SOILS ASSESSMENT FOR CLOSURE OF GASOLINE STORAGE TANK # 13

INTERNATIONAL BUSINESS MACHINES INC.
EAST FISHKILL, NEW YORK

January 25, 1991

D.E.SPEED
300-4A1
IBM EF

SOILS ASSESSMENT FOR CLOSURE OF GASOLINE STORAGE TANK # 13

This report documents soil assessment activities for closure of gasoline storage tank # 13, located at IBM's, East Fishkill, New York facility. The tank is an underground, 5,000 gallon gasoline storage tank located on the North face of Building 308. The tank was cleaned and closed in place according to 40 CFR Part 280 in 1989.

SOIL ASSESSMENT PLAN

EPA 40 CFR Part 280.72 requires site assessment activities to measure for the presence of a release, at the time of tank closure. The regulations stipulate that the sampling method, locations, and sample analysis be selected on the basis of the tanks physical surroundings and contents (appendix C). The UST regulations do not specify specific means of sampling or analyis.

Based upon the tanks physical surroundings and contents, this soil assessment plan was devised so that soil samples were collected at three depth intervals by split spoon sampling from a truck mounted hollow stem auger. Analysis of the soil samples for hydrocarbon chemical constituents was performed by a NYSDEC certified laboratory using methods SW-8020 and SW-8240[1]. These methods were selected based upon the expected composition of a gasoline[2].

RESULTS

Drilling was conducted approximately 2 to 5 feet from the northeast corner of the tank, using a truck mounted 8" hollow stem auger . Soil samples were collected in a 2-inch O.D., 2 foot long split spoon sampler. The split spoon samples were subsampled for chemical analysis at depth intervals

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1 U.S. EPA, 1982. Test Methods for Evaluation Solid Waste-Physical/Chemical Methods. Second Edition. SW-846.

2 Kramer, W.H. And T.J. Hayes., Water Soluble Phase of Gasoline: Results of a Laboratory Mixing Experiment., New Jersey Geological Survey Technical Memorandum 87-5., 1987.

2b Hoag, G.E., C. Bruell, and M. Marley., A Study of the Mechanisms Controlling Gasoline Hydrocarbon Partioning and Transport in Groundwater Systems. Institute of Water Resources, University of Conn., 1984.

of approximately 7-9', 13-15', and 25-27' (foot) below grade. Soil sampling was conducted under the supervision of a geotechnical engineer. A soil log is attached (Appendix A).

The three soil samples collected for chemical analysis were shipped to an independent New York State certified analytical testing laboratory. The sampling Chain of Custody documentation and analytical results are attached (appendix A). These results indicate that no petroleum based hydrocarbon constituents were detected within the soils surrounding the gasoline storage tank. Tank # 13 is located within a known ground water remedial action area (Area-A) which is under remediation as per a consent order between New York State and IBM. Hence, tetrachloroethylene, the principal contaminant within the ground water remedial action zone, was detected in some of the samples.

Based upon the results of this testing, soils and ground water at the location of gasoline storage tank number 13 have not been impacted by a release of gasoline or other petroleum hydrocarbon.

APPENDIX A: ANALYTICAL RESULTS

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REPORT TO

IBM Corporation
Dept.92D, 300-4-A1
E.Fishkill Facility, RT. 52
Hopewell Junction, NY 12533
Attn: Mr. David Speed

Work ID: Well A5-1
Work Order: 90-11-201

P.O. No.: CT 249954 Z

NET Atlantic, Cambridge Division
12 Oak Park
Bedford, MA 01730

IBM-EF- 77

Received: 11/08/90

NET Cambridge **REPORT** **Work Order # 90-11-201**
12/12/90 15:32:21

REPORT TO: IBM Corporation
Dept.92D, 300-4-A1
E.Fishkill Facility, RT. 52
Hopewell Junction, NY 12533
ATTEN: Mr. David Speed

