RCRA FACILITY INVESTIGATION FINAL REPORT
BUILDING 201/206/218 INVESTIGATIVE SITE
XEROX CORPORATION
JOSEPH C. WILSON CENTER FOR TECHNOLOGY
WEBSTER, NEW YORK
VOLUME II OF II

by

H&A of New York
Rochester, New York

for

Xerox Corporation
Webster, New York

File No. 70307-44
September 1994

APPENDIX D

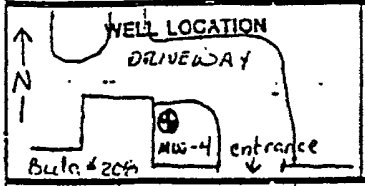
Well Construction Reports and Test Boring Reports

DRILLING CONTRACTOR:
Driller: Jim Lamm
Inspector: Mark Chauvin

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox - Webster #208
PROJECT NO. 5YC11.00

BORING NO. MW-4
Sheet 1 of 1
Location North of building #208 in grassy area to the northwest of the entrance to the building.

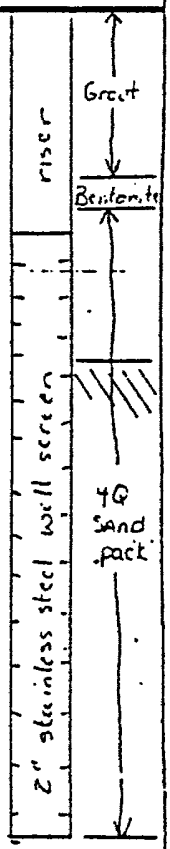


Weather Sunny, Humid 85°
Remarks

Surface Elev. 406.66
Date Start 5/3/87
Date Finish 5/3/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	photovac STRATA CHANGE reaction	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)
	0 - 2.0	SS-1	8	38-44	32	0.4/18.7	Topsoil 4"
	2.0-4.0	SS-2	11	10-10	11	0.4/6.8	Brown silt, some c-f sand and gravel, moist. Becomes very moist at 4.0'. 6.0'
	4.0-6.0	SS-3	3	3-4	5	0.8/12.5	
	6.0-8.0	SS-4	4	7-10	11	0.9/10.9	Brown c-f SAND, some c-f gravel and silt. wet. grades to grey. 10.5'
	8.0-10.0	SS-5	5	10-6	14	0.9/3.4	
	10.0-11.2	SS-6	8	5-5½		0.3/1.9	Weathered Siltstone. C-F gravel. wet. 11.2'
Zone #1			Average coring time = 5 min/ft				Conglomerate: Red and grey, coarse grain with rounded & subrounded clasts. Hematite layered within carbonaceous matrix. Bedded, medium-hard. Erosional unconformity w/ss unit below. 12.2'
							Grimsby Sandstone: Unit begins with a greenish-grey siltstone, bedded, medium-hard, fine grained with lenses of grey-green shale. At 13.2' it becomes predominately a red medium to fine grained sandstone Thick bedded, medium-soft with nodules and blotches of the siltstone mixed in.
							Boring Terminated at 16.2'

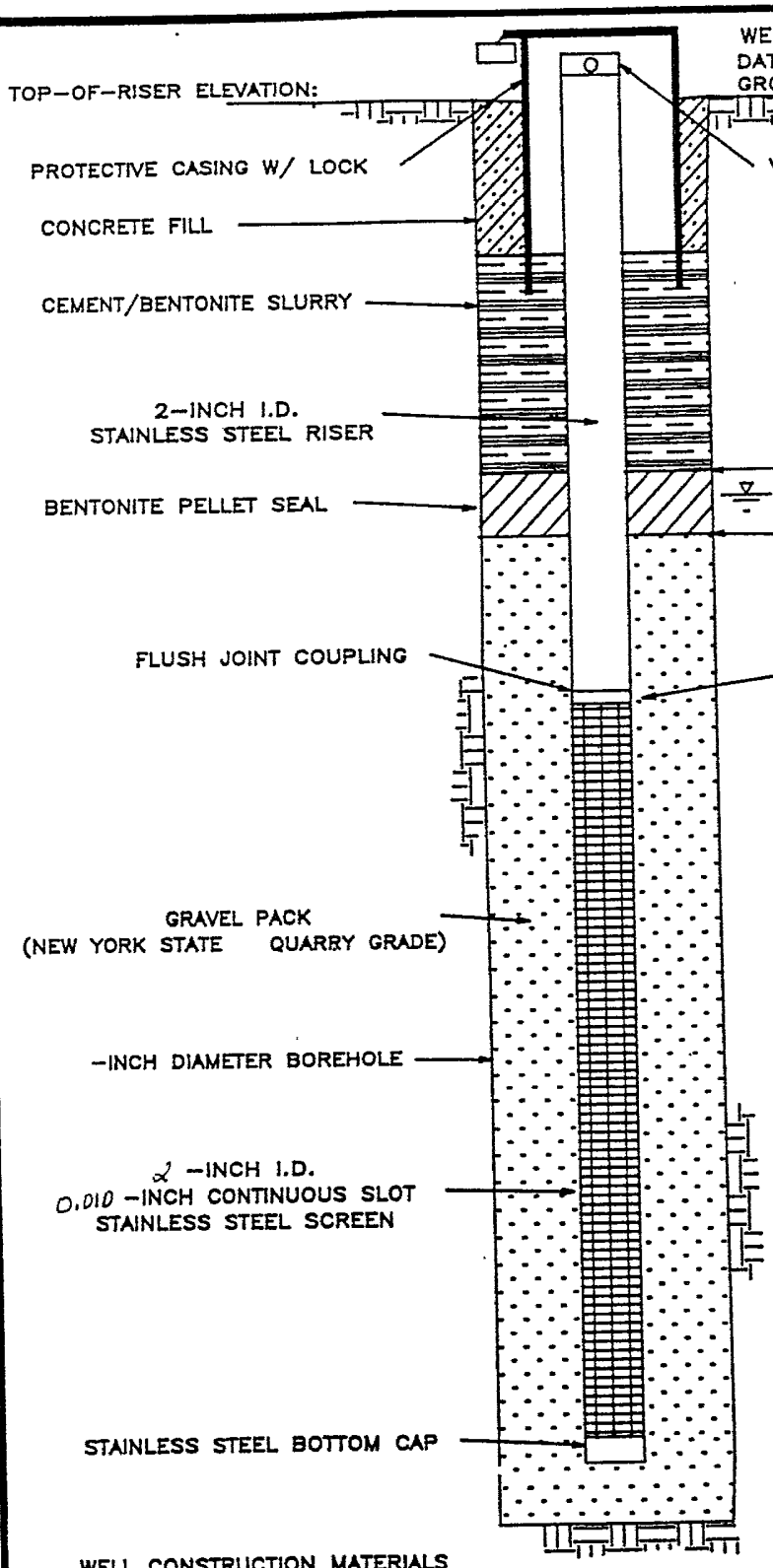
WELL CONSTRUCTION DETAILS



NOT TO SCALE

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED (SS) = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	11.2'
FOOTAGE IN ROCK	5.0'
NO. OF SAMPLES	6
CORE BARREL	



WELL CONSTRUCTION MATERIALS

SCREEN: 10'
RISER: 14'
VENTED CAP: PVC (1)
BOTTOM CAP: Stainless steel (1)
WELL GRAVEL: 250 lbs
BENTONITE PELLETS: 75 lbs
WATER:
CEMENT: 400 lbs Type I Portland
BENTONITE POWDER: 8 lbs
PROTECTIVE CASING W/ LOCK: 1
CONCRETE FOR PAD: 100 lbs

COORDINATES REF. PLANT GRID
ELEVATIONS REF. MSL

REV. NO.	DATE	TYPE OF REVISION	CHECKED BY

CONSTRUCTION REPORT FOR MONITORING WELL: 208-MW5

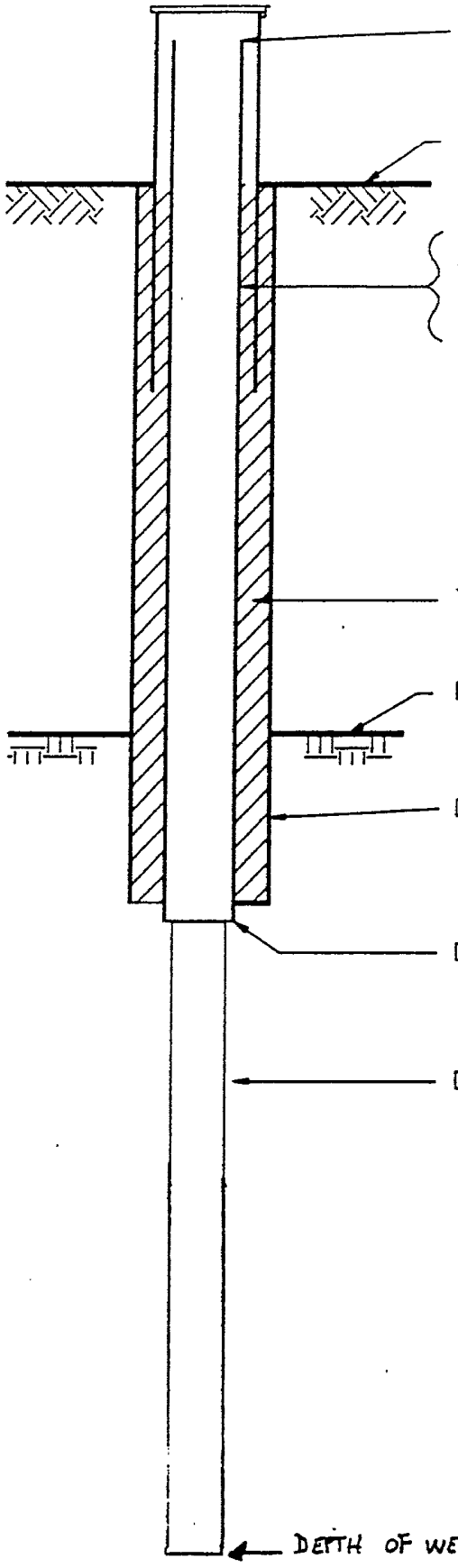
RECOVERY WELL INSTALLATION PROGRAM - BUILDING 208

XEROX CORPORATION
WEBSTER, NEW YORK

WOODWARD-CLYDE CONSULTANTS
CONSULTING ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS

JOB #:	DRAWING #	DATE:
DRAWN BY:	CHECKED BY:	
SCALE: NOT TO SCALE		FIGURE

Well Coordinates:
DATE WELL INSTALLED: 7/31/90



ELEVATION OF TOP OF CASING _____

GROUND ELEVATION _____

I.D. OF WELL CASING 4

TYPE OF WELL CASING Stainless Steel

TYPE OF BACKFILL Bentonite Grout

DEPTH TO BEDROCK SURFACE 17.0'

DIAMETER OF BOREHOLE 5 7/8"

DEPTH TO BOTTOM OF WELL CASING 29.0'

DIAMETER OF BOREHOLE 3 7/8"

DEPTH OF WELL: 39.0'

Well Construction Materials

RISER	22	FEET
CEMENT	400	LBS
BENTONITE POWDER	10	LBS
CONCRETE	100	LBS

208-MW5D

REPORT OF MONITORING WELL

~~MW-5D~~

11:06

Rev. No.	Date	Type of Revision	Checked by:

Woodward-Clyde Consultants
Consulting Engineers, Geologists and Environmental Scientists

Job No.:	Drawing No. MW7	Date: ~~07/26/90~~ 7/31/90
Drawn by: RYW	Checked by:	~~MW7~~ MW-5D
Scale: NOT TO SCALE		

LOG of BORING No. MW-5D

DATE 7/24/90 SURFACE ELEVATION 406.63 LOCATION 1532.34 E 416.61 N

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	DESCRIPTION SOIL BORING REPORT	ELEVATION	USCS SYMBOL	OVA HEADSPACE MEASUREMENT (ppm)	OTHER TESTS	OTHER TESTS
0		2	Fill: Moist brown fine sand,			0.8		
		10	trace coarse to medium sand,					
1		21	trace silt, trace fine gravel					
		43						
2		15	Fill: Moist brown fine sand, some			0		
		19	silt, vegetative matter.					
3		60						
		30						
4			Boulder 4-5'; ground through with auger					
				401.6				
5		8	Moist brown clayey silt, some gravel			1		
		13						
6		17						
		112						
7		90	Moist coarse to fine sand and coarse to fine gravel			0		
		42						
8		20						
		37						
9								

Completion Depth 39' Feet Water Depth 13 Feet Date 7/24/90

Project Name Xerox/Bldg. 208, Recovery Well Progra Project Number 90C2089

Woodward-Clyde Consultants

LOG of BORING No. MW-5D Page 2 of 5

DATE 7/24/90 SURFACE ELEVATION 406.63 LOCATION _____

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	DESCRIPTION SOIL BORING REPORT	ELEVATION	USCS SYMBOL	OVA HEADSPACE MEASUREMENT (ppm)	OTHER TESTS	OTHER TESTS
9		11	Moist medium to fine sand, trace silt, trace gravel			0		
		25						
10		35						
		90						
11		37	Moist coarse to fine sand, some rounded gravel			0		
		75						
12		140						
13		46	Wet coarse to fine sand and rounded fine gravel			0		
		82						
14		133						
15		40	Very moist coarse to fine sand and rounded fine to coarse gravel			0		
		160						
			TOR = 16.0' (GLACIOFLUVIAL)					
16		100/1						

Completion Depth 39' Feet Water Depth _____ Feet Date _____

Project Name Xerox/Bldg. 208, Recovery Well Program Project Number 90C2089

Woodward-Clyde Consultants

LOG of BORING No. MW-5D

DATE 7/26/90 SURFACE ELEVATION 406.63 LOCATION

DEPTH, ft.	SAMPLES	CORE TYPE & RUN INTERVAL	DESCRIPTION ROCK CORING REPORT	ELEVATION	RECOVERY % (in.)	RQD % (in.)	FRACTURE DENSITY (nos./ft.)	FRACTURE DIP
17		NX RUN 1 17.0 to 22.0	Cambria Frm - Red-brown fine grained sandstone; some bioturbation		54"/60" = 90%	44"/60" = 73%	1	
18							2	
19			green mottling 19 - 19.1'				2	
20							1	
21			some clay in fracture green mottling from21.5 to 22.0'				0	
22		RUN 2 22.0 to 29.0			82"/84" = 98%	62"/84" = 74%	1	
23			green mottling at 23.2' Clay-filled fractures from 23.4-24.1'				3	
24							1	
25			clay-filled fracture at 25.2' clay-filled fracture at 25.8 and 25.9'				4	
26								

Completion Depth _____ Feet Water Depth 11.5 Feet Date _____

Project Name Xerox/ Bldg. 208 Project Number 90C2089

Woodward-Clyde Consultants

LOG of BORING No. MW-5D Page 4 of 5

DATE 7/26/90 SURFACE ELEVATION 406.63 LOCATION _____

DEPTH, ft.	SAMPLES	CORE TYPE & RUN INTERVAL	DESCRIPTION ROCK CORING REPORT	ELEVATION	RECOVERY % (in.)	RQD % (in.)	FRACTURE DENSITY (nos./ft.)	FRACTURE DIP
26.0			Green fine grained sandstone					
			Red-brown fine grained sandstone high angle fracture at 26.1. Clay filled seam at 26.2; 26.4 and 26.7				4	
27.0			THOROLD SANDSTONE - Red-brown to dark pink fine grained sandstone some bioturbation				0	
28.0							0	
29.0		RUN 3 29.0 to 34.0	Dark pink fine-grained sandstone with green mttling. Soft sediment deformation and bioturbation. High angle fracture at 31.7 - 32.0'. Warm burrows and cross bedding white in color. Weathered rock at 31.5'		60"/60" = 100%	56"/60" = 93%	0	
30.0							0	
31.0							5	
32.0							0	
33.0							1	
34.0				372.6				
		RUN 4 34 to 34.5	Red-brown fine to medium grained sandstone with some pitting. Thinly bedded with some high angled fractures. Area of broken rock weathered and pitted. (Grimsby Formation)		6"/6" =100%	=75%	6	
35.0		RUN 5 34.5 to 39.0			54"/54" = 100%	40"/54" = 74%		

Completion Depth 39.0 Feet Water Depth _____ Feet Date _____

Project Name Xerox Corp/Bldg. 208 Project Number 90C2089

LOG of BORING No. MW-5D Page 5 of 5

DATE 7/27/90 SURFACE ELEVATION 406.63 LOCATION

DEPTH, ft.	SAMPLES	CORE TYPE & RUN INTERVAL	DESCRIPTION ROCK CORING REPORT	ELEVATION	RECOVERY % (in.)	RQD % (in.)	FRACTURE DENSITY (nos./ft.)	FRACTURE DIP
35.0							8	
			Red-brown, massively bedded, fine grained sandstone. Some mottling at 37.0 and 38.2'. No sedimentary structures observed					
36.0							0	
37.0							0	
38.0							0	
			(Grimsby Sandstone)					
39.0			End of Run	367.6				

Completion Depth 39.0 Feet Water Depth Feet Date 7/31/90

Project Name Xerox Corp/Bldg. 208 Project Number 90C2089

Woodward-Clyde Consultants

Well: 206-1S
Datum Elevation: 401.02

STRATUM ELEV.	DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
398.7	0.0									
	1.1	Dark brown organic SILT and fine Sand. (Topsoil).				14				
		Firm light brown to red-brown fine SAND, little silt, trace fine gravel, trace cinders, moist to wet [Fill]. PID Readings: 0.0 - 1.0 ppm.				14				
395										
	5.0					50				
						36				
390										
		Dense light brown to red-brown fine SAND, little silt, finely laminated, wet. PID Readings: 0.0 - 3.0 ppm.				38				
						32				
385	14.0					32				
		Boring terminated at 14 feet.								
380										

REMARKS:
No soil samples were obtained. Soil descriptions are taken from adjacent well boring 206-1, completed in 1989. Water level measured at 3.92 feet on 10/1/91.

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

TEST BORING RECORD

BORING NUMBER	206-1S
DATE(S) DRILLED	9/16/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 1 OF 1	

LAW ENVIRONMENTAL

WELL INSTALLATION RECORD

JOB NAME Xerox Bedrock Investigation JOB NO. 52 0538

BORING/WELL NO. 206-15 DATE INSTALLED 9/16/91 DRILLING CONTRACTOR Nothnagle

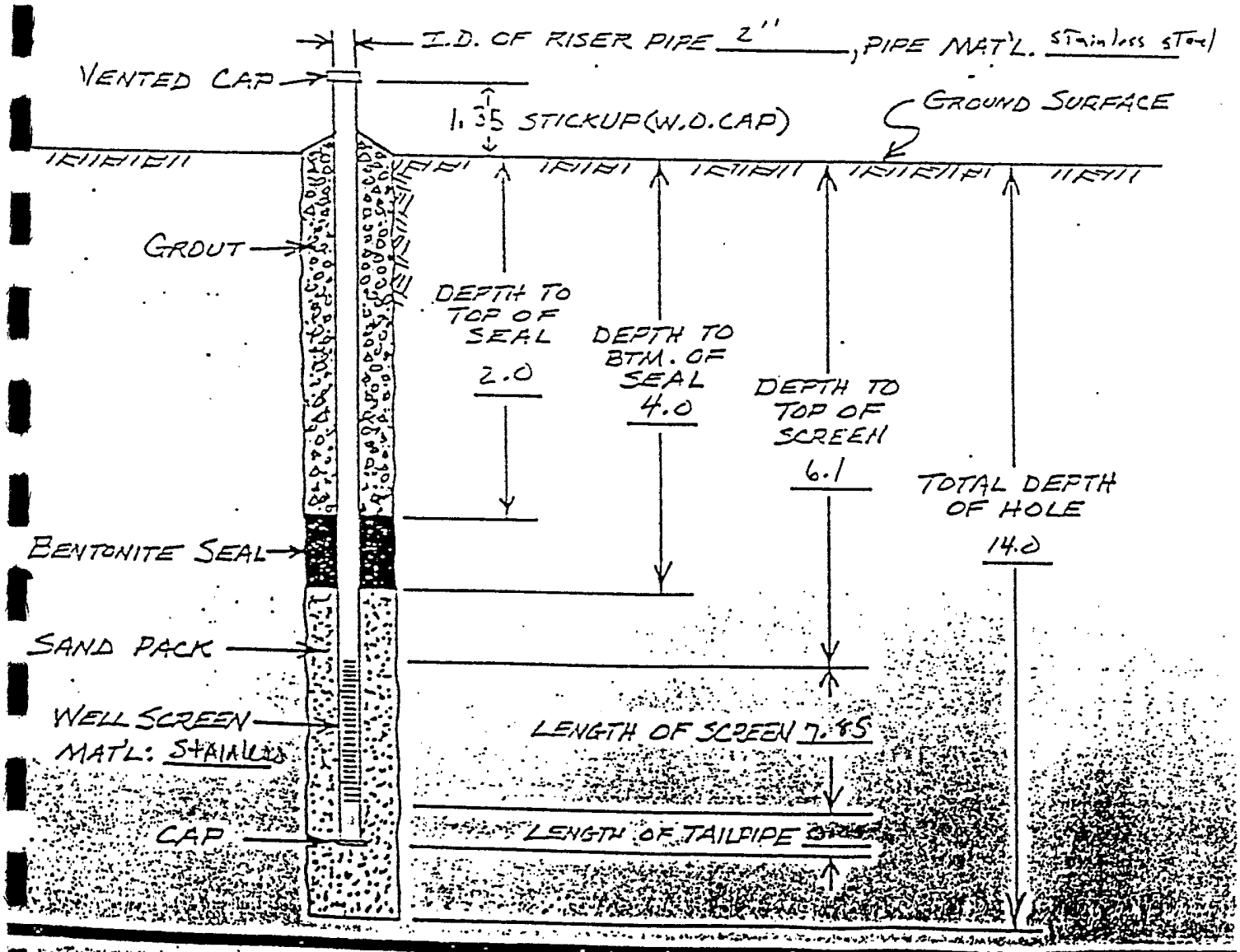
FORMATION SCREENED Silty Sand SCREEN SLOT SIZE 0.01 TYPE OF SAND PACK #3

DRILLING METHOD HSA BIT OR AUGER SIZE 4" ID

GROUND ELEV. 398.67 EST'D. ___ SURVEYED X SURVEYED TOP OF RISER ELEV. 401.02

DEPTH TO GROUND WATER/ELEVATION ___ / 394.75 (BELOW GRD.) 10/1/91 (DATE)
___ / ___ (BELOW T/O RISER) ___ (DATE)

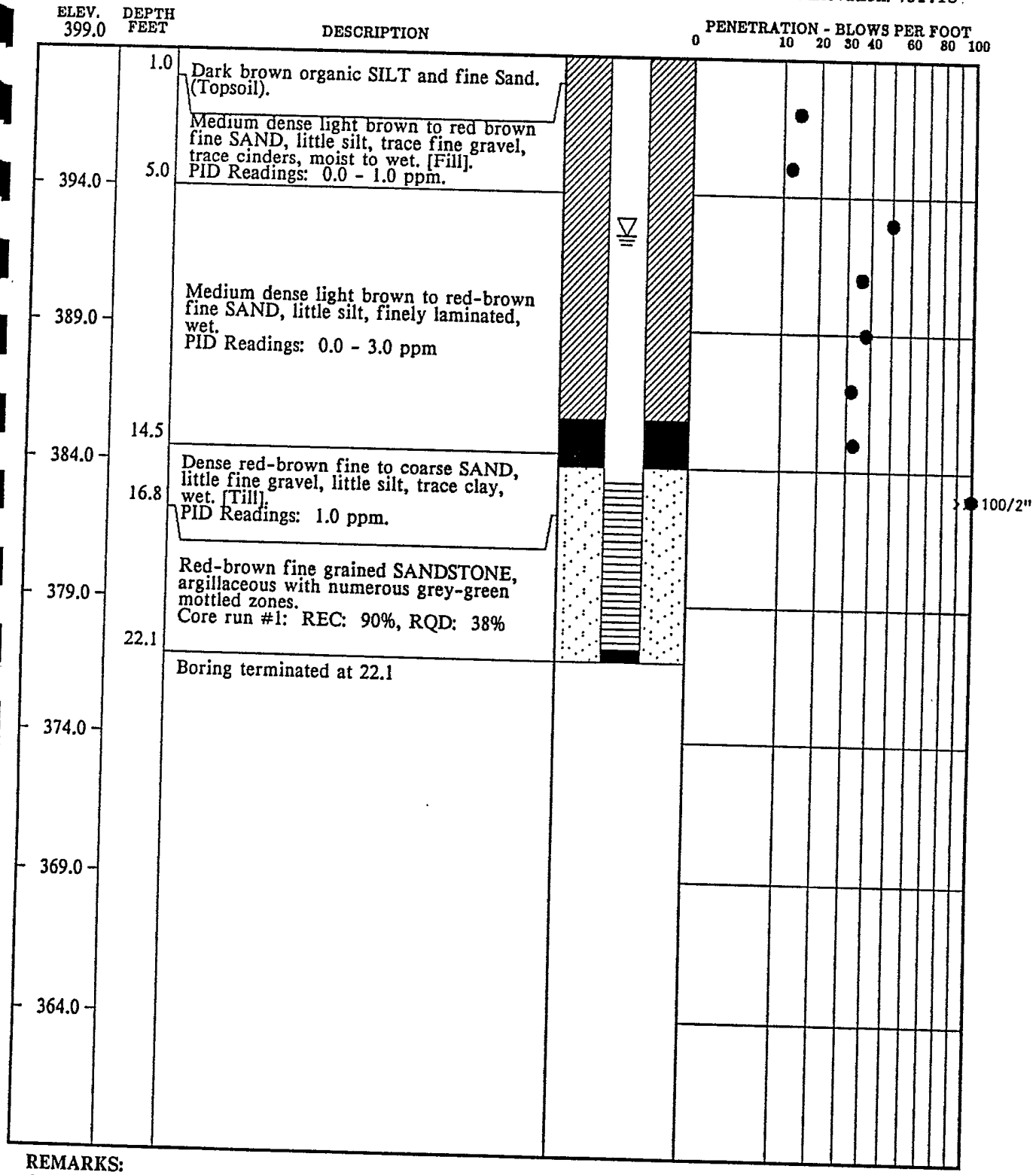
DATE DEVELOPED 9/25/91 HOW? BAIL



LAW ENVIRONMENTAL SERVICES FIELD GEOLOGIST: WILLEMS

TEST BORING RECORD

Datum Elevation: 401.18



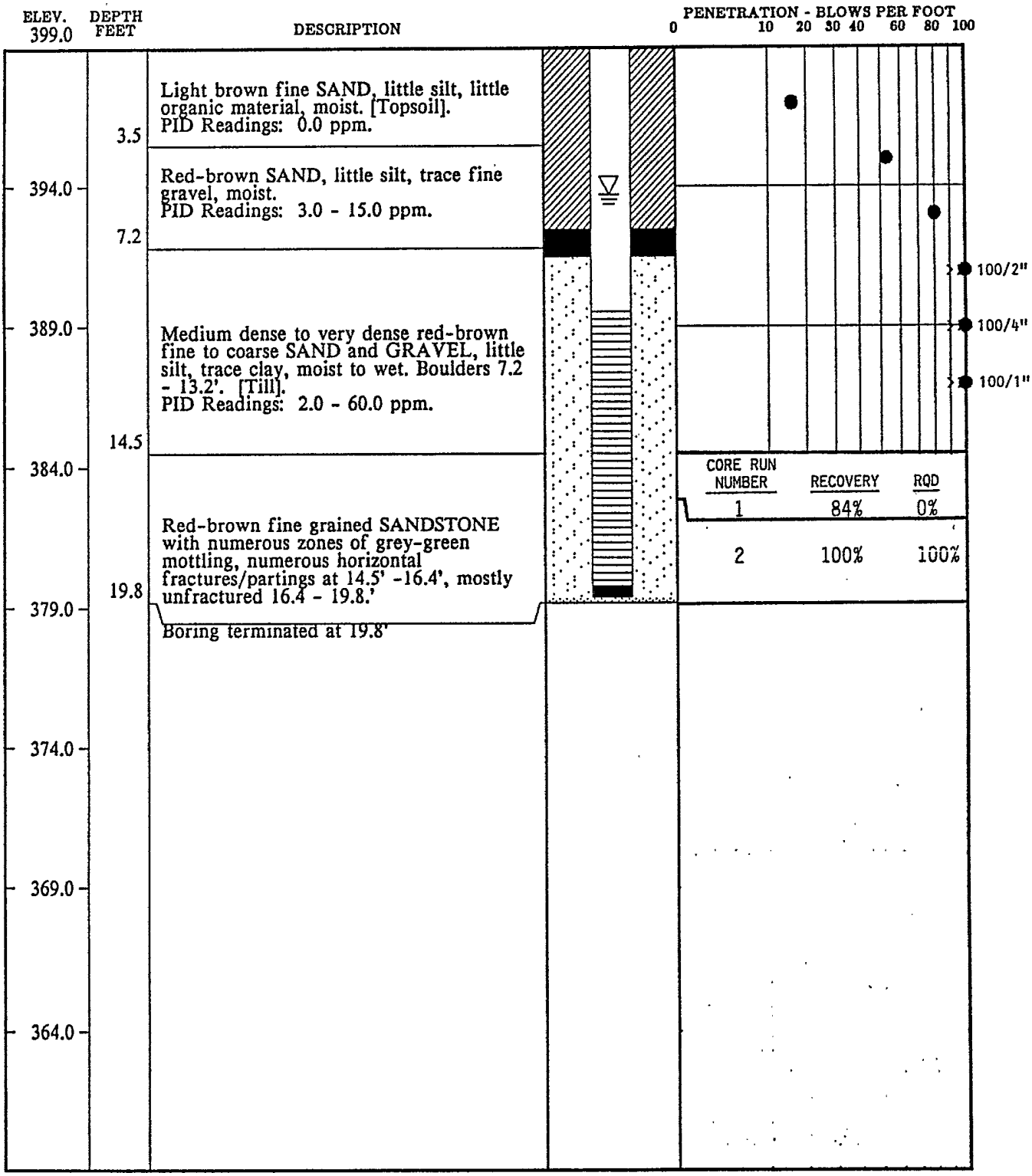
REMARKS:
Ground-water elevation measured on December 19, 1989. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 206-1
DATE STARTED: 11-17-89
DATE COMPLETED: 11-20-89
JOB NUMBER: 52-9527

TEST BORING RECORD

Datum Elevation: 400.45



REMARKS:
Ground-water elevation measured on December 19, 1989. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 206-2
DATE STARTED: 11-15-89
DATE COMPLETED: 11-16-89
JOB NUMBER: 52-9527

Well: 206-2I
Datum Elevation: 400.98

ELEV.	STRATUM DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
398.7	0.0	Light brown fine SAND, little silt, little organic material, moist (Topsoil).				18				
	3.5					52				
395		Red-brown SAND, little silt, trace fine gravel, moist.				80				
	7.2					100				
390		Dense to very dense red-brown fine to coarse SAND and GRAVEL, little silt, trace clay, moist to wet, boulders 7.2-13.2' (Till).				100				
						100				
385	14.5	Red-brown fine grained SANDSTONE with numerous zones of grey-green mottling, numerous horizontal fractures/partings at 14.5 - 16.4', mostly unfractured 16.4 - 19.8'.					84	0		
							100	100		
380	19.0	Dark red-brown to light grey-green, finely bedded SANDSTONE								

REMARKS:
No soil and rock sampling was conducted between 0 and 19.8 feet. Soil and rock descriptions from 0 - 19.8' are taken from adjacent well boring 206-2, completed in 1989. Water level measured at 7.43 feet on 10/1/91.

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

TEST BORING RECORD

BORING NUMBER	206-2I
DATE(S) DRILLED	9/19/91 -9/23/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 1 OF 2	

LAW ENVIRONMENTAL

Well: 206-2I
Datum Elevation: 400.98

STRATUM ELEV.	DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
		Dark red-brown to light grey-green, finely bedded SANDSTONE with bioturbation throughout, mottled from 19.5 - 23.0'. Closely spaced fractures: 19.6 - 24.75'					100	71		
375										
	25.0	Dark red-brown to light grey-green, finely bedded SANDSTONE with bioturbation throughout and low angle cross bedding from 28.5 - 35.0'.					100	74		
370		Weathered, clay-filled fractures aprroximately <.1" thick: 28.5', 31.3', 31.4', 33.3'								
		Thick clay and pebble-filled fracture zone: 31.5 - 31.8'								
365										
	35.0	Dark red-brown to light grey-green, finely bedded SANDSTONE with bioturbation throughout and low angle cross bedding between 35.0 - 35.3'. Closely spaced fractures: 35.1 - 38.9'					100	48		
		Weathered clay-filled fracture zone: 39.4 - 39.5'								
360		Boring terminated at 40'								
	40.0									

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

REMARKS:
No soil and rock sampling was conducted between 0 and 19.8 feet. Soil and rock descriptions from 0 - 19.8' are taken from adjacent well boring 206-2, completed in 1989. Water level measured at 7.43 feet on 10/1/91.

