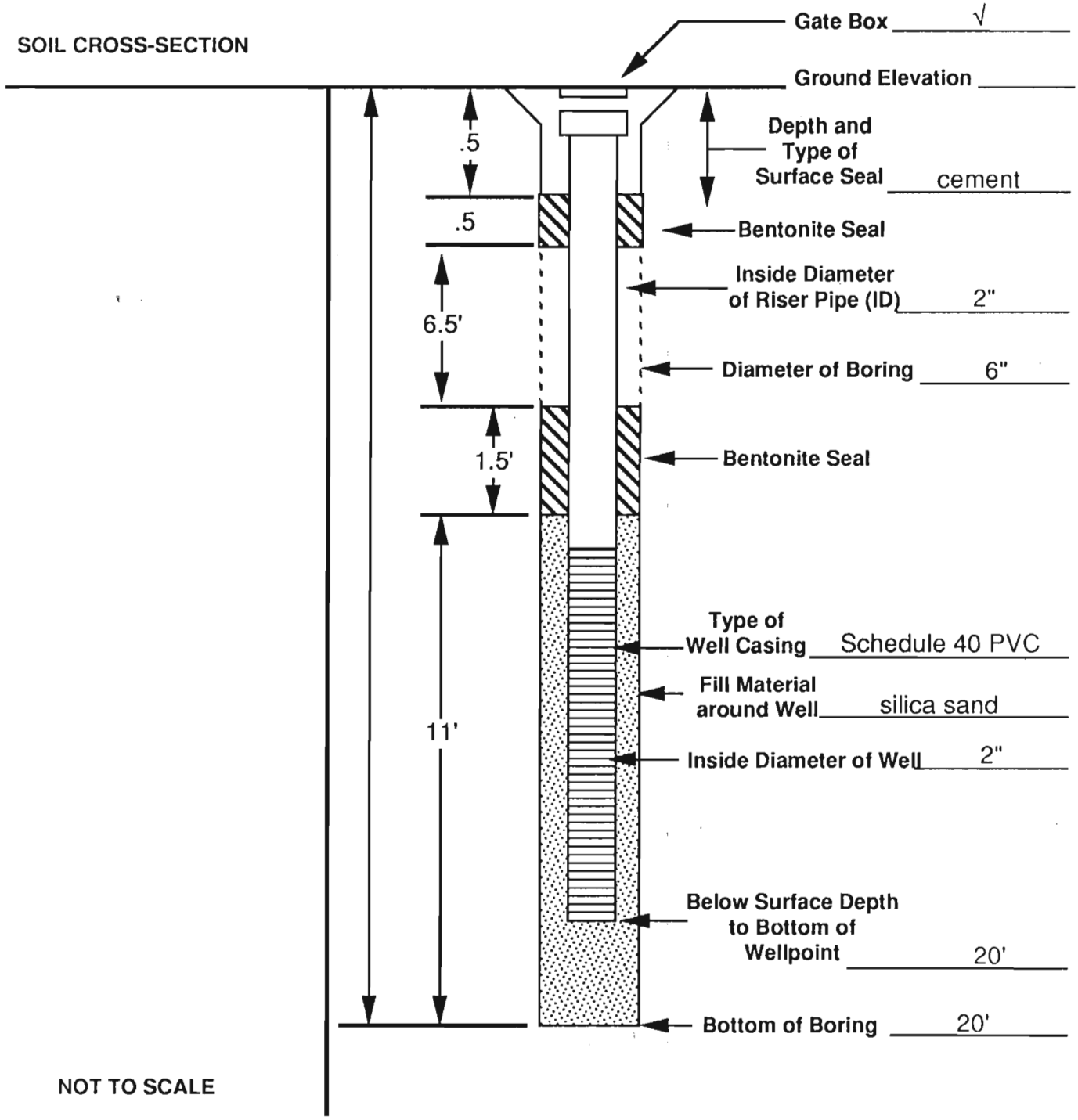
PROJECT: Northway Plaza **PROJECT #** 365-001-89

LOCATION: Route 9, Queensbury, New York

CONTRACTOR: Empire Soils **DRILLER:** M. Walpole **INSPECTOR:** Brad Carso

BORING # B-5 **WELL #** GEC-5 **INSTALLATION DATE:** 9/11/89

SOIL CROSS-SECTION



NOT TO SCALE

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-5
Northway Plaza	Date 9/11/89
# 365-001-89	Sheet 1 of 2

Boring Contractor Empire Soils **Boring Location** Septic #1

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80°Sunny

GEC Engineer Brad Carso **Date Started** 9/11/89 **Date Completed** 9/11/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time
9/11	13'		0
9/13	15'		2 days

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. Inches	SAMPLE Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
				0		Asphalt			0 ppm
1		S1	24/6		4	topsoil			
					6	some gravel			
2				2	10	fine sand			
					8				
3									
4									
5		S2	24/14	5	4	0"-2" topsoil			0 ppm
					3	2"-8"Dark brown			
6					2	fine & very fine			
					2	sand			
7				7		8"-14" Lt. brown fine			
8						sand			
9									
		S3	24/12	9.5	4	Brown /red fine and			0 ppm
10					4	very fine sand			
					4				
11					5				
				11.5					
12									
13							water table		
14									
		S4	24/18	14.5	4	0"-2" overburden			0 ppm
15					7	2"-4" Brown/ red fine			
					6	and very fine sand			
16					8	4"-12" gray very fine			
				16.5		sand & silt			
17						12"-14" light brown			
18						clay			
						14"-18" gray very fine			
19						sand & silt			
20									

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-5
Northway Plaza	Date 9/11/89
# 365-001-89	Sheet 2 of 2

Boring Contractor EmpireSoils **Boring Location** Septic #1

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80°Sunny

GEC Engineer Brad Carso **Date Started** 9/11/89 **Date Completed** 9/11/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
20		S5	24/12	19.5	3	0"-6" brown very fine and fine sand 6"-7"black very fine sand and silt 7"-12" gray very fine sand and silt			0ppm
21				21.5	3				
					6				
22					8				
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

GEC *Goldman Environmental Consultants, Inc.*

GROUNDWATER OBSERVATION WELL REPORT

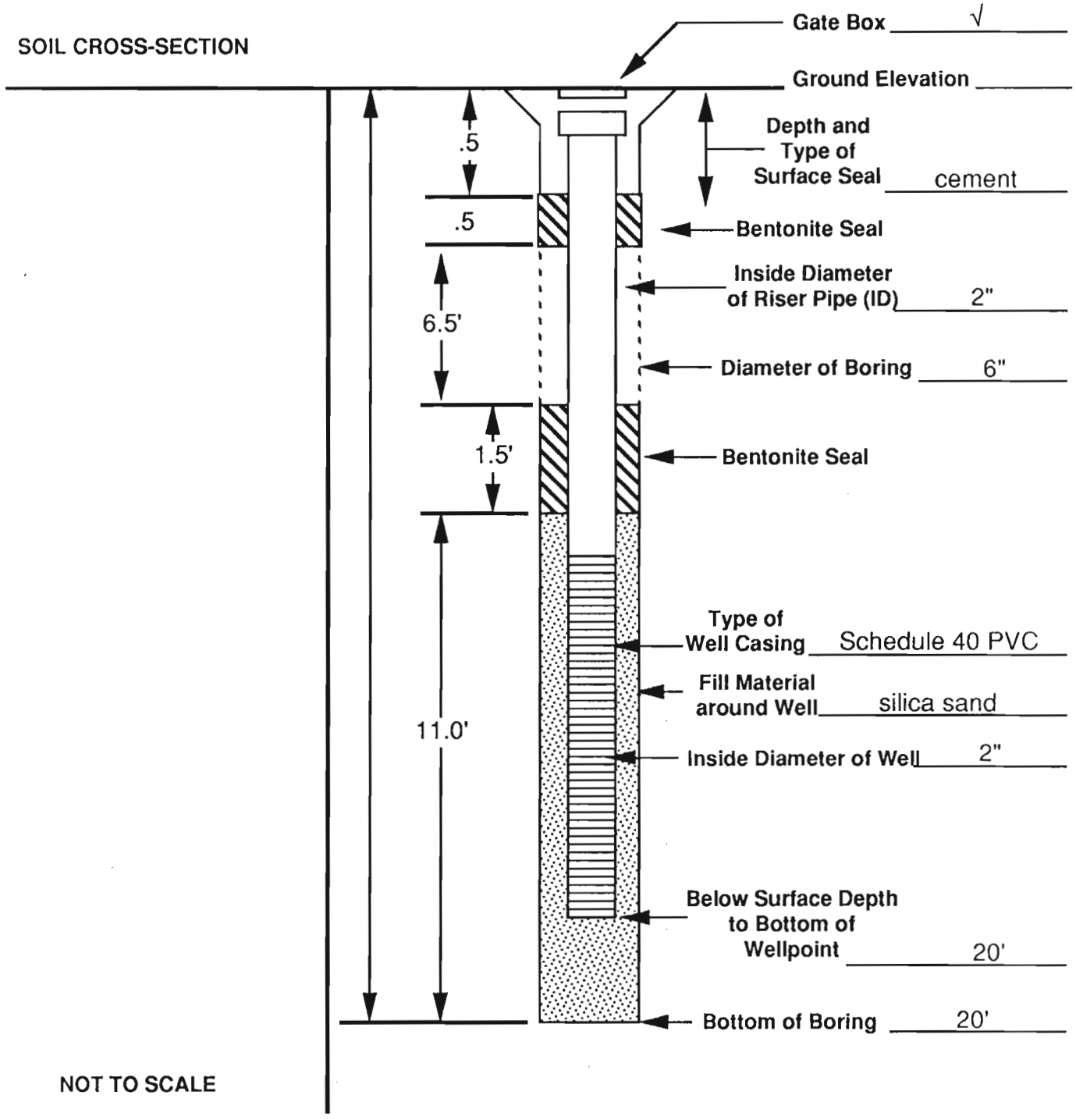
PROJECT: Northway Plaza **PROJECT #** 365-001-89

LOCATION: Route 9, Queensbury, New York

CONTRACTOR: Empire Soils **DRILLER:** M. Walpole **INSPECTOR:** Brad Carso

BORING # B-6 **WELL #** GEC-6 **INSTALLATION DATE:** 9/11/89

SOIL CROSS-SECTION



NOT TO SCALE

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-6
Northway Plaza	Date 9/11/89
# 365-001-89	Sheet 1 of 2

Boring Contractor Empire Soils **Boring Location** UST by shed in back

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80°Sunny

GEC Engineer Brad Carso **Date Started** 9/11/89 **Date Completed** 9/11/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time
9/11	13'		0
9/13	12'		2 days

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	SAMPLE Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
				0		Asphalt			0 ppm
1		S1	18/7		8	Brown very fine sand & silt			
					7				
2					8				
3									
4									
5		S2	24/12	5	6	Brown very fine sand and silt			0 ppm
					4				
6					4				
					6				
7				7					
8									
9									
						Brown very fine & fine sand			0 ppm
10		S3	24/12	10	8				
					6				
11					9				
12				12	10		water table		
13									
14									0 ppm
15		S4	24/18	15		0"-12" very fine sand & silt			
16									
						12-"-24" Brown silt & very fine sand			
17				17					
18									
19									
20									