CLIENT: IBM_FISHKILL SAMPLES: 3
COMPANY: IBM Corporation
FACILITY: Dept.92D, 300-4-A1
Hopewell Junction, NY 12533

WORK ID: Well A5-1
TAKEN: By Chuck Rine
TRANS: By Fedex # 7621486412
TYPE: Soil
P.O. #: CT 249954 Z
INVOICE: under separate cover

PREPARED BY: NET Atlantic, Cambridge Div.
12 Oak Park
Bedford, MA 01730
ATTEN:
PHONE: 617-275-3535

Nancy A. Kilar
CERTIFIED BY
CONTACT KILAR

This report is approved for release by the following staff:
Laboratory Director: Michael P. Delaney
Inorganic Laboratory:
Organic Laboratory:

SAMPLE IDENTIFICATION

01 A5-1(7'-9')
02 A5-1(13-15')
03 A5-1(25-27')

TEST CODES and NAMES used on this report

V602_S VOC/aro/waste/soil SW-8020
V624_S VOC-waste/soil SW-846/8240

NET

Received: 11/08/90

NET Cambridge **REPORT** **Work Order # 90-11-201**

Results by Sample

SAMPLE ID **A5-1(7'-9')** FRACTION **01A** TEST CODE **V602_S** NAME **VOC/aro/waste/soil SW-8020**

Date & Time Collected **11/06/90** Category _____

Analysis
Completed: 11/24/90

COMPOUND	ug/kg-wet(a)
Benzene	
Toluene	
Ethyl Benzene	
total Xylenes	
DETECTION LIMIT	1 *

NET

(a) - Concentrations less than the detection limit are left blank

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NET Cambridge REPORT Work Order # 90-11-201
Results by Sample

SAMPLE ID A5-1(13-15') FRACTION 02A TEST CODE V624_S NAME VOC-waste/soil SW-846/8240
Date & Time Collected 11/06/90 Category

Analysis
Completed: 11/24/90

COMPOUND	ug/kg(ppb)-wet(a)	COMPOUND	ug/kg(ppb)-wet(a)
Chloromethane		Bromoform	
Bromomethane		1,1,2,2-Tetrachloroethane	
Vinyl Chloride		Tetrachloroethylene	5
Chloroethane		Toluene	
Methylene Chloride		Chlorobenzene	
1,1-Dichloroethylene		Ethylbenzene	
1,1-Dichloroethane		total Xylenes	
trans-1,2-Dichloroethylene			
Chloroform		The following are non-priority pollutant Hazardous Substance List compounds.	
1,2-Dichloroethane			
1,1,1-Trichloroethane			
Carbon Tetrachloride		Carbon Disulfide	
Bromodichloromethane		2-Butanone (MEK)	
1,2-Dichloropropane		Vinyl Acetate	
trans-1,3-Dichloropropene		2-Hexanone (MPK)	
Trichloroethylene		4-Methyl-2-pentanone (MIBK)	
Chlorodibromomethane		Styrene	
1,1,2-Trichloroethane			
Benzene		DETECTION LIMIT	5 *
cis-1,3-Dichloropropene			

(a) - Concentrations less than the detection limit are left blank

NET

IBM-EF- //

Received: 11/08/90

NET Cambridge REPORT Work Order # 90-11-201
Results by Sample

SAMPLE ID A5-1(25-27') FRACTION 03A TEST CODE V602_S NAME VOC/aro/waste/soil SW-8020
Date & Time Collected 11/06/90 Category

Analysis
Completed: 11/21/90

COMPOUND	ug/kg-wet(a)
Benzene	
Toluene	
Ethyl Benzene	
total Xylenes	
DETECTION LIMIT	1

NET

(a) - Concentrations less than the detection limit are left blank

IBM-EF- //

IBM Corporation

* NOTES ON VOLATILE ORGANICS

IBM Sample #'s A5-1(7'-9'), NET I.D # 90-11-201-01A-X and IBM Sample # A5-1(13-15), NET I.D # 90-11-201-02A-x were analyzed initially analyzed within the 14 day EPA holding time requirement. However, due to low Internal Standard Recoveries, re-analysis was done outside the holding time. The initial and re-analysis confirm the results.

