International Business Machines Corporation

PO Box 950
Poughkeepsie, NY 12602

July 29, 1996

Mr. Edwin Dassatti
Bureau of Hazardous Compliance and Land Management
Division of Solid and Hazardous Materials
New York State Department of Environmental Conservation
50 Wolf Road, Room 460
Albany, New York 12233-7252

Re: Notification of Recently Identified Solid Waste Management Unit and Transmittal of RFA Results, IBM-Kingston, Part 373, Permit Number -5154-67/1-0

Dear Mr. Dassatti:

By this letter, IBM is notifying the New York State Department of Environmental Conservation (NYSDEC) that one additional solid waste management unit (SWMU) was identified at the IBM-Kingston facility. The status of this unit was briefly discussed with Gary Casper on June 21, 1996 when this matter was being pursued as a petroleum spill (reported to NYSDEC on May 30, 1996). Initially, sampling results indicated that it was not appropriate to list this unit as a SWMU. Subsequent sampling results indicate that the unit should be considered a SWMU because of low level detections of Aroclor-1254 in soil and groundwater beneath Building 202 (B202). This unit has been designated Building 202 Elevator Number 2 (SWMU AE).

BACKGROUND

B202 is located on the west side of Neighborhood Road as shown on Figure 1. B202 was built in 1970 and has three elevators located near the center of the building, including Elevator Number 2 (Figure 2). These elevators are constructed such that a single, non-telescoping, hydraulic piston located in a subsurface boring controls the movement of the elevators in this four-story building. These elevator pistons are approximately 64 feet long. The bore hole in which Elevator Number 2's hydraulic piston is located is believed to be approximately 64 feet deep, 22 inches in diameter, and cased to a depth of approximately 17 feet. The borehole below 17 feet is believed to be an open hole in the bedrock. The annular space between the piston and the bore hole was filled with sand.

ASSESSMENT

The following chronology was developed from several sources and presents the salient events leading up to the listing of this unit as a SWMU. In May 1996, Schindler Elevator personnel (the current elevator maintenance contractor) reported to IBM that the Building 202 Number 2 Elevator had

required the addition of 15 gallons of hydraulic fluid since January 1996. Over the next several days, this situation was investigated.

Schindler accessed the annular space between the piston and the piston boring casing and noted that oily sand was present. Using hand augers, Groundwater Sciences Corporation (GSC) removed sand from the annular space to a depth of approximately 10 feet below the elevator shaft floor slab and encountered sand containing hydraulic fluid throughout the interval. Samples of both the hydraulic fluid and the oil-soaked sand were conveyed to EnviroTest Laboratories, Inc. for analysis. The sand was analyzed for base neutral compounds (BNCs) by United Stated Environmental Protection Agency (USEPA) SW-846 Method 8270, for aromatic volatile organic compounds (VOCs) by Method 8020 and for polychlorinated byphenyls (PCBs) by Method 8080. The hydraulic fluid from the reservoir in the mechanical room was analyzed for PCBs by Method 8080. No BNCs, aromatic VOCs, or PCBs were detected in the sand sample and PCBs were not detected in hydraulic fluid sample. Based on these sampling results, this situation was considered to be related only to non-hazardous petroleum constituents. These results were discussed with Gary Casper of the NYSDEC by Michele West of IBM on June 21, 1996. At that time, NYSDEC and IBM concurred that the elevator shaft did not represent a SWMU as no hazardous constituents had been identified.

To investigate whether hydraulic fluid had migrated beyond the piston boring, a monitoring well location was chosen as close as practical in what was believed to be the downgradient direction (northwest) from the Elevator Number 2 piston boring. This location is in the mechanical room adjacent to the elevator shaft, and is approximately 10 feet to the northwest of the elevator shaft boring (Figure 2).

On June 27, 1996, drilling of monitoring well 202-1R/S began. Continuous split spoon soil samples were collected from a depth of 6 feet below the B202 floor slab to a depth of 17.7 feet where bedrock was encountered. The static water level in the elevator piston boring suggested that the varved silt and clay soil in this area may not be saturated; therefore, the boring was advanced 15 feet into bedrock. A monitoring well was constructed in the boring such that a 22-foot interval with 20 feet of screen was open in the bedrock and soil formations (monitoring well logs attached).

Soil sampling results indicated the presence of total petroleum hydrocarbons by EPA Method 418.1 at concentrations ranging from 663 milligrams per kilogram (mg/kg) to 9,260 mg/kg (refer to Table 1). The deepest two samples had the strongest petroleum odor and exhibited soil staining. On this basis, these two samples were also analyzed for PCBs by Method 8080. In the deepest soil sample and the sample above it, PCBs were detected at concentrations of 0.028 J mg/kg and 0.029 J mg/kg, respectively.