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-6
Northway Plaza	Date 9/11/89
# 365-001-89	Sheet 2 of 2

Boring Contractor Empire Soils **Boring Location** UST by shed in back

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80°Sunny

GEC Engineer Brad Carso **Date Started** 9/11/89 **Date Completed** 9/11/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
20		S5	18/10	20	1	Brown silt & very fine sand			0 ppm
21					4				
				21.5	7				
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

GEC *Goldman Environmental Consultants, Inc.*

GROUNDWATER OBSERVATION WELL REPORT

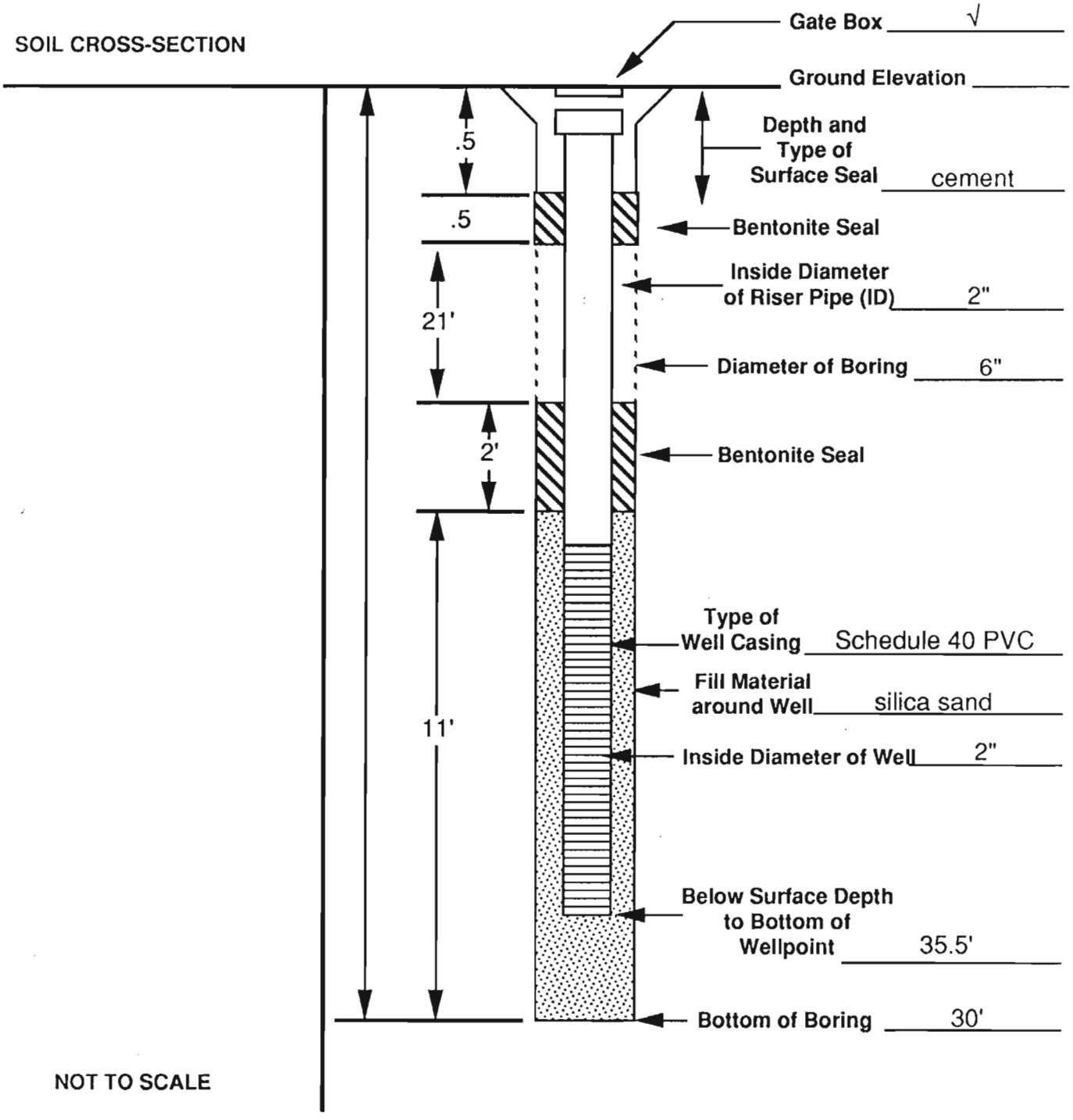
PROJECT: Northway Plaza **PROJECT #** 365-001-89

LOCATION: Route 9, Queensbury, New York

CONTRACTOR: Empire Soils **DRILLER:** M. Walpole **INSPECTOR:** Brad Carso

BORING # B-7 **WELL #** GEC-7 **INSTALLATION DATE:** 9/11/89

SOIL CROSS-SECTION



NOT TO SCALE

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-7
Northway Plaza	Date 9/11/89
# 365-001-89	Sheet 1 of 2

Boring Contractor Empire Soils **Boring Location** By dumpster on back ridge

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80° overcast

GEC Engineer Brad Carso **Date Started** 9/11/89 **Date Completed** 9/11/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time
9/11	30'		1 hour
9/13	29'		2 days

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	SAMPLE Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
				0		Asphalt			0 ppm
1		S1	24/6		8	Brown very fine sand			
					10				
2				2	12				
					14				
3									
4									
5		S2	24/14	5	1				0 ppm
					2	Brown very fine sand & silt			
6					2				
					2				
7				7					
8									
9									0 ppm
10		S3	18/3	10	15	Asphalt chunks; some sand, some gravel			
11					14				
					2				
12				11.5					
13									
14									
									0 ppm
15		S4	24/18	15	3	Brown medium & fine sand			
16					3				
					3				
17				17	3				
18									
19									
20									

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-7
Northway Plaza	Date 9/8/89
# 365-001-89	Sheet 2 of 2

Boring Contractor Empire Soils **Boring Location** By dumpster on back ridge

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80°overcast

GEC Engineer Brad Carso **Date Started** 9/11/89 **Date Completed** 9/11/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. Inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
20		S5	24/8	20	5	0"-2" brown medium & fine sand			0 ppm
21					5				
					3	2"-8" tan very fine sand & silt			
22				22	5				
23									
24									
25									
		S6	24/22	25	8	0"-2" tan very fine sand & silt			0 ppm
26					8				
					8	2"-22" light brown very fine sand & silt			
27				27	7				
28									
29							water table ▼		
									0 ppm
30			no recovery	30	12	No sample			
31					12				
					11				
32				32	5				
33									
34									
35		S7	24/17	35	rod	Brown very fine sand & silt			0 ppm
36					2				
					2				
37				37	3				
38									
39									
40									

GEC *Goldman Environmental Consultants, Inc.*

GROUNDWATER OBSERVATION WELL REPORT

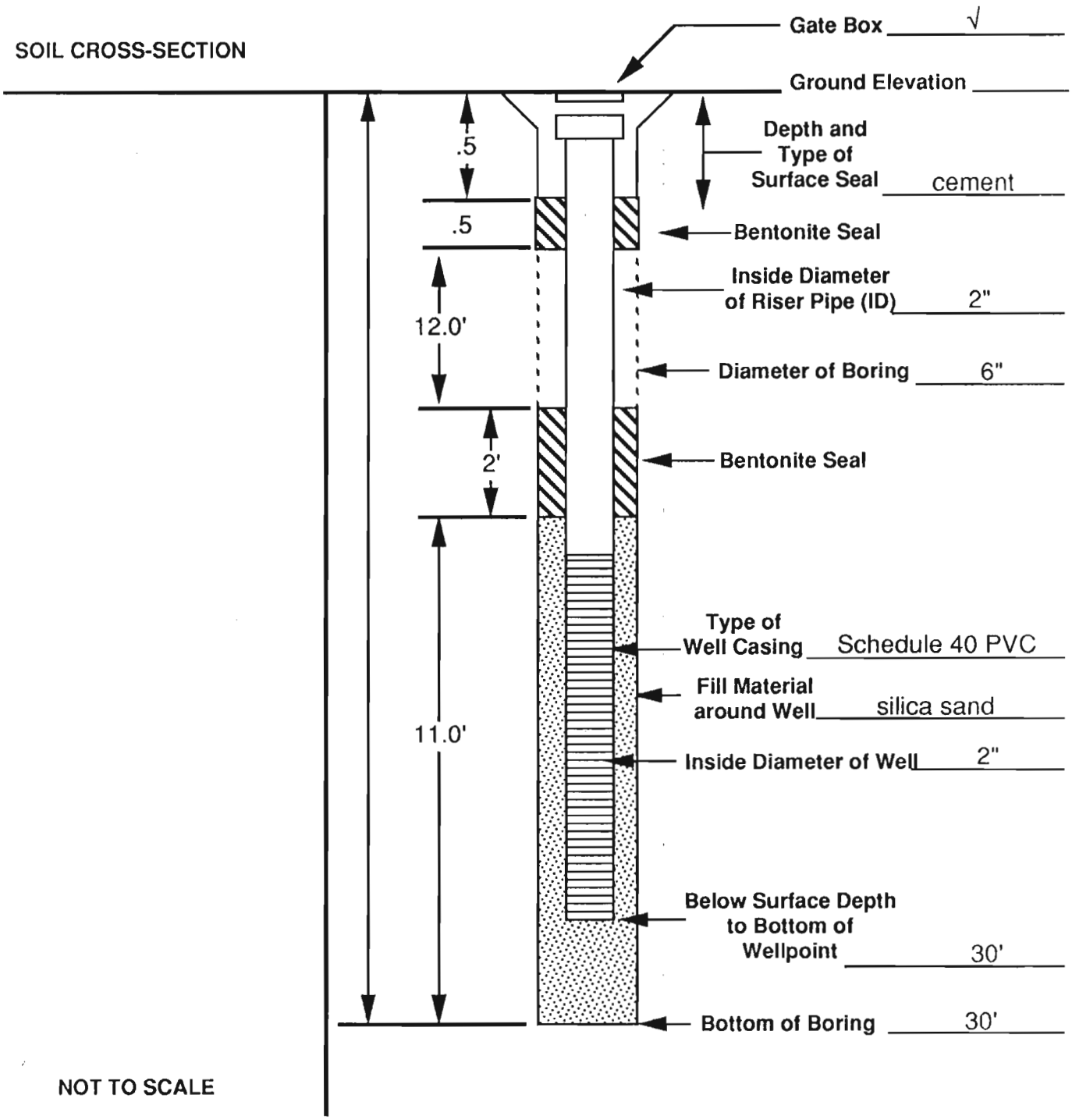
PROJECT: Northway Plaza **PROJECT #** 365-001-89