NET

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: NET CAMBRIDGE Contract: 90-11-201

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Level: (low/med) _____

	EPA SAMPLE NO.	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #	OTHER	TOT OUT
01	AS-1 (7'-9')	87	101	89		0
02	AS-1 (13-15')	91	88	84		0
03	AS-1 (25-27')	99	72*	85		0
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

	QC LIMITS
S1 (TOL) = Toluene-d8	(81-117)
S2 (BFB) = Bromofluorobenzene	(74-121)
S3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: NET - CAMBRIDGE Contract: 90-11-305

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: -08 Level: (low/med) _____

D9072

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	0	39	78	59-172
Trichloroethene	↓	5	42	74	62-137
Benzene	↓	0	60	120	66-142
Toluene	↓	2	70	138	59-139
Chlorobenzene	↓	0	52	104	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50	34	68	14	22	59-172
Trichloroethene	↓	37	64	14	24	62-137
Benzene	↓	60	120	0	21	66-142
Toluene	↓	68	132	4	21	59-139
Chlorobenzene	↓	45	90	14	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

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METHOD BLANK SUMMARY

Case No. _____ Region _____ Contractor NET CANBRIAGE Contract No. 9011-201

LAB ID	DATE OF ANALYSIS	FRACTION	MATRIX	CONC. LEVEL	INST. ID	CAS NUMBER	COMPOUND (HSL, TIC OR UNKNOWN)	CONC.	UNITS	COL
								L	ug/Kg	1C
VBLK 112490 D	11-24-90	VOA	SOIL	L	HP5975D		ACETONE			
VBLK 112990 L	11-29-90	↓	↓	↓	HP5970L	—	—	—	—	—

Comments:

NET

FORM IV

7/86

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TEST CODE **V602_S** NAME **VOC/aro/waste/soil SW-8020**

Method Reference: U.S. EPA, 1982. Test Methods for Evaluating Solid Waste-Physical/Chemical Methods. Second Edition. SW-846. EPA/Office of Solid Waste, Washington, D.C. Method 5030/8020, test method for volatile aromatic organic compounds.

Method Description: The analytes in a solid or waste sample are isolated and concentrated by purging the sample with inert gas and trapping them on an absorbant. The absorbant is thermally desorbed into a gas chromatograph (GC) where the analytes are separated and detected with a photoionization detector (PID) detector.

Quality Control Procedures: Instrument response is calibrated at least once per day using EPA traceable standard reference solutions. Analytes are quantified using the internal standard method. Surrogate standard compounds are added to every sample to monitor method performance. Additional quality control includes the analysis of matrix spikes, duplicate samples and blanks.

TEST CODE **V624_S** NAME **VOC-waste/soil SW-846/8240**

Method Reference: U.S. EPA, 1982. Test Methods for Evaluating Solid Waste-Physical/Chemical Methods. Second Edition. SW-846. EPA/Office of Solid Waste, Washington, D.C. Method 5030/8240, test method for volatile organic compounds.

Method Description: The analytes in a solid/waste sample are isolated and concentrated by purging the sample with inert gas and trapping them on an absorbant. The absorbant is thermally desorbed into a gas chromatograph (GC) where the analytes are separated and detected with a mass spectrometric (MS) detector.

Quality Control Procedures: The GC/MS is tuned daily with bromofluorobenzene (BFB). Instrument response is calibrated daily using EPA traceable standard reference solutions. Analytes are quantified using the internal standard method. Surrogate standard compounds are added to every sample to monitor method performance. Additional quality control includes the analysis of matrix spikes, duplicate matrix spikes and blanks.