TEST BORING RECORD

BORING NUMBER	206-2I
DATE(S) DRILLED	9/19/91 -9/23/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 2 OF 2	

LAW ENVIRONMENTAL

TYPE III WELL INSTALLATION RECORD

B NAME Xerox Bedrock Investigation JOB NO. 52 0538

BORING/WELL NO. 206-2I DATE INSTALLED 9/23/91 DRILLING CONTRACTOR Nothnagle

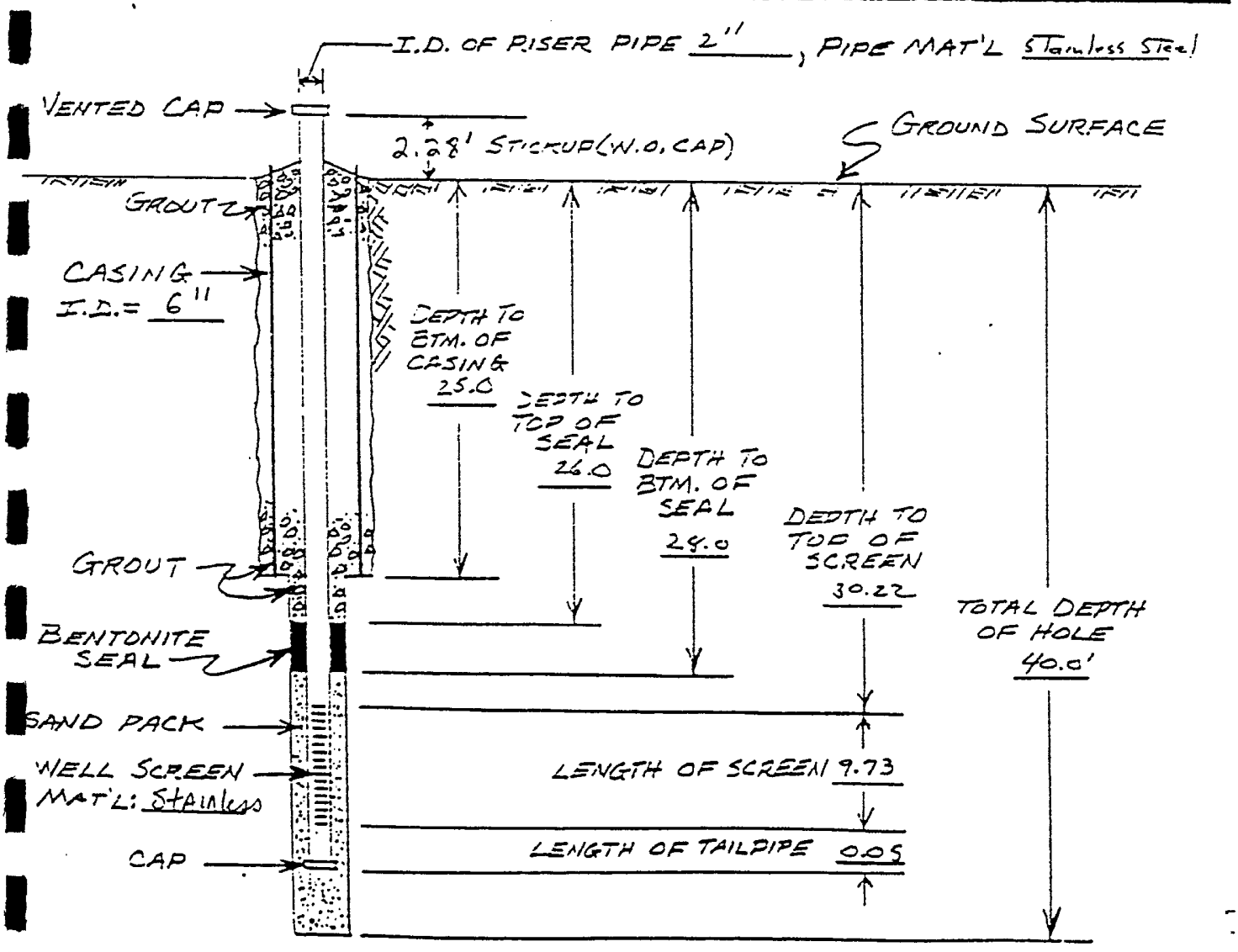
FORMATION SCREENED intermediate bedrock SCREEN SLOT SIZE 0.010 TYPE OF SAND PACK #3

DRILLING METHOD Air Rotary (ABOVE CASING) / NX core/Climax (BELOW CASING) BIT OR AUGER SIZE 9 7/8 (ABOVE CASING) / 5 7/8 (BELOW CASING)

GROUND ELEV. 398.70 EST'D. ___ SURVEYED X SURVEYED TOP OF RISER PIPE ELEV. 400.98

DEPTH TO GROUND WATER/ELEVATION ___ / 391.27 (BELOW GRD.) 10/1/91 (DATE)
___ / ___ (BELOW T/O RISER) ___ (DATE)

DATE DEVELOPED 9/25/91 HOW? Suction Pump



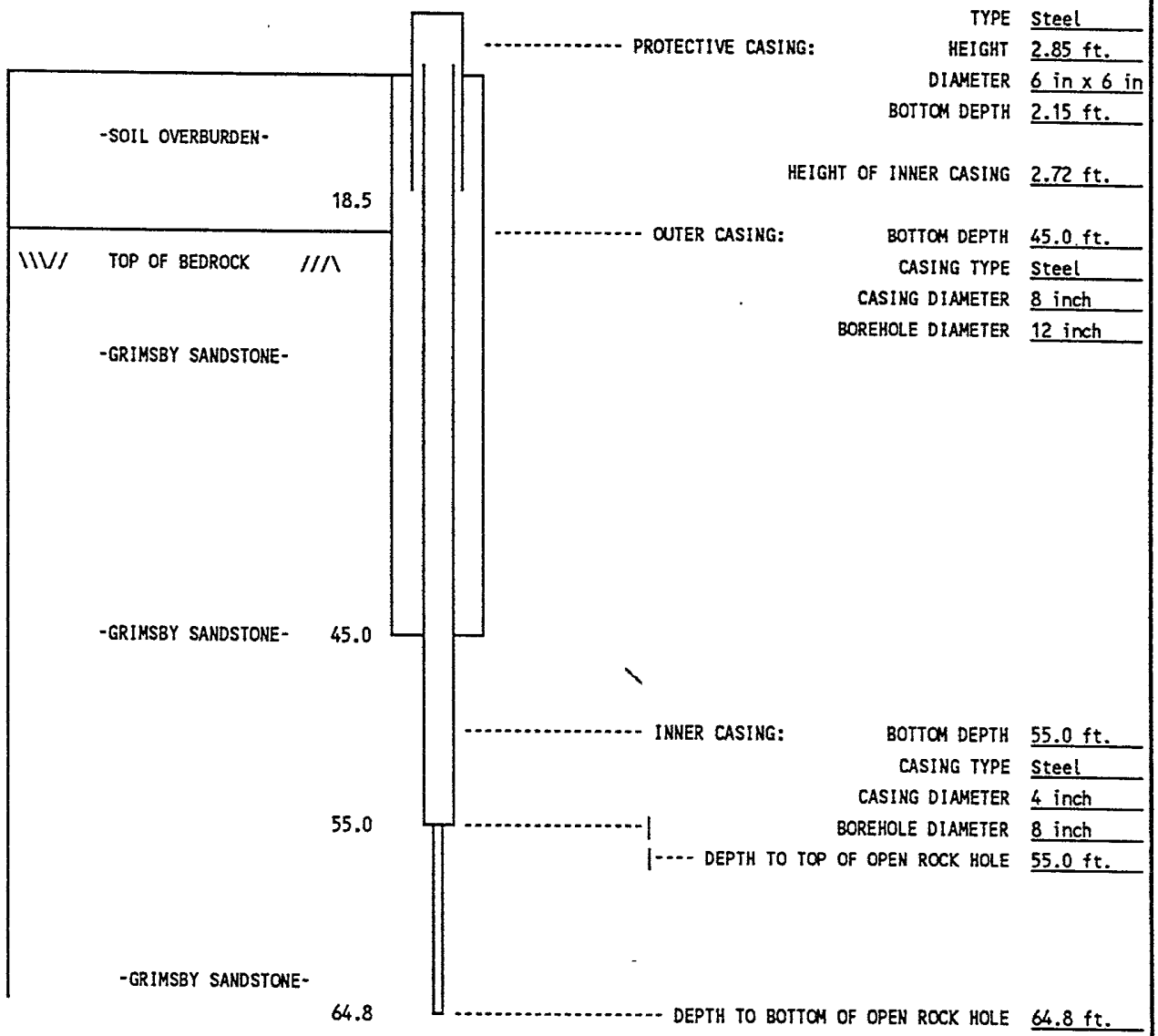
LAW ENVIRONMENTAL SERVICES

FIELD GEOLOGIST: HTW

H & A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	BEDROCK MONITORING WELL INSTALLATION REPORT

PROJECT	BUILDING 201/206/218 RFI INVESTIGATION		FILE NO. 70307-42
LOCATION	WEBSTER, NEW YORK		WELL NO. 206-2D
CLIENT	XEROX CORPORATION		LOCATION N 597.4
CONTRACTOR	NOTHNAGLE DRILLING		E 1076.2
DRILLER	S. LORANTY	RIG TYPE: CME-75 Truck Mounted	SHEET NO. 1 OF 2
INSTALLATION DATE	11 to 22 March 1993		INSPECTOR D. Nostrant

GROUND SURFACE ELEVATION 398.9
INNER CASING TOP ELEVATION 401.39



NOTES:

1. ALL DEPTHS EXPRESSED IN FEET.
2. ALL CASING DIAMETERS ARE INSIDE-DIAMETER, EXPRESSED IN INCHES.

METHOD AND MATERIALS USED TO GROUT CASINGS:
Outer Casing - 9 bags Portland Cement, 60 gallons potable water, 45 lbs. bentonite.
Inner Casing - 8 bags Portland Cement, 55 gallons potable water, 40 lbs. bentonite
REMARKS:
Single plug grouting method used to install casings.

WELL NO. 206-2D

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. 206-2D

PROJECT: BUILDING 201/206/218 RFI INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70307-42
SHEET NO. 1 OF 3
LOCATION: N 597.4
E 1076.2

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Steel	---	NX
INSIDE DIAMETER (IN)	12 in.	---	2-1/8
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, & Reedrill SK-37
BIT TYPE: Auger, NX Core, Rollerbit
DRILL MUD: Water
OTHER: Advanced augers to refusal, NX core to 63.2 ft.

ELEVATION: 398.9
DATUM: NGVD
START: 11 March 1993
FINISH: 22 March 1993
DRILLER: S. Loranty
H&A REP: D. Nostrant

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5						Advanced augers to refusal at 18.5 ft. No soil samples collected.
10						
15						
20					18.5	Auger Refusal on Apparent Top of Bedrock at 18.5 ft.
25						See Core Boring Report.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	20.0
ROCK CORED (LIN FT):	45.0
SAMPLES:	OS R
BORING NO.	206-2D

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. 206-2D FILE NO. 70307-42 SHEET NO. 2 OF 3

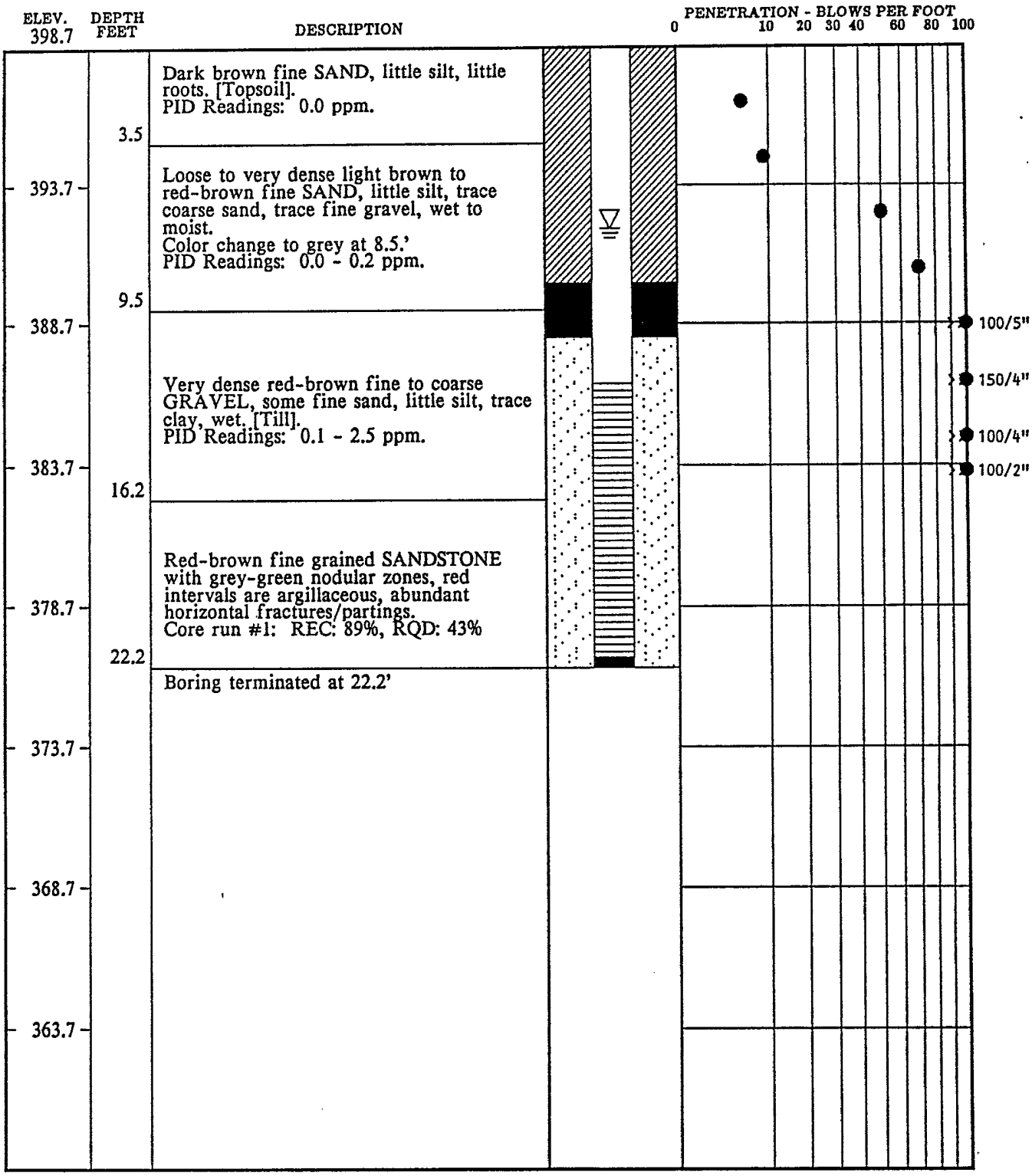
DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. / DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						18.5	Apparent top of bedrock at 18.5 ft. Set temporary 12-in. casing and advanced 12-in. nominal rotary tricone drillbit to 20.0 ft. Began Core Boring at 20.0 ft.
20	3	20.0					Medium to hard, slightly weathered red-brown fine grained thin to thick bedded SANDSTONE, some gray-green mottling and banding, bioturbation throughout. -GRIMSBY SANDSTONE-
	3						
	3						
	3						Slightly weathered steeply inclined fracture at 21.9 ft.
	3	R1	119/89	99/74	SL/MOD		Moderately weathered, crumbly, conglomerate seam at 22.5 ft.
25	3						Moderately weathered soft shale seam at 24.2 ft.
	2						
	2						Frequent slightly to moderate weathered shaley partings from 27.9 to 30.0 ft.
	2						
	2	30.0					
30	2	30.0					Dark brown phosphatic nodule layer from 31.6 to 31.7 ft.
	2						
	2						-GRIMSBY SANDSTONE-
	3						
	3	R2	114/104	95/87	SL/MOD		
35	3						Moderately weathered mudstone partings at 36.2, 36.6 and 39.5 ft.
	2						
	2						
	2						
	2	40.0					-GRIMSBY SANDSTONE-
40		40.0					
		R3	59/52	98/87	SL/MOD		Moderately weathered mudstone parting at 43.4 ft.
		45.0					
45		45.0					Slightly weathered undulating partings from 45.0 to 45.3 ft.
							-GRIMSBY SANDSTONE-
		R4	117/112	98/93	SL		
50							

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. 206-2D FILE NO. 70307-42 SHEET NO. 3 OF 3

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		R4	117/112	98/93	SL/MOD		Slightly weathered shaley parting at 52.3 ft. Moderately weathered conglomerate seam, with calcite crystals at 53.0 ft.
		55.0					-GRIMSBY SANDSTONE-
55		55.0					Medium to hard, slightly weathered red-brown and gray-green fine grained thin to thick bedded SANDSTONE.
		R5	115/104	96/87	SL		-GRIMSBY SANDSTONE
60							
		64.8					
65							Bottom of Boring at 64.8 ft.
							Notes: 1. Foxboro OVA used to monitor for organic vapors during drilling. All readings non-detect. 2. Auger refusal at 18.5 ft. Driller advanced 12-inch tricone roller bit to 20.0 ft. to seal temporary casing and began coring at 20.0 ft. 3. Driller unable to remove 12-inch temporary casing from boring following installation of 8-inch well casing. Temporary casing cut off 0.2 ft. below surface and left in place. 4. Drilling water and well water samples collected and submitted to General Testing Corporation for analysis. 5. See Bedrock Groundwater Monitoring Well Report.
70							
75							
80							
85							

TEST BORING RECORD

Datum Elevation: 400.75



REMARKS:
Ground-water elevation measured on December 19, 1989. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 206-3
DATE STARTED: 11-14-89
DATE COMPLETED: 11-15-89
JOB NUMBER: 52-9527

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

INTERFACE GROUNDWATER MONITORING WELL REPORT

PROJECT:	BUILDING 201 PIEZOMETER INSTALLATION	FILE NO.:	70198-052
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	201-P1
CLIENT:	XEROX CORPORATION	LOCATION:	N92.58 E866.15
CONTRACTOR:	NOTHNAGLE DRILLING	SHEET:	1 OF 1
DRILLER:	S. Loranty RIG TYPE: CME-75	INSPECTOR:	B. Hanna
INSTALLATION DATE:	21 June 1994		

Survey Datum NGVD

Ground Elevation: 401.64

SUMMARIZED SOIL CONDITIONS

-FILL-	9.5 ft.
-LACUSTRINE-	19.0 ft.
-BEDROCK-	25.0 ft.

-CEMENT/ BENTONITE GROUT-

What is this mtl?

11.0 ft.

-BENTONITE SEAL-

13.0 ft.

-QUARTZ SAND-

25.0 ft.

Stickup above ground surface of protective casing.	2.5 ft.
Stickup above ground surface of riser pipe.	2.1 ft.
Thickness of Surface Seal	2.5 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Sakrete
Type of Protective Casing	Stainless Steel
Inside Diameter of Protective Casing	4 in.
Depth of Bottom of Protective Casing	2.5 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Cement/Bentonite Grout
Diameter of Borehole	6 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	14.0 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.020 in.
Diameter of Wellscreen	2 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	24.0 ft.
Depth of Bottom of Borehole	25.0 ft.

Remarks:

Well No. 201-P1

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. 201-P1

PROJECT: BUILDING 201-PIEZOMETER INSTALLATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTNAGLE DRILLING CO.

FILE NO. 70198-052
SHEET NO. 1 OF 1
LOCATION: N92.58
E866.15
ELEVATION: 401.64
DATUM: NGVD
START: 21 June 1994
FINISH: 21 June 1994
DRILLER: S. Loranty
H&A REP: B. Hanna

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	PIP	---	---
INSIDE DIAMETER (IN)	8	---	---
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75
BIT TYPE: Rollerbit
DRILL MUD: ---
OTHER: Auger to top of rock.
Rollerbit 6 ft. into rock.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5						Augered to top of rock at 19.0 ft. without sampling. 0-5 ft. Brown coarse to fine sand fill, dry. 5-10 ft. Same with little silt. -FILL-
10					9.5	10-15 ft. Red-brown silty SAND, wet. -LACUSTRINE-
15						15-19 ft. Same.
20						
25						

Notes:

1. Soil description based on observation of auger cuttings.
2. Set temporary 8-in. casing to 19 ft.
3. 6-in. rollerbit to 25 ft.
4. See Well Completion Report.
5. Lost 0 gallons of water from 19 to 25 ft.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 19
ROCK CORED (LIN FT): ---
SAMPLES: ---

BORING NO. 201-P1

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: 201-P1	TOP OF INNER CASING ELEVATION: 403.64	FILE NO. 70198-052 PAGE NO. 1 OF 1

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM	ELEVATION OF WATER	REMARKS	READ BY
6/27/94	0805				Xerox changed the lock. I have no key.	BH
6/28/94	0915		7.30	396.34	Pre development.	BH
6/28/94	1333		7.39	396.25	Post development.	BH
6/29/94	1050		7.35	396.29		WL

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

INTERFACE GROUNDWATER MONITORING WELL REPORT

PROJECT:	BUILDING 201 PIEZOMETER INSTALLATION	FILE NO.:	70198-052
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	201-P2
CLIENT:	XEROX CORPORATION	LOCATION:	N271.49
CONTRACTOR:	NOTHNAGLE DRILLING		E810.81
DRILLER:	J. Stockholm RIG TYPE: CME-75	SHEET:	1 OF 1
INSTALLATION DATE:	28 June 1994	INSPECTOR:	B. Hanna

Survey Datum NGVD

Ground Elevation: 399.95

SUMMARY OF SUBSURFACE CONDITIONS

-FILL- (0 to 7.0 ft.)

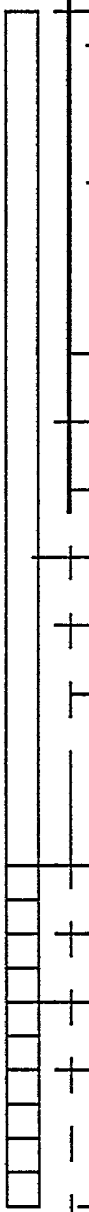
-CEMENT/ BENTONTIE GROUT- (0 to 16.9 ft.)

-BENTONITE SEAL- (16.9 to 19.0 ft.)

-LACUSTRINE- (19.0 to 25.6 ft.)

-QUARTZ SAND- (19.0 to 31.6 ft.)

-BEDROCK- (25.6 ft. to 31.6 ft.)



Stickup above ground surface of protective casing.	2.55 ft.
Stickup above ground surface of riser pipe.	2.2 ft.
Thickness of Surface Seal	2.45 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Sakrete
Type of Protective Casing	Stainless Steel
Inside Diameter of Protective Casing	4 in.
Depth of Bottom of Protective Casing	2.45 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Cement/Bentonite Grout
Diameter of Borehole	8 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	20.6 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.020 in.
Diameter of Wellscreen	2 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	30.6 ft.
Depth of Bottom of Borehole	31.6 ft.

Remarks:

Well No. 201-P2

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. 201-P2

PROJECT: BUILDING 201-PIEZOMETER INSTALLATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTNAGLE DRILLING CO.

FILE NO. 70198-052
SHEET NO. 1 OF 1
LOCATION: N271.49
E810.81
ELEVATION: 399.95
DATUM: NGVD
START: 27 June 1994
FINISH: 28 June 1994
DRILLER: J. Stockholm
H&A REP: B. Hanna

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	PIP	---	---
INSIDE DIAMETER (IN)	8	---	---
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75
BIT TYPE: Rollerbit
DRILL MUD: ---
OTHER: Auger to top of rock.
Rollerbit 6 ft. in to rock.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						Augered to top of rock at 25.6 ft. without sampling.
						0-7 ft. Brown coarse to fine SAND, dry with trace roots.
						-FILL-
5						7-12 ft. Red-brown coarse to fine SAND, damp.
						-LACUSTRINE-
10						12-25.6 ft. Gray-brown coarse to fine silty SAND, damp.
						-LACUSTRINE-
15						
20						
25						

Notes:
1. Soil description based on observation of auger cuttings.
2. Set temp 8 in . casing to 25.6 ft.
3. 6-in. rollerbit to 31.6 ft.
4. See Well Completion Report.
5. Lost 0 gallons of water from 25.6 to 31.6 ft.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	25.6
ROCK CORED (LIN FT):	---
SAMPLES:	---
BORING NO.	201-P2

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: 201-P2	TOP OF INNER CASING ELEVATION: 401.93	FILE NO. 70198-052 PAGE NO. 1 OF 1

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM Inner Casing	ELEVATION OF WATER	REMARKS	READ BY
6/28/94	1100			401.93	Pre development.	BH
6/28/94	1302		8.91	393.02	Post development.	BH
6/29/94	1045		7.04	394.89		WL

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	INTERFACE GROUNDWATER MONITORING WELL REPORT

PROJECT:	BUILDING 201 PIEZOMETER INSTALLATION	FILE NO.:	70198-052
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	201-P3
CLIENT:	XEROX CORPORATION	LOCATION:	N359.32 E981.59
CONTRACTOR:	NOTHNAGLE DRILLING	SHEET:	1 OF 1
DRILLER:	S. Loranty RIG TYPE: CME-75	INSPECTOR:	B. Hanna
INSTALLATION DATE:	24 June 1994		

Survey Datum NGVD

Ground Elevation: 399.96

SUMMARIZED SOIL CONDITIONS

-FILL-

-CEMENT/ BENTONTIE GROUT-

2.0 ft.

-BENTONITE SEAL-

4.0 ft.

-QUARTZ SAND-

8.0 ft.

-BEDROCK-

16.0 ft.

16.0 ft.

Stickup above ground surface of protective casing.	2.6 ft.
Stickup above ground surface of riser pipe.	2.3 ft.
Thickness of Surface Seal	2.4 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Sakrete
Type of Protective Casing	Stainless Steel
Inside Diameter of Protective Casing	4 in.
Depth of Bottom of Protective Casing	2.4 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Cement/Bentonite Grout
Diameter of Borehole	6 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	5.0 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	15.0 ft.
Depth of Bottom of Borehole	16.0 ft.

Remarks:

Well No. 201-P3

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. 201-P3

PROJECT: BUILDING 201-PIEZOMETER INSTALLATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTNAGLE DRILLING CO.

FILE NO. 70198-052
SHEET NO. 1 OF 1
LOCATION: N359.32
E981.59
ELEVATION: 399.96
DATUM: NGVD
START: 24 June 1994
FINISH: 24 June 1994
DRILLER: S. Loranty
H&A REP: B. Hanna

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	PIP	---	---
INSIDE DIAMETER (IN)	8	---	---
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75
BIT TYPE: Rollerbit
DRILL MUD: ---
OTHER: Auger to top of rock.
Rollerbit 6 ft. into rock.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						Augered to top of rock at 8 ft. without sampling. 0-8 ft. Brown coarse to fine SAND, damp. -FILL-

5
10
15
20
25

Notes:

1. Soil description based on observation of auger cuttings.
2. Set 8-in. temporary casing at 8 ft.
3. 6 in. rollerbit to 16 ft.
4. Lost 0 gallons from 8 to 16 ft.
5. See Well Completion Report.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 8
ROCK CORED (LIN FT): ---
SAMPLES: ---
BORING NO. 201-P3

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: 201-P3	TOP OF INNER CASING ELEVATION: 402.18	FILE NO. 70198-052 PAGE NO. 1 OF 1

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM Inner Casing	ELEVATION OF WATER	REMARKS	READ BY
6/27/94	1150				Can't get slip cap off.	BH
6/28/94	1315		7.6	394.58	Pre development.	BH
6/28/94	1340		9.79	392.39	Post development.	BH
6/29/94	1103		7.38	394.8		WL

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

INTERFACE GROUNDWATER MONITORING WELL REPORT

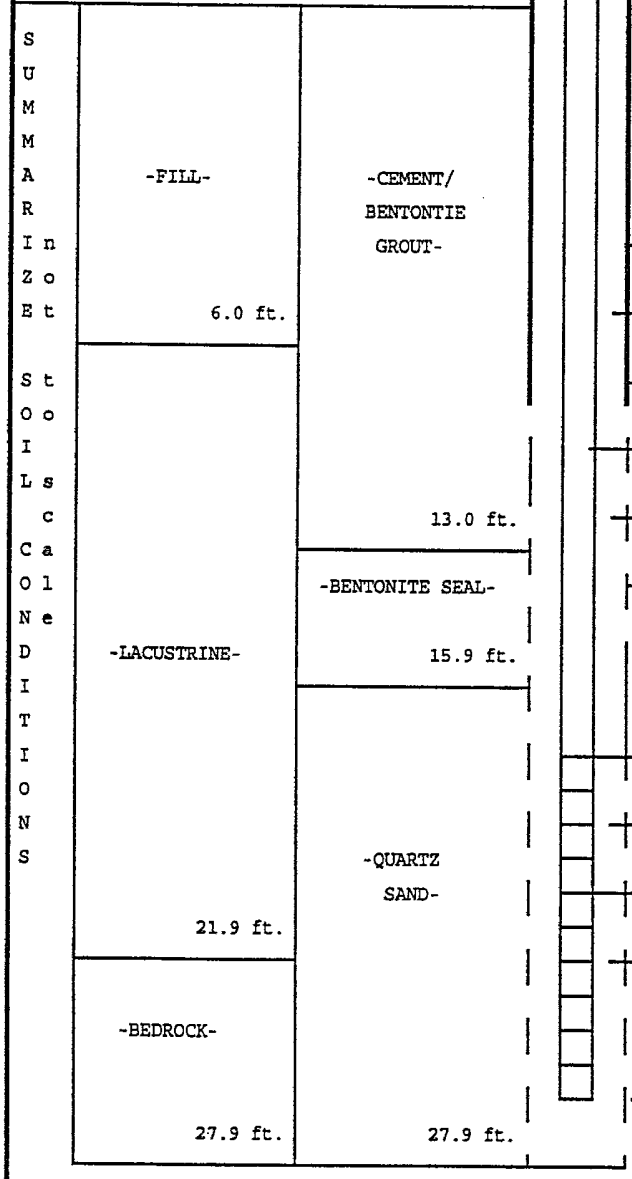
PROJECT:	BUILDING 201 PIEZOMETER INSTALLATION
LOCATION:	WEBSTER, NEW YORK
CLIENT:	XEROX CORPORATION
CONTRACTOR:	NOTHNAGLE DRILLING
DRILLER:	S. Loranty RIG TYPE: CME-75
INSTALLATION DATE:	June 1994

FILE NO.:	70198-052
WELL NO.:	201-P4
LOCATION:	N361.62 E1,075.76
SHEET:	1 OF 1
INSPECTOR:	B. Hanna

Survey Datum NGVD

Ground Elevation: 399.94

SUMMARIZE SOIL CONDITIONS



Stickup above ground surface of protective casing.	2.4 ft.
Stickup above ground surface of riser pipe.	2.1 ft.
Thickness of Surface Seal	2.6 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Sakrete
Type of Protective Casing	Stainless Steel
Inside Diameter of Protective Casing	4 in.
Depth of Bottom of Protective Casing	2.6 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Cement/Bentonite Grout
Diameter of Borehole	6 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	16.9 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.020 in.
Diameter of Wellscreen	2 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	26.9 ft.
Depth of Bottom of Borehole	27.9 ft.

Remarks:

Well No. 201-P4

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. 201-P4

PROJECT: BUILDING 201-PIEZOMETER INSTALLATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTNAGLE DRILLING CO.

FILE NO. 70198-052
SHEET NO. 1 OF 1
LOCATION: N361.62
E1,075.76
ELEVATION: 399.94
DATUM: NGVD
START: 23 June 1994
FINISH: 27 June 1994
DRILLER: S. Loranty
H&A REP: B. Hanna

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	PIP	---	---
INSIDE DIAMETER (IN)	8	---	---
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75
BIT TYPE: Rollerbit
DRILL MUD: ---
OTHER: Auger to top of rock.
Rollerbit 6 ft. into rock.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5						Augered to top of rock at 21.9 ft. without sampling. 0-5 ft. Brown coarse to fine SAND, dry. -FILL- 6-10 ft. Red-brown silty coarse to fine SAND, damp. -LACUSTRINE- 10-15 ft. Red-gray silty fine SAND, moist. 15-21.9 ft. Brown to red-brown silty coarse to fine SAND, moist.
10						
15						
20						
25						

Notes:

1. Soil description based on observation of auger cuttings.
2. Set 8-in. casing at 21.9 ft.
3. 6-in rollerbit to 27.9 ft.
4. Lost 5 gallons of water from 21.9 to 27.9 ft.
5. See Well Completion Report.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 21.9
ROCK CORED (LIN FT): ---
SAMPLES: ---

BORING NO. 201-P4

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: 201-P4

TOP OF INNER CASING ELEVATION: 401.97

FILE NO. 70198-052
PAGE NO. 1 OF 1

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM Inner Casing	ELEVATION OF WATER	REMARKS	READ BY
6/27/94	1145				Xerox lock.	BH
6/28/94	1240		7.5	394.47	Pre development.	BH
6/28/94	1310		11.25	390.72	Post development. Removed 5 gallons.	BH
6/29/94	1100		7.43	394.54		WL

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	INTERFACE GROUNDWATER MONITORING WELL REPORT

PROJECT:	BUILDING 201 PIEZOMETER INSTALLATION	FILE NO.:	70198-052
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	201-P5
CLIENT:	XEROX CORPORATION	LOCATION:	N388.58
CONTRACTOR:	NOTHNAGLE DRILLING		E1,174.95
DRILLER:	S. Loranty RIG TYPE: CME-75	SHEET:	1 OF 1
INSTALLATION DATE:	23 June 1994	INSPECTOR:	B. Hanna

Survey Datum NGVD

Ground Elevation: 399.82

SUMMARY SOIL CONDITIONS / Install Zone Notes

Soil	Depth	Zone	Depth
-FILL-	8.0 ft.	-CEMENT/ BENTONTIE GROUT-	12.5 ft.
-LACUSTRINE-	22.0 ft.	-BENTONITE SEAL-	15.5 ft.
-BEDROCK-	28.0 ft.	-QUARTZ SAND-	28.0 ft.