LOCATION: Route 9, Queensbury, New York

CONTRACTOR: Empire Soils **DRILLER:** M. Walpole **INSPECTOR:** Brad Carso

BORING # B-8 **WELL #** GEC-8 **INSTALLATION DATE:** 9/12/89

SOIL CROSS-SECTION



NOT TO SCALE

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-8
Northway Plaza	Date 9/11/89
# 365-001-89	Sheet 1 of 2

Boring Contractor EmpireSoils **Boring Location** Behind Monroe Muffler

Foreman M. Walpole **Ground Elev.** _____ **Weather** 80° overcast

GEC Engineer Brad Carso **Date Started** 9/11/89 **Date Completed** 9/12/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time
9/12	23'		0
9/13	25.5'		1 day

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	SAMPLE Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
				0		Asphalt			
1		S1	18/8		16	Brown medium & fine sand			0 ppm
					14				
2				2	18				
3									
4									
5									0 ppm
		S2	24/14	5	10	0"-7"Brown fine very fine & medium sand			
6					6				
					5				
7				7	5	7"-14"Dark brown very fine sand & silt			
8									
9									
									0 ppm
10		S3	24/14	10	13	0"-2" Dark brown very fine sand & silt			
11					8				
					5				
12				12	6	2"-12" Brown fine & very fine sand			
13									
14									
									0 ppm
15		S4	24/2	15	12	Brown silt & clay			
16					16				
					13				
17				17	9				
18									
19									
20									

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-8
Northway Plaza	Date 9/12/89
# 365-001-89	Sheet 2 of 2

Boring Contractor Empire Soils **Boring Location** Behind Monroe Muffler

Foreman M. Walpole **Ground Elev.** _____ **Weather** 75°sunny

GEC Engineer Brad Carso **Date Started** 9/11/89 **Date Completed** 9/12/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
20			10/0	20	65	No sample			0 ppm
21				20.8	100				
22							water table ▼		
23									
24									
25		S5	24/18	25	1	0"-2" very fine sand & silt			170 ppm
26					1	2"-12" brown silt & clay			
27				27	5	12"-18" brown very fine & fine sand			
28					7				
29									7 ppm
30		S6		30	12	0"-6" brown silt & clay			
31					12	6"-16" very fine sand & silt			
32				32	11				
33					5				
34									
35									
36									
37									
38									
39									
40									

GEC *Goldman Environmental Consultants, Inc.*

GROUNDWATER OBSERVATION WELL REPORT

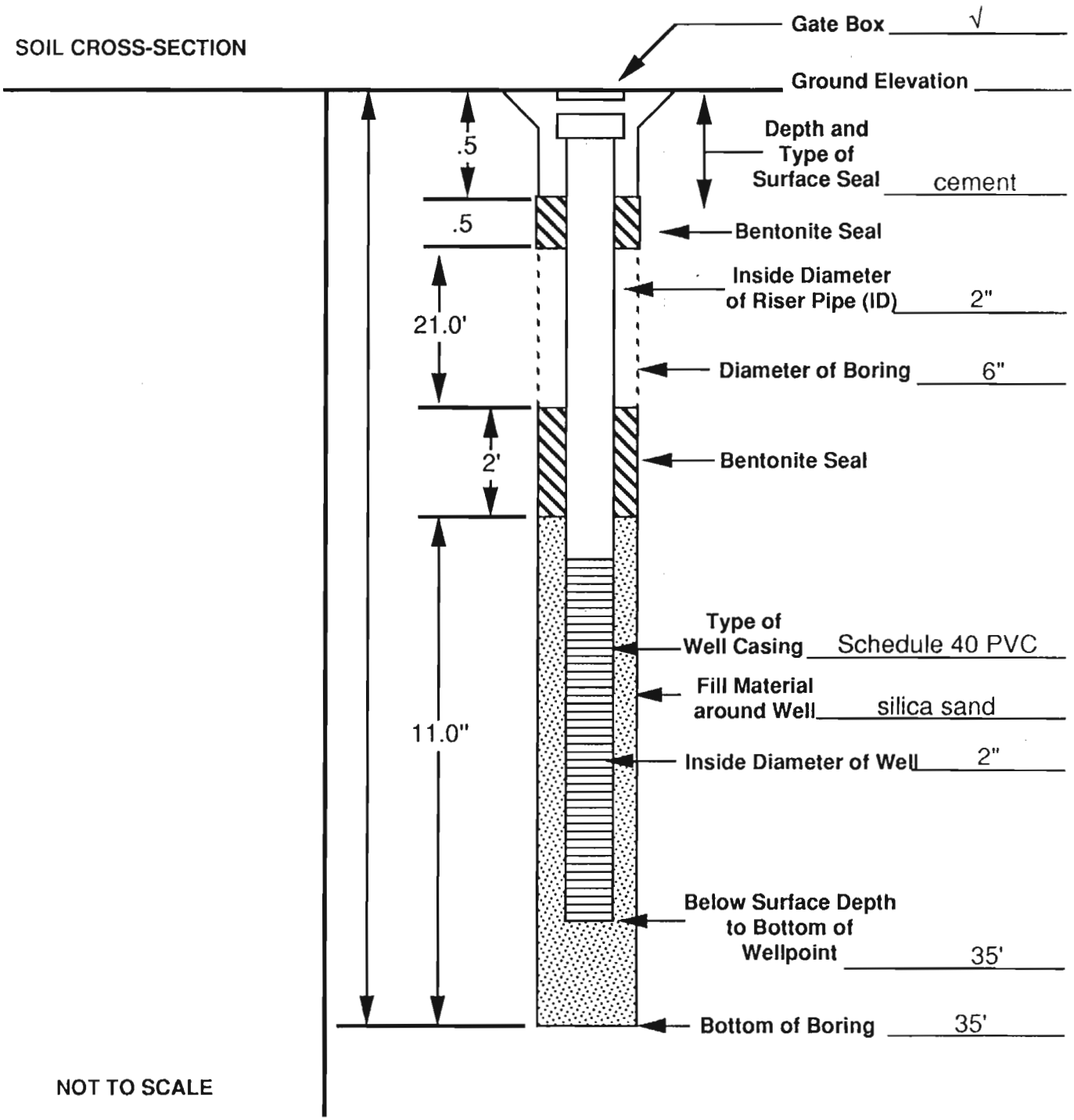
PROJECT: Northway Plaza **PROJECT #** 365-001-89

LOCATION: Route 9, Queensbury, New York

CONTRACTOR: Empire Soils **DRILLER:** M. Walpole **INSPECTOR:** Brad Carso

BORING # B-9 **WELL #** GEC-9 **INSTALLATION DATE:** 9/12/89

SOIL CROSS-SECTION



NOT TO SCALE

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-9
Northway Plaza	Date 9/12/89
# 365-001-89	Sheet 1 of 2

Boring Contractor Empire Soils **Boring Location** Behind T.V. Data building

Foreman M. Walpole **Ground Elev.** _____ **Weather** 75° sunny

GEC Engineer Brad Carso **Date Started** 9/12/89 **Date Completed** 9/12/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time
9/12	30'		0
9/13	31'		1 day

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
				0		Asphalt			0 ppm
1		S1	18/5		37	Brown fine & very fine sand			
					11				
2				2	15				
3									
4									
5									0 ppm
		S2	24/9	5	6	Brown fine & very fine sand			
6					3				
					3				
7				7	2				
8									
9									
									0 ppm
10		S3	24/18	10	11	0"-6"" Brown fine & very fine sand			
11					11				
					11	6"-12 Dark brown very fine sand & silt			
12				12	10				
13						12"-18" Tan very fine sand			
14									
									0 ppm
15		S4	24/2	15	3	Brown fine & very fine sand			
16					7				
					7				
17				17	9				
18									
19									
20									

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-9
Northway Plaza	Date 9/8/89
# 365-001-89	Sheet 2 of 2

Boring Contractor EmpireSoils **Boring Location** Behind T.V. Data building

Foreman M. Walpole **Ground Elev.** _____ **Weather** 75°Sunny

GEC Engineer Brad Carso **Date Started** 9/12/89 **Date Completed** 9/12/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
20		S5	24/20	20	4	Brown & gray clay & silt			0 ppm
21					3				
					2				
22				32	3				
23									
24									
25									170 ppm
		S-6	24/10	25	5	Brown & gray clay & silt			
26					16				
					8				
27				27	8				
28									
29							water table		7 ppm
30		S-7		30	25	0"-2" Brown & gray clay			
					18	2"-6" Gray silt & very fine sand			
31					24				
32				32	15				
33									
34									
35		S8	24/12	35	12	0"-2" overburden 2"-6" black silt 6"-12 Brown very fine sand & silt			
36					3				
					4				
37					7				
				37					
38									
39									
40									

GEC *Goldman Environmental Consultants, Inc.*

GROUNDWATER OBSERVATION WELL REPORT

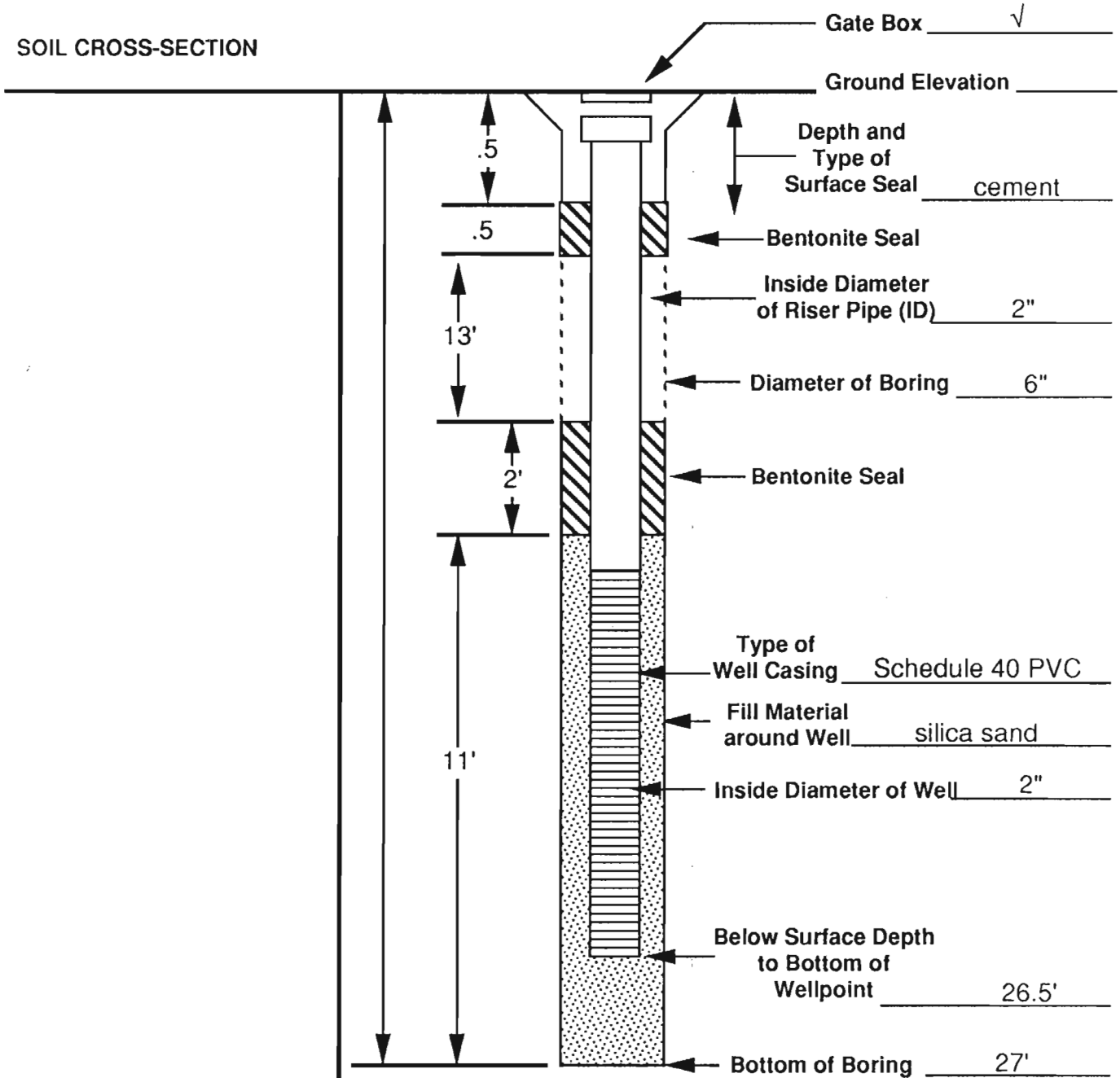
PROJECT: Northway Plaza **PROJECT #** 365-001-89