Table 1 - B202 Well Soil Sampling Results

Total Petroleum Hydrocarbons (EPA Method 418.1) mg/kg			
Depth*	Well Number		
	202-1R/S (inside)	202-2S (west of B202)	202-3S (north of B202)
6' - 8'	2,100	58	39
8' - 10'	663	<29	(no recovery)
10' - 12'	4,590	<32	<33
12' - 14'	1,090	<32	33
14' - 16'	1,940	<33	45
16' - 18'	9,260	<33	41
18' - 20'	4,880	<33	30
20' - 22'	(bedrock)	40	(bedrock)
22' - 24'		46	
24' - 26'		45	
26' - 28'		45	
28' - 30'		60	
30' - 32'		<32	
32' - 34'		44	
34' - 36'		<32	

Aroclor-1254 (SW846 Method 8080) mg/kg			
Depth*	Well Number		
	202-1R/S (inside)	202-2S (west of B202)	202-3S (north of B202)
6' - 8'	NA	NA	NA
8' - 10'	NA	NA	(no recovery)
10' - 12'	NA	NA	NA
12' - 14'	NA	NA	NA
14' - 16'	NA	NA	NA
16' - 18'	0.029 J	NA	NA
18' - 20'	0.028 J	NA	NA
20' - 22'	(bedrock)	NA	(bedrock)
22' - 24'		NA	
24' - 26'		NA	
26' - 28'		NA	
28' - 30'		NA	
30' - 32'		NA	
32' - 34'		NA	
34' - 36'		NA	

Notes:
* For 202-1R/S subtract one foot (i.e. 6'-8' = 5'-7' in 202-1R/S)
NA - Not analyzed
J - Estimated value

The first groundwater sample was collected from this monitoring well for Total Petroleum Hydrocarbons (TPH) and PCB analysis on July 2, 1996. Results from this sample indicate that TPH was detected at 0.8 milligrams per liter (mg/l) and PCBs were detected at a concentration of 2 micrograms per liter (µg/l). The equipment rinse blank from this sample round detected TPH at 1.1 mg/l.

On the basis of the soil appearance, soil odor and soil sampling results, it was determined that hydraulic fluid impacts were not confined to the elevator piston boring. Unconfirmed groundwater sampling results supported this conclusion.

On the basis of the soil observations and soil sampling results from monitoring well 202-1R/S, two additional monitoring well locations were selected in downgradient positions with respect to Elevator Number 2 (Figure 2). Well installation and soil sample collection proceeded as per NYSDEC approved protocols specified in the Kingston site Quality Assurance Project Plan. Groundwater samples were collected as per the NYSDEC approved Groundwater Monitoring Plan dated March 15, 1995. As shown on the attached well logs, monitoring wells 202-2S and 202-3S were completed in early July 1996 and groundwater samples were collected on July 10, 1996. Continuous split spoon soil samples from a depth of 6 feet to the top of bedrock were collected and analyzed for TPH by Method 418.1. TPH was not detected in approximately one-half of these samples and was detected at low concentrations near the detection limit in the other samples. The relative significance of low concentration TPH detections is discussed later in this letter. Groundwater samples collected from these two monitoring wells on July 10, 1996 were analyzed for TPH, zinc, Method 8020 VOCs, BNCs (Method 625), and PCBs (Method 8080). Samples were analyzed for zinc because the Material Safety Data Sheet for the hydraulic fluid used by the current elevator maintenance contractor indicated that zinc was a constituent present in the hydraulic fluid. TPH was detected at a concentration of up to 0.9 mg/l and zinc was detected at a concentration of up to 195 µg/l. No Method 8010, 625 or 8080 parameters (including PCBs) were detected in either groundwater sample. Therefore, no PCBs have migrated beyond the immediate vicinity of the release.

On July 10, 1996, a confirmation groundwater sample was collected from monitoring well 202-1R/S. This sample was split three ways with the one primary sample and intralaboratory duplicate sample being sent to EnviroTest Laboratories, Inc. and a second duplicate (interlaboratory) being sent to the IBM East Fishkill Laboratory. The last of these confirmation sample results was received on July 15, 1996. These samples (July 2 and July 10) indicated that the PCB Aroclor-1254 was present in the groundwater beneath Building 202 at low concentrations (reported from 2 µg/l to 10.2 µg/l; refer to Table 2). On the basis of the confirmed detection of this hazardous constituent, IBM determined that this unit should be listed as a SWMU.

Table 2 - B202 Aroclor-1254 Groundwater Sampling Results

Aroclor-1254 (SW846 8080) ug/l			
Date	Well Number		
	202-1R/S (inside)	202-2S (west of B202)	202-3S (north of B202)
July 2, 1996	2 (a)		
July 10, 1996	3.5 / 2.6 / 10.2 (b)	ND@1	ND@1

Notes:
(a) coring/development water drum 7.4 ug/l; equipment rinse ND@1
(b) equipment rinse blank ND@1

The top of casing elevations for the three monitoring wells were determined by a New York State licensed surveyor. A round of groundwater water elevation measurements was made on July 18, 1996, approximately one week after any development or sampling activity took place in the monitoring wells. In each case, the water table is within the varved silt and clay unit. The results of these activities are shown on Figure 3, which indicates the direction of groundwater flow within the varved silt and clay soil unit beneath this portion of the site. This figure shows that groundwater flows generally northwestward from Elevator Number 2 toward monitoring well 202-1R/S and then toward monitoring wells 202-2S and 202-3S.