Stickup above ground surface of protective casing.	2.8 ft.
Stickup above ground surface of riser pipe.	2.5 ft.
Thickness of Surface Seal	2.2 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Sakrete
Type of Protective Casing	Stainless Steel
Inside Diameter of Protective Casing	4 in.
Depth of Bottom of Protective Casing	2.2 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Cement/Bentonite Grout
Diameter of Borehole	6 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	17.0 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.020 in.
Diameter of Wellscreen	2 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	27.0 ft.
Depth of Bottom of Borehole	28.0 ft.

Remarks:

Well No. 201-P5

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. 201-P5

PROJECT: BUILDING 201-PIEZOMETER INSTALLATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTNAGLE DRILLING CO.

FILE NO. 70198-052
SHEET NO. 1 OF 1
LOCATION: N388.58
E1,174.82
ELEVATION: 399.82
DATUM: NGVD
START: 22 June 1994
FINISH: 23 June 1994
DRILLER: S. Loranty
H&A REP: B. Hanna

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	PIP	---	---
INSIDE DIAMETER (IN)	8	---	---
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75
BIT TYPE: Rollerbit
DRILL MUD: ---
OTHER: Auger to top of rock.
Rollerbit 6 ft. into rock.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						Augered to top of rock at 22 ft. without sampling.
						0-6 ft. Red-brown coarse to fine SAND, dry.
						-FILL-
5						
						8-22 ft. Red-brown coarse to fine SAND, trace silt, wet.
						-LACUSTRINE-
10						
15						
20						
25						

Notes:

1. Soil description based on observation of auger cuttings.
2. Set 8-in. temporary casing at 22.0 ft.
3. 6-in. rollerbit to 28.0 ft.
4. Lost 0 gallons of water from 22 to 28 ft.
5. See Well Completion Report.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 22
ROCK CORED (LIN FT): ---
SAMPLES: ---
BORING NO. 201-P5

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: 201-P5	TOP OF INNER CASING ELEVATION: 402.25	FILE NO. 70198-052 PAGE NO. 1 OF 1

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM Inner Casing	ELEVATION OF WATER	REMARKS	READ BY
6/27/94	0830				Xerox changed locks. I have no key.	BH
6/28/94	1130		8.0	394.25	Pre development.	BH
6/28/94	1320		8.11	394.14	Post development.	BH
6/29/94	1058		8.20	394.05		WL

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

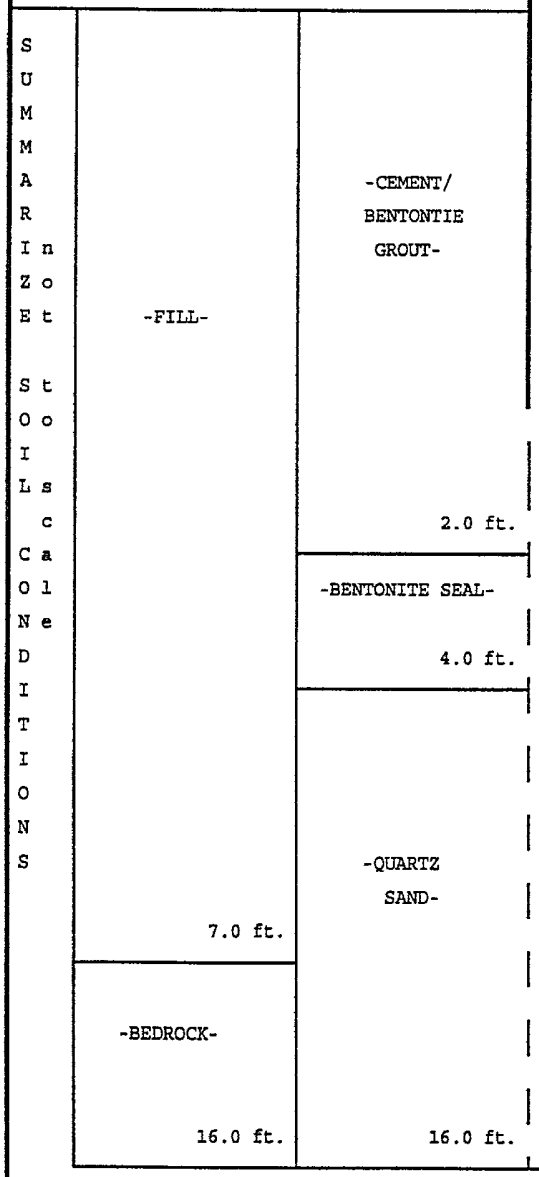
INTERFACE GROUNDWATER MONITORING WELL REPORT

PROJECT:	BUILDING 201 PIEZOMETER INSTALLATION	FILE NO.:	70198-052
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	201-P6
CLIENT:	XEROX CORPORATION	LOCATION:	N359.25
CONTRACTOR:	NOTHNAGLE DRILLING		E1,295.67
DRILLER:	S. Loranty RIG TYPE: CME-75	SHEET:	1 OF 1
INSTALLATION DATE:	22 June 1994	INSPECTOR:	B. Hanna

Survey Datum NGVD

Ground Elevation: 401.58

SUMMARIZE SOIL CONDITIONS



Note Stoscale

Stickup above ground surface of protective casing.	2.6 ft.
Stickup above ground surface of riser pipe.	2.1 ft.
Thickness of Surface Seal	2.4 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Sakrete
Type of Protective Casing	Stainless Steel
Inside Diameter of Protective Casing	4 in.
Depth of Bottom of Protective Casing	2.4 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Cement/Bentonite Grout
Diameter of Borehole	6 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	5.0 ft.
Type of Wellscreen	PVC
Screen Slot Size	0.020 in.
Diameter of Wellscreen	2 in.
Type of Backfill Around Wellscreen	Quartz Sand
Depth of Bottom of Wellscreen	15.0 ft.
Depth of Bottom of Borehole	16.0 ft.

Remarks:

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. 201-P6

PROJECT: BUILDING 201-PIEZOMETER INSTALLATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTNAGLE DRILLING CO.

FILE NO. 70198-052
SHEET NO. 1 OF 1
LOCATION: N359.25
E1,295.67
ELEVATION: 401.58
DATUM: NGVD
START: 22 June 1994
FINISH: 22 June 1994
DRILLER: S. Loranty
H&A REP: B. Hanna

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	PIP	---	---
INSIDE DIAMETER (IN)	8	---	---
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75
BIT TYPE: Rollerbit
DRILL MUD: ---
OTHER: Auger to top of rock.
Rollerbit 6 ft. into rock.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						Augered to top of rock at 7.0 ft. without sampling.
						0-7 ft. Red-brown coarse to fine SAND, dry.
						-FILL-
5						
10						
15						
20						
25						

Notes:

1. Soil description based on observation of auger cuttings.
2. Set temporary 8-in. casing at 7.0 ft.
3. 6-in. rollerbit to 16.0 ft.
4. Lost 30 gallons of water from 7.0 to 12 ft.
5. See Well Completion Report.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 7
ROCK CORED (LIN FT): ---
SAMPLES: ---
BORING NO. 201-P6

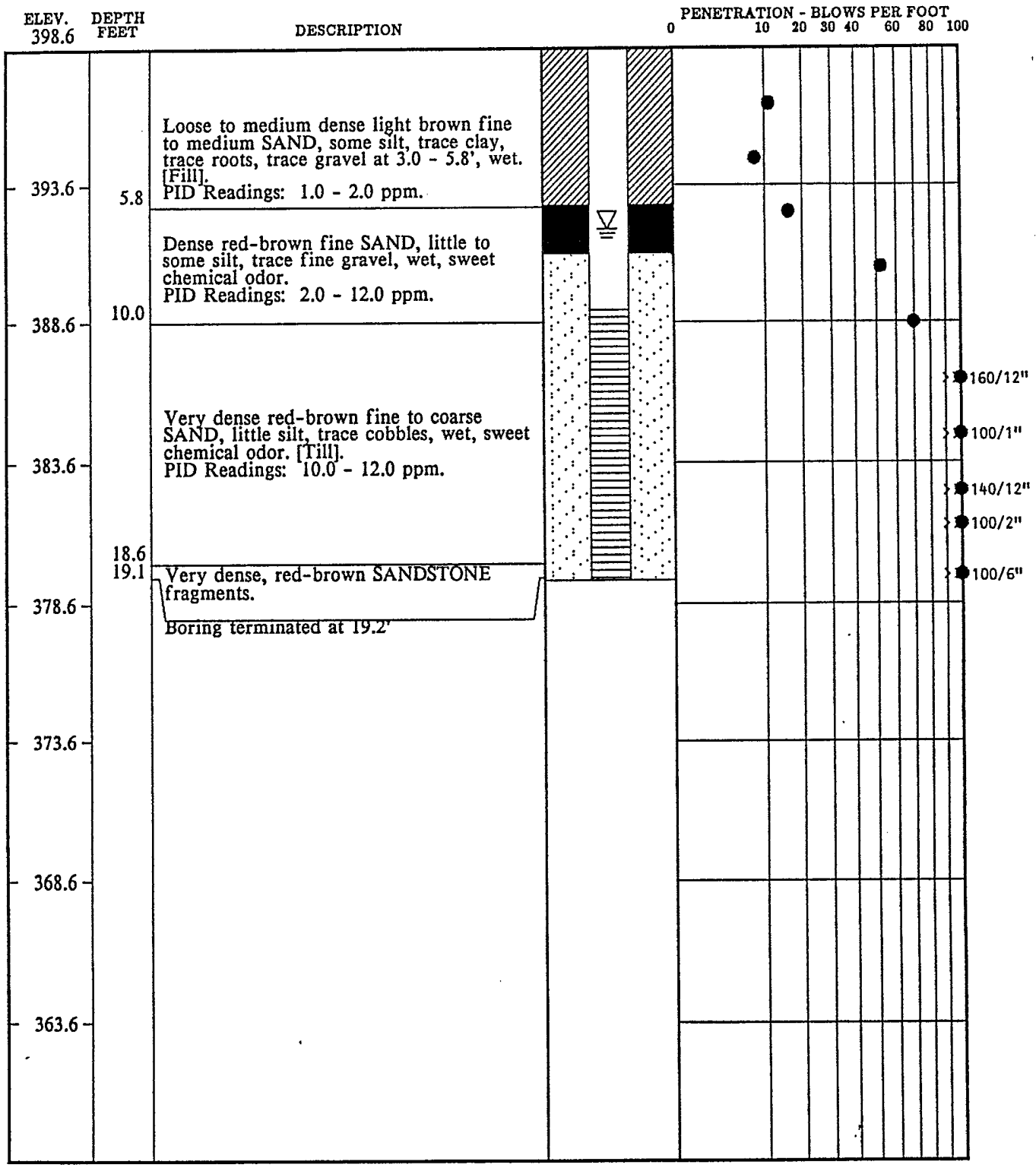
H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	GROUNDWATER LEVEL MONITORING REPORT

WELL NUMBER: 201-P6	TOP OF INNER CASING ELEVATION: 403.54	FILE NO. 70198-052 PAGE NO. 1 OF 1

DATE	TIME	ELAPSED TIME	DEPTH OF WATER FROM Inner Casing	ELEVATION OF WATER	REMARKS	READ BY
6/27/94	0758		7.93	395.61		BH
6/28/94	1015		8.5	395.04	Pre development.	BH
6/28/94	1326		7.99	395.55	Post development.	BH
6/29/94	1055		7.96	395.58		WL

TEST BORING RECORD

Datum Elevation: 399.58



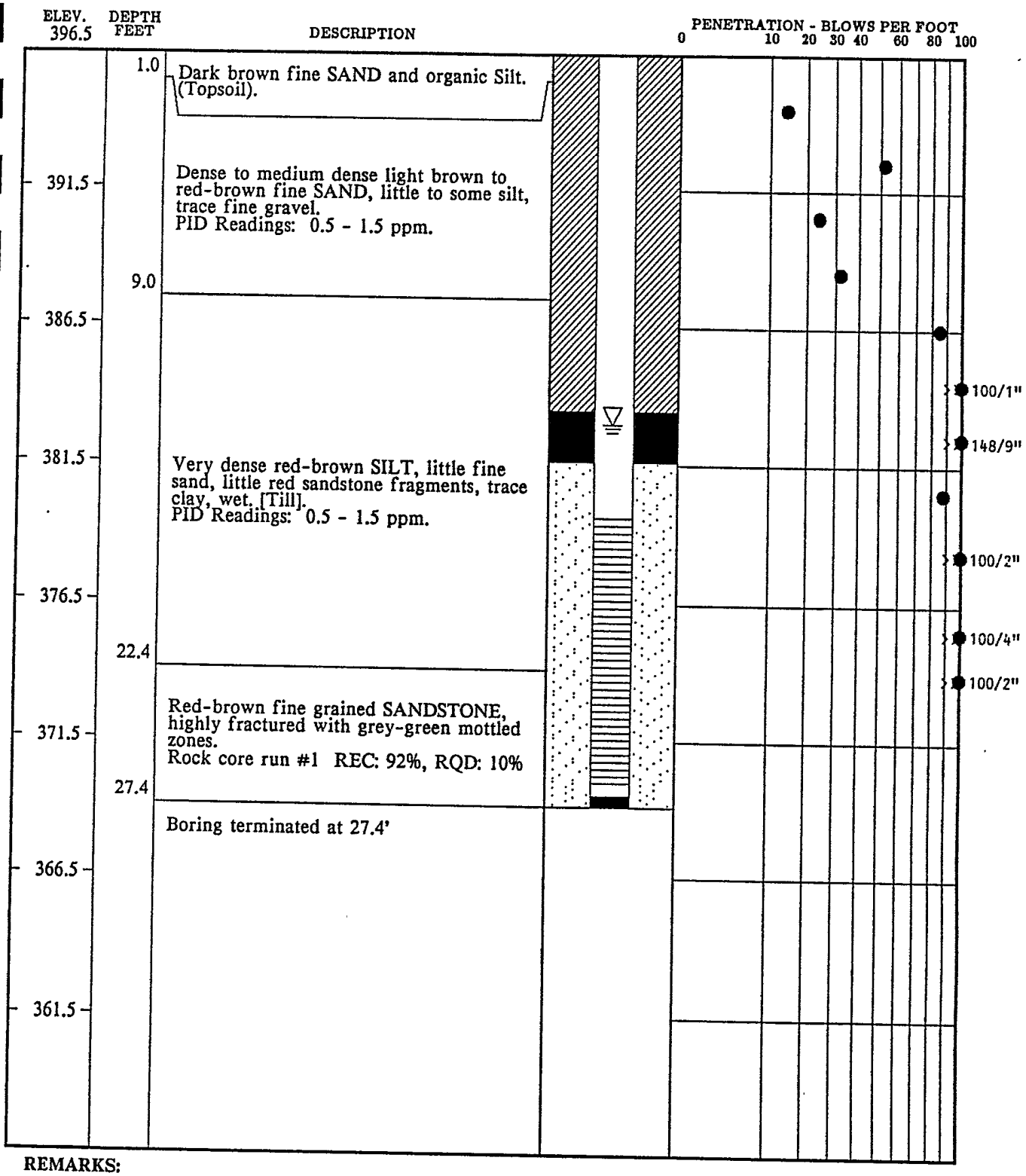
REMARKS:
Ground-water elevation measured on December 19, 1989. Well construction: four-inch diameter. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 218-1
DATE STARTED: 11-10-89
DATE COMPLETED: 11-13-89
JOB NUMBER: 52-9527

TEST BORING RECORD

Datum Elevation: 398.31



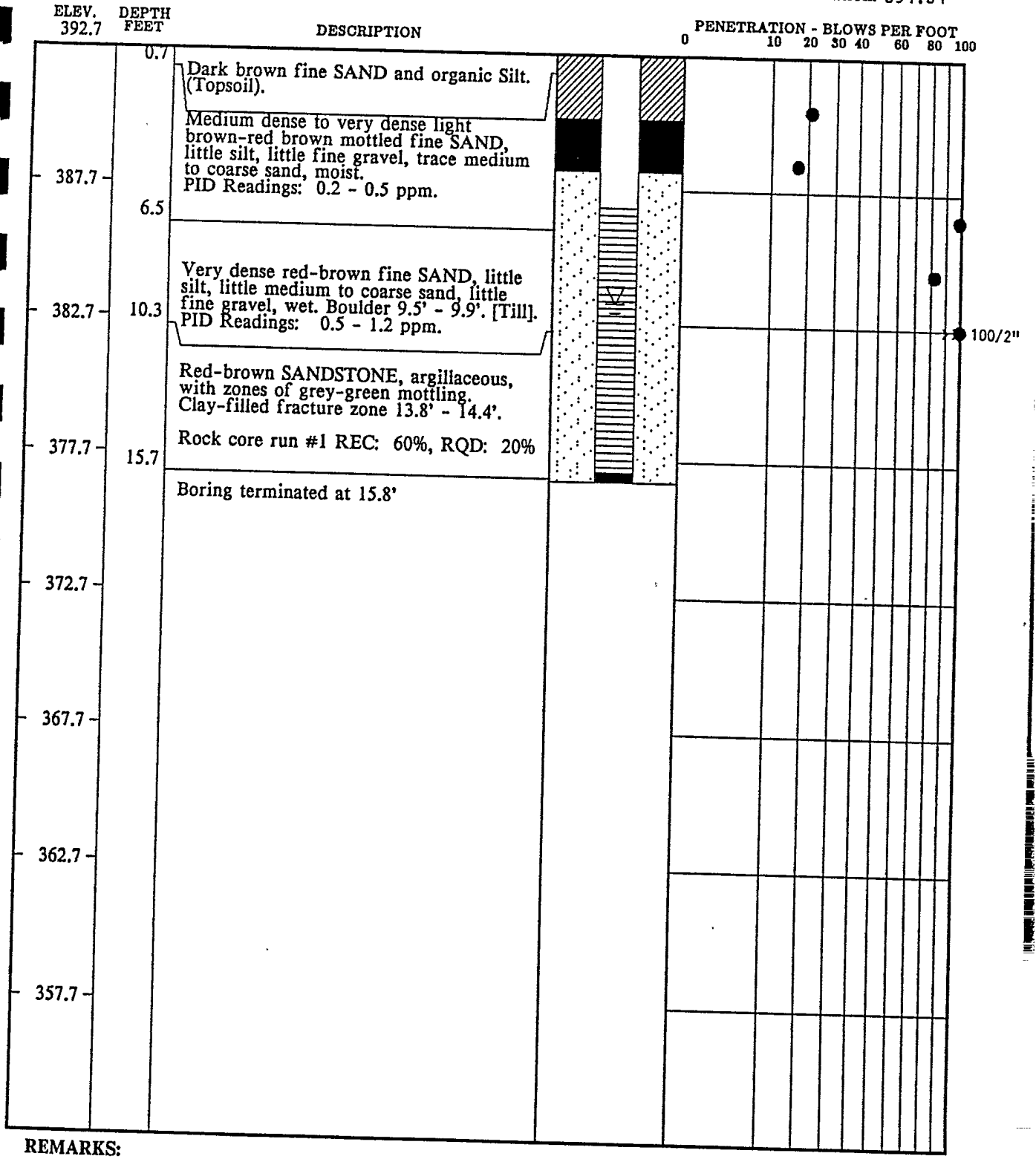
REMARKS:
Ground-water elevation measured on December 19, 1989. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 218-2
DATE STARTED: 12-7-89
DATE COMPLETED: 12-8-89
JOB NUMBER: 52-9527

TEST BORING RECORD

Datum Elevation: 394.54



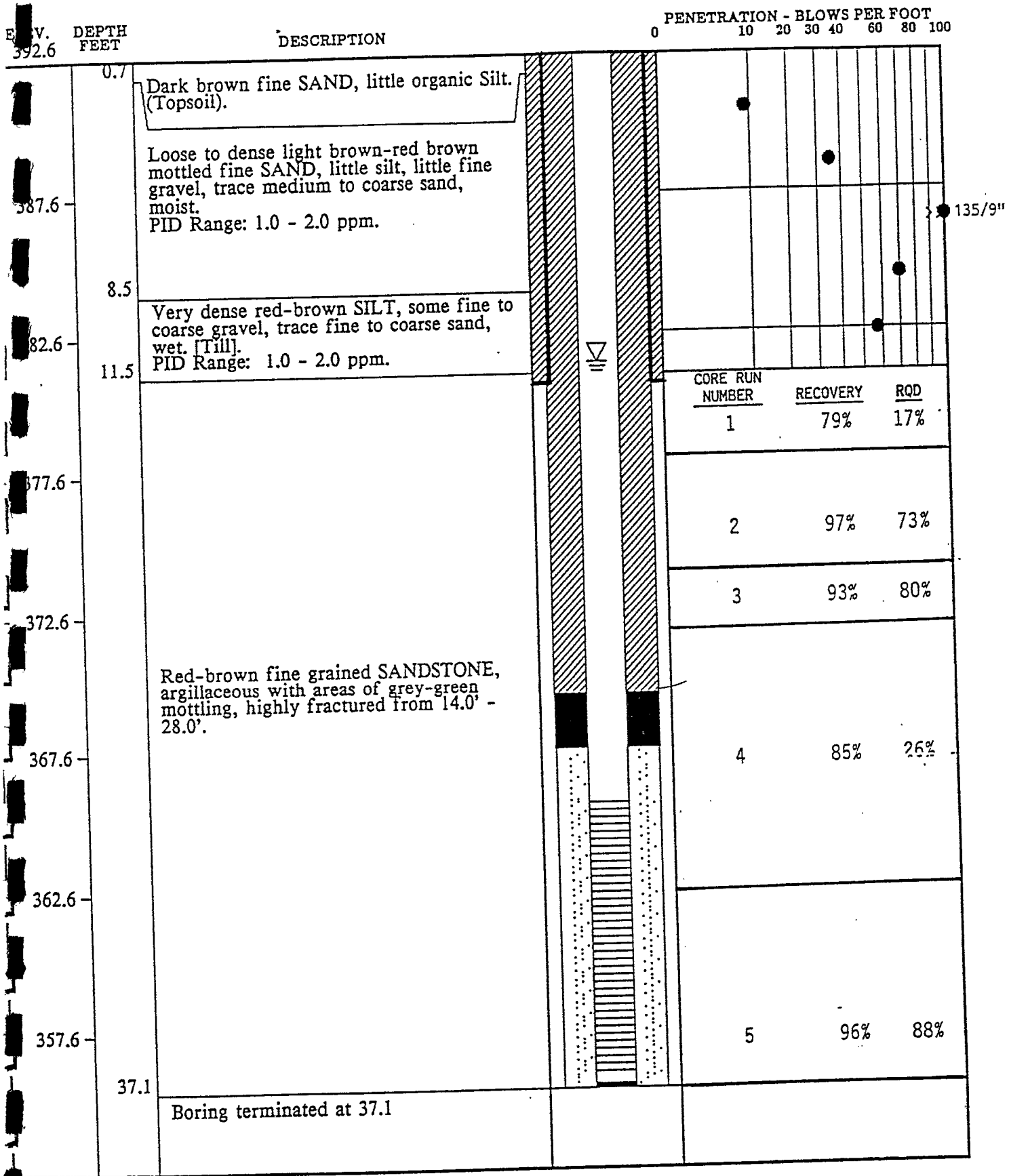
REMARKS:
Ground-water elevation measured on December 19, 1989. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 218-3
DATE STARTED: 11-22-89
DATE COMPLETED: 11-27-89
JOB NUMBER: 52-9527

TEST BORING RECORD

Datum Elevation: 394.69

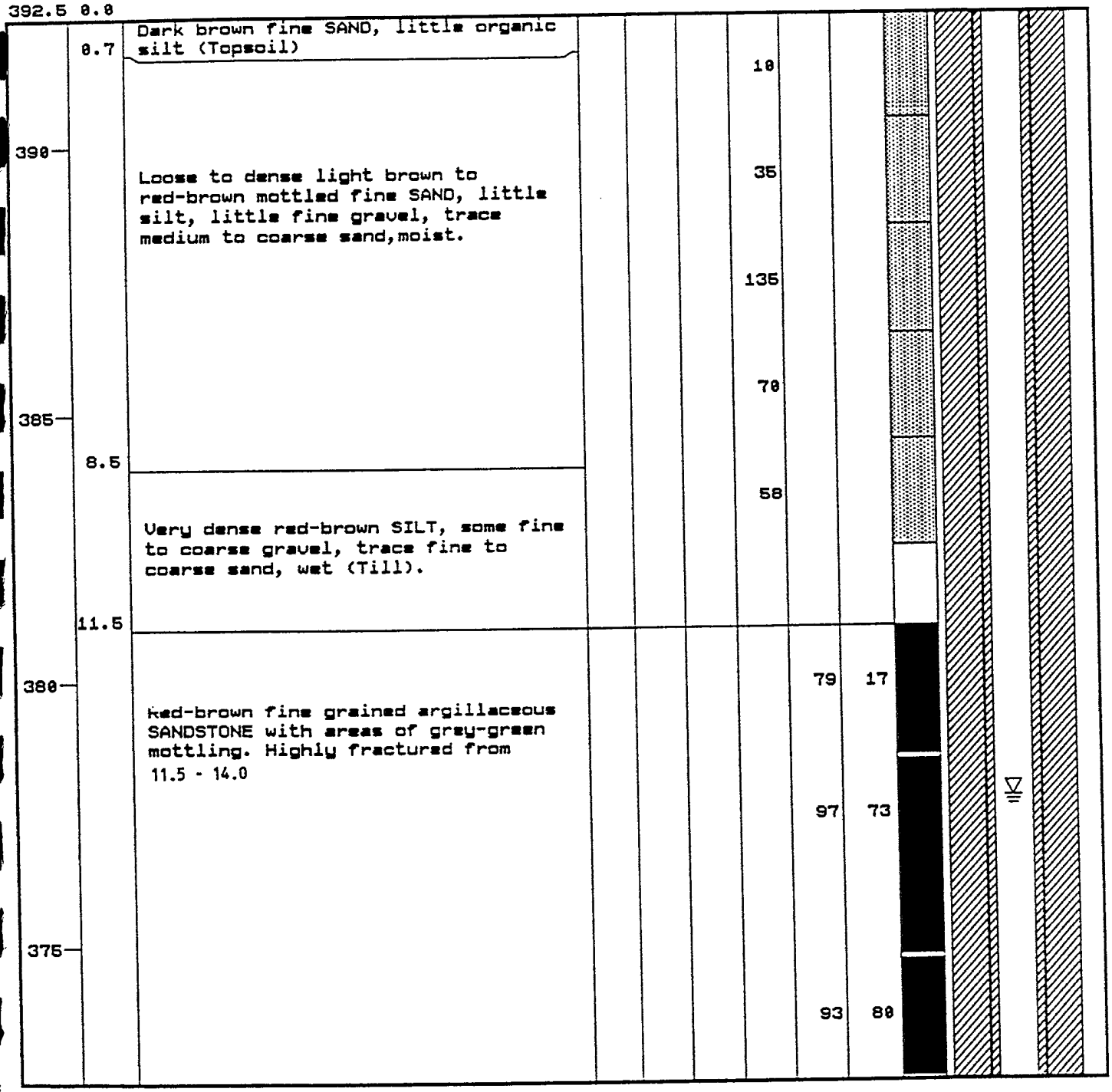


REMARKS:
Ground-water elevation measured on December 19, 1989. Six inch casing grouted in place at 11.8'. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 218-31
DATE STARTED: 11-27-89
DATE COMPLETED: 11-30-89
JOB NUMBER: 52-9527

Well: 218-3D
Datum Elevation: 394.60



Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

REMARKS:
No soil or rock sampling was conducted between 0 and 37.1 feet. Soil and rock descriptions between 0 and 37.1 ft. are taken from well boring 218-3I, completed in 1989. Water level measured at 14.72 on 10/1/91

TEST BORING RECORD

BORING NUMBER	218-3D
DATE(S) DRILLED	9/16/91 -9/19/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 1 OF 3	

LAW ENVIRONMENTAL

Well: 218-3D
Datum Elevation: 394.60

STRATUM ELEV.	DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
370		Red-brown fine grained SANDSTONE, argillaceous with areas of grey-green mottling, highly fractured from 20.8 - 30.3.					85	28		
365										
							96	88		
360										
	37.0									
355		Dark red-brown to light grey, slightly to moderately weathered, finely bedded SANDSTONE. Bioturbation and vugs: 38.0 - 40.0' Closely spaced sub-horizontal open fractures: 32.2', 37.0', 37.7', 38.1', 39.4', 40.85'					94	90		

REMARKS:
No soil or rock sampling was conducted between 0 and 37.1 feet. Soil and rock descriptions between 0 and 37.1 ft. are taken from well boring 218-3I, completed in 1989. Water level measured at 14.72 on 10/1/91

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

TEST BORING RECORD

BORING NUMBER	218-3D
DATE(S) DRILLED	9/16/91 -9/19/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 2 OF 3	

LAW ENVIRONMENTAL

Well: 218-3D
Datum Elevation: 394.60

STRATUM ELEV.	DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
		Dark red-brown to light grey, slight to moderately weathered, finely bedded SANDSTONE.								
	42.0									
350		Dark red-brown to light grey-green, slight to heavily weathered, finely bedded SANDSTONE. Green mottling at 42.0' and 44.0-45.0', low angle cross bedding between 48.7' and 49.2' High angle joint: 42.6 - 43.1' Weathered clay-filled sub-horizontal fracture: 43.6', 43.75' High and low angle fractures: 44.95 - 45.05' Closely spaced sub-horizontal fracture: 45.8'					95	50		
345		Weathered clay-filled sub-horizontal fracture: 48.0' High angle joints: 48.25 - 48.5' High and low angle joints: 49.2 - 49.3' Closely spaced sub-horizontal fractures: 49.3 - 49.4' Weathered clay-filled sub-horizontal fractures: 50.5', 51.7'								
	52.0									
340		Dark red-brown to light grey, finely bedded SANDSTONE. Low angle cross bedding between 53.0 - 55.0' and 56.0 - 56.3'. Sub-horizontal open fractures: 52.3',52.7',53.25',54' Closely spaced fractures: 55.75 - 55.90' Weathered fracture: 55.9' Closely spaced fractures and high angle joint: 56.0 - 56.4'					100	52		
	57.0									
335		Boring Terminated at 57 feet.								

REMARKS:
No soil or rock sampling was conducted between 0 and 37.1 feet. Soil and rock descriptions between 0 and 37.1 ft. are taken from well boring 218-3I, completed in 1989. Water level measured at 14.72 on 10/1/91

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

TEST BORING RECORD

BORING NUMBER	218-3D
DATE(S) DRILLED	9/16/91 -9/19/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 3 OF 3	

LAW ENVIRONMENTAL

TYPE III WELL INSTALLATION RECORD

B NAME Xerox expansion bedrock ... JOB NO. 52 C535

ORING/ ELL NO. 219-3D   DATE INSTALLED 9/18/91   DRILLING CONTRACTOR ...