LOCATION: Route 9, Queensbury, New York

CONTRACTOR: Empire Soils **DRILLER:** M. Walpole **INSPECTOR:** Brad Carso

BORING # B-10 **WELL #** GEC-10 **INSTALLATION DATE:** 9/12/89

SOIL CROSS-SECTION



NOT TO SCALE

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-10
Northway Plaza	Date 9/12/89
# 365-001-89	Sheet 1 of 2

Boring Contractor Empire Soils **Boring Location** Back road

Foreman M. Walpole **Ground Elev.** _____ **Weather** 75° sunny

GEC Engineer Brad Carso **Date Started** 9/12/89 **Date Completed** 9/12/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time
9/12	21'		0
9/13	22'		1 day

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
				0		Asphalt			0 ppm
1			no recovery			No sample			
2				2					
3									
4									
5									0 ppm
		S1	24/10	5	5	Brown very fine & fine sand			
6					6				
					5				
7				7	6				
8									
9									
									0 ppm
10		S2	24/18	10	3	0"-15" Brown very fine & fine sand			
11					4				
					5				
12				12	7	15"-18" Brown clay & silt			
13									
14									
									0 ppm
15		S3	24/18	15	4	0"-6" very fine sand & silt			
16					3	6"-17" Gray clay			
					4				
17				17	8	17"-18" Gray silt & very fine sand			
18									
19									
20									

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-10
Northway Plaza	Date 9/12/89
# 365-001-89	Sheet 2 of 2

Boring Contractor Empire Soils **Boring Location** Back road

Foreman M. Walpole **Ground Elev.** _____ **Weather** 75°Sunny

GEC Engineer Brad Carso **Date Started** 9/12/89 **Date Completed** 9/12/89

CASING

Size: HSA 4.25"

Hammer: _____ lb.

Fall: _____

SAMPLER

Type: Split Spoon **Other:**

Hammer: 140 lb.

Fall: 30"

Groundwater Readings

Date	Depth	Casing at	Stabilization Time

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec. inches	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING HNU
20		S4	24/18	20	6	Gray clay	water table ▼		0 ppm
21					8				
					9				
22					9				
				22					
23									
24									
25									0 ppm
		S5	24/12	25	1	Brown very fine sand & silt			
26					1				
					5				
27				27	7				
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

APPENDIX C
GEC PROTOCOL
JAR HEADSPACE ANALYTICAL SCREENING
FOR SOIL SAMPLES
USING A PHOTOIONIZATION DETECTOR (PID)

HNU HW-101 OR PHOTOVAC TIP

The following procedures were employed in the initial screening of soil samples for total ionizable compounds (TICs) utilizing a PID.

1) Place the sample in two clean 8 ounce (or larger) jars with an aluminum foil seal below the lid.

2) Allow the headspace to equilibrate for ten minutes. Shake the jars for 15 seconds prior to screening.

3) Remove the jar lid and puncture the foil seal with the sampling tip of the PID.

4) Record the highest reading observed on the PID. The highest response will generally occur after three to eight seconds. Repeat the procedure for the duplicate sample.

5) Compare the two readings. The readings should be within 10 to 20 percent. If screening results are above 10 ppm, two 40 ml VOA vials should be filled with the soil sample and clearly labelled. The sample should be subjected to additional volatile organic analysis via the portable gas chromatograph or a state certified analytical laboratory.

APPENDIX D
IONIZATION POTENTIALS (eV) FOR COMMON
INDUSTRIAL CHEMICALS DETECTED BY PHOTOVAC TIP AND GC

Acetaldehyde	10.21	2-bromothiophene	8.63
Acetamide	9.77	*m*-bromotoluene	8.81
Acetic acid	10.37	*o*-bromotoluene	8.79
Acetone	9.69	*p*-bromotoluene	8.67
Acetophenone	9.27	Butane	*10.63
Acetyl bromide	10.55	1,3-butadiene	9.07
Acetyl chloride	*11.02	2,3-butadione	9.23
Acrolein	10.10	1-butanethiol	9.14
Acrylonitrile	10.91	1-butene	9.58
Allyl alcohol	9.67	*cis*-2-butene	9.13
Ammonia	10.15	*trans*-2-butene	9.13
Aniline	7.70	3-butene nitrile	10.39
Anisole	8.22	*n*-butyl acetate	10.01
Benzaldehyde	9.53	*sec*-butyl acetate	9.91
Benzene	9.25	*n*-butyl alcohol	10.04
Benzenethiol	8.33	*n*-butyl amine	8.71
Benzonitrile	9.71	*sec*-butyl amine	8.70
Benzotrifluoride	9.68	*tert*-butyl amine	8.64
Biphenyl	8.27	*n*-butyl benzene	8.69
Bromine	10.55	*sec*-butyl benzene	8.68
Bromobenzene	8.98	*tert*-butyl benzene	8.68
1-bromobutane	10.13	*n*-butyl formate	10.50
2-bromobutane	9.98	1-butyne	10.18
1-bromo-2-chloroethane	*10.63	*n*-butyraldehyde	9.86
Bromochloromethane	*10.77	*n*-butyric acid	10.16
1-bromo-4-fluorobenzene	8.99	Chlorobenzene	9.07
1-bromo-2-methylpropane	10.09	1-chlorobutane	*10.67
2-bromo-2-methylpropane	9.89	2-chlorobutane	*10.65
1-bromopentane	10.10	1-chloro-2-fluorobenzene	9.16
1-bromopropane	10.18	1-chloro-3-fluorobenzene	9.21
2-bromopropane	10.08	1-chloro-2-methylpropane	*10.66
1-bromopropene	9.30	2-chloro-2-methylpropane	*10.61
3-bromopropene	9.70	1-chloropropane	*10.82

* Only detectable at high concentrations

Goldman Environmental Consultants, Inc.

2-chloropropane	*10.78	Diethyl ether	9.53
3-chloropropene	10.04	N,N-diethyl formamide	8.89
2-chlorothiophene	8.68	Diethyl ketone	9.32
m-chlorotoluene	8.83	Diethyl sulfide	8.43
o-chlorotoluene	8.83	Diethyl sulfite	9.68
p-chlorotoluene	8.70	Dihydropyran	8.34
Crotonaldehyde	9.73	1,1-dimethoxyethane	9.65
Cyclohexane	9.98	Dimethoxymethane	10.00
Cyclohexanone	9.14	Diiodomethane	9.34
Cyclohexene	8.95	Diisopropylamine	7.73
Cyclo-octatetraene	7.99	N,N-dimethyl acetamide	8.81
Cyclopentane	10.53	Dimethyl amine	8.24
Cyclopentanone	9.26	2,2-dimethyl butane	10.06
Cyclopentene	9.01	2,3-dimethyl butane	10.02
Cyclopropane	10.06	3,3-dimethyl butanone	9.17
Dedaborane	*11.00	Dimethyl ether	10.00
Dibromochloromethane	10.59	N,N-dimethyl formamide	9.12
Dibromodifluoromethane	*11.07	2,2-dimethylpropane	10.35
1,1-dibromoethane	10.19	Dimethyl sulfide	8.69
1,2-dibromoethene	9.45	*p*-dioxane	9.18
Dibromomethane	10.49	Dipropyl amine	7.84
1,3-dibromopropane	10.07	Dipropyl sulfide	8.30
m-dibromobenzene	9.12	Durene	8.03
o-dibromobenzene	9.07	Ethanethiol	9.29
p-dibromobenzene	8.94	Ethene	10.52
1,2-dichloroethane	*11.12	Ethyl acetate	10.11
cis-dichloroethene	9.65	Ethyl alcohol	10.48
trans-dichloroethene	9.66	Ethyl amine	8.86
Dichloromethane	*11.35	Ethyl benzene	8.76
1,2-dichloropropane	*10.87	Ethyl bromide	10.29
1,3-dichloropropane	*10.85	Ethyl chloride	*10.98
2,3-dichloropropene	9.82	Ethyl disulfide	8.27
Dibutyl amine	7.69	Ethylene oxide	10.57
Diethoxymethane	9.70	Ethyl formate	*10.61
N,N-diethyl acetamide	8.60	Ethyl iodide	9.33
Diethyl amine	7.69	Ethyl isothiocyanate	9.14

* Only detectable at high concentrations

Ethyl methyl sulfide	8.55	Isobutyl acetate	9.97
Ethyl propionate	10.00	Isobutyl formate	10.46
Ethyl thiocyanate	9.89	Isobutyraldehyde	9.74
Ethynylbenzene	8.82	Isobutyric acid	10.02
Fluorobenzene	9.20	Isopentane	10.32
o-fluorophenol	8.66	Isoprene	8.85
m-fluorotoluene	8.92	Isopropyl acetate	9.99
o-fluorotoluene	8.92	Isopropyl alcohol	10.16
p-fluorotoluene	8.79	Isopropyl amine	8.72
Formaldehyde	*10.87	Isopropyl benzene	8.69
Formamide	10.25	Isopropyl ether	9.20
Formic acid	*11.05	Isovaleraldehyde	9.71
2-furaldehyde	9.21	2,3-lutidine	8.85
Furan	8.89	2,4-lutidine	8.85
Hexane	10.18	2,6-lutidine	8.85
Heptane	10.08	Mesitylene	8.40
2-heptanone	9.33	Mesityl oxide	9.08
1-hexene	9.46	Methanethiol	9.44
Hydrogen iodide	10.38	N-methyl acetamide	8.90
Hydrogen selenide	9.88	Methyl acetate	10.27
Hydrogen sulfide	10.46	Methyl alcohol	*10.85
Hydrogen telluride	9.14	Methyl amine	8.97
Iodine	9.28	Methyl bromide	10.53
Iodobenzene	8.73	2-methyl-1-butene	9.12
1-iodobutane	9.21	3-methyl-1-butene	9.51
2-iodobutane	9.09	3-methyl-2-butene	8.67
1-iodo-2-methylpropane	9.18	Methyl butyl ketone	9.34
1-iodo-2-methylpropene	9.02	Methyl butyrate	10.07
1-iodopentane	9.19	Methylcyclohexane	9.85
1-iodopropane	9.26	4-methylcyclohexene	8.91
2-iodopropane	9.17	Methyl disulfide	8.46
o-iodotoluene	8.62	Methyl ethyl ketone	9.53
m-iodotoluene	8.61	Methyl formate	*10.815
p-iodotoluene	8.50	2-methyl furan	8.39
Isobutane	10.57	Methyl iodide	9.54
Isobutyl amine	8.70	Methyl isobutyl ketone	9.30