SUMMARY OF RESULTS AND CONCLUSIONS

TPH was used as an indicator parameter during the investigation of this petroleum release due to the speed and economy associated with this analysis. When the oil-soaked sand within the piston borehole was analyzed for BNCs, Method 8020 VOCs and PCBs, none were detected. The deeper soil samples in well 202-1R/S had high TPH concentrations (greater than 4,800 mg/kg) and Aroclor-1254 was detected at concentrations less than 0.03 mg/kg. Therefore, the low TPH concentrations (<70 mg/kg) associated with some soil samples from 202-2S and 202-3S are not believed to indicate impacts to soils at these locations from hazardous constituents. In fact, these low levels may not indicate any impact from the release of hydraulic oil, since low levels of soil TPH (<100 mg/kg) can represent background conditions derived through the extraction of naturally occurring organic compounds.

The petroleum release investigation indicates that petroleum products and near detection limit concentrations of one hazardous constituent (Aroclor-1254, a PCB) are present in the subsurface in the immediate vicinity of B202 Elevator Number 2, in the central portion of B202. However, soil and groundwater sampling results from downgradient monitoring wells 202-2S and 202-3S indicate that soil and groundwater impacts are confined to that area beneath B202. This conclusion is supported by the low hydraulic conductivity of the varved silt and clay and shale bedrock beneath B202 and the low mobility of PCBs in groundwater. In addition to these factors, the lacustrine varved silt and clay is likely to have high organic carbon content, which further enhances the ability of this unit to retard the transport of organic compounds in the subsurface, particularly PCBs.

IBM believes that this investigation meets the technical requirements of a RCRA Facility Assessment (RFA). This RFA indicates that subsurface impacts are localized beneath B202 and that no further investigation activities are necessary or appropriate. Therefore, no RCRA Facility Investigation (RFI) is proposed for this SWMU.

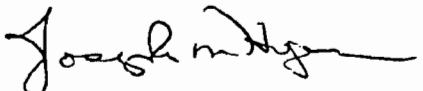
We respectfully request NYSDEC's concurrence that the investigation described above satisfies the requirement for an RFA for this SWMU and that an RFI is not necessary or appropriate.

If you have any questions or need additional information, please do not hesitate to contact Michele West at (914) 894-5536.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