NET

IBM

(NYSDOH-LAB NO. 10426)

IBM CORPORATION
ENVIRONMENTAL SERVICES B/300 Z4A1
EAST FISHKILL FACILITY ROUTE 52
HOPEWELL JUNCTION, NY 12533-0999
TELEPHONE 914-894-4060

914-894-5289

CUSTOMER NAME: Dave Speed 300-4A1

ADDRESS: IBM Corporation - Environmental Services
East Fishkill Facility Route 52
Hopewell Junction, NY 12533

SAMPLER: Chuck Rine / Groundwater Sciences

DATE: 11-7-90

PROJECT NAME: Well A5-1

PROJECT NUMBER:

Well # ↓ Depth ↓

SAMPLE & LOCATION	COLLECTED DATE	GRAB OR COMPOSITE	LAB ID NO.	SAMPLE SEAL(S)	NO. BOTTLES	PRESERVED WITH	RECEIVING pH	ANALYSIS REQUESTED	COMMENTS	TURN AROUND TIME
A5-1 7'-9'	11-6-90	Comp			1	None		Method 8020	125 ml jar w/ soil	Normal
A5-1 13'-15'	11-6-90	comp			1	↓		Method 8240	125 ml jar w/ soil	↓
A5-1 25'-27'	11-6-90	comp			1	↓		Method 8020	125 ml jar w/ soil	↓

RELINQUISHED BY	RECEIVED BY	RECEIVED BY
PRINT NAME: Charles Rine	PRINT NAME: ~~J.K. Cressy~~ J.K. CRESSY	PRINT NAME:
SIGNATURE: Charles A. Rine	SIGNATURE: J.K. Cressy	SIGNATURE:
DATE / TIME: 15:00 to 7d Ex.	DATE / TIME:	DATE / TIME:

NET

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LAB COPY

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AIRBILL
PACKAGE
TRACKING NUMBER 7621486416

7621481412

9011201

RECIPIENT'S COPY

Date 7-90

From (Your Name) Please Print: Charles A. Rine, Jr.
Your Phone Number (Very Important): (914) 896-0288
Company: GROUND WATER SCIENCES CORP
Department/Floor No.:
Street Address: 2 SUMMIT COURT
City: FISHKILL
State: NY
ZIP Required: 1 2 5 2 4

To (Recipient's Name) Please Print: Ms. Nancy Kilan
Recipient's Phone Number (Very Important): 617 275-3535
Company: NET Atlantic, Inc.
Department/Floor: Cambridge Division
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip+ Codes.): 12 Oak Park
City: Bedford,
State: Mass.
ZIP Required: 0 1 7 320

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.): 90028

IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City:
State:
ZIP Required:

PAYMENT 1 ☐ Bill Sender 2 ☐ Bill Recipient's FedEx Acct No 3 ☐ Bill 3rd Party FedEx Acct No 4 ☐ Bill Credit Card 5 ☐ Cash

SERVICES (Check only one box)		DELIVERY AND SPECIAL HANDLING	PACKAGES	WEIGHT lb Pounds Only	YOUR DECLARED VALUE	OVER SIZE
Priority Overnight Service (Delivery by next business morning†)	Standard Overnight Service (Delivery by next business afternoon†)	1 ☐ HOLD FOR PICK-UP (Fill in Box H)				
11 ☒ YOUR PACKAGING	51 ☐	2 ☐ DELIVER WEEKDAY				
16 ☐ FEDEX LETTER *	56 ☐ FEDEX LETTER *	3 ☐ DELIVER SATURDAY (Extra charge) (Not available to all locations)				
12 ☐ FEDEX PAK *	52 ☐ FEDEX PAK *	4 ☐ DANGEROUS GOODS (Extra charge) (CSS not available for Dangerous Goods Shipments)				
13 ☐ FEDEX BOX	53 ☐ FEDEX BOX	5 ☐ CONSTANT SURVEILLANCE SVC. (CSS) (Extra charge) (Release Signature Not Applicable)				
14 ☐ FEDEX TUBE	54 ☐ FEDEX TUBE	6 ☐ DRY ICE ____ Lbs				
Economy Service (formerly Standard Air) (Delivery by second business day†)	Heavyweight Service (for Extra Large or any package over 150 lbs.)	7 ☐ OTHER SPECIAL SERVICE				
30 ☐ ECONOMY SERVICE	70 ☐ HEAVYWEIGHT **	8 ☐				
	80 ☐ DEFERRED HEAVYWEIGHT **	9 ☐ SATURDAY PICK-UP (Extra charge)				
		10 ☐				
		11 ☐				
		12 ☐ HOLIDAY DELIVERY (If offered) (Extra charge)				
			1	15		
			Total	Total	Total	
			1	15		