* Only detectable at high concentrations

Methyl isobutyrate	9.98	Propionaldehyde	9.98
Methyl isopropyl ketone	9.32	Propyl acetate	10.04
Methyl isothiocyanate	9.25	Propyl alcohol	10.20
1-methyl napthalene	7.96	Propyl amine	8.78
2-methyl napthalene	7.96	Propyl benzene	8.72
2-methylpentane	10.12	Propylene	9.73
3-methylpentane	10.08	Propylene oxide	10.22
2-methyl propene	9.23	Propyl ether	9.27
Methyl propionate	10.15	Propyl formate	10.54
Methyl propyl ketone	9.39	Propyne	10.36
Methyl thiocyanate	10.07	Pyridine	9.32
a-methyl styrene	8.35	Pyrrole	8.20
Napthalene	8.12	Styrene	8.47
Nitric oxide	9.25	Thiolacetic acid	10.00
Nitrobenzene	9.92	Thiophene	8.86
Nitrogen dioxide	9.78	Tetrachloroethene	9.32
Nitroethane	*10.81	Tetrahydrofuran	9.54
Nitromethane	*11.08	Tetrahydropyran	9.26
1-nitropropane	*10.88	Toluene	8.82
2-nitropropane	*10.71	Tribromoethane	9.27
Pentaborane	10.40	Tribromofluoromethane	*10.67
Pentane	10.35	Tribromomethane	10.51
2,4-pentanedione	8.87	Trichloroethene	9.45
1-pentene	9.50	Triethylamine	7.50
Phenetole	8.18	Trimethyl amine	7.52
Phenol	8.50	2,2,4-trimethyl pentane	9.96
Phenyl isocyanate	8.77	Tripropyl amine	7.23
Phenyl isothiocyanate	8.52	Valeraldehyde	9.82
2-picoline	9.02	Valeric acid	10.12
3-picoline	9.02	Vinyl acetate	9.19
4-picoline	9.04	Vinyl bromide	9.80
Propane	*11.07	Vinyl chloride	10.00
1-propanethiol	9.20	Vinyl methyl ether	8.93
Propiolactone	9.70	*m*-xylene	8.56
Propionic acid	10.24	*o*-xylene	8.56
		p-xylene	8.45

* Only detectable at high concentrations

Received: 09/12/89 09/18/89 11:55:35

REPORT TO: GOLDMAN ENVIRONMENT
161 FORBES RD.
SUITE 204
BRAINTREE, MA 02184
ATTEN: PATTY BRYAN

PREPARED BY: TOXIKON CORPORATION
225 WILDWOOD AVE.
WOBURN, MA 01801
ATTEN: PAUL LEZBERG
PHONE: (617) 933-6903

CERTIFIED BY

CONTACT: JIM

CLIENT: GOLDMAN SAMPLES: 2
COMPANY: GOLDMAN ENVIRONMENT
FACILITY:

DEQE MASS, CERT. STATUS: TRACE METALS,FLUORIDE,CORROSIVITY SERIES, SODIUM, T. COLIFORM(MF), METALS, MINERALS, VOLATILE HALOCARBONS & AROMATIC, CYANIDE, PHENOLICS, F. COLIFORM(MF) STD. PLATE COUNT, NUTRIENTS, PESTICIDES, O & G, TRIHALOMETHANE

WORK ID: KELLY & DUTCH 365-001-89
TAKEN:
TRANS:
TYPE: SOIL
P.O. #:
INVOICE: under separate cover

Q.A. MANAGER: Michael T. Butt

SAMPLE IDENTIFICATION	TEST CODES and NAMES used on this report	
01 KEL-454-08	8240	PURGEABLE ORGANICS VOA/SOI
02 KEL-455-08		

Received: 09/12/89 Results by Sample

SAMPLE ID KEL-454-08 FRACTION 01A TEST CODE 8240 NAME PURGEABLE ORGANICS VOA/SOI
Date & Time Collected 09/08/89 Category SOIL

	RESULT	LIMIT	UNITS = ug/Kg	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
1,1-Dichloroethene	ND	2.0	Bromoform	ND	2.0
Trichlorofluoromethane	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	32	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	3487	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	2.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED: _____
DATE RUN: 09/14/89
ANALYST: WT
INSTRUMENT: OWA
CONC FACTOR: 1

ND = not detected at detection limit

Received: 09/12/89 Results by Sample

SAMPLE ID KEL-455-08 FRACTION 02A TEST CODE 8240 NAME PURGEABLE ORGANICS VOA/SOI
Date & Time Collected 09/08/89 Category SOIL

	RESULT	LIMIT	UNITS = ug/Kg	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
1,1-Dichloroethene	ND	2.0	Bromoform	ND	2.0
Trichlorofluoromethane	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	11	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	ND	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	2.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED:
DATE RUN: 09/14/89
ANALYST: WT
INSTRUMENT: OWA
CONC FACTOR: 1

ND = not detected at detection limit

TEST CODE 8240 NAME PURGEABLE ORGANICS VOA/SOI

EPA METHOD: 8240

Reference: Test Mehtods for Evaluating Solid Wastes: Physical/Chemical Methods.
EPA SW-846 (Third Edition) 1986. Office of Solid Wast, USEPA.

APPENDIX F

GEC PROTOCOL

GAS CHROMATOGRAPHY SCREENING

Goldman Environmental Consultants (GEC) utilizes a Photovac 10S55 Portable Gas Chromatograph equipped with a dual-column system. Both of the columns are fused silica capillary columns coated with CPSIL-5 resin. One of the columns is 3.4 feet in length and functions as a pre-column. The other column is 29 feet long and is the analytical column. The two columns enable the instrument to be used with a "pre-column backflush" that expedites the analytical process. The flow configuration in the instrument is programed so that any late-eluting compounds that are not of interest are back-flushed out of the system when still in the pre-column. An isothermal oven is also utilized to obtain more accurate and reproducible results.

The 10S55 utilizes a photoionization detector (PID) equipped with a 10.6 eV lamp to detect compounds as they elute from the column. The PID can detect several organic and some inorganic compounds with ionization potentials less than 10.6 eV. The following protocol describes the procedures utilized by GEC to analyze vapor samples with a Photovac 10S55 portable gas chromatograph.

a. The 10S55 is equipped with a memory capable of storing several compounds (with retention times and response factors) in a library. Once the instrument is set up in the office, the library can be calibrated to the exact operating conditions by using a gas standard of known concentration.

b. Once the instrument has been calibrated, vapor samples are injected manually using a variety of gas-tight syringes. The syringes are purged three (3) times with ambient air, three (3) times with hydrocarbon-free air, and three (3) times with sample vapor (without removing the syringe from the sample container). An appropriate sample volume is then injected into the instrument.

c. Based on the volume of the sample injected into the instrument, the concentration of the sample can be determined.

d. GEC performs periodic checks to ensure that the instrument is functioning properly. Following no more than ten (10) runs, an injection of a standard of known concentration is performed to verify that the instrument is calibrated within acceptable limits. If the retention time of the standard has drifted, the instrument is recalibrated.

SOIL SAMPLE HEADSPACE SCREENING OF SOIL SAMPLES TAKEN DURING DRILLING OPERATIONS AT NORTHWAY PLAZA, QUEENSBURY , NY

A HEADSPACE SOIL SCREENING

1. SOIL SAMPLING

The objective of the soil sample headspace screening conducted on the property was to determine the presence, if any, of subsurface contamination

beneath the subject property. Soil screening was conducted by GEC personnel at GEC's office on September 18, 1989.

Soil samples were obtained during drilling operations at the time of ground water monitoring well installation performed on September 7,8,11, and 12, 1989. Boring samples were collected in clean 8 oz soil sample jars. The samples were stored and transported in accordance with USEPA protocols.

2. SOIL HEADSPACE SCREENING METHODS AND RESULTS

Selected soil boring samples were analyzed using a portable gas chromatograph (Photovac 10S55) at the office of GEC. A soil boring sample aliquot equal to one third of the volume of the 40 mL VOA vial was taken from each boring sample to be analyzed. Deionized (hydrocarbon-free) water was added to the sample until one third of the vial remained as headspace volume. The vials were shaken vigorously for 30 seconds and were allowed to equilibrate for ten minutes prior to subsequent headspace analysis using the portable gas chromatograph (Photovac 10S55). An aliquot of headspace (100µL) was then removed from the vial using a teflon tip plunger gas-tight glass barrel syringe and the sample was injected into the gas chromatograph. A Photovac 10S55 Portable Gas Chromatograph (GC) with a 10.6 eV photoionization detector (PID) was used for the analysis. The GC is a field instrument capable of identifying and quantifying a wide range of volatile and semi-volatile organic compounds, as well as some inorganic compounds in air. See Appendix D for a list of compounds that can be detected by the PID. The instrument compares the retention time and response of each component of the sample against an internal library of VOC standards to tentatively identify and

quantify compounds in the soil gas sample. The GC field screening method employed has the following limitations:

* GC identification and quantification of VOCs in soil gas are tentative pending verification by laboratory analysis.
* The detection limits described for each soil gas survey are dependent on the ambient conditions, the GC operating conditions, and detector response to VOC standards in the GC internal library.

The GC was calibrated to the current operating conditions in the office with a 1.02 ppm primary standard of benzene (certified to ± 2%), traceable to a certified NBS standard. The GC operating conditions were as follows: ultra pure air flow - 10 mL/min; analytical column temperature - 30 °C; analytical column - 29 meter fused silica capillary column (SPSIL5); and analysis time - 600 seconds; detector window ± 5%. The detection limits for the compounds of interest were as follows:

Benzene	20 ppb
Trichloroethylene	*20 ppb
Toluene	*30 ppb
Perchloroethylene	*30 ppb
Ethyl benzene	*70 ppb
Acetone	*30 ppb
P-Xylene	*30 ppb
O-Xylene	*30 ppb

These detections limits are the minimum thresholds in which the concentration of the identified VOC in the soil gas sample can be reproduced within 20% analytical error through replicate sample injections. (* indicates detection limits for other compounds stored in the library normalized to observed detection limit of benzene performed on the day of analysis).