International Business Machines Corporation



Joseph M. Hogan
Environmental, Health and Safety

JMH:lp/m
Attachments

cc: Gary Casper
Steven Kaminski
Rod Aldrich
James Reidy

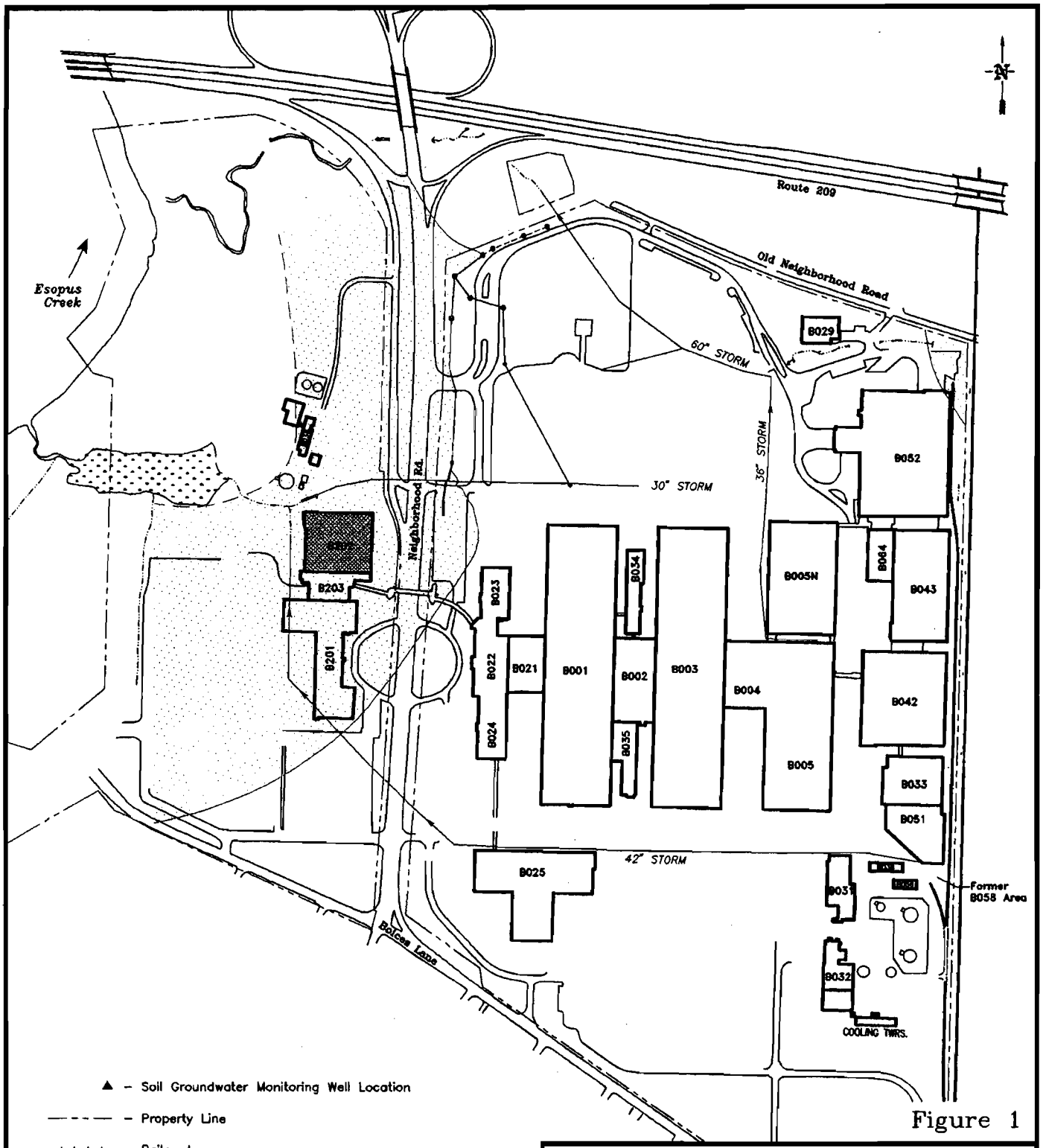


Figure 1

IBM
Kingston, New York

Building 202 Site Location Map

DRAWN BY: MJM	DATE: 7/26/96	DRAWING NO. 93002-003-0
CHECKED & APPROVED BY: DAS		

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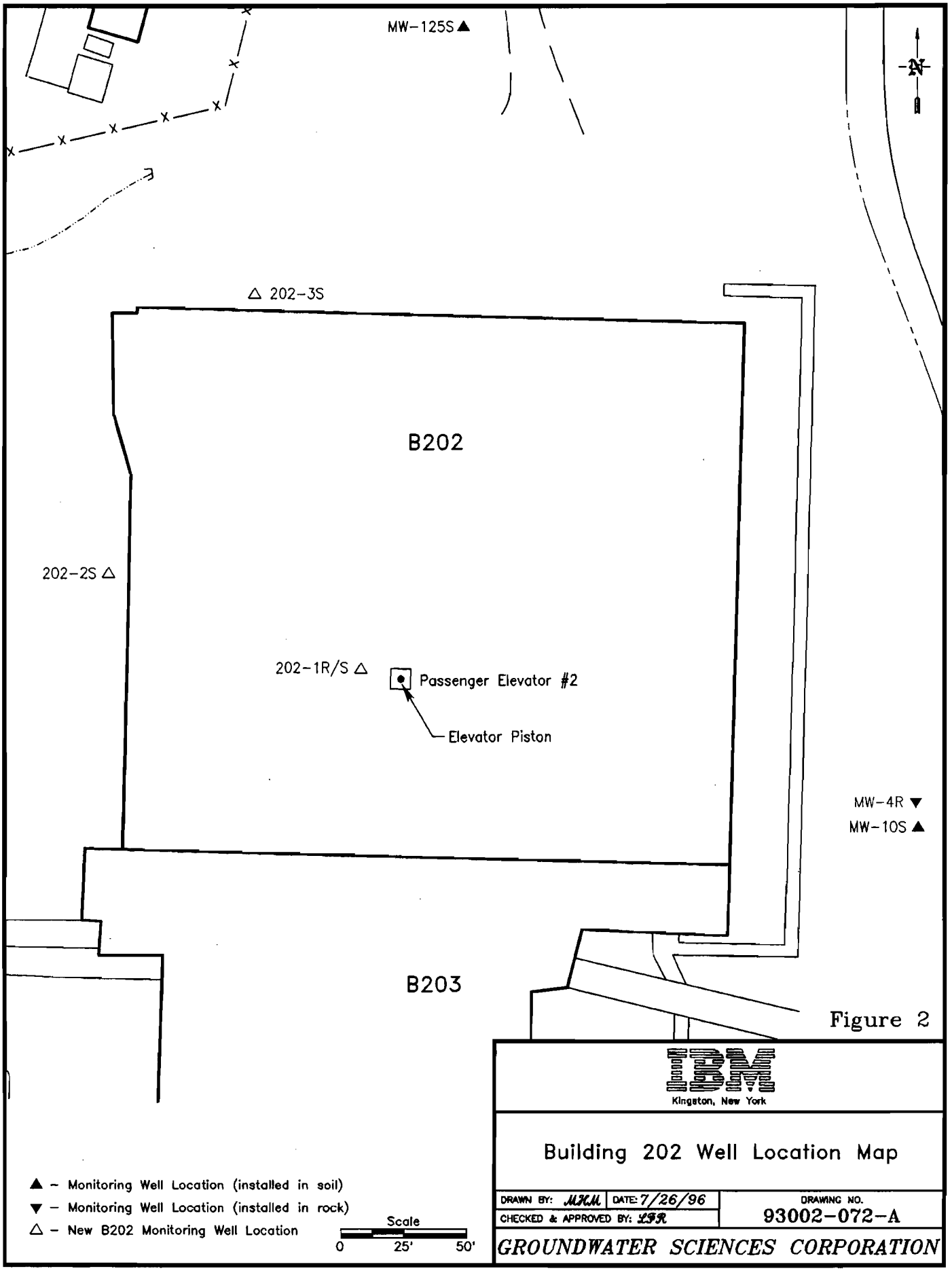