† Delivery commitment may be later in some areas
* Declared Value limit $100
** Call for delivery schedule

DIM SHIPMENT (Heavyweight Services Only) ☐ ____ lbs

Received At:
1 ☐ Regular Stop 3 ☐ Drop Box
2 ☐ On-Call Stop 4 ☐ B.S.C. 5 ☐ Station

FedEx Emp. No.

Date/Time

5 Release Signature

Emp No | Date

☐ Cash Received
☐ Return Shipment
☐ Third Party ☐ Chg To Del ☐ Chg To Hold

Street Address

City | State | Zip

Received By: X

Date/Time Received | FedEx Employee Number

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

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APPENDIX B: SOIL SAMPLING LOG

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SOIL CLASSIFICATION SHEET

Sheet 1 of 4

Project E. Fishkill Mon. Wells. Job No. 90028 Drill Hole No. A5-1

Site Area No. 5, Abandoned gasoline tank Elevation

Contractor Soiltesting, Inc. Driller GWL 0 Hrs.

Classified by CAR Date 10-10-90 24 Hrs.

3:30 – Coordinates N/S E/W HNu background = 1.0

Depth Ft.	Sample No.	SPT Blows/ 6 In. (6 12 18 24)	In. Rec.	SOIL DESCRIPTION Density (or Consistency), Color Soil Type - Accessories	U.S.C.S.	qu	Coarse Granular Soils: Range Size	Coarse Granular Soils: Grain Shape	REMARKS Chemical Comp., Geologic Data, Groundwater, Construction Prob.etc.
0				Bituminous pavement					
.2				Fill, med br, slightly moist (GM)					HNu = 0 (above backgr.)
1.0	①			Fill (GM)					HNu = 0
2.5	②			Fill, med br-tan, moist (GC) increasing clay fraction			0.5-4 cm	Subang	HNu = 0
3.5	③			Fill (SM-SC), med-br, moist					
5.0	④			Fill (GC-SC)					HNu = 0 (down hole).

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GROUNDWATER SCIENCES CORPORATION

FIELD OPERATIONS REPORT

Project No: 90028

Total Depth 50'
Depth to S.S. Refusal 47'
Depth to Competent Bedrock 47'
SWL (Date)
Screened Interval 35.0'-25.0'
Hole Diameter 8" HSA
Monitoring Tube 2" SS and PVC
Elev., Ground Surface

Well No. A5-1
Driller Soiltesting, Inc.
Logged by C. Rine/GSC
Drilling Began 11-6-90
Drilling Completed 11-7-90
Well Const. Completed 11-8-90
Development Completed
Elev., T.O.C.