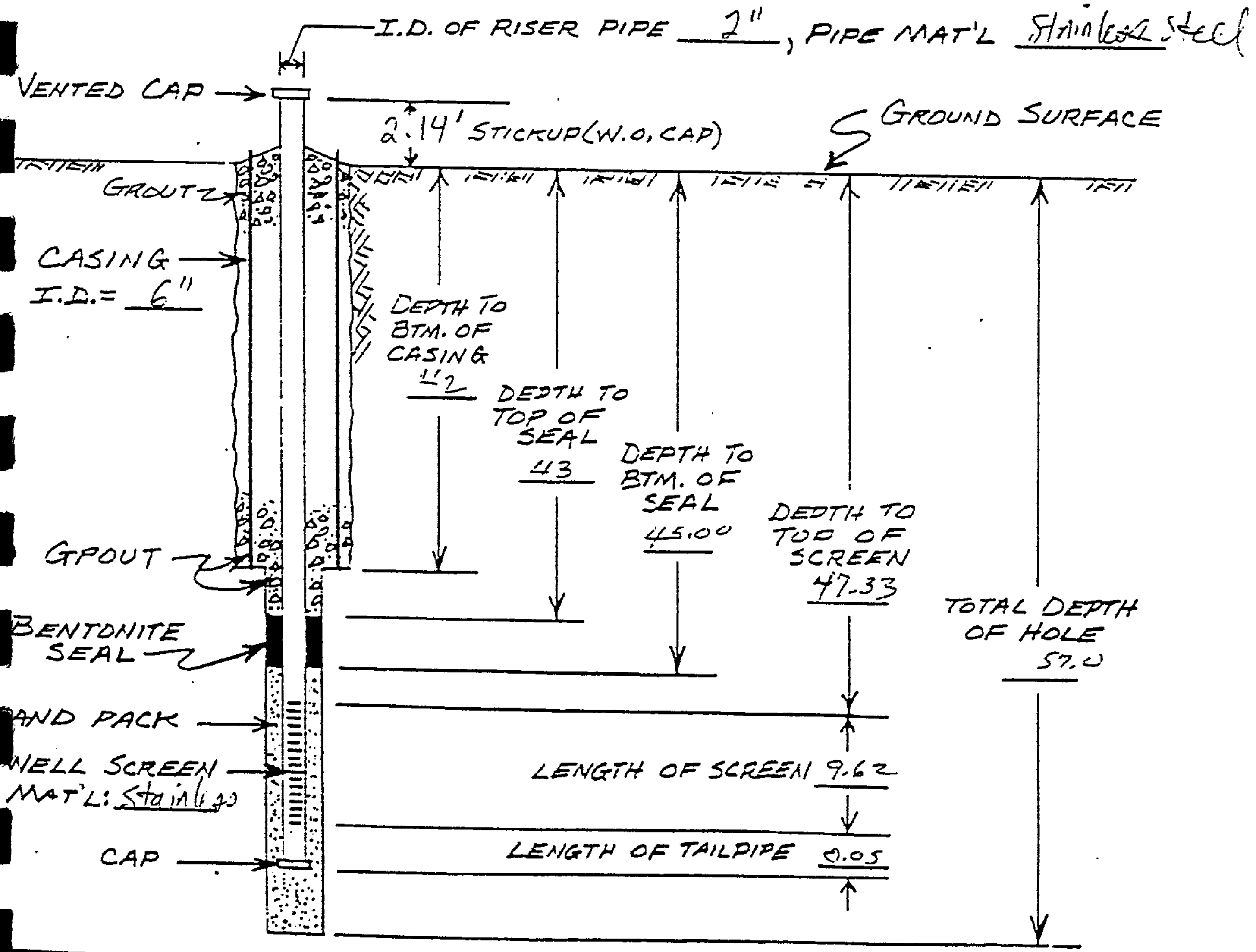
ORMATION REENED ...   SCREEN SLOT SIZE 0.010   TYPE OF SAND PACK ...

ILLING ETHOD 9 7/8" air rotary (ABOVE CASING)   BIT OR AUGER SIZE 9 7/8 (ABOVE CASING)
nx core 5 7/8 wash bore (BELOW CASING)   5 7/8 (BELOW CASING)

ROUND LEV. 392.46   EST'D. ___ SURVEYED X   SURVEYED TOP OF RISER PIPE ELEV. 394.60

EPTH TO ROUND WATER/ LEVATION ___ / 377.74 (BELOW GRD.) 10/1/91 (DATE)
___ / ___ (BELOW T/O RISER) ___ (DATE)

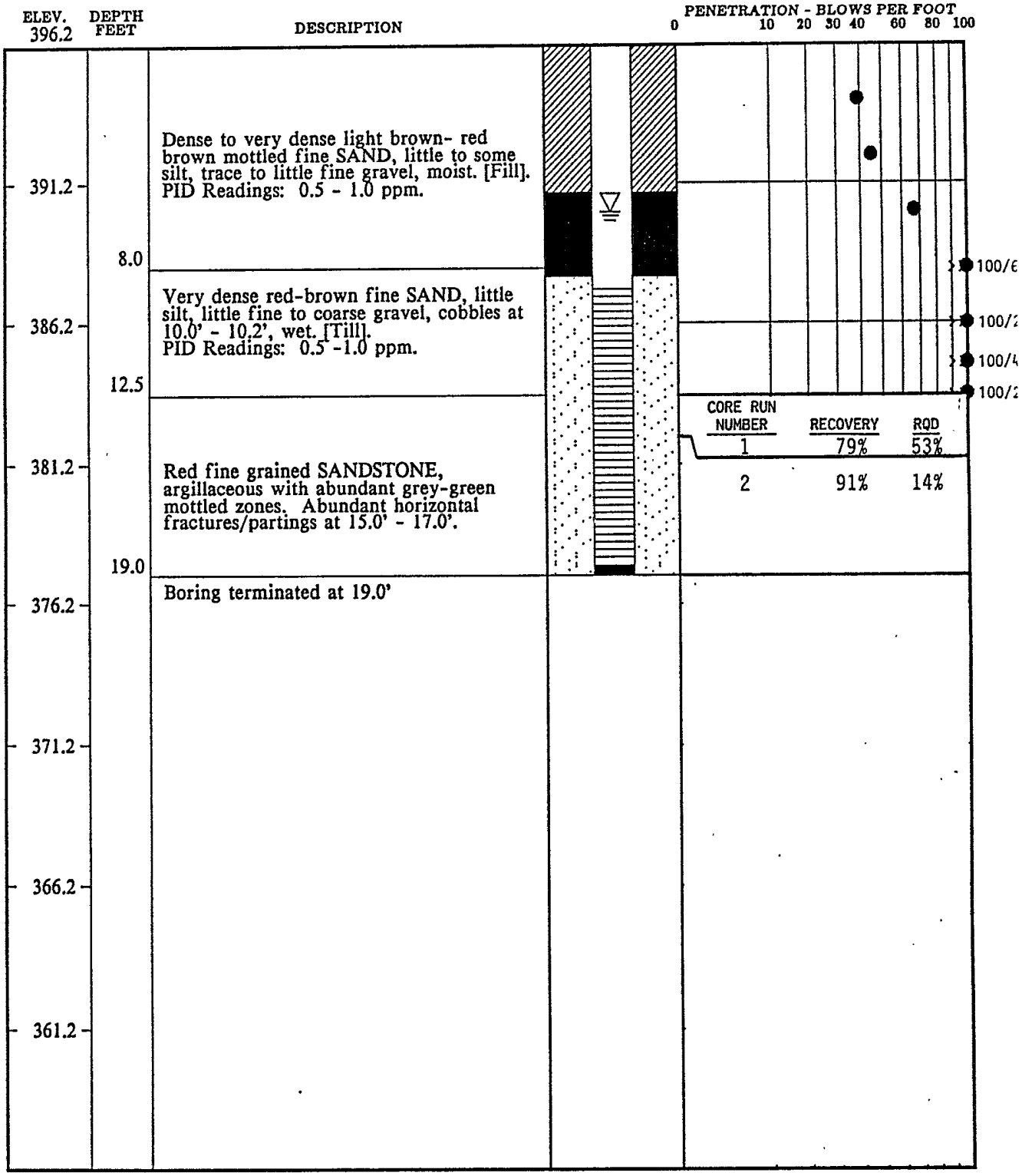
TE DEVELOPED 9/27/91   HOW? Suction Pump, stainless Bailer



LAW ENVIRONMENTAL SERVICES   FIELD GEOLOGIST: HTW

TEST BORING RECORD

Datum Elevation: 398.61



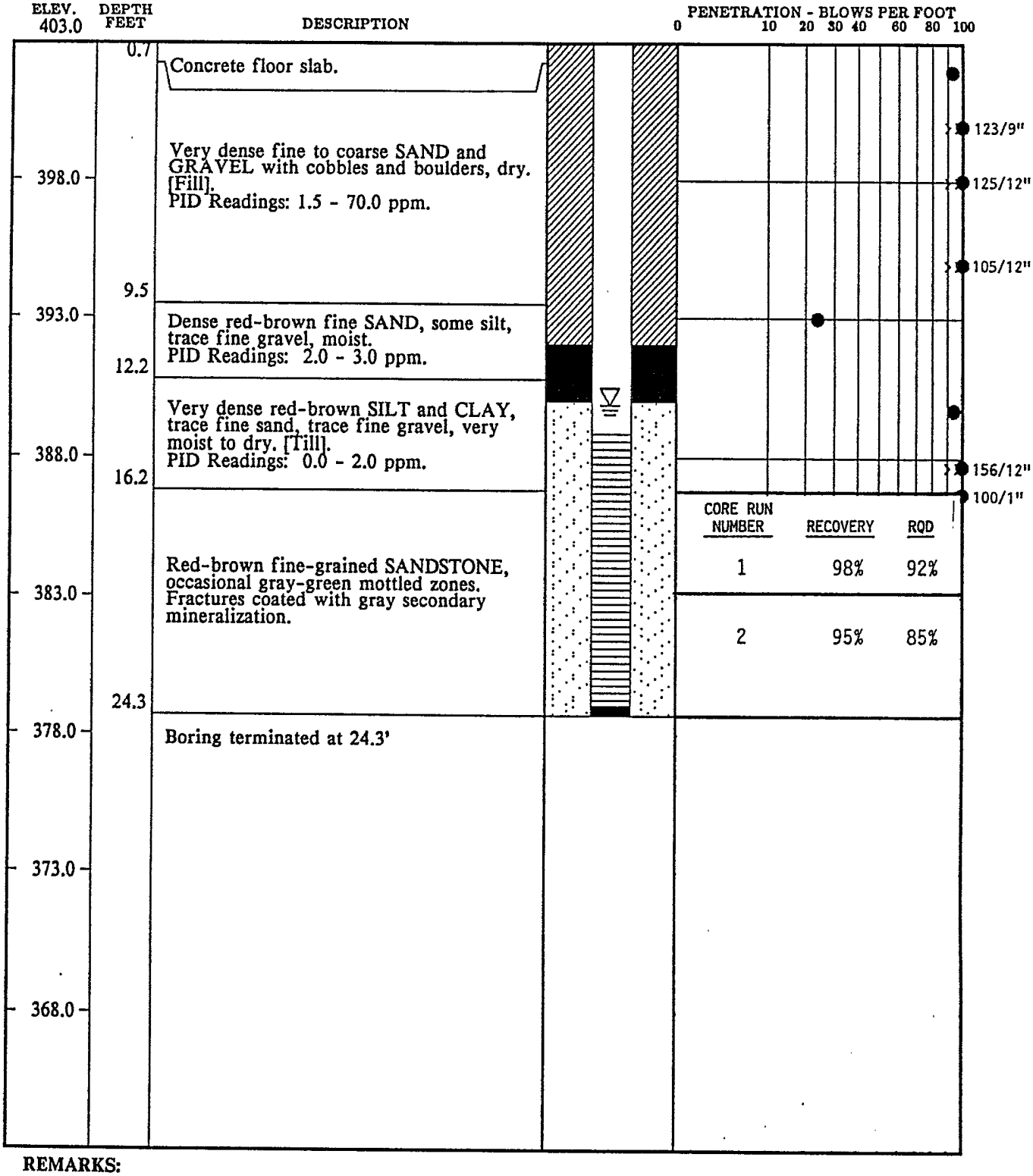
REMARKS:
Ground-water elevation measured on December 19, 1989. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 218-4
DATE STARTED: 11-20-89
DATE COMPLETED: 11-21-89
JOB NUMBER: 52-9527

TEST BORING RECORD

Datum Elevation: 402.79



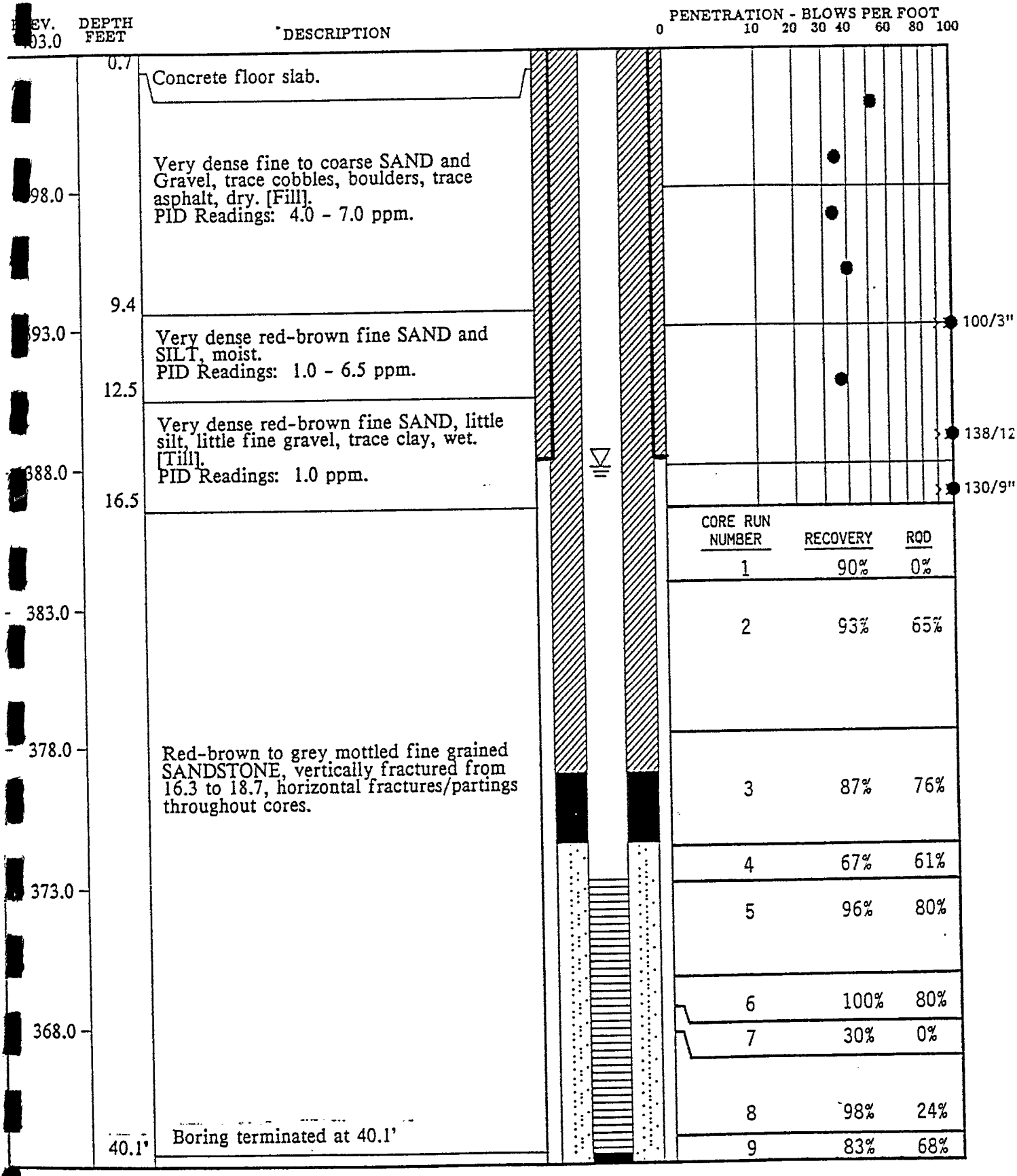
REMARKS:
Ground-water elevation measured on December 19, 1989. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 218-5
DATE STARTED: 10-27-89
DATE COMPLETED: 11-1-89
JOB NUMBER: 52-9527

TEST BORING RECORD

Datum Elevation: 402.68



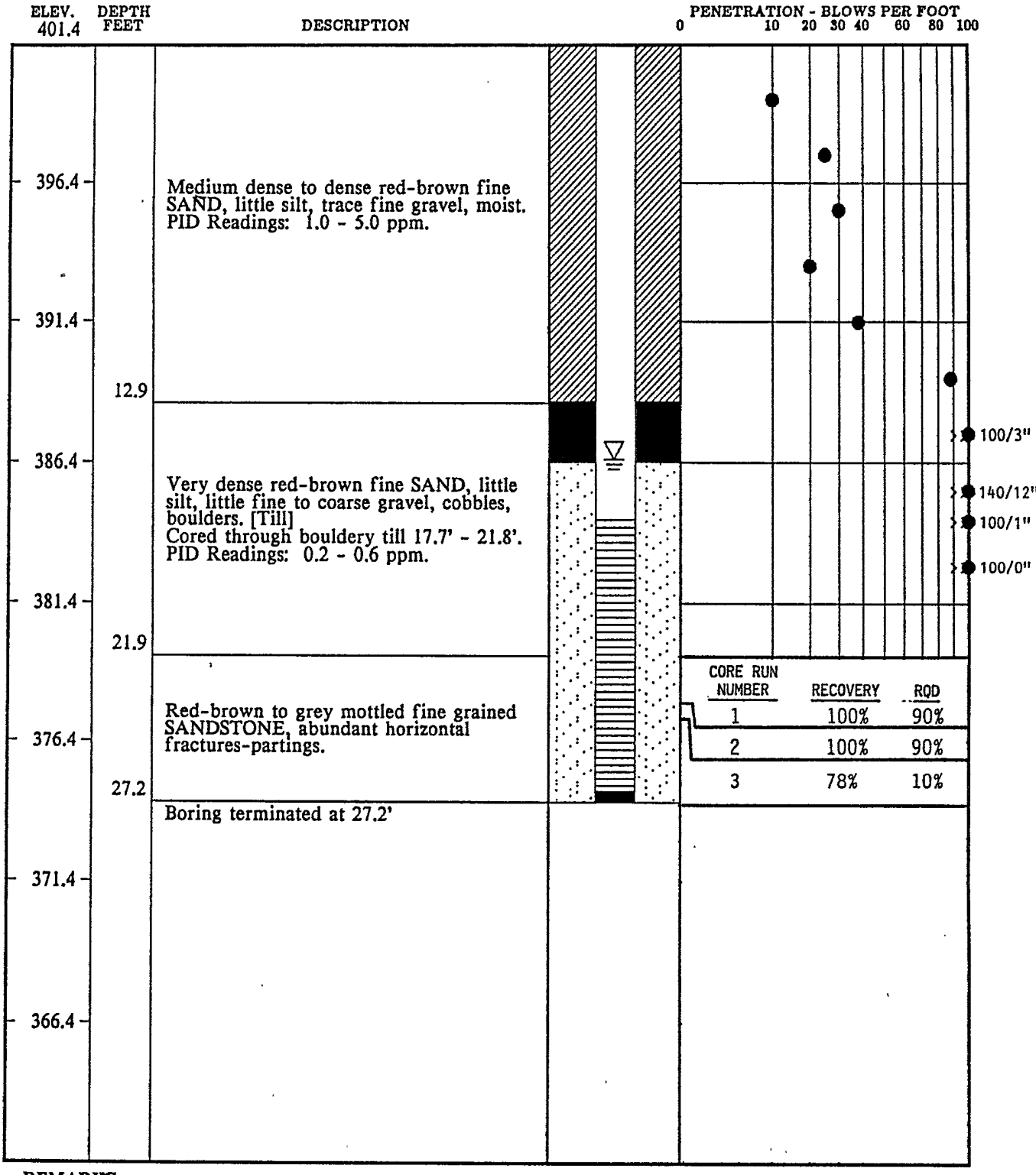
REMARKS:
Ground-water elevation measured on December 19, 1989. Six inch casing grouted in place at 14.65'. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 218-5I
DATE STARTED: 11-2-89
DATE COMPLETED: 11-7-89
JOB NUMBER: 52-9527

TEST BORING RECORD

Datum Elevation: 403.37



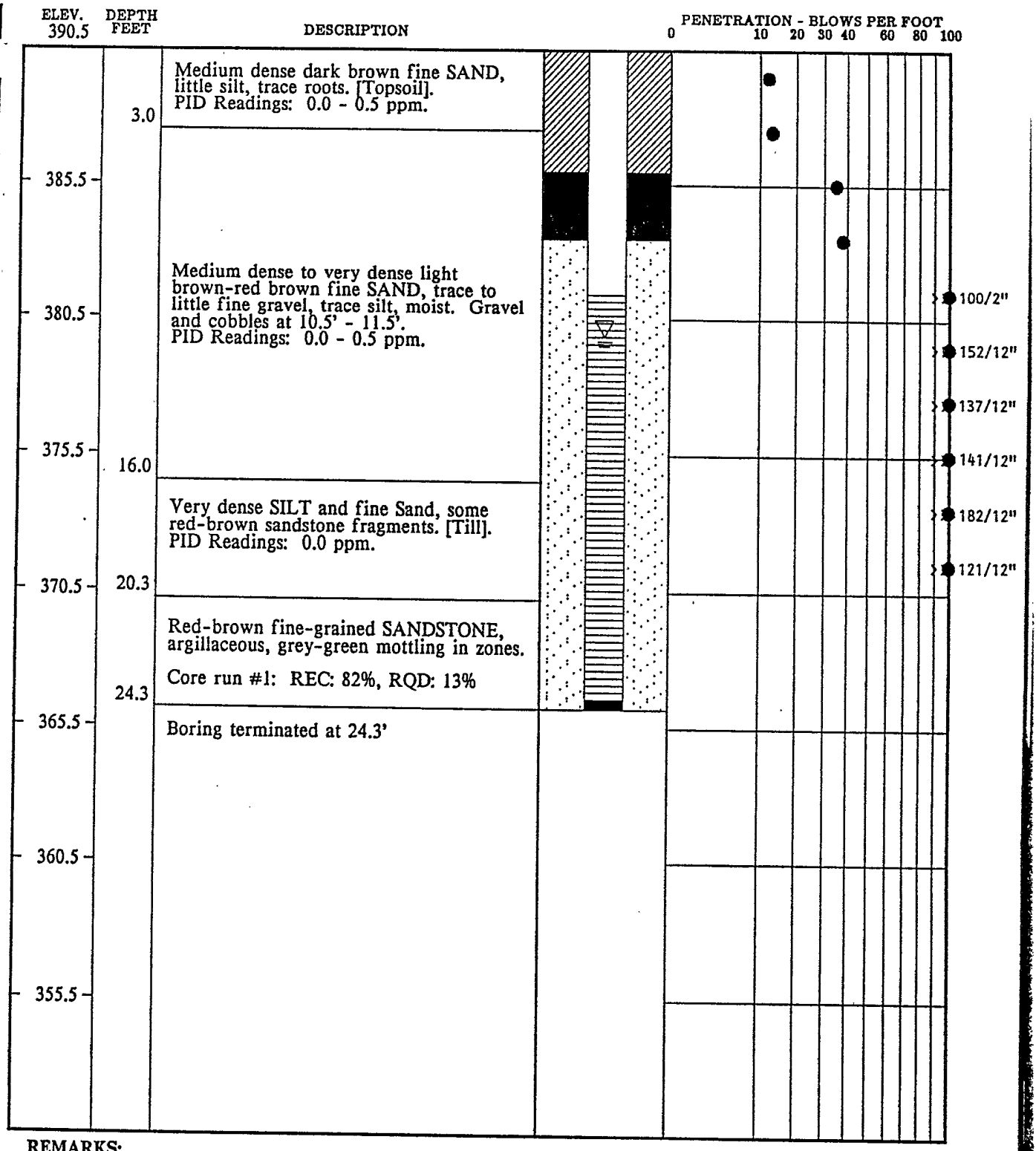
REMARKS:
Ground-water elevation measured on December 19, 1989. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 218-6
DATE STARTED: 11-8-89
DATE COMPLETED: 11-9-89
JOB NUMBER: 52-9527

TEST BORING RECORD

Datum Elevation: 392.51



REMARKS:
Ground-water elevation measured on December 19, 1989. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 218-7
DATE STARTED: 11-30-89
DATE COMPLETED: 12-5-89
JOB NUMBER: 52-9527

TEST BORING RECORD

Datum Elevation: 392.80

ELEV.	DEPTH FEET	DESCRIPTION
390.6		
	3.2	Medium dense dark brown fine SAND, little silt, trace roots. [Topsoil]. PID Readings: 0.0 ppm.
385.6		
		Very dense light brown-red brown fine SAND, trace to little fine gravel, trace to little silt, moist. PID Readings: 0.5 - 1.0 ppm.
380.6		
	14.0	
375.6		Very dense red-brown SILT, little angular red sandstone fragments, wet. [Till]. Boulder at 14.0' - 14.8'. PID Readings: 0.5 - 1.0 ppm.
370.6	20.2	
365.6		Red-brown fine grained SANDSTONE, argillaceous with occasional grey-green mottled zones, infrequent horizontal fractures and breaks, vertical fractures between 21.6' -25.0'.
360.6		
355.6		

PENETRATION - BLOWS PER FOOT
0 10 20 30 40 60 80 100

120/12'
150/12'
188/11'
100/4"
100/0"
155/12'

CORE RUN NUMBER	RECOVERY	RQD
1	94%	50%
2	94%	50%
3	96%	87%

REMARKS:
Ground-water elevation measured on December 19, 1989. Six inch casing grouted in place at 20.0'. PID headspace readings taken with HNu PI-101 Photoionizer.

DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 218-7I
DATE STARTED: 12-1-89
DATE COMPLETED: 12-6-89
JOB NUMBER: 52-9527

TEST BORING RECORD

Datum Elevation: 392.80

DEPTH FEET	DESCRIPTION	PENETRATION - BLOWS PER FOOT 0 10 20 30 40 60 80 100	CORE RUN NUMBER	RECOVERY	RQD
.6	Red-brown fine-grained SANDSTONE, argillaceous with occasional grey-green mottled zones, infrequent horizontal fractures and breaks.		3	96%	87%
44.7	Boring terminated at 44.7'				
5.6					
6					
.6					
0.6					
325.6					
320.6					
315.6					

REMARKS:
Ground-water elevation measured on December 19, 1989. Six inch casing grouted in place at 20.0'. PID headspace readings taken with HNu PI-101 Photoionizer.

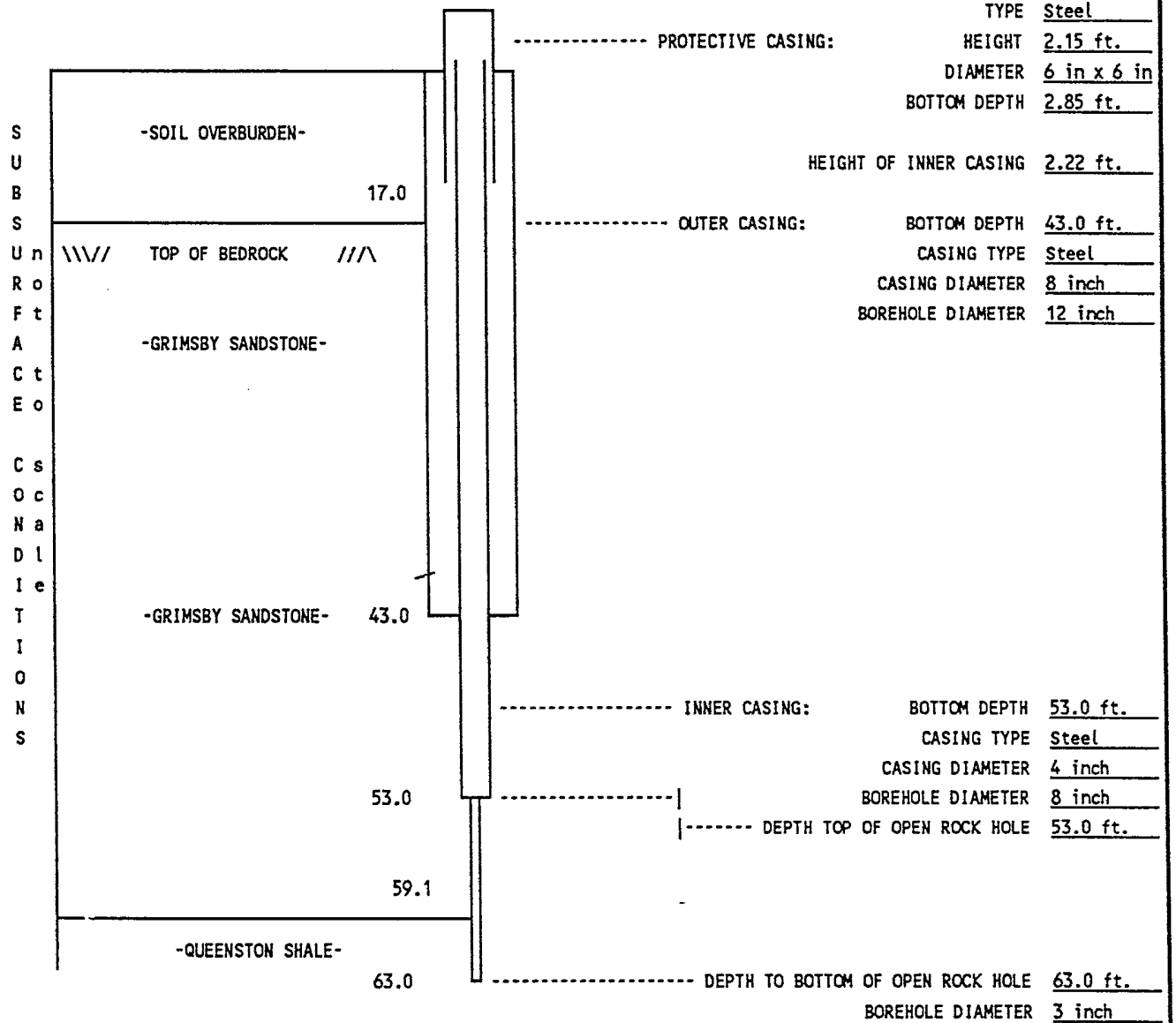
DRILLED BY: Empire Soils
LOGGED BY: PAT
CHECKED BY: SWH

BORING NUMBER: 218-7I
DATE STARTED: 12-1-89
DATE COMPLETED: 12-6-89
JOB NUMBER: 52-9527

H & A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	BEDROCK MONITORING WELL INSTALLATION REPORT

PROJECT	BUILDING 201/206/218 RFI INVESTIGATION		FILE NO. 70307-42
LOCATION	WEBSTER, NEW YORK		WELL NO. 218-7D
CLIENT	XEROX CORPORATION		LOCATION N 1711.4
CONTRACTOR	NOTHNAGLE DRILLING		E 757.2
DRILLER	S. LORANTY	RIG TYPE: CME-75 Truck Mounted	SHEET NO. 1 OF 2
INSTALLATION DATE	25 February to 3 March 1993		INSPECTOR D. Nostrant

GROUND SURFACE ELEVATION 387.1
INNER CASING TOP ELEVATION 389.25



NOTES:

1. ALL DEPTHS EXPRESSED IN FEET.
2. ALL CASING DIAMETERS ARE INSIDE-DIAMETER, EXPRESSED IN INCHES.

METHOD AND MATERIALS USED TO GROUT CASINGS:
Outer Casing - 12 bags Portland Cement, 80 gallons potable water, 60 lbs. bentonite.
Inner Casing - 8 bags Portland Cement, 55 gallons potable water, 40 lbs. bentonite
REMARKS:
Single plug grouting method used to install casings.

WELL NO. 218-7D

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. 218-7D

PROJECT: BUILDING 201/206/218 RFI INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70307-42
SHEET NO. 1 OF 3
LOCATION: N 1711.4
E 757.2
ELEVATION: 387.1
DATUM: NGVD
START: 25 Feb. 1993
FINISH: 3 March 1993
DRILLER: S. Loranty
H&A REP: D. Nostrant

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Steel	---	NX
INSIDE DIAMETER (IN)	12 in.	---	2-1/8
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, & Reedrill SK-37
BIT TYPE: Auger, NX Core, Rollerbit
DRILL MUD: Water
OTHER: Advanced augers to refusal, NX core to 64.8 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5						Advanced augers to refusal at 17.0 ft. No soil samples collected.
10						
15					17.0	
20						Auger Refusal at 17.0 ft. See Core Boring Report.
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	17.0
ROCK CORED (LIN FT):	44.9
SAMPLES:	OS 5R
BORING NO.	218-7D

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. 218-7D FILE NO. 70307-42 SHEET NO. 2 OF 3

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. / DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
							Began Coring at 17.0 ft.
	2	17.0				18.0	Advanced core barrel through gray limestone BOULDER from 17.0 to 17.4 ft. and through gravelly SILT from 17.4 to 18.0 ft.
	2				SL		-GLACIAL TILL-
	3				MOD		Medium hard to hard, slightly weathered, green to red-brown, fine-grained, thin to thick-bedded SANDSTONE, with gray-reen mottling and banding.
20	3						
	2	R1	109/102	91/85	SL		-GRIMSBY SANDSTONE-
	4						Soft, moderately weathered SHALE partings at 19.8 and 20.3 ft.
	3						Medium hard phosphatic (?) seam at 24.4 ft.
	5						
25	4						Same, except thick-bedded and heavily bioturbated from 24.4 to 34.5 ft.
	3	27.0					
	4	27.0					
	4						
	3						
30	4						
	4	R2	118/108	98/90	SL		
	3						
	3						Conglomerate seam with gray-white matrix at 34.5 ft.
	4						
35	4						
	4	37.0					Swirly-bedded, bioturbated, from 36.5 to 42.0 ft.
	4	37.0					
	4						
	4	R3	56/54	93/90	SL		Moderately-dipping tight joint at 39.5 ft.
40	4						
	4	42.0					Soft, moderately weathered SHALE parting at 41.6 ft.
	3	43.0					Reamed borehole with 12-in. nominal rollerbit, and installed 4 in. ID steel casing to 43.0 ft.
	3						
45	3						
	3						
	2						Frequent slightly weahtered SHALE partings from 44.3 to 45.2 ft., and from 46.8 to 48.9 ft.
	2	R4	108/80	90/67	SL		
	2						
50							

H & A OF NEW YORK, ROCHESTER, NEW YORK
Consulting Geotechnical Engineers,
Geologists and Hydrogeologists

CORE BORING REPORT

BORING NO. 218-7D
FILE NO. 70307-42
SHEET NO. 3 OF 3

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		R4	108/80	90/67	SL		Moderately hard to hard, slightly weathered green to red-brown, fine grained, thin to thick-bedded SANDSTONE, with gray-green mottling and banding.
		53.0					-GRIMSBY SANDSTONE-
		53.0					Frequent slightly weathered SHALE partings from 53.8 to 55.6 ft.
55							
		R5	112/80	91/65	SL	58.2	Moderately hard, light-gray, coarse to medium grained, thin-bedded CONGLOMERATE from 58.2 to 59.1 ft.
						59.1	-GRIMSBY SANDSTONE-
					MOD		Moderately hard, slightly weathered, red-brown, fine grained, thin to thick-bedded SANDSTONE.
60					SL		-QUEENSTON SHALE-
		63.2					Severely weathered SHALE partings at 59.1 and 59.6 ft.
							Bottom of Core Boring at 63.2 ft.
65							
70							
75							
80							
85							

Notes:

1. Foxboro OVA used to monitor for organic vapors during drilling. All readings non-detect.
2. No core recovery from 42.0 to 43.0 ft., 12-inch tricone roller bit advanced to 43.0 ft.
3. Approximately 60 gallons of water lost during drilling of monitoring interval (53.0 - 63.0 ft.).
4. Drill water and well water samples collected and submitted to General Testing Corporation for analysis.
5. See Bedrock Groundwater Monitoring Well Report.