Figure 2

IBM
Kingston, New York

Building 202 Well Location Map

DRAWN BY: MKM	DATE: 7/26/96	DRAWING NO. 93002-072-A
CHECKED & APPROVED BY: LSR		

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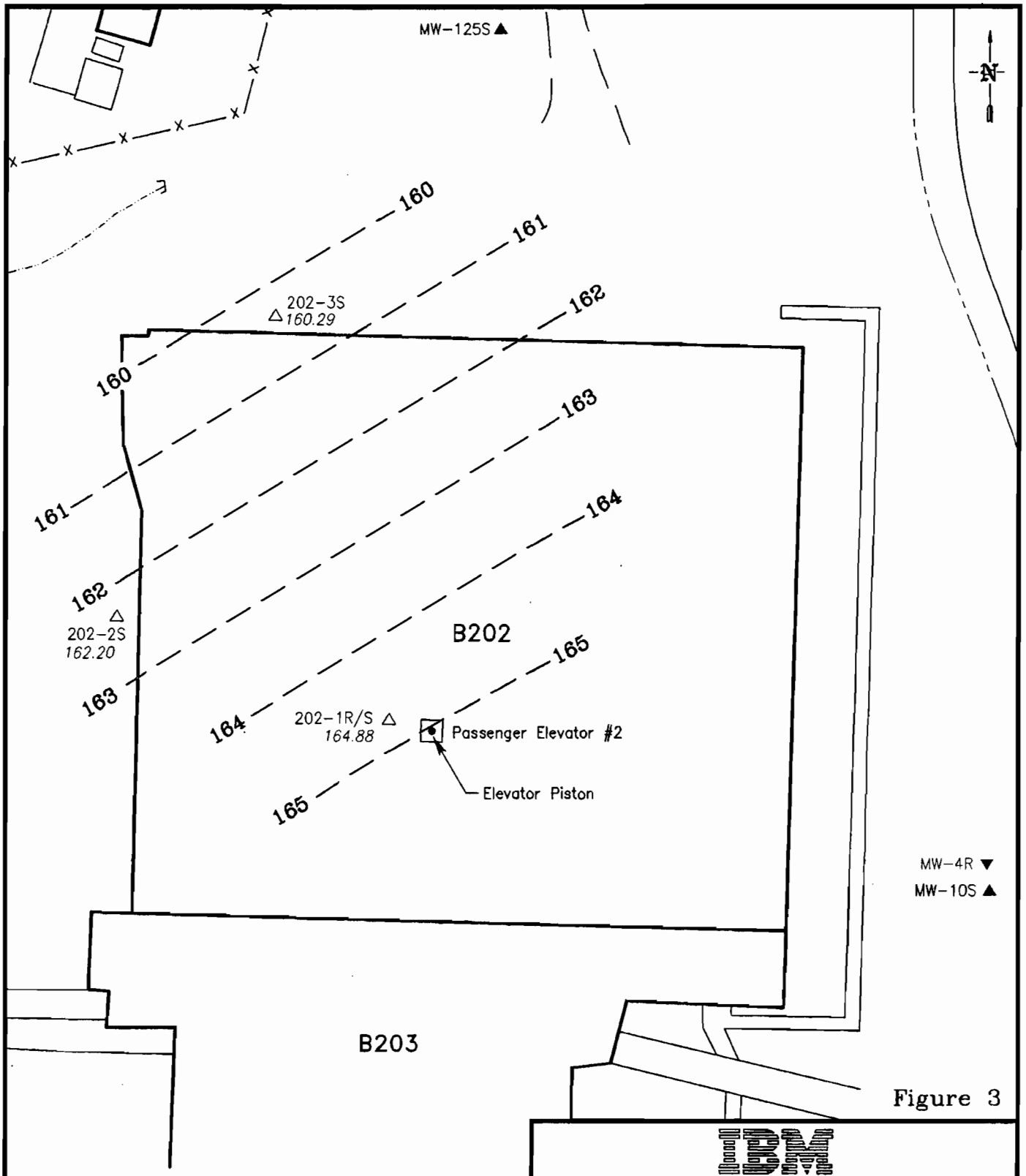


Figure 3

IBM
Kingston, New York

Building 202 Groundwater Elevation Contour Map

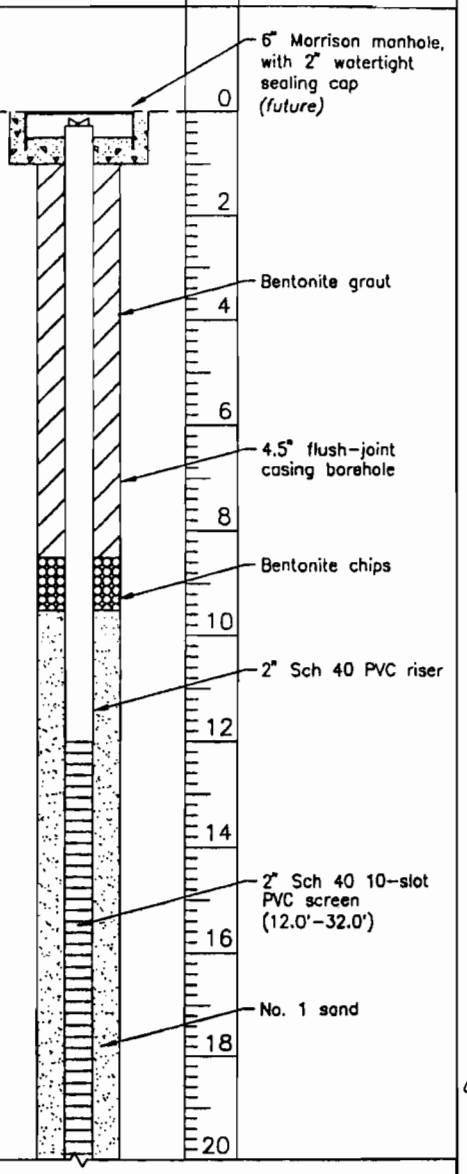
DRAWN BY: MJM	DATE: 7/26/96	DRAWING NO.
CHECKED & APPROVED BY: LFR		93002-073-A

GROUNDWATER SCIENCES CORPORATION

Soil Augering Log
Client: IBM Hudson Valley, Kingston Site
Project No. 93002.07

Boring No. 202-1R/S TOC Elev. 176.43'
Location B202, approx. 10' south of Column E6