The soil headspace screening method conducted for the subject property as part of the subsurface investigation indicated that levels exceeding the detection limits achieved for the compounds referenced above did exist for samples taken from one of the borings. The following was detected in sample GEC-8/S-4 (15 to 17 feet interval): 70 to 100 ppb of benzene; 79 ppb trichloroethylene; 94 ppb tetrachloroethene; 175 ppb ortho-xylene; and 184 to 678 ppb of ethylbenzene. For each sample 10 micro-liters of headspace was tested at a gain of 100.

PHOTOVAC MODEL 10S55 PORTABLE GAS CHROMATOGRAPH OPERATING LOG SHEET

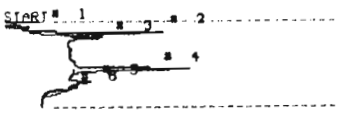
The operator of the gas chromatograph should fill in the following information after using the Photovac GC.

Project Number: 365-001-89 Date: 9-18-89
Client name: Kelly & Dutch (Northway Plaza) Operator: John Niedzielski
Location used: Office Oven temperature: 30°C
Carrier gas flow rate: 10ml/min Delivery pressure: 40 psi
Internal tank pressure: (start) 1500 (finish) 1100
Compound(s) used to calibrate instrument: Benzene
Number of analyses performed: 13
Number of calibration runs performed: _____
Type of injection: manual ✓ or automatic _____
Libraries used 2

Place a copy of the chromatogram for a calibration run in the space below.

Detector Window ± 5%

PHOTOVAC



SAMPLE LIBRARY 2 SEP 18 1989 13:14
ANALYSIS # 7 365-001-89
INTERNAL TEMP 33 100PPB BENZ 50UL
GAIN 100 10 ML-MIN

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	8.8	253.6 mVS
UNKNOWN	2	18.3	1.1 VS
UNKNOWN	3	20.2	164.0 mVS
UNKNOWN	4	74.5	1.5 VS
UNKNOWN	5	94.6	204.1 mVS

PHOTOVAC

2 COMPOUND	ID #	R.T.	LIMIT
BENZENE	1	74.5	100.0 PPM
TOLUENE	2	173.3	100.0 PPM
ETHYLBENZENE	3	388.3	100.0 PPM
P-XYLENE	4	423.5	100.0 PPM
O-XYLENE	5	504.3	100.0 PPM
ACETONE	6	26.7	100.0 PPM
PERCHLOROETHYLEN	7	256.7	100.0 PPM
TRICHLOROETHYLEN	9	181.7	100.0 PPM

PHOTOVAC

CALIBRATED PEAK 4,BENZENE

SAMPLE LIBRARY 2 SEP 18 1989 13:15
ANALYSIS # 7 365-001-89
INTERNAL TEMP 32 100PPB BENZ 50UL
GAIN 100 10 ML-MIN

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	8.8	259.6 mVS
UNKNOWN	2	18.3	1.1 VS
ACETONE	3	20.2	15.82 PPB
BENZENE	4	74.5	100.0 PPB
UNKNOWN	5	94.6	204.1 mVS

PHOTOVAC

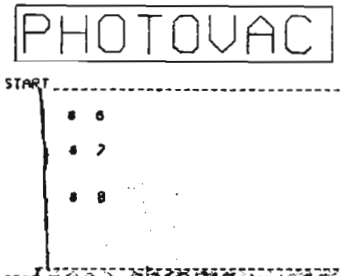
SEP 18 1989 14:15

FIELD: 30
POWER: 45

SAMPLE	0.0	10.0
CAL	0.0	0.0
EVENT 3	10.0	100.0
EVENT 4	0.0	0.0
EVENT 5	0.0	0.0
EVENT 6	0.0	0.0
EVENT 7	0.0	0.0
EVENT 8	0.0	0.0

PHOTOVAC MODEL 10S55 PORTABLE GC DATA SHEET

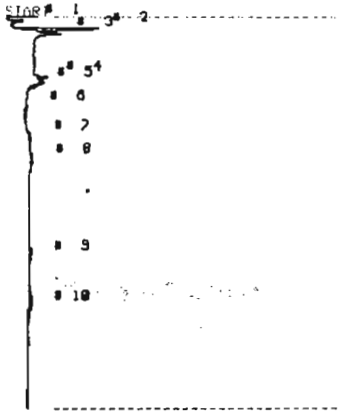
PHOTOVAC



STOP @ 600.0
SAMPLE LIBRARY 2 SEP 18 1989 12:37
ANALYSIS # 1 365-001-89
INTERNAL TEMP 30 BASELINE
GAIN 50 10 ML-MIN

COMPOUND NAME	PEAK	R.T.	AREA/PPM
ACETONE	1	28.6	222.7 PPB
UNKNOWN	2	94.6	94.5 mVS
UNKNOWN	4	138.4	7.2 mVS
UNKNOWN	5	224.4	16.4 mVS
UNKNOWN	6	386.2	120.8 mVS
ETHYLBENZENE	7	437.7	16.28 PPB
UNKNOWN	8	510.9	55.5 mVS

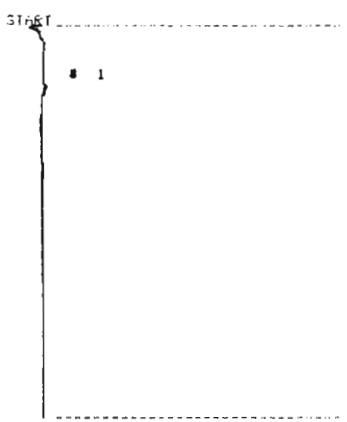
PHOTOVAC



STOP @ 600.0
SAMPLE LIBRARY 2 SEP 18 1989 12:48
ANALYSIS # 2 365-001-89
INTERNAL TEMP 30 SYRINGEBLANK50UL
GAIN 50 10 ML-MIN

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	7.5	88.5 mVS
UNKNOWN	2	18.8	738.2 mVS
UNKNOWN	3	27.2	108.6 mVS
UNKNOWN	4	94.9	148.3 mVS
UNKNOWN	6	139.6	10.0 mVS
TOLUENE	7	185.7	2.422 PPB
UNKNOWN	8	221.4	32.1 mVS
UNKNOWN	9	369.2	154.9 mVS
ETHYLBENZENE	10	446.0	11.78 PPB

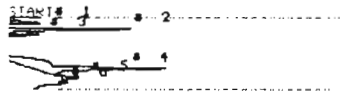
PHOTOVAC



STOP @ 600.0
SAMPLE LIBRARY 2 SEP 18 1989 13: 0
ANALYSIS # 3 365-001-89
INTERNAL TEMP 30 BASELINE
GAIN 10 10 ML-MIN

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	94.9	10.8 mVS

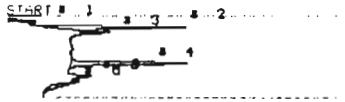
PHOTOVAC



STOP @ 112.4
SAMPLE LIBRARY 2 SEP 18 1989 13: 5
ANALYSIS # 4 365-001-89
INTERNAL TEMP 31 100PPB BENZ 50UL
GAIN 100 10 ML-MIN

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	18.4	1.7 VS
UNKNOWN	2	18.9	1.6 VS
UNKNOWN	3	28.1	122.2 mVS
BENZENE	4	80.2	171.9 PPB
UNKNOWN	5	94.9	270.5 mVS

PHOTOVAC

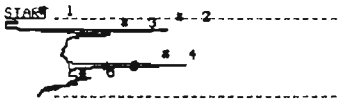


STOP @ 124.9
SAMPLE LIBRARY 2 SEP 18 1989 13: 8
ANALYSIS # 5 365-001-89
INTERNAL TEMP 32 100PPB BENZ 50UL
GAIN 100 10 ML-MIN

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	10.1	349.4 mVS
UNKNOWN	2	18.1	1.3 VS
UNKNOWN	3	25.3	142.5 mVS
UNKNOWN	4	74.5	1.5 VS
UNKNOWN	5	94.9	203.8 mVS

PHOTOVAC MODEL 10S55 PORTABLE GC DATA SHEET

PHOTOVAC



STOP @ 121.1
SAMPLE LIBRARY 2 SEP 18 1989 13:11
ANALYSIS # 6 365-001-89
INTERNAL TEMP 32 100PPB BENZ 50UL
GAIN 100 10 ML-MIN

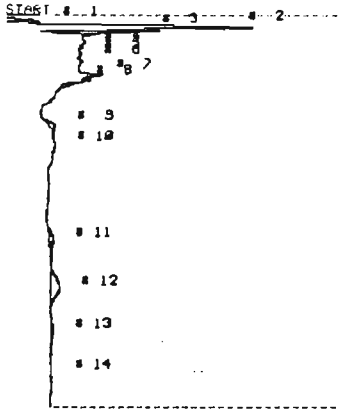
COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	7.8	381.3 mUS
UNKNOWN	2	18.5	1.3 US
UNKNOWN	3	26.3	178.0 mUS
UNKNOWN	4	74.3	1.5 US
UNKNOWN	5	94.8	193.3 mUS

Place chromatogram here

PHOTOVAC

2 COMPOUND	ID #	R.T.	LIMIT
BENZENE	1	74.5	100.0 PPM
TOLUENE	2	173.3	100.0 PPM
ETHYLBENZENE	3	388.3	100.0 PPM
P-XYLENE	4	423.5	100.0 PPM
O-XYLENE	5	504.3	100.0 PPM
ACETONE	6	26.7	100.0 PPM
PERCHLOROETHYLEN	7	256.7	100.0 PPM
TRICHLOROETHYLEN	8	181.7	100.0 PPM

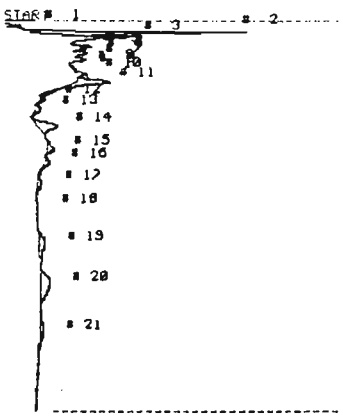
PHOTOVAC



STOP @ 600.0
SAMPLE LIBRARY 2 SEP 18 1989 13:27
ANALYSIS # 8 365-001-89
INTERNAL TEMP 31 8-8 S-4 50UL
GAIN 100 10 ML-MIN

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	12.2	542.5 mUS
UNKNOWN	2	19.3	3.3 US
ACETONE	3	25.5	108.0 PPB
UNKNOWN	4	51.5	19.0 mUS
UNKNOWN	5	61.9	6.2 mUS
BENZENE	6	72.9	1.393 PPB
UNKNOWN	7	94.9	267.9 mUS
TOLUENE	9	174.2	6.568 PPB
UNKNOWN	10	205.2	60.3 mUS
UNKNOWN	11	352.3	280.1 mUS
P-XYLENE	12	428.0	9.526 PPB
O-XYLENE	13	492.2	3.229 PPB
UNKNOWN	14	555.1	5.4 mUS