Depth	Blow Count	RQD ft/ft	Recovery ft/ft	Sample No.1 Run No.	Sample Description (USCS), GRN Size, Color, Shape texture, moistness, etc. Headspace procedure: 0.1 ft of sample in 200 ml sample jar. Allow to sit for 0.5 hr. in truck cab (~60°F)	% Grn. Size C	S	Sd	Gr	OVA Headspace test result Other Notes Background 3-4 ppm.	Graphic Lith.	Well Const.
		Analysis										
2												
4												
6	8		8"	1	Br sandy silt w/ some f gravel, stiff, damp. Gravel is rounded to subang. Trace organic material (black silt blebs)	—	50	30	20			
	6 7 14											
8	13	8020	14"	2(2)	Br sandy silt w/ some f gravel. (ML-SM)					15 ppm		
	17 32											
					Dolostone cobble @ 8.7', lt grey, microxstalline							
	19 20		2"	—	Br sandy silt (ML)							
10	22 17 16											
	11 12		6"	3	Grey-br silty fine sand, loose, damp (SM)	—	30	70	—	250 ppm		
12	20 25											
	13 21	8240	12"	4(2)	Fine brown sand, somewhat loose, little silt (SP)	—	20	80	—	25 ppm		
14	17 18 22											
	5 6"		NR									
16												
	26		2'		Rock - dark grey dolostone cobble w/ silty sand, dry.							
18	33 36 39											
	35		1'	5	Grey silt, brown, very stiff (19-19.5') (ML)	25	60	15	—	111 ppm		
20					Dk brown f-m sand, some silt, some gravel (SM-ML)	—	30	50	20			

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GROUNDWATER SCIENCES CORPORATION

FIELD OPERATIONS REPORT

Project No: 90028

Total Depth	50'
Depth to S.S. Refusal	47'
Depth to Competent Bedrock	47'
SWL (Date)	
Screened Interval	35.0'-25.0'
Hole Diameter	8" HSA
Monitoring Tube	2" SS + PVC
Elev., Ground Surface	
Well No.	A5-1
Driller	Soil Testing
Logged by	C. Rine
Drilling Began	11-6-90
Drilling Completed	11-7-90
Well Const. Completed	11-8-90
Development Completed	
Elev., T.O.C.	

Depth	Blow Count	RQD ft/ft	Recovery ft/ft	Sample No.1 Run No.	Sample Description (USCS), GRN Size, Color, Shape texture, moistness, etc.	% Grn. Size C	S	Sd	Gr	Other Notes OVA headspace test result.	Graphic Lith.	Well Const.	Depth
0	21												
	26												
21	15		NR										
	30												
2	26												
	24												
5	23		5"		f-m grey silty sand with coarse subangular to angular gravel, dry (SM) dark grey to black lms.	—	20	50	30	240 ppm			
	50/5"												
4													
25	14	80%	10"	(2)	F-c sand, grey, and angular f-c gravel, dry (SW) subrounded to subangular					710 ppm			
	15												
6	12												
	13												
27	15		3"		grey sandy silty gravel, wet, angular. (GM)	—	20	30	50	wet @ 27'			
	20												
8	50/6"												
29	15		9"		grey f-c sand, little silt, some f-c gravel (SW)					45 ppm ambient temp open hole			
	11												
0	6												
	3				(SW-GW)								
31	3		22"		Grey f-m sand and f-c gravel, wet, somewhat loose, gravel is angular, incl 3 "cored" rock fragments. due to water.	—	10	50	40	24 ppm.			
	6												
2	12												
	10												
33	13		15"		Grey silty fine sand, somewhat stiff, wet. very homogeneous.	—	30	70	—	30 ppm			
	27												
4	50/5"												
35	21		8"		Grey silty fine sand w/ trace fine angular gravel. (SM)					14 ppm.			
	50/5"												
6													
37	23		14"		f-c sand and f-c angular gravel, wet (SW-GW)	—	20	40	40				
	45												
8	50/4"												
	50/5"				Brown f-m sand w/ some silt, f gravel, wet (SP)	—	20	70	10				
0													

GROUNDWATER SCIENCES CORPORATION

FIELD OPERATIONS REPORT

Project No: 90028

Total Depth 50'
Depth to S.S. Refusal 47'
Depth to Competent Bedrock 47'
SWL (Date)
Screened Interval 35.0'-25.0'
Hole Diameter 8" HSA
Monitoring Tube 2" SS + PVC
Elev., Ground Surface

Well No. A5-1
Driller Soiltesting, Inc
Logged by C. Pine
Drilling Began 11-6-90
Drilling Completed 11-7-90
Well Const. Completed 11-8-90
Development Completed
Elev., T.O.C.