Depth Feet	Blow Counts	PID (ppm)	Sample Number	Recovery	Overburden/Lithologic Description	USCS
0	Floor Surface	0.3				
2	AUGERED				CONCRETE: to 5".	
4						
6	25-35-20-24	0	1	22"	SAND: 0-19", v fine, dry. CLAY: 19-22", med brown, varved.	
8	28-31-32-24	0.3	2	18"	SILT & CLAY: brown and gray, varved, si moist.	
10	10-11-14-14	0	3	23"	SILT & CLAY: dark brown and blue gray w/pink laminations, varved, stiff, moist.	
12	18-23-22-21	0	4	18"	: SAA.	
14	8-11-12-14	0	5	24"	: SAA.	
16	4-6-6-10	0.3	6	24"	: SAA; note: two lenses of silt to f sand at 6-9.5" and 20-24" w/strong petrochemical odor, visibly darker (gray-black), moist.	
	11-200/4"	0	7	8"	: SAA; note: lens of silt to f sand at 2.5-3.5" w/petrochemical odor, visibly darker (gray-black) and moist; 3.5-8.5" varved silt and clay mixed w/shale chips.	
18	HWG Double-tube Core	2.3'/2.3' (100%)			SHALE BEDROCK.	
20						



Well Construction Details

GWE 16-1.88 or depth of 11.55

Driller: SoilTesting
Logged by: D. Muriceak, GSC
Drilling Started: 6-27-96
Drilling Completed: 6-28-96
Well Construction: 6-28-96
Well Developed: 7-1-96

Notes:
SAA = Same As Above
Split spoon refusal at 17.7'.
Core from 17.7' to 32.0'.
Measured DTB 32.0' (from floor).
SWL 11.23' (7/1/96, 14:25; from TOC).

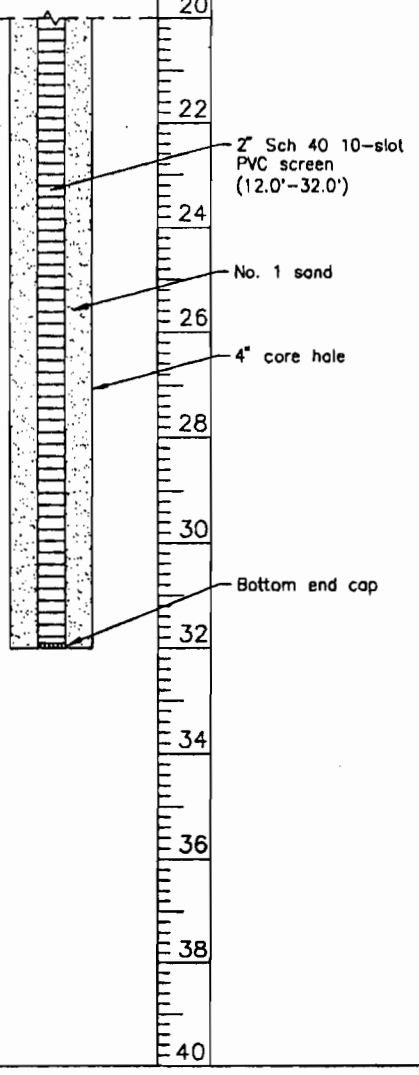
GROUNDWATER SCIENCES CORPORATION

Geologic Log: 202-1R/S

Soil Augering Log
Client: IBM Hudson Valley, Kingston Site
Project No. 93002.07

Boring No. 202-1R/S TOC Elev. 176.43'
Location B202, approx. 10' south of Column E6

Depth Feet	Blow Counts	PID (ppm)	Sample Number	Recovery	Overburden/Lithologic Description	USCS
20						
22	HWG Double-tube Core	2'/2' (100%)			SHALE BEDROCK.	
24	HWG Double-tube Core	5'/5' (100%)				
26						
28	HWG Double-tube Core	5'/5' (100%)				
30						
32					Total Depth: 32.0'.	
34						
36						
38						
40						