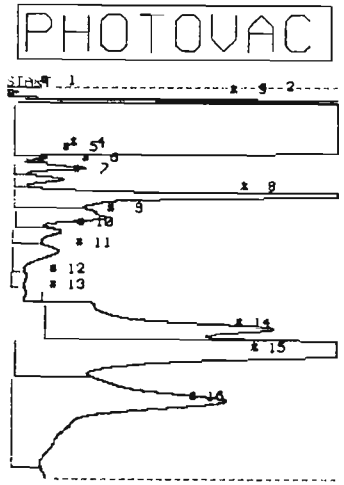
PHOTOVAC



STOP @ 600.0
SAMPLE LIBRARY 2 SEP 18 1989 13:41
ANALYSIS # 9 365-001-89 8-8-
INTERNAL TEMP 31 8-8 4 50UL 5-6
GAIN 100 10 ML-MIN 50uL

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	9.1	223.3 mUS
UNKNOWN	2	18.2	2.1 US
ACETONE	3	26.0	28.50 PPB
UNKNOWN	4	42.2	80.6 mUS
UNKNOWN	6	52.5	125.4 mUS
UNKNOWN	7	62.5	145.2 mUS
BENZENE	8	72.9	1.140 PPB
BENZENE	9	72.7	1.122 PPB
UNKNOWN	10	85.3	136.0 mUS
TRICHLOROETHYLEN	11	98.5	5.622 PPB
UNKNOWN	12	126.4	96.8 mUS
UNKNOWN	13	142.8	152.0 mUS
TOLUENE	14	182.2	31.29 PPB
UNKNOWN	15	203.4	333.3 mUS
UNKNOWN	16	223.8	156.0 mUS
PERCHLOROETHYLEN	17	252.2	3.522 PPB
UNKNOWN	18	293.9	26.0 mUS
UNKNOWN	19	350.2	655.7 mUS
P-XYLENE	20	412.4	10.81 PPB
O-XYLENE	21	488.8	10.12 PPB

PHOTOVAC

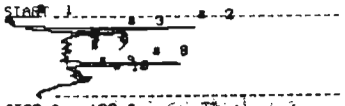


STOP @ 600.0
SAMPLE LIBRARY 2 SEP 18 1989 13:53
ANALYSIS # 10 365-001-89
INTERNAL TEMP 31 8-8 50UL 8-8
GAIN 50 10 ML-MIN 5-5

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	8.4	305.0 mUS
UNKNOWN	2	18.3	1.8 US
UNKNOWN	3	21.0	3.8 US
UNKNOWN	4	64.9	530.5 US
UNKNOWN	5	111.1	294.2 mUS
UNKNOWN	6	128.0	2.4 US
UNKNOWN	7	145.2	1.8 US
TOLUENE	8	162.5	1.268 PPM
UNKNOWN	9	204.6	8.4 US
UNKNOWN	10	226.8	3.0 US
PERCHLOROETHYLEN	11	258.4	182.8 PPB
UNKNOWN	12	292.9	1.0 US
UNKNOWN	13	322.3	923.1 mUS
ETHYLBENZENE	14	329.2	1.478 PPM
ETHYLBENZENE	15	405.9	6.005 PPM
O-XYLENE	16	491.4	1.783 PPM

PHOTOVAC MODEL 10S55 PORTABLE GC DATA SHEET

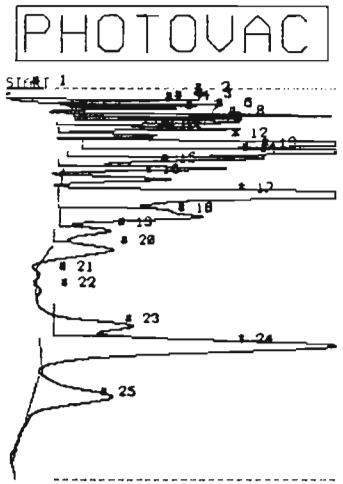
PHOTOVAC



STOP @ 122.0
SAMPLE LIBRARY 2 SEP 18 1989 13:58
ANALYSIS # 11; 365-001-89
INTERNAL TEMP 32 100PPB BENZ SOUL
GAIN 100 10 ML-MIN

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	7.8	179.2 mVS
UNKNOWN	2	18.3	1.6 VS
ACETONE	3	26.1	31.46 PPB
UNKNOWN	4	42.9	39.3 mVS
UNKNOWN	6	53.1	76.5 mVS
UNKNOWN	7	63.3	58.7 mVS
BENZENE	8	73.5	92.71 PPB
UNKNOWN	9	85.9	104.3 mVS
UNKNOWN	10	94.9	122.1 mVS

PHOTOVAC

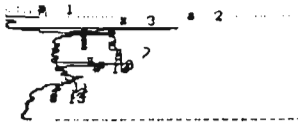


STOP @ 600.0
SAMPLE LIBRARY 2 SEP 18 1989 14:13
ANALYSIS # 12 365-001-89
INTERNAL TEMP 31 8-8 1UL
GAIN 100 10 ML-MIN

B-5
5-5

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	8.6	232.9 mVS
UNKNOWN	2	18.2	1.8 VS
ACETONE	3	26.1	134.0 PPB
UNKNOWN	4	29.4	211.2 mVS
UNKNOWN	5	31.6	853.5 mVS
UNKNOWN	6	42.5	2.9 VS
UNKNOWN	7	46.5	1.9 VS
UNKNOWN	8	52.2	3.2 VS
UNKNOWN	9	62.2	3.4 VS
BENZENE	10	72.5	101.8 PPB
BENZENE	11	77.3	62.63 PPB
UNKNOWN	12	84.8	15.2 VS
TRICHLOROETHYLEN	13	92.2	29.67 PPB
UNKNOWN	14	108.4	5.3 VS
UNKNOWN	15	125.6	4.0 VS
UNKNOWN	16	142.4	3.1 VS
UNKNOWN	17	164.5	48.1 VS
UNKNOWN	18	201.0	8.9 VS
UNKNOWN	19	221.2	2.2 VS
PERCHLOROETHYLEN	20	253.5	94.26 PPB
UNKNOWN	21	293.9	194.8 mVS
UNKNOWN	22	312.9	166.0 mVS
ETHYLBENZENE	23	323.2	184.3 PPB
ETHYLBENZENE	24	403.1	678.2 PPB
O-XYLENE	25	484.9	175.5 PPB

PHOTOVAC



STOP @ 152.9
SAMPLE LIBRARY 2 SEP 18 1989 14:12
ANALYSIS # 13 365-001-89
INTERNAL TEMP 31 20PPB BENZ SOUL
GAIN 100 10 ML-MIN

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	1	8.1	436.4 mVS
UNKNOWN	2	18.8	1.6 VS
ACETONE	3	26.7	30.56 PPB
UNKNOWN	4	43.9	30.3 mVS
UNKNOWN	5	53.2	80.2 mVS
UNKNOWN	6	64.5	44.1 mVS
BENZENE	7	74.5	48.48 PPB
UNKNOWN	8	87.1	78.8 mVS
UNKNOWN	9	94.6	228.6 mVS
TRICHLOROETHYLEN	10	100.0	0.504 PPB
UNKNOWN	11	129.0	69.0 mVS

Place chromatogram here

 TOXIKON CORP. REPORT Work Order # 89-09-110

Received: 09/15/89 09/28/89 14:38:53

REPORT TO: GEC
161 FORBES RD., SUITE 204
BRAINTREE, MA 02184

ATTEN: PATTY BRYAN

PREPARED BY: TOXIKON CORPORATION
225 WILDWOOD AVE.
WOBURN, MA 01801

ATTEN: PAUL LEZBERG
PHONE: (617) 933-6903

CERTIFIED BY

CONTACT: JSK

CLIENT: GEC SAMPLES: 13
COMPANY: GEC
FACILITY:

DEQE MASS. CERT. STATUS: TRACE METALS, FLUORIDE, CORROSIVITY SERIES, SODIUM, T. COLIFORM(MF), METALS, MINERALS, VOLATILE HALOCARBONS & AROMATIC, CYANIDE, PHENOLICS, F. COLIFORM(MF) STD. PLATE COUNT, NUTRIENTS, PESTICIDES, O & G, TRIHALOMETHANE

WORK ID: 365-001-89
TAKEN: KELLY & DETD.
TRANS:
TYPE: WATER
P.O. #:
INVOICE: under separate cover

Q.A. MANAGER:

SAMPLE IDENTIFICATION

01 KEL-001-05
02 KEL-002-05
03 KEL-003-05
04 KEL-004-05
05 KEL-005-05
06 KEL-006-05
07 KEL-007-05
08 KEL-008-05
09 KEL-009-05
10 KEL-010-05
11 KEL-011-05
12 KEL-012-05
13 TRIP BLANK

TEST CODES and NAMES used on this report

624	PURGEABLE ORGANICS VOA
N AMM	NITROGEN AMMONIA
N TKN	NITROGEN KJELDAHL, TOTAL
TPH IR	TPH BY IR

Received: 09/15/89 Results by Sample

SAMPLE ID KEL-001-05 SAMPLE # 01 FRACTIONS: A

Date & Time Collected 09/13/89 Category WATER

N_AMM	N_TKN	TPH_IR
ND	ND	ND
mg/L, DL=0.05	mg/L, DL=0.05	mg/Kg, DL=10

Received: 09/15/89 Results by Sample

SAMPLE ID KEL-001-05 FRACTION 01A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	ND	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED:
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

Received: 09/15/89 Results by Sample

SAMPLE ID KEL-002-05 FRACTION 02A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	153	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED:
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

Received: 09/15/89 Results by Sample

SAMPLE ID KEL-003-05 FRACTION 03A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	28	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	ND	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED: _____
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

SAMPLE ID KEL-004-05 SAMPLE # 04 FRACTIONS: A
Date & Time Collected 09/13/89 Category WATER

TPH_IR	ND
mg/Kg, DL=10	

Received: 09/15/89 Results by Sample

SAMPLE ID KEL-004-05 FRACTION 04A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	40	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	96	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	12	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	763	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	802	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED:
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

SAMPLE ID KEL-005-05 FRACTION 05A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	ND	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED:
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

SAMPLE ID KEL-006-05 SAMPLE # 06 FRACTIONS: A
Date & Time Collected 09/13/89 Category WATER

TPH_IR	ND
mg/Kg, DL=10	

Received: 09/15/89 Results by Sample

SAMPLE ID KEL-006-05 FRACTION 06A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	9	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	ND	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED: _____
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

SAMPLE ID KEL-007-05 SAMPLE # 07 FRACTIONS: A
Date & Time Collected 09/13/89 Category WATER

TPH_IR	ND
mg/Kg, DL=10	

Received: 09/15/89 Results by Sample

SAMPLE ID KEL-007-05 FRACTION 07A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	206	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED: _____
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

SAMPLE ID KEL-008-05 SAMPLE # 08 FRACTIONS: A
Date & Time Collected 09/13/89 Category WATER

TPH_IR	ND
mg/Kg, DL=10	

Received: 09/15/89 Results by Sample

SAMPLE ID KEL-008-05 FRACTION 08A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	23	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	7	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	183	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	328	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	842	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	9	2.0	Total Xylenes	2356	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	ND	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED: _____
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

SAMPLE ID KEL-009-05 SAMPLE # 09 FRACTIONS: A
Date & Time Collected 09/13/89 Category WATER

N_AMM	8.77	N_TKN	11.8
mg/L, DL=0.05		mg/L, DL=0.05	

Received: 09/15/89 Results by Sample

SAMPLE ID KEL-009-05 FRACTION 09A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	8	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	7	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	31	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	39	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED:
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

SAMPLE ID KEL-010-05 SAMPLE # 10 FRACTIONS: A
Date & Time Collected 09/13/89 Category WATER

	N_AMM	N_TKN
	1.30	4.01
	mg/L, DL=0.05	mg/L, DL=0.05

Received: 09/15/89 Results by Sample

SAMPLE ID KEL-010-05 FRACTION 10A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	ND	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED: _____
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

Received: 09/15/89 Results by Sample

SAMPLE ID KEL-012-05 FRACTION 12A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	69	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	67	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	12	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	791	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	950	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED:
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

SAMPLE ID TRIP BLANK FRACTION 13A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	ND	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	ND	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	ND	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	ND	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED:
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

TEST CODE 624 NAME PURGEABLE ORGANICS VOA

EPA METHOD: 624

Reference: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater. Appendix A. 40CFR Part 136. Federal Register Vol. 49, No. 209, 1984.