Well: 218-9
Datum Elevation: 392.76

STRATUM ELEV.	DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
390.4	0.0									
390		Topsoil and Fill: fine to coarse gravel, red-brown fine sand, wood chips, moist				32				
	4.5					40				
385		Firm to very dense red-brown fine SAND, little silt, trace gravel, trace coarse sand, moist, wet at 15.5'				24				
						42				
						54				
380						97				
						99				
						70				
375						68				
	18.0									
	19.4	Very dense red-brown fine SAND, little silt, trace gravel, trace coarse sand. Occasional <2mm thin layers of well sorted medium sand, wet.				152				

REMARKS:
No soil sampling was conducted between 0 and 19.4'. Soil descriptions from 0-19.4' are taken from adjacent well boring 218-9I, completed in 1991. Water level at 6.57 feet on 10/1/91.

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

TEST BORING RECORD

BORING NUMBER	218-9
DATE(S) DRILLED	9/5/91 -9/6/91
PROJECT NUMBER	52.0638
PROJECT	Xerox 201/206/218 project
PAGE 1 OF 2	

LAW ENVIRONMENTAL

Well: 218-9
Datum Elevation: 392.76

ELEV.	STRATUM DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
370		Red-brown to light grey-green, fine grained slightly to moderately weathered SANDSTONE with close to very closely spaced horizontal - sub-horizontal fractures and bioturbation, mottled. Low angle open fracture: 19.8' Highly weathered clay and pebble-filled horizontal fracture: 20.1- 20.3'					90	47		
	24.1	Sub-horizontal open fractures: 20.7-21.1' Highly weathered fracture: 21.4' Weathered sub-horizontal fractures: 21.6',21.9' Highly weathered clay and pebble-filled fracture: 22.1-22.3' Highly weathered fracture: 22.5' Highly weathered clay-filled fractures: 23.4', 23.8', 24.0' Boring terminated at 24.1 feet.								
365										
360										
355										

REMARKS:
No soil sampling was conducted between 0 and 19.4'. Soil descriptions from 0-19.4' are taken from adjacent well boring 218-9I, completed in 1991. Water levelat 6.57 feet on 10/1/91.

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

TEST BORING RECORD

BORING NUMBER	218-9
DATE(S) DRILLED	9/5/91 -9/6/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 2 OF 2	

LAW ENVIRONMENTAL

TYPE II WELL INSTALLATION RECORD

B NAME Xerox expanded bedrock JOB NO. 52-0538

ORING/ ELL NO. 218-9 DATE INSTALLED 9/6/91 DRILLING CONTRACTOR Nothnagle

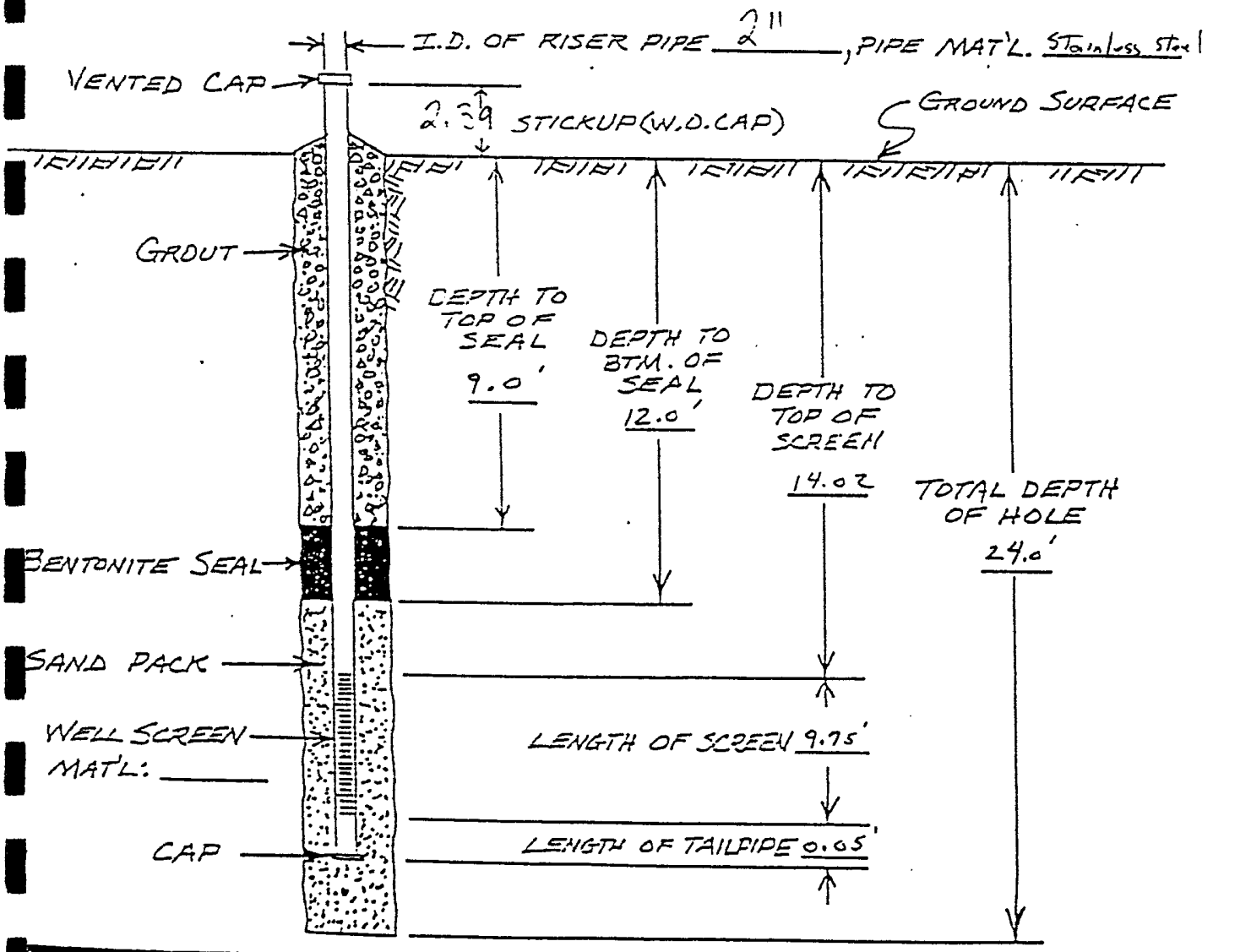
RMATION CREENED bedrock/overburden interface SCREEN SLOT SIZE 0.010 TYPE OF SAND PACK #3

ILLING ETHOD 6" ID augers NX core, 5 7/8 rolled. Tream BIT OR AUGER SIZE 6" ID auger, 5 7/8 b.t

ROUND EV. 390.37 EST'D. ___ SURVEYED X SURVEYED TOP OF RISER ELEV. 392.76

EPTH TO OUND WATER/ ___ / 382.80 (BELOW GRD.) 10/1/91 (DATE)
LEVATION ___ / ___ (BELOW T/O/RISER) ___ (DATE)

TE DEVELOPED 9/26/91 HOW? Suction pump



Well: 218-9I
Datum Elevation: 392.84

STRATUM ELEV.	DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
390.4	0.0									
390		Topsoil and Fill: fine to coarse gravel, red-brown fine sand, wood chips, moist.		75	<1	32				
				83	<1	40				
	4.5			100	12	24				
385		Firm to very dense red-brown fine SAND, little silt, trace gravel, trace coarse sand, moist, wet at 15.5'.		100	3	42				
				100	5	54				
380				100	3	97				
				100	<2	99				
				100	<2	70				
375				100	3	68				
	18.0	Very dense red-brown fine SAND, little silt, trace fine gravel, trace coarse sand. Occasional <2mm thin layers of well sorted medium sand.		100	<1	152				

REMARKS:
Soil and rock was continously sampled from ground surface to 45.8 feet. Soil sample S-3 (4 to 6 feet) submitted for laboratory VOC analysis. Water level at 12.22 measured on 10/1/91.

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

TEST BORING RECORD

BORING NUMBER	218-9I
DATE(S) DRILLED	9/3/91 -9/10/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 1 OF 3	

LAW ENVIRONMENTAL

Well: 218.9I
Datum Elevation: 392.84

ELEV.	STRATUM DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
370	20.8	Very dense red-brown fine SAND, little silt, trace fine gravel, trace coarse sand		100	1	101				
		Red-brown to light gray to green, fine grained, thin bedded, slightly weathered SANDSTONE, bioturbated throughout. Close to closely spaced, partly open fractures from 20.8-25.0'.					90	47		
	24.8									
365		Red-brown to light gray to green fine-grained, slightly weathered SANDSTONE with green mottling. High angle, weathered clay-filled joint: 25.2 - 25.7' Fractures: 25.84 - 26.7' High angle joints: 26.8 - 27.4'					100	70		
		Weathered clay-filled fractures: 29.5-29.6'								
360	30.8									
		Red-brown to light gray to green fine-grained, slightly weathered SANDSTONE with green mottling. Weathered clay-filled fractures: 31.5', 32.9', 33.05', 33.1', 33.26-33.7'					100	90		
355	35.8									
		Red-brown to light gray to green fine-grained, slightly weathered SANDSTONE with green mottling.					100	78		
		Weathered clay filled fracture: 37.8' Fractures: 38.6, 38.7', 38.9', 39.1' Zone of rock fragments, high and low angle fractures: 39.4 -39.5'								

REMARKS:
Soil and rock was continously sampled from ground surface to 45.8 feet. Soil sample S-3 (4 to 6 feet) submitted for laboratory VOC analysis. Water level at 12.22 measured on 10/1/91.

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

TEST BORING RECORD

BORING NUMBER	218-9I
DATE(S) DRILLED	9/3/91 -9/10/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 2 OF 3	

LAW ENVIRONMENTAL

Well: 218-9I
Datum Elevation: 392.84

ELEV.	STRATUM DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
350		Red-brown to light gray to green fine-grained, slightly weathered SANDSTONE with green mottling. Fracture: 41.1' High angle joint: 41.5' Fracture: 41.9' Zone of rock fragments, high and low angle fractures: 42.0-42.1'								
345	45.8	Boring terminated at 45.8 feet								
340										
335										

REMARKS:
Soil and rock was continously sampled from ground surface to 45.8 feet. Soil sample S-3 (4 to 6 feet) submitted for laboratory VOC analysis. Water level at 12.22 measured on 10/1/91.

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

TEST BORING RECORD

BORING NUMBER	218-9I
DATE(S) DRILLED	9/3/91 -9/10/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 3 OF 3	

LAW ENVIRONMENTAL

TYPE III WELL INSTALLATION RECORD

3 NAME Xerox Bedrock Investigation JOB NO. 520538

RING/ LL NO. 218-9I DATE INSTALLED 9/10/91 DRILLING CONTRACTOR Nothnagle

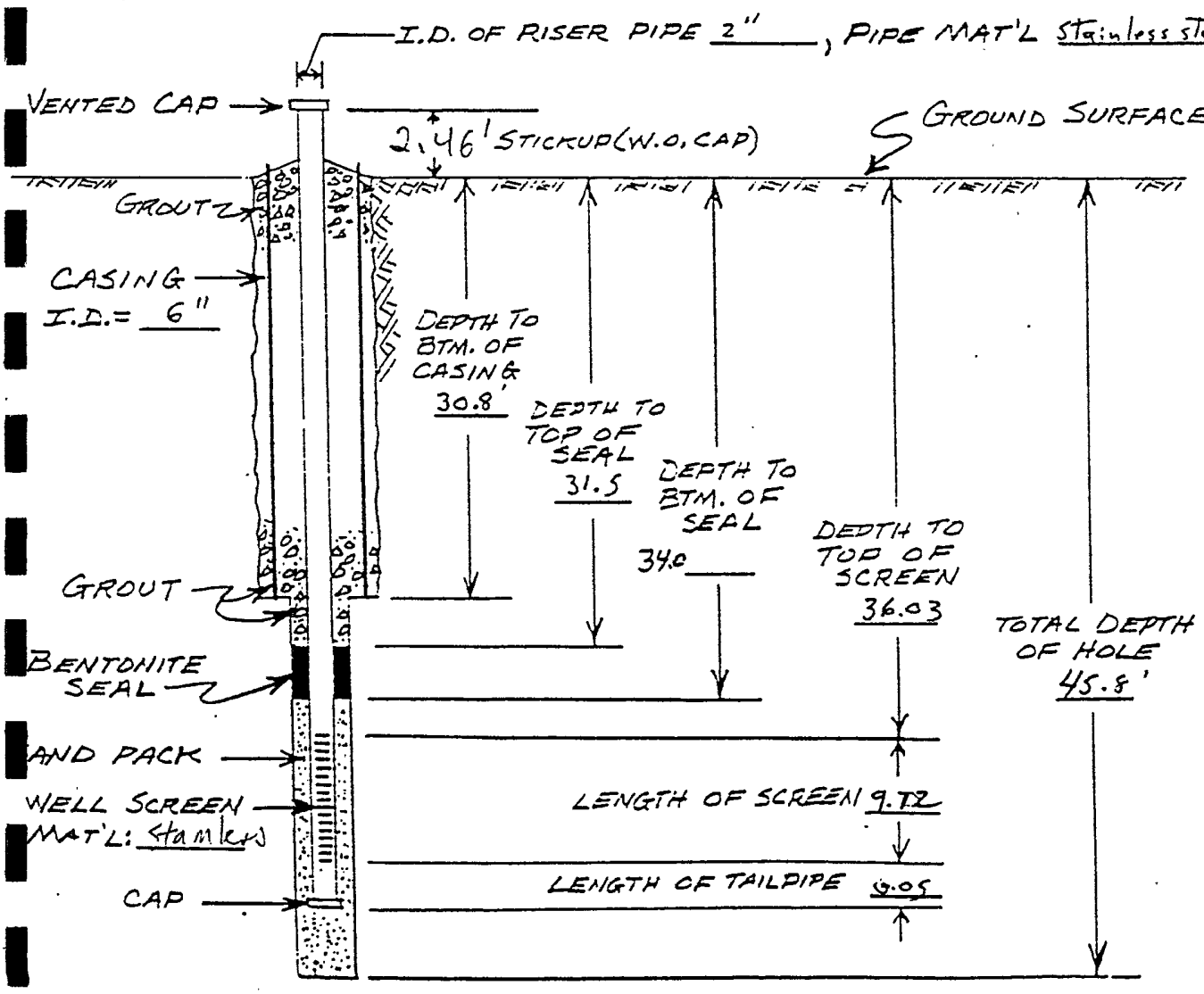
ORMATION EENED intermediate bedrock SCREEN SLOT SIZE 0.010 TYPE OF SAND PACK #3

RILLING THOD HSA rollerbit (ABOVE CASING) BIT OR AUGER SIZE 9 7/8 (ABOVE CASING)
rot. air rig (BELOW CASING) 5 7/8 (BELOW CASING)

ROUND EV. 390.38 EST'D. ___ SURVEYED Y SURVEYED TOP OF RISER PIPE ELEV. 392.84

EPTH TO WATER/ ___ / 378.16 (BELOW GRD.) 10/1/91 (DATE)
LEVATION ___ / ___ (BELOW T/O/RISER) ___ (DATE)

TE DEVELOPED 9/26/91 HOW? Suction Pump



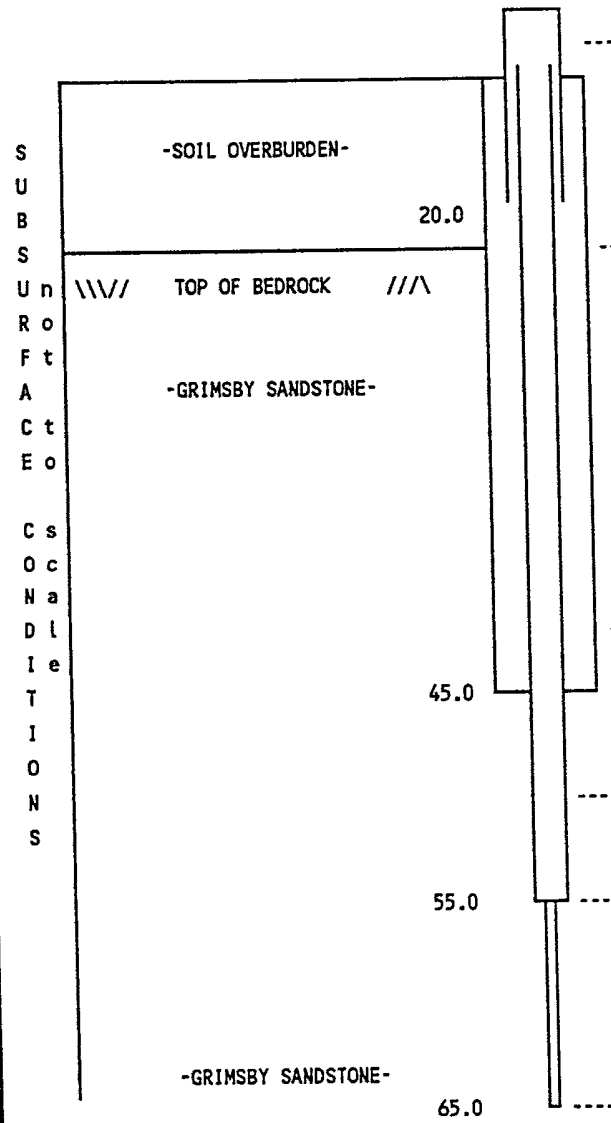
LAW ENVIRONMENTAL SERVICES

FIELD GEOLOGIST: HTW

H & A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	BEDROCK MONITORING WELL INSTALLATION REPORT

PROJECT	BUILDING 201/206/218 RFI INVESTIGATION		FILE NO. 70307-42
LOCATION	WEBSTER, NEW YORK		WELL NO. 218-9D
CLIENT	XEROX CORPORATION		LOCATION N 1436.2
CONTRACTOR	NOTHNAGLE DRILLING		E 380.9
DRILLER	S. LORANTY	RIG TYPE: CME-75 Truck Mounted	SHEET NO. 1 OF 2
INSTALLATION DATE	5 to 10 March 1993	REEDRILL SK-37	INSPECTOR D. Nostrant

GROUND SURFACE ELEVATION 390.3
INNER CASING TOP ELEVATION 392.46



PROTECTIVE CASING:
- TYPE: Zinc-Coated Steel
- HEIGHT: 2.65 ft.
- DIAMETER: 6 in x 6 in
- BOTTOM DEPTH: 2.35 ft.

HEIGHT TO TOP OF INNER CASING: 2.28 ft.

OUTER CASING:
- BOTTOM DEPTH: 45.0 ft.
- CASING TYPE: Steel
- CASING DIAMETER: 8 inch
- BOREHOLE DIAMETER: 12 inch

INNER CASING:
- BOTTOM DEPTH: 55.0 ft.
- CASING TYPE: Steel
- CASING DIAMETER: 4 inch
- BOREHOLE DIAMETER: 8 inch

DEPTH TOP OF OPEN ROCK HOLE: 55.0 ft.

DEPTH TO BOTTOM OF OPEN ROCK HOLE: 65.0 ft.
- BOREHOLE DIAMETER: 3 inch (NX corehole)

NOTES:
1. ALL DEPTHS EXPRESSED IN FEET.
2. ALL CASING DIAMETERS ARE INSIDE-DIAMETER, EXPRESSED IN INCHES.

METHOD AND MATERIALS USED TO GROUT CASINGS:
Outer Casing - 12 bags Portland Cement, 80 gallons potable water, 60 lbs. bentonite.
Inner Casing - 9 bags Portland Cement, 60 gallons potable water, 45 lbs. bentonite

REMARKS:
Single plug grouting method used to install casings.

WELL NO. 218-9D

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. 218-9D

PROJECT: BUILDING 201/206/218 RFI INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70307-42
SHEET NO. 1 OF 3
LOCATION: N 1436.2
E 380.9

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Steel	---	NX
INSIDE DIAMETER (IN)	12	---	2-1/8
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, & Reedrill SK-37
BIT TYPE: Auger, NX Core, Rollerbit
DRILL MUD: Water
OTHER: Advanced augers to refusal, NX core to 65.5 ft.

ELEVATION: 390.3
DATUM: NGVD
START: 5 March 1993
FINISH: 10 March 1993
DRILLER: S. Loranty
H&A REP: D. Nostrant

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5						Advanced augers to refusal at 19.5 ft. No soil samples collected.
10						
15						
20					19.5	Auger Refusal on Apparent Top of Bedrock at 19.5 ft.
25						See Core Boring Report.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	20.0
ROCK CORED (LIN FT):	45.5
SAMPLES:	OS 6R
BORING NO.	218-9D

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. 218-9D FILE NO. 70307-42 SHEET NO. 2 OF 3

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
							Apparent top of bedrock at 19.5 ft. Set 12-in. temporary casing and advanced 12-in. nominal rotary tricone drillbit to 20.0 ft.
20						19.5	Began Core Boring at 20.0 ft.
	1	20.0					Medium to hard, slightly weathered, red-brown and light gray-green fine-grained thin to thick bedded SANDSTONE.
	1						-GRIMSBY SANDSTONE-
	2						Moderately weathered shaley partings from 20.7 to 22.7 ft.
	3						Moderate to severely weathered soft clayey SHALE layers from 23.3 to 24.1 ft. and 25.4 to 25.7 ft.
25	3	R1	92/83	85/77	MOD		
	3						
	3						
	3						
	3	29.0					
	2	29.0					Moderately weathered from 28.8 to 30.0 and 30.2 to 30.4 ft.
30	2						Slightly weathered, open, steeply inclined joint at 29.5 ft.
	3						
	4						-GRIMSBY SANDSTONE-
	4						Nodule-bearing gray-white caliche seams at 30.6 and 31.7 ft. with wavy texture.
	4	R2	113/87	94/73	MOD		
35	4						Moderately weathered caliche seam from 38.0 to 38.1 ft. with conglomeratic texture.
	4						
	4						
	4						
	4	39.0					
	4	39.0					Soft, highly weathered shaley parting at 39.4 ft.
40	4						Slightly weathered open horizontal joint at 40.1 ft.
	4						
	4	R3	74/67	103/91*	SL		*RQD expressed as percent of rock core recovered.
	4						
	4						
	4	45.0					
45	4	45.0					
	4						
	3						
	4	R4	120/106	100/88	SL		
	4						
50							Argillaceous shale partings at 50.9, 52.3 and 54.0 ft.

H & A OF NEW YORK, ROCHESTER, NEW YORK
Consulting Geotechnical Engineers,
Geologists and Hydrogeologists

CORE BORING REPORT

BORING NO. 218-9D
FILE NO. 70307-42
SHEET NO. 3 OF 3

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. / DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
	3						Argillaceous shale partings at 50.9, 52.3 and 54.0 ft.
	3						
	3	R4	120/106	100/88	SL		-GRIMSBY SANDSTONE-
	3						
	3	55.0					Moderately weathered shale parting at 55.0 ft.
55	3	55.0					
	3						
	5	R5	43/40	89/83	SL		-GRIMSBY SANDSTONE-
	5	59.0					
	5	59.0					Medium to hard, slightly weathered light gray-green and red-brown fine to coarse grained, thin to thick bedded CONGLOMERATE, with some mottling and swirly bedding.
60	4						
	4						
	4	R6	72/65	92/83	SL		-GRIMSBY SANDSTONE-
	4						
	4	65.5					
65							Bottom of Boring at 65.5 ft.
							Notes:
							1. Foxboro OVA used to monitor for organic vapors during drilling. All readings non-detect.
							2. No observable water loss during drilling from 55.0 to 65.5 ft.
70							3. Run No. 5 - terminated at 4.0 ft. due to suspected obstruction in borehole. Driller inspected corebarrel, removed core and advanced coring to 65.5 ft.
							4. See Bedrock Groundwater Monitoring Well Report.
75							
80							
85							

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

GROUNDWATER RECOVERY WELL REPORT

PROJECT: BUILDING 201/206/218 MIGRATION CONTROL TRENCH INSTALLATION
LOCATION: WEBSTER, NEW YORK
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING
DRILLER: N. Short RIG TYPE: Gus Peck GP-750C
INSTALLATION DATE: 19 to 21 July 1993

FILE NO.: 70198-49
WELL NO.: REC 218-10
LOCATION: N-1154.95
E-175.27
SHEET: 1 OF 1
INSPECTOR: D. Nostrant

Survey Datum NGVD

Ground Elevation: 389.73

SUMMARIZE Soil Conditions

-OVERBURDEN-

Note: Advanced augers/tricone rollerbit without sampling

18.0 ft.

-GRIMSBY SANDSTONE-

-OPEN MANHOLE-

5.0 ft.

-CEMENT/BENTONITE GROUT-

14.0 ft.

-BENTONITE-PELLETS-

16.0 ft.

-QUARTZ SAND-

28.2 ft.

Depth/Stickup above/below ground surface of protective casing.	N.A.
Depth below ground surface of riser pipe.	3.77 ft.
Thickness of Surface Seal	9.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Bentonite/Grout
Type of Protective Casing	---
Inside Diameter of Protective Casing	---
Depth of Bottom of Protective Casing	---
Inside Diameter of Riser Pipe	6.0 in. Stainless Steel
Type of Backfill Around Riser	Bentonite/Grout
Diameter of Borehole	12.0 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	18.0 ft.
Type of Wellscreen	304 Stainless Steel
Screen Slot Size	0.020 in.
Diameter of Wellscreen	6.0 in.
Type of Backfill Around Wellscreen	Morie No. 0 Quartz Sand
Depth of Bottom of Wellscreen	28.0 ft.
Depth of Bottom of Borehole	28.2 ft.

Remarks:

Note: Well installed within concrete vault.

Well No. REC 218-10

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: BLDG 201/206/218 RFI INVESTIGATION
LOCATION: WEBSTER, NEW YORK
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING
DRILLER: S. Loranty RIG TYPE: CME-75
INSTALLATION DATE: 23 March 1993

FILE NO.: 70307-42
WELL NO.: 218-P1
LOCATION: See Plan
SHEET: 1 OF 1
INSPECTOR: D. Nostrant

Survey Datum NGVD

Ground Elevation: 398.6

SUMMARIZE STRATIGRAPHIC COLUMN DESCRIPTIONS

-TOPSOIL- 1.4
-FILL- 4.2
-LACUSTRINE- 13.5
-GLACIAL TILL- 16.0
-GROUT- 2.0
-BENTONITE- 4.0
-QUARTZ SAND-

Stickup above ground surface of protective casing.	2.7 ft.
Stickup above ground surface of riser pipe.	2.6 ft.
Thickness of Surface Seal	2.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Cement Grout
Type of Protective Casing	Zinc-Coated Steel
Inside Diameter of Protective Casing	6 in. x 6 in.
Depth of Bottom of Protective Casing	2.4 ft.
Inside Diameter of Riser Pipe	1.25 in.
Type of Backfill Around Riser	Bentonite
Diameter of Borehole	4 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	6.0 ft.
Type of Wellscreen	Slotted PVC
Screen Slot Size	0.010 in.
Diameter of Wellscreen	1.25 in.
Type of Backfill Around Wellscreen	No. 4 Quartz Sand
Depth of Bottom of Wellscreen	16.0 ft.
Depth of Bottom of Borehole	16.0 ft.

WELL SUMMARY: 6.0 ft. (LENGTH OF RISER PIPE) + 10.0 ft. (LENGTH OF WELLSCREEN) = 16.0 ft. (TOTAL LENGTH)

Appendix C

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. 218-P1

PROJECT: BUILDING 201/206/218 RFI INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70307-42
SHEET NO. 1 OF 1
LOCATION: Not Surveyed

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	2-3/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck Mounted
BIT TYPE: 2-3/4 inch augers
DRILL MUD: ---
OTHER: Advanced auger to refusal at 16.0 ft.

ELEVATION: 398.6
DATUM: NGVD
START: 23 March 1993
FINISH: 23 March 1993
DRILLER: S. Loranty
H&A REP: D. Nostrant

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
0		3 5 7 10	S1	0.0 2.0	1.4	Medium dense brown SILT, little coarse to fine sand, trace rootlets, wet. -TOPSOIL FILL-
		4 4 5 9	S2	2.0 4.0	4.2	Same, except loose, and with trace fine gravel. -FILL-
5		4 5 10 13	S3	4.0 6.0		Medium dense red-brown and dark brown SILT, little medium to fine sand, moist. -LACUSTRINE-
		13 15 16 19	S4	6.0 8.0		Same, except light brown.
		10 19 12 14	S5	8.0 10.0		Same, except mottled red-brown and dark brown, trace fine gravel, moist. -LACUSTRINE-
10		10 14 64 65	S6	10.0 12.0	11.2	Very dense medium brown fine sandy SILT, trace coarse to medium sand, trace fine gravel, damp.
		26 63 90 100/1	S7	12.0 13.6	13.5	Same. -LACUSTRINE-
15		57 56 100/3 100/2	S8	14.0 15.3		Very dense medium brown coarse to fine SAND, some silt, trace green and red-brown sandstone fragments, trace fine gravel, damp. -GLACIAL TILL-
			S9	15.3 15.5		S9 - No recovery.
20						Auger Refusal on Apparent Top of Bedrock at 16.0 ft.
25						

Notes:

1. Soil samples field screened for volatile organics using a Foxboro Century 128 GC OVA. All readings non-detect.
2. Soil samples headspace screened under laboratory condition using a Foxboro Century 128 OVA. Sample jars were heated in 40 degree C water bath prior to screening.
3. Sample S4 submitted to General Testing Corporation for VOA analysis by Method 8010/8020.
4. See Headspace Analysis Form

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
See Water Level Monitoring Report					

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

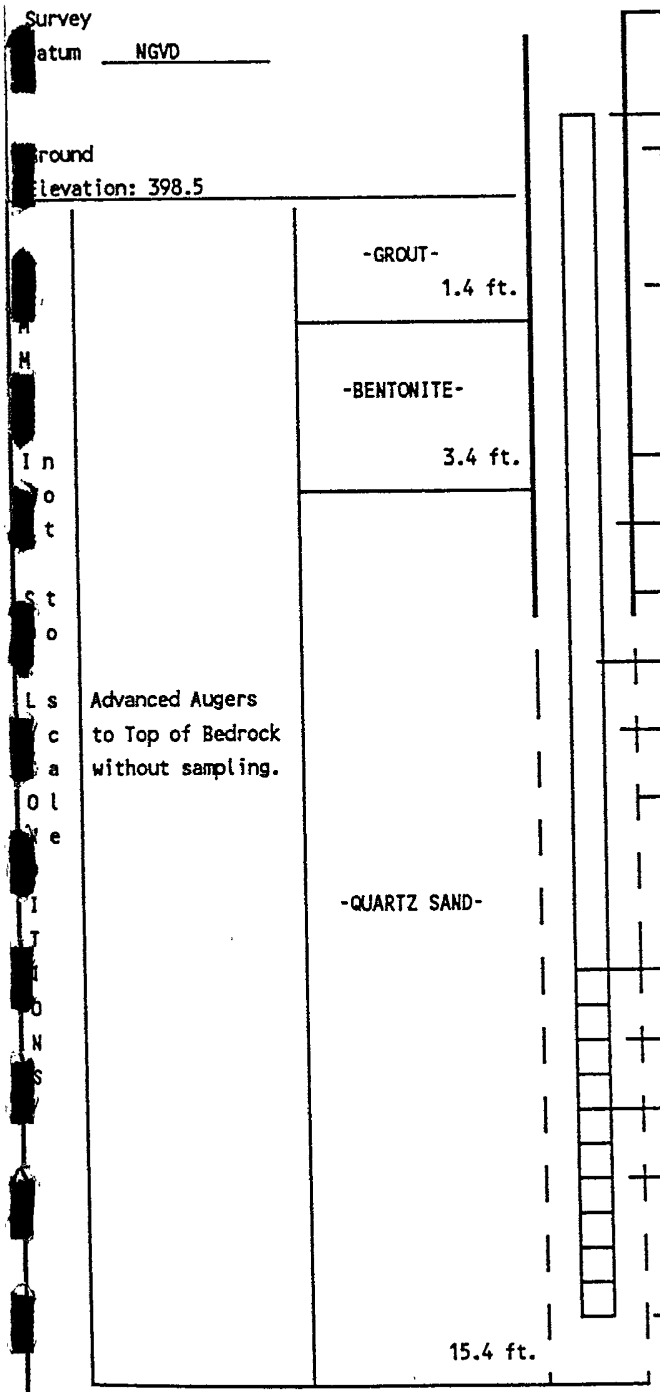
OVERBURDEN (LIN FT):	16.0
ROCK CORED (LIN FT):	---
SAMPLES:	9S
BORING NO.	218-P1

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT:	BLDG 201/206/218 RFI INVESTIGATION	FILE NO.:	70307-42
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	218-P2
CLIENT:	XEROX CORPORATION	LOCATION:	See Plan
CONTRACTOR:	NOTHNAGLE DRILLING		
DRILLER:	S. Loranty RIG TYPE: CME-75	SHEET:	1 OF 1
INSTALLATION DATE:	23 March 1993	INSPECTOR:	D. Nostrant

Survey Datum NGVD

Ground Elevation: 398.5



Stickup above ground surface of protective casing.	2.7 ft.
Stickup above ground surface of riser pipe.	2.5 ft.
Thickness of Surface Seal	1.4 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Cement Grout
Type of Protective Casing	Zinc-Coated Steel
Inside Diameter of Protective Casing	6 in. x 6 in.
Depth of Bottom of Protective Casing	1.0 ft.
Inside Diameter of Riser Pipe	1.25 in.
Type of Backfill Around Riser	Bentonite
Diameter of Borehole	4 inch
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	5.4 ft.
Type of Wellscreen	Slotted PVC
Screen Slot Size	0.010 in.
Diameter of Wellscreen	1.25 in.
Type of Backfill Around Wellscreen	No. 4 Quartz Sand
Depth of Bottom of Wellscreen	15.4 ft.
Depth of Bottom of Borehole	15.4 ft.