Well Construction Details

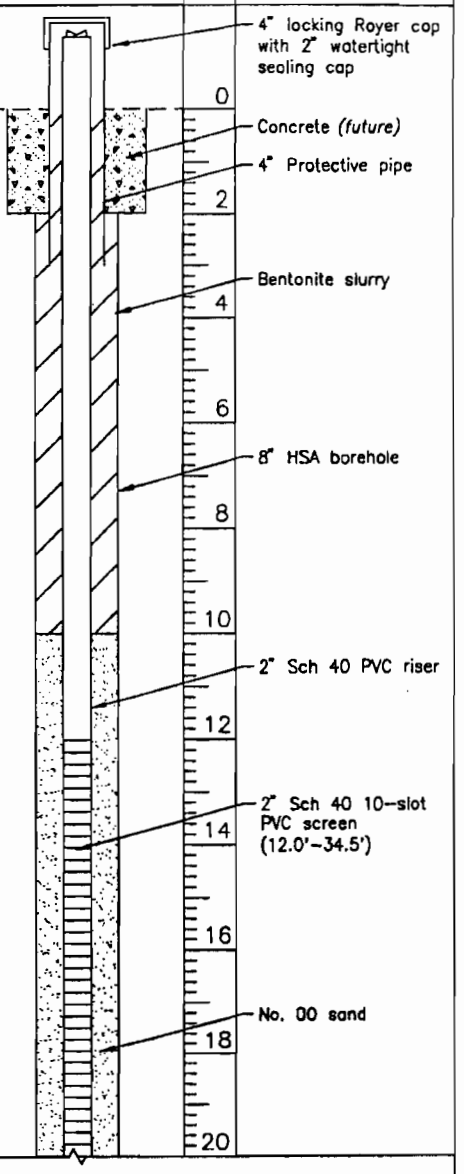
GROUNDWATER SCIENCES CORPORATION

Geologic Log: 202-1R/S

Soil Augering Log
Client: IBM Hudson Valley, Kingston Site
Project No. 93002.07

Boring No. 202-2S
Location 8'W of B202, 108'N of B203
TOC Elev. 175.51'

Depth Feet	Blow Counts	PID (ppm)	Sample Number	Recovery	Overburden/Lithologic Description	USCS
0	Ground Surface					
2	HAND AUGERED				Sod 0-3". SILT, SAND & GRAVEL: dark yellow brown (fill).	
4						
6						
8	3-4-5-5	0	1	21"	FILL: top 6", silt & sand w/organics, tr gravel. SAND: at 6", pale yel br to dusky yellow, vf-f, some silt, mottled w/occ rootlets, moist, crumbly, coorsening lower 1" to pred m sand.	
10	5-5-5-6	0	2	12"	SAND: dk yel br to mod yel br, pred m sand w/ some vf to f, tr silt, loose, moist to dry, crumbly, silty 9.5" to 10.5". SILT & CLAY: at 10.5", mod yel brown, weathered, varved, dense, plastic, moist.	
12	3-2-2-2	0	3	18"	SILT & CLAY: varved, brownish gray w/occ pale red and dusky brown occ organic frags, moist, mod plastic, occ vf sand lams.	
14	2-2-2-2	0	4	13"	: SAA, turning wet, more plastic below, dense above, some dusky yel loms, wet.	
16	1-2-1-1	0	5	17"	: SAA top 10" w/tr vf sand lams and dusky yellow color, all brownish gray w/incr red lams below 10", wet.	
18	2-1-2-1	0	6	16"	: SAA top 8", then occ silty vf sandy lams up to 0.5" thick, typically 2-3mm, wet, plastic.	
20	WOH/1.5'-1	0	7	21"	: SAA, occ dusky yellow vf sandy lams top 7", v plastic, wet.	



Well Construction Details

- 4" locking Royer cap with 2" watertight sealing cap
- Concrete *(future)*
- 4" Protective pipe
- Bentonite slurry
- 8" HSA borehole
- 2" Sch 40 PVC riser
- 2" Sch 40 10-slot PVC screen (12.0'-34.5')
- No. 00 sand

Driller: North Star Drilling Co.
Logged by: S. Fisher, GSC
Drilling Started: 7-10-96
Drilling Completed: 7-10-96
Well Construction: 7-10-96
Well Developed: 7-11-96

Notes:

SAA = Same As Above
WOH = Weight of Hammer

Split spoon refusal at 34.6'.

Measured DTB 34.6' (from ground surface).

SWL 13.13' (7/18/96, from TOC).

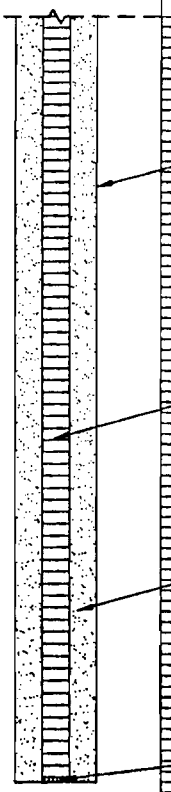
GROUNDWATER SCIENCES CORPORATION

Geologic Log: 202-2S

Soil Augering Log
Client: IBM Hudson Valley, Kingston Site
Project No. 93002.07

Boring No. 202-2S
Location 8'W of B202, 108'N of B203
TOC Elev. 175.51'