TEST CODE N AMM NAME NITROGEN AMMONIA

EPA METHOD: 350.1

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE N TKN NAME NITROGEN KJELDAHL, TOTAL

EPA METHOD: 351.1

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL.

TEST CODE TPH IR NAME TPH BY IR

EPA METHOD: 418.1 for water sample.

Reference: Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020 (Revised, March 1983). EPA/EMSL, Cincinnati, OH.

EPA METHOD: 9071 for soil sample.

Reference: Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846 (Third Edition) 1986. Office of Solid Waste, USEPA.

GEC GOLDMAN ENVIRONMENT CONSULTANTS, INC.
161 FORBES ROAD SUITE 204
BRAINTREE, MA 02184

CHAIN OF CUSTODY RECORD

Sampled By: BC, JN

Page 1 Of 1

PROJECT CODE: 365 -- 001 -- 89
PROJECT: Kelly & Dutch
GEC CONTACT: Patty Fagan

Laboratory: Toxikon
Address: Woburn MA.
Contact: Jim Kiach

Delivery Date: 9-29-89

Sample Serial Number	Laboratory Sample Number	Sampling Date	Sampling Time	Sample Type	Container ID Number	Analyses 624		TPH		TKN		Amm.		No. of Containers	Comments
KEL-001-05						✓		✓		✓		✓		4	
KEL-002-05						✓								2	
KEL-003-05						✓								2	
KEL-004-05						✓		✓						3	
KEL-005-05						✓								2	
KEL-006-05						✓		✓						3	
KEL-007-05						✓		✓						2	
KEL-008-05						✓		✓						2	
KEL-009-05						✓				✓		✓		2	
KEL-010-05						✓				✓		✓		2	
KEL-011-11						✓								2	Septic Tank #1
KEL-014-05						✓								2	
Trip Blank						✓								2	

1. Relinquished By:	1. Received By:	1. Date & Time	REMARKS:
FED EX	[signature]	9/15/89 930	One sample is a duplicate
2. Relinquished By:	2. Received By:	2. Date & Time	
3. Relinquished By:	3. Received By:	3. Date & Time	

GEC GOLDMAN ENVIRONMENT CONSULTANTS, INC.
161 FORBES ROAD SUITE 204
BRAINTREE, MA 02184

CHAIN OF CUSTODY RECORD

Sampled By: BC, JN

Page 1 Of 1

PROJECT CODE: 365 -- 001 -- 89
PROJECT: Kelly & Ritchie
GEC CONTACT: Patty Bryan

Laboratory: Toxikon
Address: Woburn MA
Contact: Jim Kinch

Delivery Date: 9-29-89

Sample Serial Number	Laboratory Sample Number	Sampling Date	Sampling Time	Sample Type	Container ID Number	Analyses 624	TPH	TKN	Amm	No. of Containers	Comments
KEL-001-05						✓	✓	✓	✓	4	
KEL-002-05						✓				2	
KEL-003-05						✓				"	
KEL-004-05						✓	✓			3	
KEL-005-05						✓				2	
KEL-006-05						✓	✓			3	
KEL-007-05						✓	✓			"	
KEL-008-05						✓	✓			"	
KEL-009-05						✓		✓	✓	"	
KEL-010-05						✓		✓	✓	"	
KEL-011-11						✓				2	Sister Tank #1
KEL-014-05						✓				"	
Trip Blank						✓				"	

1. Relinquished By:	1. Received By:	1. Date & Time	REMARKS:
FED EX	Paul Keyless	9/15/89 930	One sample is a duplicate
2. Relinquished By:	2. Received By:	2. Date & Time	
3. Relinquished By:	3. Received By:	3. Date & Time	

Received: 09/15/89 Results by Sample

SAMPLE ID KEL-011-05 FRACTION 11A TEST CODE 624 NAME PURGEABLE ORGANICS VOA
Date & Time Collected 09/13/89 Category WATER

	RESULT	LIMIT	UNITS = ug/L	RESULT	LIMIT
Chloromethane	ND	2.0	trans-1,3-Dichloropropene	ND	2.0
Bromomethane	ND	2.0	Trichloroethene	ND	2.0
Vinyl Chloride	ND	10	Dibromochloromethane	ND	2.0
Chloroethane	ND	2.0	1,1,2-Trichloroethane	ND	2.0
Dichloromethane	ND	10	Benzene	ND	2.0
Acetone	ND	50	cis-1,3-Dichloropropene	ND	2.0
Carbon Disulfide	22	2.0	2-Chloroethylvinylether	ND	2.0
Trichlorofluoromethane	ND	2.0	Bromoform	ND	2.0
1,1-Dichloroethene	ND	2.0	2-Hexanone	ND	4.0
1,1-Dichloroethane	ND	2.0	4-Methyl-2-pentanone	ND	4.0
Trans-1,2-Dichloroethene	ND	2.0	Tetrachloroethene	ND	2.0
Chloroform	12	2.0	1,1,2,2-Tetrachloroethane	ND	2.0
1,2-Dichloroethane	ND	2.0	Toluene	ND	2.0
2-Butanone	ND	10	Chlorobenzene	ND	2.0
1,1,1-Trichloroethane	ND	2.0	Ethyl Benzene	ND	2.0
Carbon Tetrachloride	ND	2.0	Styrene	ND	2.0
Vinyl Acetate	ND	2.0	Total Xylenes	8	2.0
Bromodichloromethane	ND	2.0	1,2-Dichlorobenzene	ND	2.0
Methyl Tert Butyl Ether	ND	2.0	1,3-Dichlorobenzene	ND	2.0
1,2-Dichloropropane	ND	1.0	1,4-Dichlorobenzene	ND	2.0

Notes and Definitions for this Report:

EXTRACTED:
DATE RUN: 09/22/89
ANALYST: WT
INSTRUMENT: OWA1050
CONC FACTOR: 1

ND = not detected at detection limit

APPENDIX J
HEALTH AND SAFETY PLAN
GOLDMAN ENVIRONMENTAL CONSULTANTS

SITE DESCRIPTION

Date: 9/7/89 Project Number: 365-001-89

Site Name: Northway Plaza Shopping Center
Site Address: Corner of NYS Rt. 254 & US Rte. 9
Queensbury, NY

Entry Objectives: Monitor well installation, and sample and survey groundwater monitoring wells
Major Hazards: Physical; slip, trip, fall

Surronding population: commercial and residential
Topography: flat, gentle slope
Weather Conditions: summer
Sketches Attached: Yes __X__ No _____
Additional Information: Maps attached

EMERGENCY PHONE NUMBERS:

Nearest Phone: (518) 798-0695 (Plaza Superintendent)
Nearest two-way radio:

	Number	Location
Fire:	(518)761-6477	Warren County
Police:	(518)761-6477	Warren County
Ambulance:	911	West Glens Falls
Hospital:	(518)792-3151	Glens Falls Hospital

Does hospital have a chemical trauma capability: Yes __X__ No _____
Directions to Hospital:

Route 9 to Park St. and left on Park St.

Additional Emergency Phone Numbers:

Goldman Environmental	(617) 848-5012 in Mass. (800) 446-2014
DEQE Spill Reporting	(508) 947-1231 x680
Chemtrec	(800) 424-9300
National Response Center	(800) 424-8802
TSCA Hotline	(800) 424-9065
ATSDR	DAY: (404) 329-2888
AT & F (Explosive Information)	(800) 424-9555

Pesticide Information Service	(800) 845-7633
EPA ERT Emergency	(201) 321-6660
RCRA Hotline	(800) 424-9346
CMA Chemical Referral Center	(800) 262-8200
National Poison Control Center	(800) 942-5969
U.S. DOT	DAY: (202) 366-0656

PERSONAL PROTECTIVE EQUIPMENT

The following level of protection will be used:

Task to be Performed	Level of Protection	Coverall	Glove In/Out (A.1)	Air Purification Cartridge (A.2)
monitor well installation	D-C	Tivex	Latex/Butyl	Organic (type B) Ammonia (type D)
sample GW wells	D-C	Tivex	Latex/Butyl	Organic Ammonia (type D)

The following additional equipment will be worn:

Hard hat __X___
Face shield __X__
Safety glasses __X_
Ear protection __X___
Rubber boots _____
Other _____

Anticipated Monitoting:

Radiation Meter (A.3) _____
Gas Chromatograph (A.4) _____
Photovac TIP / HNU(A.5) __X__
Draegger Tubes (A.6) _____
Oxygen Meter (A.7) _____
Other _____

HAZARD DESCRIPTION

Personal Physical Safety Hazards
Heat (A.8) __X__ Cold (A.9) _____ Noise (A.10) __X___ Underground Utilities __X___ Overhead Utilities __X___ Heavy Equipment __X___ Slip, Trip, Fall __X__ Confined Spaces _____ Pressurized Airlines _____ Explosive (A.11) _____ Ladders or Scaffolds _____ Unguarded floor/ground Openings _____ Liquids in open containers, ponds, or lagoons _____ Radiation(A.12) _____ Physical Hazards (A.13) __X__ Oxygen Deficiency (A.14) _____ Other _____

WORK LIMITATIONS

Describe limitaions due to time of day, weather, situations, etc.
Heat

Original Health and Safety Form on file in GEC offices.

APPENDIX K
REFERENCES

1. Garrett, P., J.D. Lowry, and M. Moreau. MTBE as a Ground Water Contaminant, in *Proceedings of the NWWA/API Conference on Petroleum Hydrocarbons and Organic Chemicals in Ground Water - Prevention, Detection, and Restoration.* National Water Well Association, 1986. pp. 227-238.

2. Goldman Environmental Consultants, Inc. *Environmental Siurvey Report for Northway Plaza Shopping Center*, August 4, 1989.