WELL SUMMARY: 5.4 ft. (LENGTH OF RISER PIPE) + 10.0 ft. (LENGTH OF WELLSCREEN) = 15.4 ft. (TOTAL LENGTH)

Appendix C

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: BLDG 201/206/218 RFI INVESTIGATION
LOCATION: WEBSTER, NEW YORK
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING
DRILLER: S. Loranty RIG TYPE: CME-75
INSTALLATION DATE: 24 March 1993

FILE NO.: 70307-42
WELL NO.: 218-P3
LOCATION: See Plan
SHEET: 1 OF 1
INSPECTOR: D. Nostrant

Survey Datum NGVD

Ground Elevation: 398.6

SUMMARIZE SOIL CONDITIONS

Advanced Augers to Top of Bedrock without sampling.

-GROUT- 3.0 ft.

-BENTONITE- 5.0 ft.

-QUARTZ SAND- 17.0 ft.

Stickup above ground surface of protective casing.	0.0 ft.
Depth below ground surface of riser pipe.	0.1 ft.
Thickness of Surface Seal	3.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Cement Grout
Type of Protective Casing	Steel Roadway Box
Inside Diameter of Protective Casing	8 inch
Depth of Bottom of Protective Casing	1.0 ft.
Inside Diameter of Riser Pipe	1.25 in.
Type of Backfill Around Riser	Bentonite
Diameter of Borehole	4 inch
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	7.0 ft.
Type of Wellscreen	Slotted PVC
Screen Slot Size	0.010 in.
Diameter of Wellscreen	1.25 in.
Type of Backfill Around Wellscreen	No. 4 Quartz Sand
Depth of Bottom of Wellscreen	17.0 ft.
Depth of Bottom of Borehole	17.0 ft.

WELL SUMMARY: 6.9 ft. (LENGTH OF RISER PIPE) + 10.0 ft. (LENGTH OF WELLSCREEN) = 16.9 ft. (TOTAL LENGTH)

Appendix C

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: BLDG 201/206/218 RFI INVESTIGATION
LOCATION: WEBSTER, NEW YORK
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING
DRILLER: S. Loranty RIG TYPE: CME-75
INSTALLATION DATE: 24 March 1993

FILE NO.: 70307-42
WELL NO.: 218-P4
LOCATION: See Plan
SHEET: 1 OF 1
INSPECTOR: D. Nostrant

Survey Datum NGVD

Ground Elevation: 398.2

SUMMARIZE SOIL CONDITIONS

-ASPHALT- 1.0 ft.
-FILL- 2.6 ft.
-LACUSTRINE- 10.6 ft.
-GLACIAL TILL-
-GROUT- 4.2 ft.
-BENTONITE- 6.6 ft.
-QUARTZ SAND-

Stickup above ground surface of protective casing.	0.0 ft.
Depth below ground surface of riser pipe.	0.5 ft.
Thickness of Surface Seal	4.2 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Cement Grout
Type of Protective Casing	Steel Roadway Box
Inside Diameter of Protective Casing	8 in.
Depth of Bottom of Protective Casing	1.0 ft.
Inside Diameter of Riser Pipe	1.25 in.
Type of Backfill Around Riser	Bentonite
Diameter of Borehole	4 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	8.2 ft.
Type of Wellscreen	Slotted PVC
Screen Slot Size	0.010 in.
Diameter of Wellscreen	1.25 in.
Type of Backfill Around Wellscreen	No. 4 Quartz Sand
Depth of Bottom of Wellscreen	18.2 ft.
Depth of Bottom of Borehole	18.2 ft.

WELL SUMMARY: 7.7 ft. (LENGTH OF RISER PIPE) + 10.0 ft. (LENGTH OF WELLSCREEN) = 17.7 ft. (TOTAL LENGTH)

Appendix C

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. 218-P4

PROJECT: BUILDING 201/206/218 RFI INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70307-42
SHEET NO. 1 OF 1
LOCATION: Not Surveyed

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	2-3/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck Mounted
BIT TYPE: 2-3/4 inch augers
DRILL MUD: ---
OTHER: Advanced augers to refusal at 18.2 ft.

ELEVATION: 398.2
DATUM: NGVD
START: 24 March 1993
FINISH: 24 March 1993
DRILLER: S. Loranty
H&A REP: D. Nostrant

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
			Auger		1.0	Advanced augers through ASPHALT to 1.0 ft. -FILL-
		7 6 9 8	S1	1.0 3.0	2.6	Medium dense brown SILT, little medium to fine gravel, trace sand, and with asphalt fragments, moist. -FILL-
		12 6 8 8	S2	3.0 5.0		Medium dense light brown and dark brown SILT, trace fine gravel and fine sand.
5		12 12 8 14	S3	5.0 7.0	6.5	Same. -LACUSTRINE-
		12 22 22 26	S4	7.0 9.0	8.0	Medium dense gray-green and red-brown mottled clayey SILT, little coarse to medium gravel, trace fine sand, damp. -LACUSTRINE-
		12 25 66 100/4	S5	9.0 10.9	10.6	Dense red-brown SILT, little coarse to fine sand, trace fine gravel, damp. Same, except very dense, and wet from 9.0 to 9.7 ft. -LACUSTRINE-
10		12 58 100/4	S6	11.0 12.4		Very dense red-brown sandy SILT, little medium to coarse gravel, wet. -LACUSTRINE-
		32 84 100/2	S7	13.0 14.2		Very dense brown coarse to fine SAND, little silt, little medium to fine gravel, wet. -GLACIAL TILL- Same. Advanced augers to 15.0 ft.
15		44 100/1	S8	15.0 15.6		Same, except with weathered shale and sandstone fragments. Advanced augers to 17.0 ft.
		66 100/1	S9	17.0 17.6		Same. -GLACIAL TILL-
20						Auger Refusal on Apparent Top of Bedrock at 18.2 ft.
25						

Notes:
1. Soil samples field screened for volatile organics using a Foxboro Century 128 GC OVA. All readings non-detect.
2. Soil samples headspace screened under laboratory conditions using a Foxboro Century 128 OVA. Sample jars were heated in 40 degree C water bath prior to screening.
3. Sample S2 submitted to General Testing Corporation for VOA analysis by Method 8010/8020.
4. See Headspace Analysis Form.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

See Water Level Monitoring Report

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 18.2
ROCK CORED (LIN FT): ---
SAMPLES: 9S

BORING NO. 218-P4

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: BLDG 201/206/218 RFI INVESTIGATION
LOCATION: WEBSTER, NEW YORK
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING
DRILLER: S. Loranty RIG TYPE: CME-75
INSTALLATION DATE: 23 March 1993

FILE NO.: 70307-42
WELL NO.: 218-P5
LOCATION: See Plan
SHEET: 1 OF 1
INSPECTOR: D. Nostrant

Survey Datum NGVD

Ground Elevation: 398.4

0.0 ft.
-GROUT-
1.8 ft.
-BENTONITE-
2.8 ft.
-QUARTZ SAND-
14.8 ft.

Advanced Augers to Top of Bedrock without sampling.

Stickup above ground surface of protective casing.	0.0 ft.
Depth below ground surface of riser pipe.	0.3 ft.
Thickness of Surface Seal	1.8 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Cement Grout
Type of Protective Casing	Steel Roadway Box
Inside Diameter of Protective Casing	8 inch
Depth of Bottom of Protective Casing	1.0 ft.
Inside Diameter of Riser Pipe	1.25 in.
Type of Backfill Around Riser	Bentonite
Diameter of Borehole	4 inch
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	4.8 ft.
Type of Wellscreen	Slotted PVC
Screen Slot Size	0.010 in.
Diameter of Wellscreen	1.25 in.
Type of Backfill Around Wellscreen	No. 4 Quartz Sand
Depth of Bottom of Wellscreen	14.8 ft.
Depth of Bottom of Borehole	14.8 ft.

WELL SUMMARY: 4.5 ft. (LENGTH OF RISER PIPE) + 10.0 ft. (LENGTH OF WELLSCREEN) = 14.5 ft. (TOTAL LENGTH)

Appendix C

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: BLDG 201/206/218 RFI INVESTIGATION
LOCATION: XEROX, WEBSTER, NEW YORK
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING
DRILLER: S. Loranty RIG TYPE: CME-75
INSTALLATION DATE: 25 March 1993

FILE NO.: 70307-42
WELL NO.: 218-P6
LOCATION: See Plan
SHEET: 1 OF 1
INSPECTOR: D. Nostrant

Survey Datum NGVD

Ground Elevation: 397.4

SUMMARIZE SOIL CONDITIONS

Advanced Augers to Top of Bedrock without sampling.

-GROUT-

5.5 ft.

-BENTONITE-

7.5 ft.

-QUARTZ SAND-

19.5 ft.

Stickup above ground surface of protective casing.	0.0 ft.
Depth below ground surface of riser pipe.	0.4 ft.
Thickness of Surface Seal	5.5 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Cement Grout
Type of Protective Casing	Steel Roadway Box
Inside Diameter of Protective Casing	8 in.
Depth of Bottom of Protective Casing	1.0 ft.
Inside Diameter of Riser Pipe	1.25 in.
Type of Backfill Around Riser	Bentonite
Diameter of Borehole	4 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	9.5 ft.
Type of Wellscreen	Slotted PVC
Screen Slot Size	0.010 in.
Diameter of Wellscreen	1.25 in.
Type of Backfill Around Wellscreen	No. 4 Quartz Sand
Depth of Bottom of Wellscreen	19.5 ft.
Depth of Bottom of Borehole	19.5 ft.

WELL SUMMARY: 9.1 ft. (LENGTH OF RISER PIPE) + 10.0 ft. (LENGTH OF WELLSCREEN) = 19.1 ft. (TOTAL LENGTH)

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

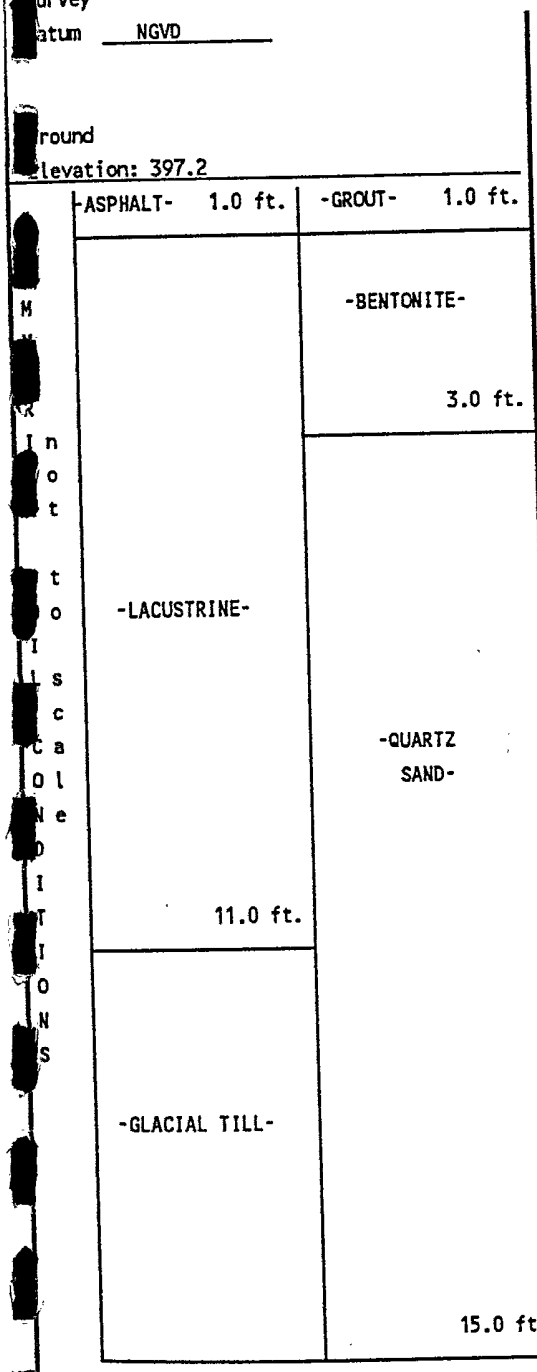
OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT: BLDG 201/206/218 RFI INVESTIGATION
LOCATION: WEBSTER, NEW YORK
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING
DRILLER: S. Loranty RIG TYPE: CME-75
INSTALLATION DATE: 25 March 1993

FILE NO.: 70307-42
WELL NO.: 218-P7
LOCATION: See Plan
SHEET: 1 OF 1
INSPECTOR: D. Nostrant

Survey Datum NGVD

Ground Elevation: 397.2



NOT TO SCALE

Stickup above ground surface of protective casing.	0.0 ft.
Depth below ground surface of riser pipe.	0.5 ft.
Thickness of Surface Seal	1.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Cement
Type of Protective Casing	Steel Roadway Box
Inside Diameter of Protective Casing	8 in.
Depth of Bottom of Protective Casing	1.0 ft.
Inside Diameter of Riser Pipe	1.25 in.
Type of Backfill Around Riser	Bentonite
Diameter of Borehole	4 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	5.0 ft.
Type of Wellscreen	Slotted PVC
Screen Slot Size	0.010 in.
Diameter of Wellscreen	1.25 in.
Type of Backfill Around Wellscreen	No. 4 Quartz Sand
Depth of Bottom of Wellscreen	15.0 ft.
Depth of Bottom of Borehole	15.0 ft.

WELL SUMMARY: 4.5 ft. (LENGTH OF RISER PIPE) + 10.0 ft. (LENGTH OF WELLSCREEN) = 14.5 ft. (TOTAL LENGTH)

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. 218-P7

PROJECT: BUILDING 201/206/218 RFI INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70307-42
SHEET NO. 1 OF 1
LOCATION: Not Surveyed

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	---
INSIDE DIAMETER (IN)	2-3/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck Mounted
BIT TYPE: 2-3/4 inch augers
DRILL MUD: ---
OTHER: Advanced augers to refusal at 15.0 ft.

ELEVATION: 397.2
DATUM: NGVD
START: 25 March 1993
FINISH: 25 March 1993
DRILLER: S. Loranty
H&A REP: D. Nostrant

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
					1.0	Advanced augers through asphalt to 1.0 ft. -FILL-
		3 4 4 7	S1	1.0 3.0	1.6	Loose dark brown and red-brown SILT, little medium to fine sand, trace fine gravel. -FILL-
		14 7 16 18	S2	3.0 5.0		Medium dense brown SILT, little medium to fine sand, trace fine gravel. -LACUSTRINE-
5		16 14 17 19	S3	5.0 7.0	6.8	Same, except with red sandstone cobble at 4.6 ft. Same.
		10 15 18 28	S4	7.0 9.0		Dense brown SILT, trace medium to fine sand, damp. -LACUSTRINE-
10		70 100/5	S5	9.0 9.9		Same, except very dense, and with gray limestone cobble at 9.8 ft. Advanced augers to 11.0 ft.
		60 100/4	S6	11.0 11.8	11.0	Very dense brown sandy SILT, little fine gravel, moist. -GLACIAL TILL-
		100/6	S7	13.0 13.5		Very dense red-brown gravelly SILT, little clay, trace sand, moist. -GLACIAL TILL- Advanced augers to 14.6 ft.
15		100/5	S8	14.6 15.0	14.6	Very dense red-brown sandy SILT, some angular red and gray sandstone fragments. -WEATHERED BEDROCK-
20						Auger Refusal on Apparent Top of Competent Bedrock at 15.0 ft.
25						

Notes:

1. Soil samples field screened for volatile organics using a Foxboro Century 128 GC OVA. All readings non-detect
2. Soil samples headspace screened under laboratory conditions using a Foxboro Century 128 OVA. Sample jars were heated in 40 degree C water bath prior to screening.
3. Sample S3 submitted to General Testing Corporation for VOA analysis by Method 8010/8020.
4. See Headspace Analysis Form

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
See Water Level Monitoring Report					

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	15.0
ROCK CORED (LIN FT):	---
SAMPLES:	8S
BORING NO.	218-P7

Appendix B

DRILLING CONTRACTOR:
ller: Empire Soils
pector: G. S. Goodman

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. SW-1
Sheet 1 of
Location SW-1

GROUND WATER OBSERVATIONS

AT ___ FT. AFTER ___ HOURS

AT ___ FT. AFTER ___ HOURS

Weather Sunny - 65°
Remarks

Surface Elev.
Date Start 5/1/86 0800
Date Finish 5/1/86 1130

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
-3		A					Orange brown fine sand some silt organic matter and roots throughout.	
3-7		A					Grading into red brown mottled silt and clay some medium gravel.	
-10		A					Brown silt and clay some fine sand little gravel.	
10-13		A					Red brown silt and clay, little gravel.	5.0'

P/C - Stainless 40 - 2 inch

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
ller: Empire Soils
pector: G. S. Goodman
CME 45

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. RW-1
Sheet 1 of
Location SE of Bldg. 201 in SE corner of grass area approx. 30' outside fence.

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather Cloudy/Cool - 65° Wind SW-5mph
Remarks

Surface Elev.
Date Start 5/2/86 1030
Date Finish 5/2/86 1630

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0-6	6-12	12-18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
	0-2	SS	2	2	4 8		Orange brown fine sand, some silt organic matter and roots (fine) throughout.	
.0	4-6	SS	21	32	40 69		Graded into red brown mottled silt and clay. Some gravel 5-10 mm rounded, TR fine sand, tight - compact.	
.0	8-9.5	SS	42	50/0			Red brown silt and clay, some gravel rounded 10-15 mm.	
12.5	12.5-13.2	SS	30	100/.2			Red brown gravel 10 mm angular to rounded and silt/clay - wet.	
15.0	15.0	SS	50/0				Refusal - red brown sandstone fragment.	
	18.0	SS	40/2				15-18.6 coarse gravel and boulders with red clay and silt matrix.	
	18.6-23.4	Core					18.6' - top of bedrock surface (SS) 18.6'-20.6' - highly fractured 23.1'-23.4' gray-green SS BOH 23.4	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: Empire
Inspector: Georgia Moreau

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox-Webster Bldg 201
PROJECT NO. 66302.01

BORING NO. RW-1D
Sheet 1 of 2
Location 15' west of RW-1

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather
Remarks

Surface Elev.
Date Start 4/9/87
Date Finish 4/10/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
5							Drill with 6½" ID Hollow Stem Augers To bedrock refusal. See log for RW-1, SW-1 for Soil Description.	4" ID Steel Pipe
10								
15							Auger refusal at 17.5 Feet	Bed-Rock
20	17.5-27.0	C	Run 1 = 9.5 Feet				GREEN, fine grained sandstone, grades To Red below 18.5 Feet. Hard, massive To 20.0 Feet. Below 20.0 Feet contains Thin, moderately soft interbeds of siltstone 1 To 3 inches Thick.	12.5
			Recovery = 8.7 Feet					
			RQD = 70.6%					
25								27.9
	27.9-32.9	C	Run 2 = 5.0 Feet				NX Core To 27.0 Feet Roller bit w/ 5⅛" Tricone To 27.9. Install 4" ID Steel pipe and grout in place. Continue NX Coring with air at 27.9 Feet.	open NX Coreho
			Recovery = 5.1 Feet					
30			RQD = 85.1%					
	32.9-42.9	C	Run 3 = 10.0 Feet					
			Recovery = 9.9 Feet					
35			RQD = 52.5%					
							Run 2: Same as Run 1. Red Sandstone contains occasional green mudc or interlayer.	45.9

Not To Scale

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: _____
Inspector: _____

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox-Webster Bldg 201
PROJECT NO. 66302 01

BORING NO. RW-1D
Sheet 2 of 2
Location _____

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather _____
Remarks _____

Surface Elev. _____
Date Start _____
Date Finish 4/10/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
40							Run 3 - Same with disturbation evident below 37.0 Feet. Encountered Formation water at between 39.0 and 40.0 Feet.	
	42.9-45.9	C	Run 4	3.0	Feet		Coring Terminated at 45.9 Feet	
			Recovery	2.4	Feet		Hole open To 46.9 Feet From Top of 4" Pipe.	
45			RQD =	31.6%			Hole open To 45.9 Feet From ground surface.	
50								

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
ller: Empire
pector: G. Goodman/L. Baker
CME 45

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. SW-2
Sheet ____ of ____
Location Inside Building

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather
Remarks

Surface Elev.
Date Start 5/8/86 1540
Date Finish 5/9/86 1130

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
2-4		A					Orange brown - red brown clay and silt, some small rock fragments	Grout
-9		A					Brown sand and silt with gravel beds or seams, gravel increasing with depth	Bentonite Seal
9-12.5		A					Red brown sand and silt, little gravel.	Sand Pack
12.5-13.5		A					Large cobbles, very difficult drilling	
13.5-17		A					Red brown sand and silt	50'
							BOH @ 17'	STAINLESS STEEL #304 SS

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
iler: Empire
pector: G. Goodman/E. Dobson
CME 45

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. RW-2
Sheet ____ of ____
Location Inside Step II ARea in Bldg. 201

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather
Remarks

Surface Elev.
Date Start 5/7/86 1130
Date Finish 5/8/86 1415

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
	0-2	SS	5	5	7 1	10.1/ 7.3	Orange brown clay and silt, trace sand, gravel.	
2.5	2.5-4.5	SS	9	8	8 17	9.4/7.1	Dark brown clay, some silt, red sandstone cobble (broken)	
4.5	4.5-6.5	SS	12	50/0		25/7.2	No recovery, very hard drilling - gravel?	Grout
7.0	7-9	SS	42	17	22 25	48/8.2	Orange brown fine sand and silt trace rounded gravel, more than 20mm	
9.0	9-11	SS	38	75	50/0	62/7.9	Tan brown fine sand and silt, some angular gravel seams throughout, wet	
12.5	11-12.5	No Sample Taken						
	12.5-13	SS	105			18.3/8.4	Hard drilling through gravel/rock grey green gravel and red sandstone cobbles and red brown sand, some silt.	
	Extremely Hard Drilling - no samples							
16.0	16-16.5	SS	134	100/.1		10.1/8.1	Green grey argillacious sandstone and red brown sand - some silt.	Grout Seal
18.5	16.5-18.5	No Sample					Hard drilling - possible weathered	Sand Pack
	18.5-19.2	SS	35	105/.2		10.1/7.5	rock, red, brown gravel/sand, some	
20.0	20-20.9	SS	57	100/3		24.5/24	silt - tightly packed - hard - Bottom at 19.2, continued 5/8/86 @ 1515 hrs.	
24.37	24.37-29.30	C					Dark grey angular gravel (less than 10 mm) grading into larger (2cm) gravel grading into silt and clay, some gravel.	7.5'
							20.9-23.9 - boulders and gravel coarse grained) with red brown silt and clay.	
							Red sandstone with green grey agerllicious nodules. Majority of nodules are located approx. 26'. Top 2" shows weathering. Fractures 24.37-25.37, weathered remaining is fractured. Top of rock - 24.37; BOH - 29.3'.	Stainless steel #304 SS

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Iler: Empire
pector: G. Goodman
CME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. SW-3
Sheet ____ of ____
Location NE Corner of Bldg. 201

GROUND WATER OBSERVATIONS
AT 2.3 FT. AFTER 0 HOURS
AT ___ FT. AFTER ___ HOURS

Weather Sunny-60°F, Wind NNE 10-15 mph
Remarks

Surface Elev.
Date Start 5/12/86 1130
Date Finish 5/13/86 0945

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
	1-3	SS	2	8	11 9	7.4/6.6	Brown tan sand and silt (loam) little clay, loose, dry root fibers throughout	Grout
3	3-5	SS	7	5	10 11	7.6/6.3	Same, with a 30mm cobble clay (orange brown) coated.	
5	5-7	SS	14	60	25 25	9.4/6.3	Dark brown and red mottled sand and silt, some clay, little gravel.	
	7-8.7	SS	41	9	60 100/.4		Dark brown silt and gravel, little sand - 4" brown fine sand seam.	Bentonite Seal
9	9-11	SS	16	18	25 29	9.1/6.3 6.1/6.2	Red brown med (very uniform) sand, little silt.	
11	11-13	SS	26	24	30 32	7.5/7.4	Same, slightly greyer - more black and grey grains.	Sand Pack
13	13-14	SS	100/.5			10.5/7.8	Same - grey color.	
14	14-15	Augered thru gravel				12.4/7.2	Cobble (25mm) green grey SS	5.0'
15	15-15.6	SS	100/.5		6.9/6.8		Brown grey med. sand, some angular 5mm black gravel.	
16.1	16.1-16.5	SS	100/.5			8.8/6.8	Same with red brown sandstone	
17.3	17.3-20.9C					7.7/6.6	Red sandstone cobbles, fragments, fractured rock.	Bentonite Seal
BOH @ 20.9 1455 hrs - 5/12/86							BOH 20.9	PVC Screen 10, 2 inch
@ TOB H_2O @ 2.3								

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
iller: Empire Soils
pector: G. Goodman
CME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. RW-3
Sheet ____ of ____
Location NE Corner of Bldg. 201, near liquid nitrogen tanks

GROUND WATER OBSERVATIONS

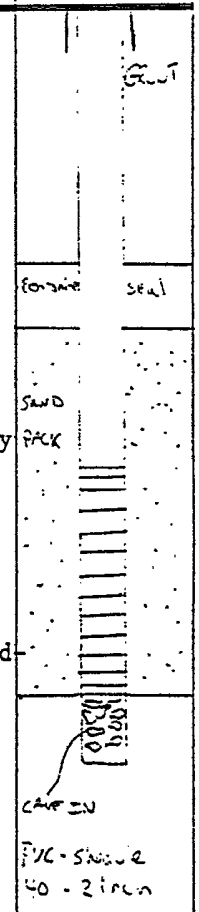
AT ___ FT. AFTER ___ HOURS

AT ___ FT. AFTER ___ HOURS

Weather Sunny - 72°F
Remarks

Surface Elev.
Date Start 5/13/86 1100
Date Finish 5/13/86 1655

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
	0-3	A					Brown silt and sand, some clay.	
3	3-4	UD					Pushed thin wall tube 1' crushed	
	3-5	A					Brown sand and silt, some large more than 25mm gravel	
5	5-13.5	A					Brown tored brown sand and silt, some clay.	
13.5	13.5	A					Resistance and deflected auger, gravel, in the sand silt. Extremely hard augering, gravel throughout brown sand and silt.	
20.0	20-20.4	SS	100/.4				Red brown silt and gravel (sub-angular-rounded), little sand. Sandstone fragment at bottom of spoon. Coring @ 1310 hrs - 1345 hrs.	
20.4	20.4-25.4	C					Red grimsby sandstone, green grey sandstone inclusion at 23.5'. TOR @ 21.5' BOH @ 25.4' @ 1355 hrs Cobble wedged itself in core hole obstructing last 2'.	



D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
iller: Empire Soils
spector: G. Goodman
CME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. SW-4
Sheet ____ of ____
Location NW corner of Bldg 201

GROUND WATER OBSERVATIONS

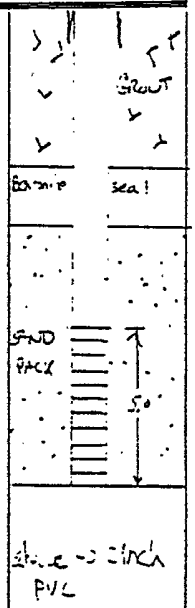
AT ___ FT. AFTER ___ HOURS

AT ___ FT. AFTER ___ HOURS

Weather Cloudy, drizzle
Remarks

Surface Elev.
Date Start 5/20/86 1410
Date Finish 5/20/86

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
0–3.5		A					Red brown silt and clay	
3.5–5.5		A					Becoming sandy	
5.5–9.5		A					Brown sand and silt	
9.5–15		A					Orange brown sand and silt, some gravel. At 12.5–15 hard augering gravel	
							BOh @ 15-	



Slot - 0.01inch PVC

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
ler: Empire
ector: G. Goodman
ME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. RW-4
Sheet ____ of ____
Location NE Corner of Bldg. 201, adjacent to manhole 201

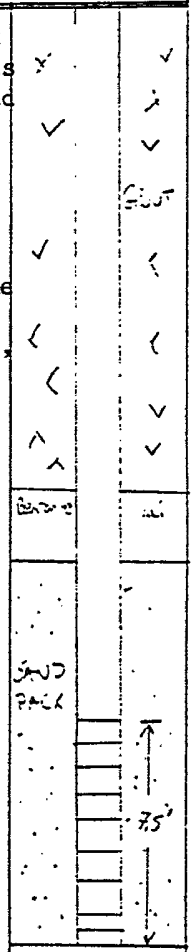
GROUND WATER OBSERVATIONS
T__ FT. AFTER __ HOURS
AT__ FT. AFTER __ HOURS

Weather 5/15 - Sunn6. 76°F Humid, no wind
Remarks 5/16 - ran - 58°F SW 5 mph

Surface Elev. ____
Date Start 5/15/86 1625
Date Finish 5/16/86 1350

EPTH BELOW URFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)
	1-3	SS	4	8	7 10	6.9/	Red brown/tan orange mottled silt
						6.8	and sand some clay, roots/organics
3	3-5	SS	10	15	20 25	8.6/8.4	Same - slightly more sand. Stopped
rilling @ 1640 hrs - 5/15; Commenced						5/16/86	0815 hrs.
	5-7	SS	22	30	40 44		Brown fine sand and silt, some to little, 10 mm angular gravel.
7	7-9	SS	25	33	40 47	11.1/	Same.
						6.2	
9	9-11	SS	12	31	43 48	13.4/	Red brown fine sand and silt, some
						6.2	angular gravel 10-20mm.
1	11-13	SS	46	47	48 57	12.5/	Red brown/pink fine sand and silt,
						6.5	some gravel angular 20 mm.
13	13-13.4	SS	100/4			7.9/6.2	Same.
5	15-17	SS	10	14	36 35		Brown grey silt and sand, some fine clay, little coarse rounded
7	17-17.5	SS	100				gravel.
	Augered through gravel.						
1	21-21.4	SS	100/4			7.4/7.1	
23	23-23.5	SS	100			6.8/4.2	Red brown silt and rounded gravel tightly packed.
4.6	24.6	SS	100/0			7.5/5.1	No recovery.
24.6	24.6-29.6	C	@ 1115 Hrs.				Red brown sandstone - highly fractured in top 2'. BOH @ 29.6' @ 1350 hrs; TOR @ 24.6'.