Depth Feet	Blow Counts	PID (ppm)	Sample Number	Recovery	Overburden/Lithologic Description	USCS
20						
22	WOH/2'	0	8	18"	: SAA, all brownish gray w/pale red vf sand laminations, wet.	
24	WOH/2'	0	9	24"	: SAA, v clay-rich.	
26	WOH/2'	0	10	23"	: SAA w/occ pred silt layer, moist, thick, inter-bedded with clay and silt or clay layers, v plastic, wet.	
28	WOH/1'-1-2	0	11	24"	: SAA w/occ dark gray silty vf sand laminations below 6" and 13", very plastic throughout, wet.	
30	WOH/2'	0	12	13"	: SAA 0-8", pred dark gray silty vf, flowing sand 8-12", v wet, pred silty f sand lower 1" w/some vf sand, wet.	
32	WOH/2'	0	13	12"	: SAA w/frequent dk gray silty vf sand zones, flowing sand layer 5-7", pred silty vf sand w/ freq silty/clay laminations, wet.	
34	WOH-2-2-3	0	14	24"	SAND & SILT: dk gray silty vf sand w/occ silt/clay lamins, flowing, v wet top 8". SILT & CLAY: plastic, 8-18". SILT & SAND: lower 6", silt and vf sand, sl flowing w/occ clay laminations, wet.	
	2-50/1'	0	15	9"	SILT & CLAY: as above w/1" oblate SA shale frags at 2-3" & 7-8" w/occ vf sandy lams, wet, v plastic.	
36					BEDROCK: at 34.6'. Total Depth: 34.6'.	
38						
40						



Well Construction Graphic

Depth Feet

Well Construction Details

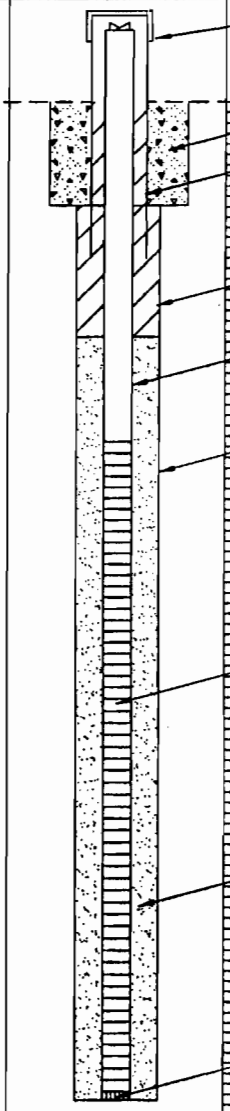
GROUNDWATER SCIENCES CORPORATION

Geologic Log: 202-2S

Soil Augering Log
Client: IBM Hudson Valley, Kingston Site
Project No. 93002.07

Boring No. 202-3S TOC Elev. 175.42'
Location 6'N/56'E Northwest Corner of Building 202

Depth Feet	Blow Counts	HNu (ppm)	Sample Number	Recovery	Overburden/Lithologic Description	USCS
0	Ground Surface					
2	HAND AUGERED				Sod 0-3", dk br silt & sand soil (fill), clear plastic sheeting at 1'. SAND: dk yel br, f-m w/vf sand, tr c, some silt, loose, moist. SAND & GRAVEL: mod yel br, f-vf w/silt, some c-m, lit vc, some f-m SA-SR grovel, cohesive, moist. : cobble/boulder at 2.6'. : asphalt layer at 3.2'. : olive gray to grayish brown sand & gravel w/ silt 3.2-5.5' (fill?).	
4						
6					: softer form at 5.5'	
8	4-5-5-7	10	1	13"	SILT: mottled, mod yel br to pale yel br, tr pale red lams, occ vf sand lams & near vertical sand/ silt-filled wthrd fracts, cohesive, dense, moist, occ filled root trace.	
10	6-6-6-6	-	2	NR		
12	2-2-3-3	0	3	22"	SILT & CLAY: mod yel br w/occ pale red to mod pink lams (varves), widely-spaced (~1.25-3") clay-rich in red/pink zones, dense throughout, plastic, moist-wet, hariz. lam, occ. vf sand lams.	
14	2-2-1-3	0	4	20"	: SAA top 7". SILT & CLAY: br gray w/occ pale red lam, v plastic, incr clay content, turning mod olive br below 14" w/ occ vf-f sand lams, vc sand lam at 18", brown gray color bottom 2", dense, plastic, wet.	
16	1-1-2-2	0	5	12"	: SAA top 5". SAND: lt olive br, vf w/f, some silt, occ silt/clay horizontal lam, sl flowing, pred f lower 1", sl cohesive to loose, v wet.	
18	WOR/1'-2-2	0	6	15"	SILT/CLAY: top 11" w/f-vf sand layer 5-7", plastic, dense, wet. SILT & GRAVEL: at 11", brownish-black w/f-m SA-SR gravel, v dense, plastic, some clay, wet.	
20	WOH-50/1' — AUGERED —	0	7	2"	: SAA, lg shale rock frag top 1", wthrd, dk gray.	
					Total Depth: 19.1'.	



Well Construction Graphic

Well Construction Details

Driller: North Star Drilling Co.
Logged by: S. Fisher, GSC
Drilling Started: 7-8-96
Drilling Completed: 7-8-96
Well Construction: 7-8-96
Well Developed: 7-11-96

Notes:
SAA = Same As Above
WOR = Weight of Rods
WOH = Weight of Hammer
NR = No Recovery

Split spoon refusal at 18.6'.

Measured DTB 19.1' (from ground surface).
Measured DTB 21.05' (from TOC).

SWL 13.37' (7/9/96, 20:05; from TOC).

GROUNDWATER SCIENCES CORPORATION

Geologic Log: 202-3S