Depth	Blow Count	RQD ft/ft	Recovery ft/ft	Sample No.1 Run No.	Sample Description (USCS), GRN Size, Color, Shape texture, moistness, etc.	% Grn. Size C	S	Sd	Gr	OVA background 3-4 ppm Other Notes OVA headspace test result	Graphic Lith.	Well Const.	Depth
41	50/5"		3"		orange brown silty sand, litf gravel (SM-SP)	—	30	55	15				
42	50/3"		2"		Rock fragments (weathered BR?)								
45	50		16"		45-46 grey f-m sand and coarse angular gravel (SW)	—	—	70	30	2 ppm			
46	38 50/6"				46-47 rust brown-orange silty f-m sand. (decomp bedrock) zone of fine tan-buff sand 46.7-46.9.	—	30	70	—				
47	50/0		NR		SS refusal @ 47.0' BR @ 47.0'								
48					auger time (min/ft)								
49					augering stop for direction								
50	5.0		15" / 60"		Dolostone bedrock (to be described in detail later)								
2	3.0												
	5.0												
4	7.0												
	7.0												
55	5.0		48" / 60"										
6	1												
8													
0	V												

End of boring 50.0'

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APPENDIX C: 40 CFR PART 280.72

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(B) American Petroleum Institute Publication 2015, "Cleaning Petroleum Storage Tanks";

(C) American Petroleum Institute Recommended Practice 1631, "Interior Lining of Underground Storage Tanks," may be used as guidance for compliance with this section; and

(D) The National Institute for Occupational Safety and Health "Criteria for a Recommended Standard . . . Working in Confined Space" may be used as guidance for conducting safe closure procedures at some hazardous substance tanks.

§ 280.72 Assessing the site at closure or change-in-service.

(a) Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the type of backfill, the depth to ground water, and other factors appropriate for identifying the presence of a release. The requirements of this section are satisfied if one of the external release detection methods allowed in § 280.43 (e) and (f) is operating in accordance with the requirements in § 280.43 at the time of closure, and indicates no release has occurred.

(b) If contaminated soils, contaminated ground water, or free product as a liquid or vapor is discovered under paragraph (a) of this section, or by any other manner, owners and operators must begin corrective action in accordance with Subpart F.

§ 280.73 Applicability to previously closed UST systems.

When directed by the implementing agency, the owner and operator of an UST system permanently closed before December 22, 1988 must assess the excavation zone and close the UST system in accordance with this Subpart if releases from the UST may, in the judgment of the implementing agency, pose a current or potential threat to human health and the environment.

§ 280.74 Closure records.

Owners and operators must maintain records in accordance with § 280.34 that are capable of demonstrating compliance with closure requirements under this Subpart. The results of the excavation zone assessment required in § 280.72 must be maintained for at least 3 years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the UST system out of service;

(b) By the current owners and operators of the UST system site; or

(c) By mailing these records to the implementing agency if they cannot be maintained at the closed facility.

Subpart H—Financial Responsibility

SOURCE: 53 FR 43370, Oct. 26, 1988, unless otherwise noted.

§ 280.90 Applicability.

(a) This subpart applies to owners and operators of all petroleum underground storage tank (UST) systems except as otherwise provided in this section.

(b) Owners and operators of petroleum UST systems are subject to these requirements if they are in operation on or after the date for compliance established in § 280.91.

(c) State and Federal government entities whose debts and liabilities [illegible] the debts and liabilities of a state or the United States are exempt from the requirements of this subpart.

(d) The requirements of this subpart do not apply to owners and operators of any UST system described in § 280.10 (b) or (c).

(e) If the owner and operator of a petroleum underground storage tank are separate persons, only one person is required to demonstrate financial responsibility; however, both parties are liable in event of noncompliance. Regardless of which party [illegible] the date set for compliance at a particular facility is determined by the characteristics of the owner as set forth in § 280.91.