WELL CONSTRUCTION DETAILS



D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
iller: Empire
pector: G. Goodman
CME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. RW-5
Sheet ____ of ____
Location W side of Bldg. 201 in middle - N of door to research (LAEF)

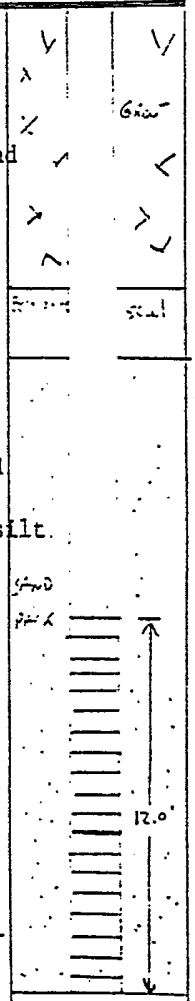
GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather Cloudy; drizzle
Remarks

Surface Elev.
Date Start 5/19/86 1120
Date Finish 5/20/86 1310

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0-6	6-12	12-18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)
	1-3	SS	2	3	2 11	10/6.6	Dark brown/grey and tan mottled silt and clay, some organics.
3	3-5	SS	8	11	10 14	9.4/6.4	Same, very little recovery - 5%.
5	5-7	SS	10	11	13 25	8.6/6.4	Red brown silt and clay, trace sand
7	7-9	SS	25	30	36 44	7.9/6.4	Red brown sand and gravel 5mm rounded, some silt.
9	9-11	SS	22	24	23 45	8.2/6.4	Brown red fine sand and silt
1	11-13	SS	18	26	30 44	8.9/6.6	Red brown medium sand and silt.
13	13-13.5	SS	100			10.6/6.4	Red brown fine sand and silt.
15	15-17	SS	12	17	85 100	8.9/6.3	Red brown extremely fine sand and silt.
17	17-17.5	SS	100			9.4/6.3	Brown medium to coarse sand and silt.
19.5	19.5-19.8	SS	100/.3			8.2/6.2	Hard augering - large cobbles.
23	23-23.4	SS	100/.4			6.4/6.1	Red brown fine sand and gravel - till.
24	24-	SS	100				Same.
24	24-28.8	C					1.5' gravel and red sandstone, cobbles.
29.8	29.8-31.8	W					1.5' red sandstone fractured, green grey sandstone and red sandstone
	Roller Bit						BOH @ 31.8' @ 1650 hrs.
							TOR @ 24.0

WELL CONSTRUCTION DETAILS



D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
iller: Empire
pector: G. Goodman
CME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

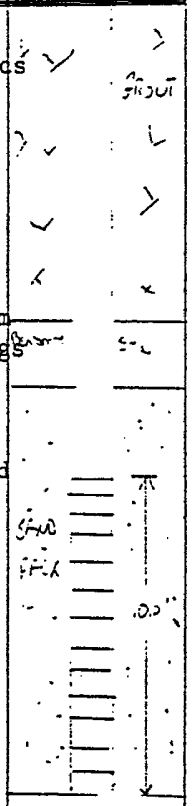
BORING NO. RW-6
Sheet ____ of ____
Location N of Bldg. 201
TB-6 and 7

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather Cloudy; drizzle 55°F
Remarks

Surface Elev.
Date Start 5/20/86 1610
Date Finish 5/21/86

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
1	1-3	SS	3	4	9 20	5.4/4.5	Orange brown/brown mottled silt and clay, some sand, trace organics	
3	3-5	SS	14	11	20 26		Orange brown/brown mottled silt and sand, some clay.	
	Stopped @ 1640							
5	5-5.5	SS	100			5.4/4.2	Brown silt and sand some clay.	
	Very tough augering.							
7	7-7.5	SS	100			5.9/4.5	Same.	
9	No Sample						Large boulder obstruction.	
10	10-10.5	SS	100			3.1/4.5	Red brown silt and sand, some 10mm rounded gravel, trace clay coatings	
15	15-15.8	SS	100			3.4/4.5	Red brown, fine to medium sand and silt, trace rounded gravel more than 10mm.	
17	17	SS	100			5.6/4.6	No recovery.	
20	20-20.2	SS	100/2			4.5/4.5	Red weathered sandstone.	
20.2	20-25.2	C					Red sandstone, trace green/grey sandstone	
							BOH @ 25.2' @ 1310 TOR @ 20.2'	



D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
ler: Empire
ector: G. Goodman
CME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. RW-7
Sheet ____ of ____
Location S of Bldg. 201, S Entrance

GROUND WATER OBSERVATIONS
T__ FT. AFTER __ HOURS
AT__ FT. AFTER __ HOURS

Weather Cloudy 60°F
Remarks

Surface Elev.
Date Start 5/22/86 1005
Date Finish 5/22/86 1535

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)
1	1-3	SS	2	3	3 6	8.1/7.6	Dark grey/black silt and clay, some sand - loam.
3	3-5	SS	6	10	11 25	8.6/7.4	Brown/red brown mottled silt and clay, some sand
5	5-7	SS	22	20	30 37	8.4/2.1	Red brown fine sand and silt, little angular gravel 10-25 mm
7	7-7.5	SS	100				Same.
9	9-11	SS	35	40	40 70	7.6/2.5	Same.
11	11-11.4	SS	100/4			8.5/2.6	Same, increasing angular rock fragments (gravel) 10mm
13	13-13.8	SS	45	100/3		10.4/4.5	Brown, subangular to subrounded gravel 10-15mm & coars sand, little silt.
15	15-15.9	SS	38	100/4		12.5/4.0	Red brown fine sand, some silt, trace gravel, angular more than 20 mm
17	17-17.4	SS	100/4			9.6/4.1	Red brown fine sand and silt, trace gravel, angular more than 20 mm.
19.9	19.9-20.2	SS	100/3				Red sandstone, highly weathered.
20.2	20.2-24.9	C					Red sandstone, fractured in 19.2' to 21.8'.
							BOH @ 24.9'
							TOR @ 20.2'

WELL CONSTRUCTION DETAILS

STAINLESS STEEL = 304

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
ller: Empire
pector: G. Goodman
CME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. RW-8
Sheet ____ of ____
Location NE of Mandrel Area outside Bldg. 201

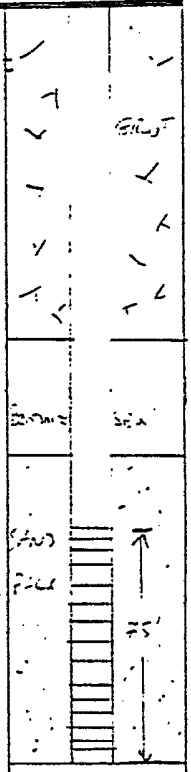
GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather Cloudy, cool, 50°F, NW-10 mph
Remarks Rig down 1050 5/22/86 - 0800 5/27/86 bearing in rotary box.

Surface Elev. ____
Date Start 5/22/86 1600
Date Finish 5/27/86 1150

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)
2	2-4	SS	4	4	8 10	9.6/6.5	Orange brown mottled with tan silt and clay, trace fine sand.
4	4-6	SS	12	22	40 85	10.1/6.8	Red brown/brown mottled gravel & fine silt, wet, some fine sand
6	6-6.4	SS	100/.4			9.8/7.4	Same.
8	8-8.1	SS	100/.1				Not much recovery, silt and clay, trace sand.
	9	A					
10	10-12	SS	13	19	21 26	13.4/7.5	Red brown/grey sand and silt.
12	12-14	SS	36	35	45 80	16.5/8.1	Same.
14	14-16	SS	14	23	26 35	Same.	
16	16-17.5	SS	26	40	100	9.3/8.4	Red brown/red gravel and silt - some weathered sandstone.
19	19-19.2	SS	100/.2		No Recovery - box (lower (	10.4/8.5	Rig brok down - bearing to rotary spun-reparing @ 1100 hrs.
19.2	19-24	C					Red fractured sandstone, trace green inclusion.
							BOH @ 24'
							TOR @ 19.2'

WELL CONSTRUCTION DETAILS



D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
ller: Empire
pector: G. Goodman
CME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. RW-9
Sheet ____ of ____
Location SE Corner of Bldg. 201 outside, adjacent to TCE tank

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather Partly cloudy - 85°F SW-5-15 mph
Remarks Auger snapped off @ 15' - retreived abandoned - grouted, and restarted

Surface Elev. ____
Date Start 5/27/86 1230
Date Finish 5/28/86 1115

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
2	2-4	SS	5	5	40 11	5.2/3.2	Gravel fill, gravel bed around tanks, orange brown/red brown mottled silt and clay - trace sand.	
	4-6	SS	30	40	40 21	8.6/3.3	Red brown, fine silt, little sand trace clay.	
6	6-7.5	SS	20	32	100	25.6/3.4	Red brown fine sand and silt.	
8	8-10	SS	20	30	50 45	16/3.2	Red brown fine sand and silt	
10	10-12	SS	45	35	35 40	12/3.5	Red brown coarse sand and silt.	
12	12-19.9	SS	35	100/.4		15/3.2	Red brown coarse sand and gravel augered thru boulders and sand	
	@ 1350 snapped 2nd auger off in hole hole abandoned - moved 1420 hrs.							
15	15-15.4	SS	100/.45			10/3.1	Same as above.	
17	17-17.1	SS	100/.1				Very little recovery, red crushed sandstone	
19	19-19.5	SS	100/.5				Weathered sandstone and silt.	
19.5	19.5-24.5	C						
							BOH @ 24.5'	
							TOR @ 19.5'	

STAINLESS STEEL =304 SS

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

ENGINEERING-SCIENCE
DRILLING RECORD

DRILLING CONTRACTOR:
Driller: PAT BENNETT
Inspector: MARK CHARVIN

PROJECT NAME XEROX - WEBSTER
PROJECT NO. 66502.01

BORING NO. MW-10
Sheet 1 of 1
Location

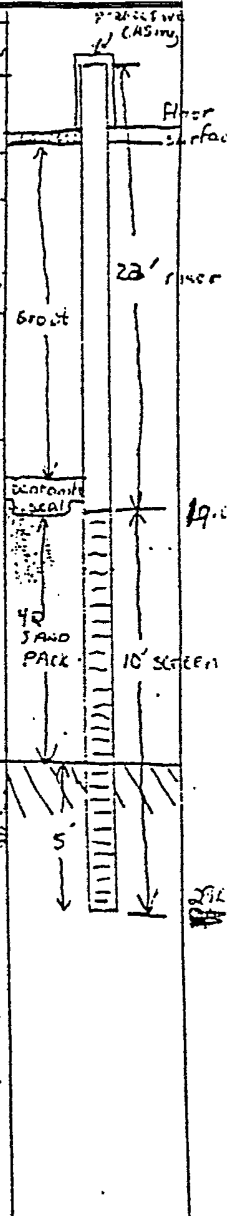
WELL LOCATION
MW-10
BLDG #201
N

Weather INSIDE BUILDING
Remarks

Surface Elev.
Date Start 7/21/87
Date Finish

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	PHOTOVAC* READING (~~STRATA CHANGE~~)	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)
	0.5-2.0	SS	37	25-27	—	0.0/21.7	Concrete 6" / FILL BOULDERS / COBBLES 2.5'
	2.0-4.0	SS	24	22-35	13	0.2/6.9	Red-brown SILT and m-f SAND. Broken cobbles. Damp. very dense.
7/21/87 7/22/87	4.0-6.0	SS	14	23-22	21	1.0/81.6	same. medium dense. Little f gravel.
	6.0-8.0	SS	20	31-26	41	0.2/61.6	same w/some c-f gravel. Moist. v. dense.
	8.0-10.0	SS	15	30-50	115	0.3/52.9	same w/cobble fragments. wet. 10.0'
	10.0-12.0	SS	100/.5	(SPOON BOUNCE)		0.6/28.4	Red-brown c-f sand and gravel, some silt. Moist. very dense.
	12.0-14.0	SS	—	—	—	—	NO SAMPLE TAKEN. BOULDERS & COBBLES 14.0'
	14.0-16.0	SS	24	35-100	100/.3	0.4/1208	Brown-red m-f SAND, little silt, wet. very dense.
	16.0-18.0	SS	108	100/.3		0.8/1260	SAME AS ABOVE.
	18.0-20.0	SS	44	134		1.0/483	SAME AS ABOVE. Grades to sandy silt
	20.0-22.0	SS	80	100/.4		0.6/338	SAME AS ABOVE. Grades to SILT, some f sand.
	22.0-24.0	SS	68	100/.5		0.7/418	SAME AS ABOVE.
7/22/87	24.5-25.0	SS	100/.4			0.7/44.2	SAME AS ABOVE. Rock fragments in bottom of spoon.
7/23/87	25.0-30.0	C				2 min	TOP OF ROCK 25.0' Green-Grey SILTSTONE. Highly fractured. no recovery. washed away during coring
						3 min	
7/23/87 7/24/87			CORING TIME (min)			2 min / 4 min / 7 min	Red SANDSTONE. w/green-grey nodules of SILTSTONE. SILSTONE is Brittle and washes away during coring. 50% recovery. Low Rock Quality Design. Thin bedded. Medium-hard.
							B.T. @ ~~30.0~~ 29.0'

WELL CONSTRUCTION DETAILS



D = DRY W = WASHED (C) = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED (SS) = SPLIT SPOON

* readings taken with samples in jars.

PAY QUANTITIES	
FOOTAGE IN EARTH	25.0'
FOOTAGE IN ROCK	5.0'
NO. OF SAMPLES	13
CORE BARREL	NX

DRILLING CONTRACTOR:
Driller: Empire - Joe Jensen
Inspector: George Moreau

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox - Bldg 201
PROJECT NO. 66302.01

BORING NO. RW-11
Sheet 1 of 1
Location 11' East and 4' North of the southeast corner of Terrace at Building 212

GROUND WATER OBSERVATIONS
AT 8.5 FT. Augers at 9.0' ~~AFTER HOURS~~
AT 5.1 FT. Augers at 14.0 ~~AFTER HOURS~~

Weather Sunny 50°
Remarks CME-75 Truck w/4¼" ID Hollow Stem Augers
Field reading / Headspace Reading Background in ( ).

Surface Elev. J
Date Start 4/14/87
Date Finish 4/14/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	PhiTovac ~~STRATA CHANGE~~ Reading #	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
						(1.0)/(1.0)	moist, dark brown sand-silt-clay Topsoil, soft (ML)	
	1-3	SS-1	3	4	5/13	2.3/1.3	0.5 Extremely moist, brown silty-sand Fine to medium sand, slightly mottled, medium dense (SM)	Cement Grout
	3-5	SS-2	6	6	8/10	1.0/1.3	grades To Trace gravel below 3.0'	
5							grades To 5.0	
	5-7	SS-3	9	20	65/70	1.0/1.4	Extremely moist, reddish brown, Fine To coarse sand and gravel, little silt, some black discoloration at 5.5 Feet, dense (SM-GM)	Bentonite Pellets
	7-7.5	SS-4	100			1.9/1.7	Encountered boulders at 7.5-9.0 Feet	6.5
	9-11	SS-5	45	60	70/90	3.3/2.6		8.5
10							grades To 11.0	10.5
	11-11.3'	SS-6	100/.3'			3.5/5.0	Wet, reddish brown, gravelly SAND, Fine To coarse sand, very dense, poorly STRATIFIED with interlayers containing Trace To little clay (SM-GM)	4" Q-Rok
	13-13.5	SS-7	100			1.6/2.5	Auger Refusal at 14.0 Feet 3 7/8" Roller bit with air To 16.4 Feet.	
15							NX Core 16.4-20.8 Red sandstone boulder to 18.7'	Bedrock
	16.4-17.0	C-1	Run1 = .6 Feet				Red Sandstone bedrock at 19.0 Feet Moderately hard, moderately weathered with green interlayer at 19.5-19.8	2" ID #10-slot PVC Screen
			Recovery = .5 Feet				Coring Terminated at 20.8 Feet.	20.5
	17.0-20.8	C-2	Run2 = 4.8 Feet					20.8
			Recovery = 3.8 Feet					(Not To Scale)
				1.8	Bedrock			
			RQD = 31.8%					
20				(Bedrock)				

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
riller: Empire - Joe Jensen
ispector: George Moreau

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox - Bldg 201
PROJECT NO. 66302.01 (

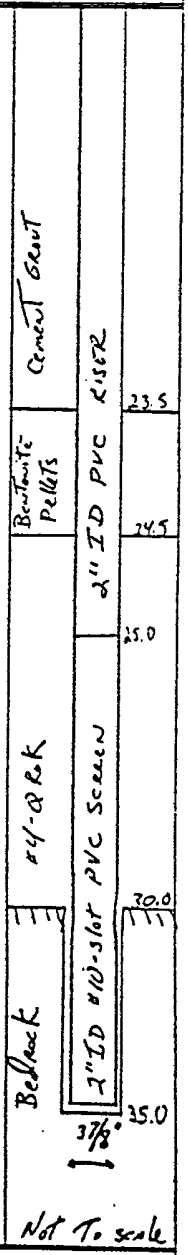
BORING NO. RW-12
Sheet 1 of 1
Location 6 Feet Southwest OF RW-12D, NEAR Cafeteria

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather
Remarks

Surface Elev.
Date Start 4/17/87
Date Finish 4/17/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
							SEE log RW-12D For soil description	



) = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

ENGINEERING-SCIENCE
DRILLING RECORD

DRILLING CONTRACTOR:
Driller: Empire - Joe Jensen
Inspector: George Moreau

PROJECT NAME Xerox - Bldg 201
PROJECT NO. GG302.01

BORING NO. RW-12D
Sheet 1 of 3
Location 10' west and 5' North of the NW corner of parking lot adjacent to cafeteria

GROUND WATER OBSERVATIONS
AT 9 FT. Augers at 15'
AT ___ FT. AFTER ___ HOURS

Weather 60° Sunny, Windy
Remarks CME-75 - 6½" ID HSA
*Field Reading / Head Space Reading
Background in ( )

Surface Elev.
Date Start 4/14/87
Date Finish

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading*	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
						(2.8)		
	1-3	SS-1	5	6	5/50	2.8/3.3 (0.2)	Extremely moist, brown, slightly mottled sand-silt-clay with trace fine gravel, very stiff (ML)	
	3-5	SS-2	10	12	6/6	(1.7) 2.1/1.6		
5	5-7	S-3	25	33	45 70	2.0/1.7	5.0 Moist reddish brown fine sandy-silt with trace gravel and occasional cobble, very dense, platy structure and brittle consistence (ML-SM)	
	7-9	SS-4	42	100/.3		2.0/5.0	grades 9.0	
10	9-11	SS-5	40	115	60 80	1.2/1.0	wet brown very fine sandy silt with trace fine gravel, very dense in place, liquefies when disturbed (SM)	cement grout
	11-11.4	SS-6	100/.4'			1.3/1.1	Occasional cobble or boulder during augering	
	13-15	SS-7	17	24	29/73	1.0/1.0	Becoming stratified with 6" layers of coarse sand, red and green subangular sandstone. Layers range from sorted to poorly sorted	4" ID steel casing; 30.0
15	15-17	SS-8	50	40	30/90	1.2/1.0		Bedrock; 40.0
	17-18	SS-9	55	100		1.2/1.1	grades to little to some gravel (SM-GM)	3" open hole
20							• Auger refusal at 20 feet - Roller bit and sample from 20 feet (5⅞" bit with air)	59.0; Not to Scale

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller:
Inspector:

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Bldg 201
PROJECT NO. 66202-01

BORING NO. RW-12D
Sheet 2 of 3
Location

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT 24 FT. AFTER ___ HOURS (Prior to casing; Casing at 30')

Weather
Remarks

Surface Elev
Date Start 4/14/87
Date Finish

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
20								
	21-22	SS-10	45	100		1.2/1.1	Same	
25	24-24.3	SS-11	100/.3'				No recovery on SS-11 (WASH)	
	28-28.5	SS-12	100				Grades 28.0 Extremely moist Reddish brown silty-sand, fine size sand with little to some fine to coarse gravel and occasional cobble or boulder, massive soil structure, very dense, Till (SM)	
30								
	31-38.6	Run 1	8.6	feet			Advance augers to 30.0 feet. Ream to 31.0 feet (5 7/8" bit) Begin coring with air at 31.0 feet No return water at start of run 1. Ground water at 38-38.5 feet at 39.5	
		Recovery	8.2	feet				
		RQD	62.2%					
35							Red sandstone, fine grained, moderately hard with moderately soft siltstone interbeds up to 1 foot thick. Many seams are filled with silt. slightly weathered. Weathered siltstone at 36.5-36.8. Core becomes weathered and highly fractured below 35 feet.	
40								

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: _____
Inspector: _____

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox · Bldg 201
PROJECT NO. 663201

BORING NO. RW-12D
Sheet 3 of 3
Location _____

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather _____
Remarks _____

Surface Elev. _____
Date Start 4/14/87
Date Finish 4/20/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
45							4½" ID Steel casing grouted in place at 40.0 Feet. Top of grout in casing at 39.5 Feet. Tricone w/ 3⅞" bit and air to	
							No apparent groundwater while drilling from 28.0 To 44.0 Feet. Groundwater Return began at approximately 44.0 Feet	
50							Drilling Terminated at 59.0 Feet.	
55								
60								

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:	ENGINEERING-SCIENCE DRILLING RECORD	BORING NO. RW-13
Driller: Empire - Joe Jensen		Sheet 1 of 2
Inspector: George Moreau	PROJECT NAME Xerox. Bldg 201	Location
	PROJECT NO. 66302.01	

GROUND WATER OBSERVATIONS		
AT __ FT. AFTER __ HOURS	Weather 80° Sunny, breezy	Surface Elev.
AT __ FT. AFTER __ HOURS	Remarks CME-75 Truck mount 4 1/4" Hollow stem augers w/2' ID standard split spoon * Background in ( ). Field reading (Head space reading)	Date Start 4/20/87
		Date Finish

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading (STRATA CHANGE)	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
	1-3	SS-1	3	3	4/7	(1.2) 1.2/1.1	Moist light brown sand-silt clay gr grades to brown @ 1.5 feet, trace fine gravel, medium stiff (ML)	
	3-5	SS-2	12	13	15/20	1.2/1.0	grades to extremely moist, little fine to coarse gravel, very stiff (ML) 5.0	Cement Grout
5	5-7	SS-3	15	22	25/26	(0.2) 0.2/0.1	Wet, brown very fine sandy-silt, dense in place. Tends to liquefy when disturbed becoming very dense, thinly bedded below 7.0 feet (SM-ML)	Bentonite Pellets 17.0; 19.0
	7-8	SS-4	100	100		0.1/0.1 (0.6)		2" ID PVC Riser
	9-9.9	SS-5	40	100/.4		0.7/0.8	grades to greyish brown w/ trace fine to coarse gravel, slight tendency to liquefy when disturbed (SM) 10.0	#4 Q-Rok 20.0
10							- - - grades - - - Cobbles or boulders from 10.0 - 12.5	2" ID #10-slot PVC Screen 25.0
	13-13.5	SS-6	100			-	grades to some fine to coarse gravel and occasional cobble or boulder (SM-GM)	Bedrock 30.0
15	15-15.4	SS-7	100/.4				No recovery on S-7. Rock fragment lodged in shoe.	Not To Scale
							Boulders from 16.0 - 18.0 feet	4± ft. to 5.0 feet over silty lake sediment & 10.0 feet over sandy glacial till * 17.5
	18-18.5	SS-8	100				- - grades to - - 17.5 Moist to extremely moist reddish-brown sand-silt clay with little to some subangular to subrounded gravel, very dense in place (SM-ML)	
20								

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: _____
Inspector: _____

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Bldg 201
PROJECT NO. 66302.01

BORING NO. RW-13
Sheet 2 of 2
Location 20°

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather _____
Remarks NX Coring w/WATER

Surface Elev. _____
Date Start _____
Date Finish _____

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
	23.-23.1	SS-9	100/.1				No Recovery in S-9 Borehole dry prior to S-9. After taking S-9 borehole contained .5 feet water. AT START of CORING, water table at 23 FEET and RISING.	
25							Auger Refusal AT 25 Feet. Begin NX coring AT 25 Feet 2.5 min/ft.	
	25-30	C-1	Run 1	5.0 Feet			Red sandstone, moderately hard with occasional green interlayers OR nodules, weathered throughout entire length of RUN. Highly fractured between 25 and 26 feet and below 27.5 Feet.	
			Recovery	4.5 Feet				
			RQD %	12.9%				
							Coring Terminated AT 30.0 Feet	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: Empire - Joe Jensen
Inspector: George H Morral

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox - Bldg 201
PROJECT NO. 66302.01

BORING NO. RW-14
Sheet 1 of 1
Location 6 Feet west of RW-14D in parking lot north of Building 102

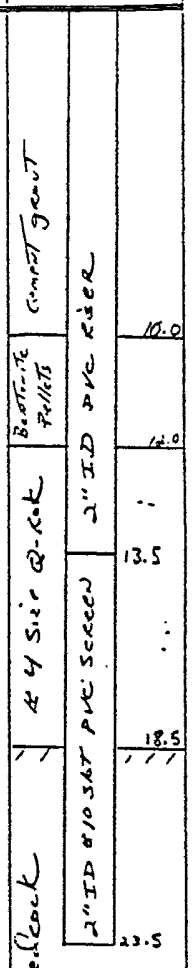
GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather 60° Pt. Cloudy, Windy
Remarks CME-75 Truck mount
4¼" ID HSA - No Sampling
N/x Core

Surface Elev.
Date Start 4/27/87
Date Finish 4/28/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)
5							See log for RW-14D for Soil Description
10							
15							
20	18.5-23.5	C-1	RUN 1 = 5.0		FEET		Red sandstone, hard, weathered with vertical fracture at 18.5 - 19.1 feet. Numerous highly fractured and weathered seams. Core somewhat more massive below 22.0 feet.
			Recovery 4.4		FEET		
			RQD = 49.0%				
25							

WELL CONSTRUCTION DETAILS



Not To Scale

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: Joe Jensen - Empire
Inspector: George H Morgan

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox - Bldg 201
PROJECT NO. 66302.01

BORING NO. RW-14D
Sheet 1 of 3
Location Parking Space #102 - 75 in 1st North of Bldg 102

GROUND WATER OBSERVATIONS
AT 1 FT. Augers at 4.0 feet ~~AFTER — HOURS~~
AT 2.9 FT. Augers at 15.0 feet ~~AFTER — HOURS~~ 8:30 4/27/87

Weather Sunny 50' windy
Remarks CME-75 Truck 6½" HSA and 2" ID standard split spoon
Field reading / head space reading
Background in ( ).

Surface Elev.
Date Start 4/24/87
Date Finish 4/28/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	PhotoVac ~~STRATA CHANGE~~ Reading #	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
							Asphalt and gravel base	
						(0.5) 0.7 / 4.0	Extremely moist, brown sandy-silt-clay with Trace fine gravel, Fill, STIFF. (ML)	
	2-3	SS-1	5					
				6		(0.4)		
	3-5	SS-2	6			(1.1)		
				11		1.3 / 10.0		
					10/18		3.0	
5							Moist brown clayey-silt with Trace fine gravel, very stiff, thinly laminated with thin interbeds of coarse silt (ML)	
	5.7	SS-3	20	33	40/50	1.1 / 6.0		
							5.0	
	7-7.7	SS-4	43			(0.2) 0.3 / 9.0	Dry brown clayey-silt with Trace fine gravel, in beds ½" Thick, hard, brittle consistence (ML)	
				100/.2'				
							9.0	
	9-10.5	SS-5	20			1.2 / 5.8	Extremely moist grayish brown very fine sandy-silt with Trace gravel very dense in place, Tends to Liquefy when disturbed	
10				40				
					100		— — — grades — — — 12.5	
								Cement/Bentonite Grout
	13-14	SS-6	35			1.1 / 3.0	Extremely moist reddish brown silty-sand, coarse to fine sand with little coarse to fine gravel, subangular to subrounded gravel, very dense (SM)	4" ID Steel Pipe
				100				
15							— — grades — — 15.0	
	15-15.5	SS-7	100			1.2 / 3.8	Extremely moist reddish brown fine sandy-silt, trace to little mostly fine size gravel, very dense, massive soil structure	28.5
								Open Hole
	18.3-18.5	SS-8	100/.2'			1.7 / 4.0		
							18.5	47.9
20							Auger Refusal at 18.5 feet	NOT To Scale

See Sheet 2

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller:
Inspector:

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox - Bldg 201
PROJECT NO. 66302.01

BORING NO. RW-14D
Sheet 2 of 3
Location Parking lot west of Bldg 102

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather
Remarks

Surface Elev.
Date Start 4/24/87
Date Finish 4/28/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
	18.5-28.5	C-1	Run 1 =	10.0	Feet		.5' Void at 25.5 feet - lost return water Red sandstone, hard with mixed white interlayers showing evidence of bioturbation. Highly fractured, weathered zones at 19.5 – 20.5, 21.5-21.7, and 25.0 – 25.5 feet. Numerous voids associated with fractures. Recovery = 8.7 feet, however hole open to 28.3 feet.	
			Recovery:	8.7	Feet			
			RQD:	50%				
25								
	28.5-34.9	C-2	Run 2 =	7.0	Feet (0.6 feet grout)		Run 2 Same with grout and recore of previous hole 0-0.6 feet into Run 2. Recovery of rock begins at 28.5. Recovery of new core is 5.7 feet. Highly fractured seams with probable voids at 29 feet, 30.2 feet, and 33 feet. Contains siltstone interbeds up to 4 inches thick.	
			Recovery:	6.2	Feet			
30			RQD:	30.8%				
35								
	34.9-44.9	C-3	Run 3 =	8.0	Feet		Run 3 Same with occasional nodule of green argillaceous rock	
			Recovery:	7.3	Feet			
			RQD:	50.0%				
40								

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: _____
Inspector: _____

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox-Bldg 201
PROJECT NO. 66302.01

BORING NO. RW-14D
Sheet 3 of 3
Location _____

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather _____
Remarks _____

Surface Elev. _____
Date Start 4/24/87
Date Finish 4/28/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
	42.9-47.9	C-4	Run 4 = 5.0		Feet		Same	
			Recovery = 5.0		Feet			
			RQD = 90%					
45								
50								
55								
60								

47.9

Coring Terminated at 47.9 Feet
Water Table at 9.3 Feet at completion

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

Well: RW-14D
Datum Elevation: 398.89

STRATUM ELEV.	DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
396.8	0.0									
395		Stiff brown sand, silt-clay with trace fine gravel, fill, moist (Topsoil, Fill)				11				
	3.2					73				
		Hard Brown clayey SILT with trace fine gravel, thin interbeds of coarse silt, moist.				53				
390						143				
						60				
385										
	12.7					135				
		Very dense greyish-brown silty fine SAND with little gravel, wet.				100				
380										
	18.5					100				
		Red SANDSTONE with mixed white interlayers showing evidence of bioturbation.					87	50		

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

REMARKS:
No soil or rock sampling was conducted between 0-47 feet. Descriptions from 0-47.0' are summarized from adjacent well drilling record RW-14I, completed in 1987 by Engineering Science. Water level at 18.22 feet on 10/1/91.

TEST BORING RECORD

BORING NUMBER	RW-14D
DATE(S) DRILLED	9/10/91 -9/13/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 1 OF 4	

LAW ENVIRONMENTAL

Well: RW-14D
Datum Elevation: 398.89

STRATUM ELEV.	DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
375		Red SANDSTONE with mixed white interlayers showing evidence of bioturbation. Highly fractured, weathered zones at 19.5 - 20.5, 21.5 - 21.7', and 25.0 - 25.5'. Numerous voids associated with fractures. Hole open from 25 to 28.3'.								
370										
	28.0	Red SANDSTONE with mixed white interlayers showing evidence of bioturbation. Some grout and recora of previous hole 0.0 - 0.6' in Core Run. Recovery of rock begins at 28.5'. Recovery of new core is 5.7'. Highly fractured seams with probable voids at 29', 30.2' and 33'. Contains siltstone interbeds up to 4 meters thick.					89	31		
365										
	34.9	Red SANDSTONE with mixed white interlayers showing evidence of bioturbation and occasional nodule of green argillaceous rock.					91	50		
360										

REMARKS:
No soil or rock sampling was conducted between 0-47 feet. Descriptions from 0-47.0' are summarized from adjacent well drilling record RW-14I, completed in 1987 by Engineering Science. Water level at 18.22 feet on 10/1/91.

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

TEST BORING RECORD

BORING NUMBER	RW-14D
DATE(S) DRILLED	9/10/91 -9/13/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 2 OF 4	

LAW ENVIRONMENTAL

Well: RW-14D
Datum Elevation: 398.89

STRATUM ELEV.	DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
355										
	42.9	Red SANDSTONE with mixed white interlayers showing evidence of bioturbation and occasional nodule of green argillaceous rock.					100	90		
350	47.0	Red-brown to light grey, slight to moderately weatered fine grained SANDSTONE, with green mottling and evidence of bioturbation. Open fractures: 47.75 - 52.5'.					100	75		
345										
	53.0	Red-brown to light grey, slight to moderately weatered fine grained SANDSTONE, with green mottling and evidence of bioturbation. Zones of bioturbation from 53 - 54' Closely spaced fractures: 53.5 - 54.2' Very closely spaced highly weathered sub-horizontal fractures. Weathered fractures: 54.2 - 54.4', 54.6 - 54.8' Fractures: 54.9 - 57.0' Weathered fractures: 57.2 - 57.3', 57.8 - 58.0' Fractures: 58.2', 58.7', 59.0', 59.5'					97	37		
340										
	60.0									

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

REMARKS:
No soil or rock sampling was conducted between 0-47 feet. Desriptions from 0-47.0' are summarized from adjacent well drilling record RW-14I, completed in 1987 by Engineering Science. Water level at 18.22 feet on 10/1/91.

TEST BORING RECORD

BORING NUMBER	RW-14D
DATE(S) DRILLED	9/10/91 -9/13/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 3 OF 4	

LAW ENVIRONMENTAL

Well: RW-14D
Datum Elevation: 398.89

STRATUM ELEV.	DEPTH	VISUAL SOIL DESCRIPTION	F	SR	OVA	N	CR	RQD	ST	WELL DIAGRAM
335	62.3	Red-brown to light grey, slight to moderately weatered fine grained SANDSTONE, with green mottling and evidence of bioturbation. Open moderately weathered, sub-horizontal fractures Fractures : 60.1', 60.3' Weathered pebble filled joint: 60.4 - 60.5' High angle joint: 60.7 - 60.8' High angle joint: 61.0 - 61.6'					100	62		
	64.5	Red brown to light grey, slight to moderate weathered thinly bedded SANDSTONE with low angle cross bedding. Fractures: 62.6', 63.7', 64.0' High angle joints and low angle fractures, clay filled: 64.1 - 64.25' Fracture: 64.5'					100	60		
330	68.0	Dark red-brown, light grey SANDSTONE interbedded with dark red-brown SILTSTONE. Sandstone exhibits low angle cross bedding. Closely spaced argillaceous parting in siltstone. Closely spaced fractures: 65.0' High angle joints and low angle fractures: 65.5 - 65.7' Weathered clay filled fractures: 65.9 - 66.1' Fractures: 66.4', 66.8' Weathered clay filled fractures: 67.2 - 67.3' High angle joints and low angle fractures: 67.8 - 68.0'					94	21		
325		Boring terminated at 68.0'								
320										

REMARKS:
No soil or rock sampling was conducted between 0-47 feet. Descriptions from 0-47.0' are summarized from adjacent well drilling record RW-14I, completed in 1987 by Engineering Science. Water level at 18.22 feet on 10/1/91.

Drilled by: Nothnagle Drilling
Logged by: HTW
Checked by: PAT

TEST BORING RECORD

BORING NUMBER	RW-14D
DATE(S) DRILLED	9/10/91 -9/13/91
PROJECT NUMBER	52.0538
PROJECT	Xerox 201/206/218 project
PAGE 4 OF 4	

LAW ENVIRONMENTAL

TYPE III WELL INSTALLATION RECORD

JOB NAME Xerox Expanded Bedrock Investo. JOB NO. 52-0538

BORING/WELL NO. RW-14D DATE INSTALLED 9/13/91 DRILLING CONTRACTOR Nothnagle

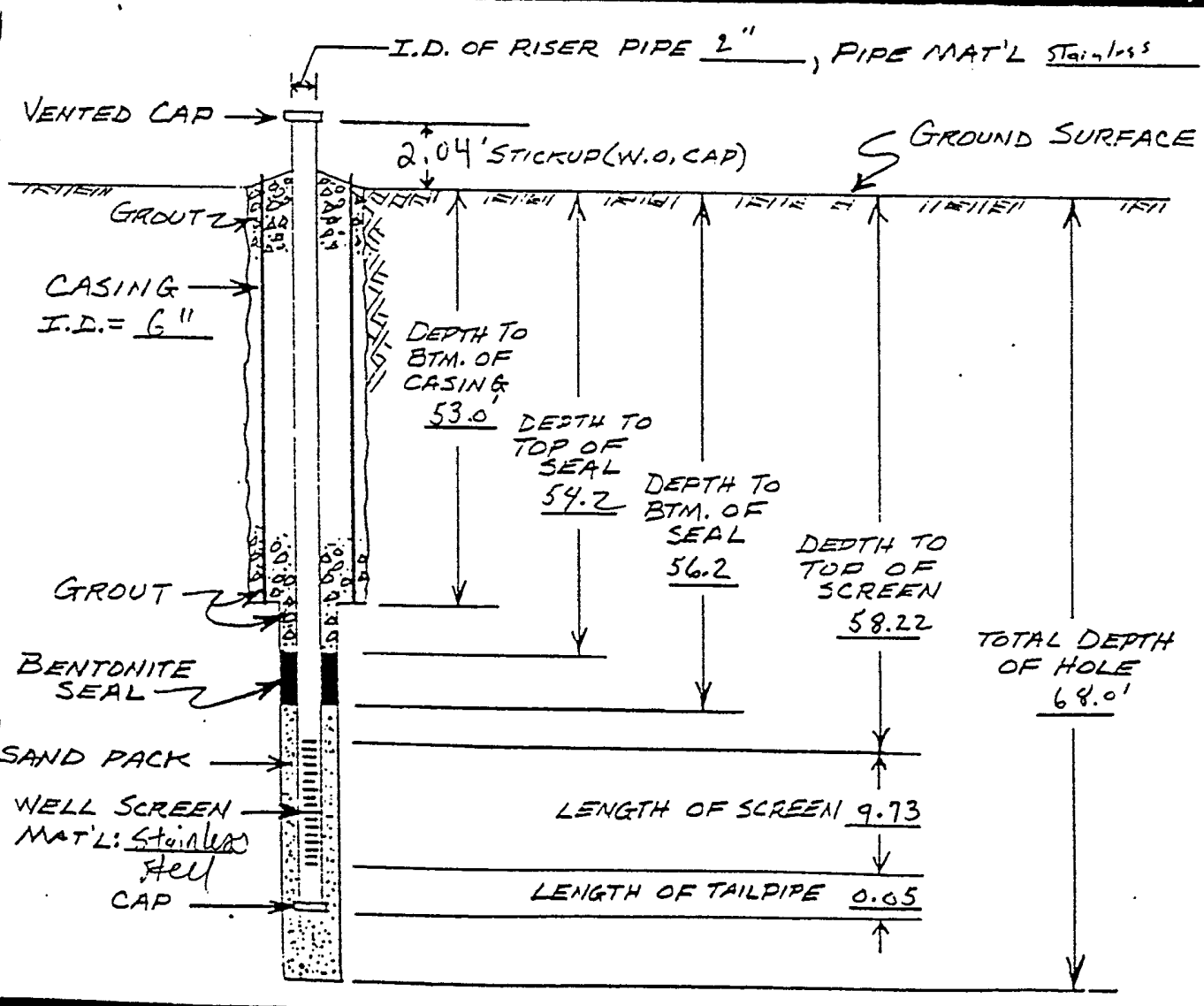
FORMATION SCREENED deep bedrock (lower Gringley) SCREEN SLOT SIZE 0.010 TYPE OF SAND PACK #3

DRILLING METHOD Air Rotary (ABOVE CASING) BIT OR AUGER SIZE 9 7/8 (ABOVE CASING)
w/ core, 5 7/8 wash bore (BELOW CASING) 5 7/8 (BELOW CASING)

GROUND ELEV. 396.78 EST'D. ___ SURVEYED X SURVEYED TOP OF RISER PIPE ELEV. 398.82

DEPTH TO GROUND WATER/ELEVATION ___ / 378.56 (BELOW GRD.) 10/1/91 (DATE)
___ / ___ (BELOW T/O RISER) ___ (DATE)

DATE DEVELOPED 9/26/91 HOW? Suction Pump, BAILER



LAW ENVIRONMENTAL SERVICES

FIELD GEOLOGIST: HTW

DRILLING CONTRACTOR:
Driller: Empire Joe Jensen
Inspector: George Moreau

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox - Bldg 201
PROJECT NO. 66302.01

BORING NO. RW-15
Sheet 1 of 1
Location 4 Feet East of RW-15D

GROUND WATER OBSERVATIONS
No water at auger refusal
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather Cloudy 45° Windy
Remarks CME 75 Truck mount
4¼" ID HSA

Surface Elev.
Date Start 4/22/87
Date Finish 4/22/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
5							See log of RW-15D for soil description	Cement Grout
10								Bentonite Pellets 9.3
15								2" ID PVC Riser 11.3
	17-22	C-1	Run 1 = 5.0		Feet		17.0 Red sandstone, moderately hard w. th green or white interlayers, fresh to 18 feet, becoming weathered, highly fractured with occasional soft siltstone interbeds, generally 1 inch thick. Apparent interconnection between the two coreholes (RW-15 and RW-15D) at 18.5 - 19.0 feet, corresponding to a highly fractured zone in both cores. (Observed air rising through borehole RW-15D while coring RW-15).	11.8
			Recovery = 4.6		Feet			
20			RQD = 42.8%					
25							Coring Terminated at 22.0 feet	2" ID #10 Slot PVC Screen 17.0 21.8 22.0

NOT To Scale

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: Empire - Joe Jensen
Inspector: George Moreau

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox - Bldg 201
PROJECT NO. 6630.01

BORING NO. RW-15D
Sheet 1 of 3
Location 15 feet off northeast corner of Trailer parking lot located near northeast corner of Phillips Rd + Halifax Drive

GROUND WATER OBSERVATIONS
No water at auger refusal
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather 80° Sunny Breezy
Remarks CME-75 Truck
6½" ID HSA w/ 2" Standard Split Spoon
PhotoVac not operational on 4/21/87
Readings are headspace on 4/22/87
Background in ( )

Surface Elev.
Date Start 4/21/87
Date Finish 4/23/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
							Moist black clayey-silt Topsoil, Soft (ML) 1.5	
	1-3	SS-1	2			-/114 (0.2)		
				2				
					4/2			
	3-5	SS-2	4					
				10				
					18/20	-/75		
5	5-7	SS-3	9					
				12				
					18/24	-/68		
	7-9	SS-4	15					
				20				
					30/29	-/32		
	9-11	SS-5	22					
10				40				
					42/45	-/56		
							grades To 11.0	
	11-12	SS-6	44					
				100		-/25	Wet grayish brown silty-sand, fine size sand with Trace fine gravel, very dense, weakly stratified with bedded silt and fine sands which liquefy when disturbed (SM)	
	13-15	SS-7	10					
				18				
					15/65	-/10		
15							Yellow sand at 10.7-11.0 feet	
	15-16	SS-8	30					
				100		-/4.5		
							grades To 16.0	
							Moist reddish brown sand-silt-clay with little fine to coarse gravel and occasional cobble, very dense (ML) 17.3	
	17-17.3	SS-9	100			-/6.0		
	17.3-27.3	C-1	RUN 1: 10 Feet				Red sandstone, moderately hard with occasional green or white interlayers or nodules. Weathered to 21.0 feet. Contains 1 to 3 inch soft siltstone interbeds.	
			Recovery: 9.6 Feet					
			RQD: 28.6%					
20								

WELL CONSTRUCTION DETAILS: Backfill; 4" ID Steel Pipe; 17.3; Open Borehole; 27.0; 46.7; NOT To Scale

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: _____
Inspector: _____

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox - Bldg 201
PROJECT NO. 64302.01 (1)

BORING NO. RW-15D
Sheet 2 of 3
Location _____

GROUND WATER OBSERVATIONS
AT 18.7 FT. AFTER 1 HOURS
AT ___ FT. AFTER ___ HOURS

Weather _____
Remarks _____

Surface Elev. _____
Date Start 4/21/87
Date Finish 4/23/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
25	27.3-37.3	C-2	Run 2 =	10.0	Feet		Run 1 continued – Numerous horizontal fractures throughout entire run. At 25.5 feet a vertical fracture occurs, slightly weathered with green argillaceous nodules 1/4" in size. Entire length of run shows signs of bioturbation or distortion of beds. Run 1: Limited ground water return while reaming corehole with air, – Run 2: NO return water while coring with air. Recovered .4' concrete in pipe. Red sandstone, hard, medium to fine grained with white interbeds up to 6 inches thick. Weathered to 29.0 feet. Occasional thin green interbeds and green argillaceous nodules. Below 33.0 feet becomes moderately hard with more numerous soft siltstone interbeds 1-2" inches thick. Evidence of weathering in most breaks in core. Some evidence of groundwater in core between 27.3 – 29.0 Run 3 - Red sandstone hard, medium grained massive, occasional white or green interlayer. Weathered seam at 44 feet. See Sheet 3	
			Recovery	10.4	Feet			
			RQD =	66.6%				
30								
35								
	37.3-47.3	C-3	Run 3 =	10.0	Feet			
			Recovery	9.9	Feet			
			RQD =	100%				
40								

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: _____
Inspector: _____

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox - Bldg 201
PROJECT NO. 66302.01

BORING NO. RW-15D
Sheet 3 of 3
Location _____

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather _____
Remarks _____

Surface Elev. _____
Date Start 4/21/87
Date Finish 4/23/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
							Apparent groundwater at 44 feet, most breaks in core are silt-fill.	
45							Same	
50							Coring terminated at 47.3 feet. Hole open to 46.7 feet 1 hour after completion. Water table at 18.7 feet 1 hour after completion	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: EMPIRE
Inspector: J.N. BAKER
ENGINEERING-SCIENCE

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME XEROX WEBSTER BLDG. 201
PROJECT NO. 66302.01

BORING NO. RW-16
Sheet 1 of 1
Location

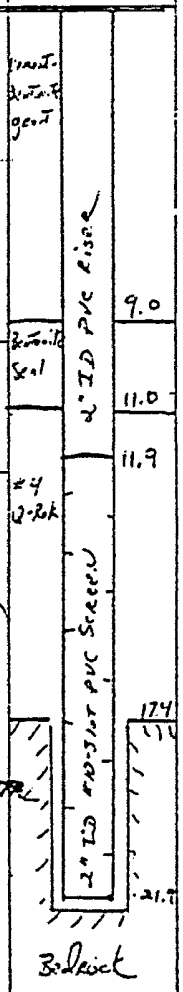
GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather COOL-MID 30's to MID 40's
Remarks

Surface Elev.
Date Start APRIL 7, 1987
Date Finish

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)
							BROWN, MOIST SILTY SAND, TRACE GRAVEL. 5.0
5'		A					RED BROWN, MOIST SILTY SAND WITH F. TO C. GRAVEL, TRACE COBBLE AT 4' AND 9'. 10.0
10'		A					SAME AS ABOVE WITH COBBLES AT 11', 12.5' AND 14'. 15.0
15'		A					TOP OF WEATHERED ROCK 17.4' (AUGER REFUSAL).
20'							RUN 3: CORED 5' (17.4'-22.4').
							– RED, FINE GRAINED SANDSTONE, MODERATELY WEATHERED WITH HORIZONTAL FRACTURES (17.4'-19.2'). NODULES OF GREEN ARGILLACEOUS ROCK.
							TOTAL DEPTH OF BORE HOLE 22.4'.

WELL CONSTRUCTION DETAILS



D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	17.4'
FOOTAGE IN ROCK	5.0'
NO. OF SAMPLES	
CORE BARREL	

ENGINEERING-SCIENCE DRILLING RECORD

DRILLING CONTRACTOR:
Driller: Empire
Inspector: George Moreau

PROJECT NAME: Xerox - Webster
PROJECT NO. 66302.01

BORING NO. RW-16 D
Sheet 1 of 3
Location: 18' east of Catch Basin and 18' South of Edge of pavement - Mitchellean Drive

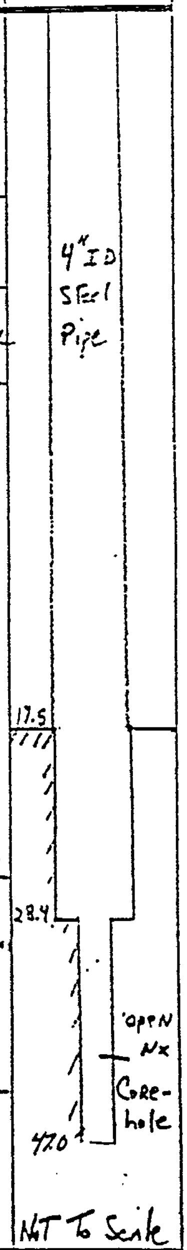
GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather
Remarks

Surface Elev.
Date Start: April 3, 1987
Date Finish: April 24 1987

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading Head Space	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)
	1-3	SS-1	6	20	30/45	1.4	Moist, dark brown fine sandy-silt, Fill or reworked original, Trace fine gravel, very dense (ML) 3.0
	3-5	SS-2	40	30	25/45	1.6	Wet, brown silty-sand, Trace gravel, very dense (SM) 4.0
5	5-7	SS-3	25	40	45/70	1.2	Moist, brown fine to coarse sand and fine gravel, little silt, very dense (GM-SM) 5.0
	7-7.9	SS-4	25	100/.4		1.5	Grades to extremely moist, brown silty-sand, fine size sand, little fine gravel and occasional cobble very dense, platy structure with brittle consistence
10	9-11	SS-5	30	35	40/40	1.0	grades to moist, with trace clay
	11-12	SS-6	45	100		1.0	Boulder at 13.0-13.7 feet
							grades to 14.0
15	14-16	SS-7	12	32	35/140	0.8	Moist brown sandy-silt, Trace clay, little fine gravel and occasional cobble or boulder, very dense (ML)
	16-16.5	SS-8	100			0.8	17.5
20							weathered red sandstone bedrock

WELL CONSTRUCTION DETAILS



D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: EMPIRE SOILS
Inspector: J.N. BAKER
ENGINEERING-SCIENCE

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME XEROX WEBSTER, NY
PROJECT NO. 66302.01

BORING NO. RW-16D
Sheet 2 of 3
Location

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather WINDY (NE-SW) RAIN - LIGHT TO HEAVY
Remarks

Surface Elev.
Date Start APRIL 3, 1987
Date Finish April 24, 1987

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
25							RUN 2: CORED 6'; AUGER TOOTH BETWEEN CORE BARREL AND CORE HOLE. PULLED CORE BARREL AND REAMED HOLE 5' AND RESUMED CORING (18.2' – 24.2'). 3.9' CORE RECOVERY FROM 1ST 5'.	
							– RED, FINE GRAINED SANDSTONE, WEATHERED BETWEEN 18.2' AND 19.2'. FRACTURED (HORIZONTAL). INTERBEDDED WITH SOFT SILTSTONE 21.35 TO 21.45. SANDSTONE CONTAINS NODULES OF GREEN ARGILLACEOUS ROCK.	
	28.4-37.1	C-3	RUN 3	8.7	FEET			
			Recovery	8.8	FEET			
30			RQD =	86.6%				
							– CORED TO 24', PROBLEM WITH AUGER TEETH STILL IN HOLE, COULD LOOSE CORE BIT, BEGAN REAMING HOLE TO 28.4'. 4½" ID Pipe grouted in at 28.4 feet	
35							RUN 3. Red Sandstone, hard, medium To fine grained with green nodules or interlayers. most breaks in core are silt-filled. Limited groundwater apparent in formation	
	37.1-41.1	C-4	RUN 4	7.0	FEET			
			Recovery	7.0	FEET			
			RQD =	50.0%				
40								

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: _____
Inspector: _____

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox - Bldg 201
PROJECT NO. 66302.01

BORING NO. RW-16D
Sheet 3 of 3
Location _____

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather _____
Remarks _____

Surface Elev. _____
Date Start 4/2/87
Date Finish 4/24/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
45							Nx core with air To 44.1 Feet Tricone with air (2 15/16" bit) To 47.0 feet. Water Table at 24.0 Feet. Drilling Terminated at 47.0 Feet 47.0	
50								

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

ENGINEERING-SCIENCE DRILLING RECORD

DRILLING CONTRACTOR:
Driller: Empire - Joe Jensen
Inspector: George H Moreau

PROJECT NAME Xerox - Bldg 201
PROJECT NO. 66302.01

BORING NO. RW-17
Sheet 1 of 2
Location Feet North of Curb. West of Building 205.

GROUND WATER OBSERVATIONS
AT 3.2 FT. ~~AFTER __ HOURS~~ Augers at 5.0 feet
AT __ FT. AFTER __ HOURS

Weather Cloudy, rain 48°
Remarks CME-75 Truck 4¼" ID HSA
2" Standard Split Spoon

Surface Elev.
Date Start 4/28/87
Date Finish 4/29/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading (~~STRATA CHANGE~~)	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
						(0.0)	moist dark brown sandy-silt Topsoil, loose	
	1-3	SS-1	2	2	3/4	.8/35	1.5 — Moist yellowish-brown silty-sand, fine size sand, compact	
	3-5	SS-2	9	11	20/30	0.0/185 (1.0)	3.5 — grades to grayish brown, wet Thinly bedded, very dense in place; liquefies when disturbed	Cement grout
5	5-7	SS-3	26	30	40/65	2.9/83		2" ID PVC Riser; 11.0
	7-8.2	SS-4	65	60	100/.2	2.6/66	grades to gray	Bentonite Pellets; 13.4
							9.0	
10	9-11	SS-5	6	10	16/30	1.8/38	Extremely moist gray clayey-silt interbedded with fine sand beds up to 1" thick, very stiff	14.1
	11-13	SS-6	10	15	26/22	1.5/34	Wet gray fine sand, trace silt, thinly bedded, liquefies when disturbed	#4 Q-Rok; 2" ID #10 slot PVC screen; 19.1
	13-15	SS-7	12	15	19/18	1.4/43		Backfill
15	15-17	SS-8	25	35	80/60	2.0/19	grades to sand-silt-clay with little gravel 15.5 — Moist reddish-brown silty-sand, fine size sand with trace fine gravel, very dense, massive soil structure	24.1
	17-18	SS-9	40	100		2.4/40		Not to Scale
							19.1	
20							Auger refusal at 19.1 feet	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: _____
Inspector: _____

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox - Bldg 201
PROJECT NO. 66302.01

BORING NO. RW-17
Sheet 2 of 2
Location _____

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather _____
Remarks _____

Surface Elev. _____
Date Start 4/28/87
Date Finish 4/29/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	STRATA CHANGE	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
	19-24.1	C-1	Run 1:	5.0	Ext		Red sandstone, hard, massive to 20.4 feet. Weathered, moderately fractured between 20.4 and 22.0 feet. Massive below 22.0 feet. Contains green nodules or interlayers with occasional soft argillaceous nodules. Contains soft, weathered siltstone interbeds less than 1" thick.	
			Recovery	4.9	Ext			
			RQD	74.4%				
25								
30								
35								
40								

24.1
Coring terminated at 24.1 feet

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
Driller: Empire - Joe Jensen
Inspector: George Moreau

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME XEROX
PROJECT NO. 66302.01

BORING NO. RW-18
Sheet 1 of 1
Location 36' east of edge of pavement - Phillips Rd. 20' South of Bldg 305

GROUND WATER OBSERVATIONS

AT 3.8 FT. Augers @ 23.4 feet

AT 4.2 FT. AFTER 17 HOURS

Weather
Remarks
* Headspace Readings Bg = Background

Surface Elev.
Date Start 4/1/87
Date Finish 4/3/87

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Readings*
	1-3	SS-1	1	1	1/2	Bg=1.1 1.6
	3-5	SS-2	4	11	22/50	1.6
5	5-7	SS-3	33	40	45/55	3.3
	7-9	SS-4	30	35	60/65	1.9 Bg=0.4
10	9-11	SS-5	30	40	50/80	0.8
	11-11.4	SS-6	100/.4'			0.9
	13-15	SS-7	10	15	15/18	1.0
15	15-17	SS-8	15	20	25/22	0.5
	17-19	SS-9	25	40	35/40	0.4 Bg=0
20	19-21	SS-10	3	3	5/6	0.6
	21-23	SS-11	10	11	23/40	0.2
	23-23.5	SS-12	50			0.9
25	23.5-28.5	C-1	=5.0 ft			
		Recovery	4.6 ft			
		RQD=	65.4%			
30						

REMARKS — FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)

Extremely moist, dark brown sandy-silt, little gravel, very loose, Fill (SM-ML) 3.0

Extremely moist, brown, very fine sandy-silt with interbeds of fine sand, dense, mottled between 3.0 and 3.5 feet. (SM-ML) grades to 6.5

Moist, brown very fine sand and silt, thinly bedded (1/4"), brittle consistence, very dense (SM-ML)
Grades to gray at 8.0 feet
Becoming interbedded with thin lenses of clayey-silt (1/4" to 1") at 13 feet, dense 16.0

Extremely moist, reddish-brown silty-sand, little fine gravel and occasional cobble, dense, becoming very dense below 17.0 feet (Till)-(SM)
Wet, liquefies when disturbed below 19.0 feet. 22.5

Moist, reddish brown very fine sandy-silt trace clay with little gravel or cobbles, dense (ML-SM) 23.5

Red sandstone, moderately hard, weathered to 24.0 feet. Interbedded with moderately soft siltstone. Coring terminated at 28.5 feet

WELL CONSTRUCTION DETAILS

Cement bentonite grout; 2" I.D. PVC riser; 15.3; Bentonite Pellets; 17.3; #4 Q Rok; 18.3; 2" I.D. #10-slot PVC screen; 23.5; Bedrock; 28.3; 28.5

Not to Scale

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	BEDROCK GROUNDWATER MONITORING WELL REPORT

PROJECT:	XEROX BUILDING 218 INVESTIGATION	FILE NO.:	70307-40
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	RW-19
CLIENT:	XEROX CORPORATION	LOCATION:	N1040.4 E0108.8
CONTRACTOR:	NOTHNAGLE DRILLING	SHEET:	1 OF 2
DRILLER:	S. Loranty RIG TYPE: Reedrill SK-37	INSPECTOR:	D. Nostrant
INSTALLATION DATE:	9-10 January 1992		

Survey Datum NGVD

Ground Elevation: 391.50

SUMMARIZE SOIL CONDITIONS

0.0 ft.

-CEMENT/ BENTONITE GROUT-

-LACUSTRINE-

10.0 ft.

-BENTONITE PELLET SEAL-

12.1 ft.

16.1 ft.

-WEATHERED BEDROCK-

18.0 ft.

-GRADED QUARTZ SAND-

25.1 ft.

-BEDROCK-

26.5 ft.-BENTONITE-

Stickup above ground surface of protective casing.	2.65 ft.
Stickup above ground surface of riser pipe.	2.60 ft.
Thickness of Surface Seal	10.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Cement/Bentonite Grout
Type of Protective Casing	Zinc-Coated Steel
Inside Diameter of Protective Casing	6 in.
Depth of Bottom of Protective Casing	2.35
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Cement/Bentonite Grout
Diameter of Borehole	8 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	14.1 ft.
Type of Wellscreen	304 Stainless
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2 in.
Type of Backfill Around Wellscreen	Graded Quartz Sand
Depth of Bottom of Wellscreen	24.1 ft.
Depth of Bottom of Borehole	26.5 ft.

Remarks: 20 gal. water lost during installation, contractor removed 30 gal. during development. Water slightly turbid.

Well No. RW-19

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. RW-19

PROJECT: XEROX BUILDING 218 INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70307-40
SHEET NO. 1 OF 1
LOCATION: N1040.4
E0108.8
ELEVATION: 391.50
DATUM: NGVD
START: 9 January 1992
FINISH: 10 January 1992
DRILLER: S. Loranty
H&A REP: D. Nostrant

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	---	---
INSIDE DIAMETER (IN)	---	---	---
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Reedrill SK-37
BIT TYPE: 7-7/8, 5-7/8 in. Roller Bit
DRILL MUD: ---
OTHER: Advanced 7-7/8 in. roller bit to 19.0 ft. Advanced 5-7/8 in. roller bit to 26.5 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
10						Notes: 1. See RW-191 boring report for soil classification and core boring information. 2. Groundwater Monitoring Well installed in completed borehole. See Bedrock Monitoring Monitoring Well Report.
20						
30						Bottom of Boring at 26.5 ft.
40						
50						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
See Groundwater Level Monitoring Report					

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

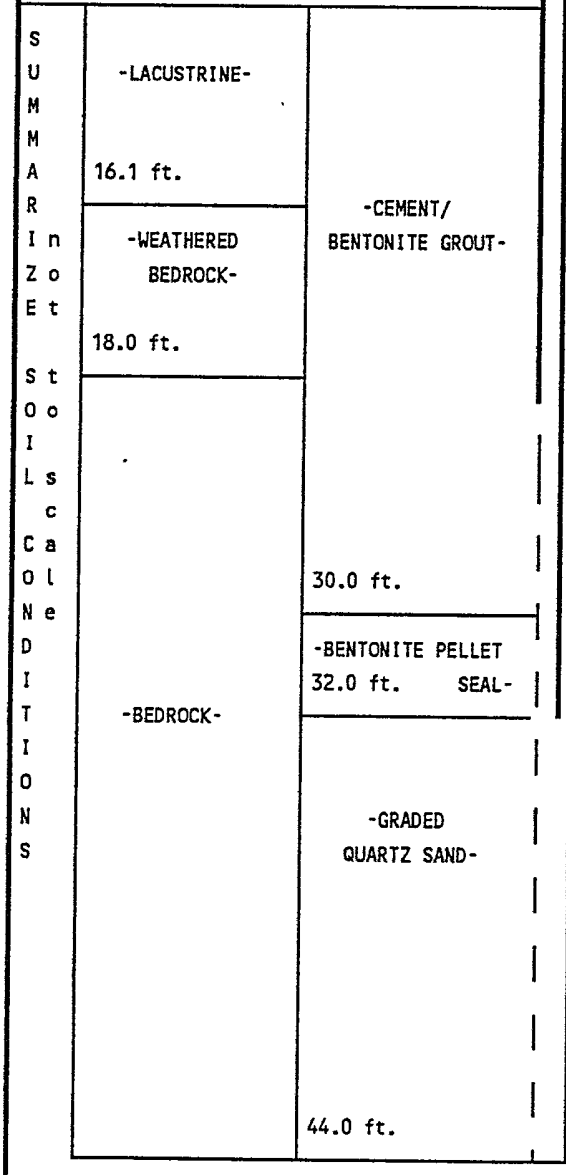
OVERBURDEN (LIN FT):	26.5
ROCK CORED (LIN FT):	---
SAMPLES:	---
BORING NO.	RW-19

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	BEDROCK GROUNDWATER MONITORING WELL REPORT

PROJECT:	XEROX BUILDING 218 INVESTIGATION	FILE NO.:	70307-40
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	RW-191
CLIENT:	XEROX CORPORATION	LOCATION:	N1030.1 E0108.7
CONTRACTOR:	NOTHNAGLE DRILLING	SHEET:	1 OF 2
DRILLER:	S. Loranty RIG TYPE: CME 75	INSPECTOR:	D. Nostrant
INSTALLATION DATE:	6-8 January 1992 Reedrill SK-37		

Survey Datum NGVD

Ground Elevation: 391.65



Depth/Stickup above/below ground surface of protective casing.	2.5 ft.
Depth/Stickup above/below ground surface of riser pipe.	2.6 ft.
Depth to Top of Casing	0.0 ft.
Thickness of Surface Seal	30.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Cement/Bentonite Grout
Type of Protective Casing	Zinc-Coated Steel
Inside Diameter of Protective Casing	6 in.
Depth of Bottom of Protective Casing	1.5 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Cement/Bentonite Grout
Diameter of Borehole	10 in.
Diameter of Casing	6 in. steel
Type of coupling (threaded, welded, etc.)	Threaded
Depth to Bottom of Casing	34.0 ft.
Depth of Bottom of Riser	34.0 ft.
Type of Wellscreen	304 Stainless
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Graded Quartz Sand
Depth of Bottom of Wellscreen	44.0
Depth of Bottom of Borehole	44.0

Remarks: 30 gal. water lost during installation, 15 gal. removed by contractor during development - well dry.

Well No. RW-191

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. RW-191

PROJECT: XEROX BUILDING 218 INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70307-40
SHEET NO. 1 OF 2
LOCATION: N1030.1
E0108.7
ELEVATION: 391.65
DATUM: NGVD
START: 6 January 1992
FINISH: 8 January 1992
DRILLER: S. Loranty
H&A REP: D. Nostrant

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	NX
INSIDE DIAMETER (IN)	4-1/4	1-3/8	2-1/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Reedrill SK-37
BIT TYPE: 5-7/8 in. Roller Bit
DRILL MUD:
OTHER: Advanced auger to refusal at 18.0 ft. Advanced roller bit to 19.0 ft.

DEPTH (FT)	OVA READINGS (ppm)	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
	ND	1 6 3 3	S1 20"/24"	0.0 2.0	1.3	Loose, brown SILT, trace sand, grass, rootlets, moist. -TOPSOIL-
	ND	2 2 5 15	S2 14"/24"	2.0 4.0		Medium stiff brown CLAY, trace sand, trace silt. Same. -LACUSTRINE-
5	ND	2 12 49 18	S3 20"/24"	4.0 6.0		Hard brown silty CLAY, some medium to coarse sand.
	ND	6 12 14 19	S4 21"/24"	6.0 8.0	6.5	Medium dense brown SILT and moderately to severely weathered shale, little clay, trace fine sand.
	ND	5 10 15 19	S5 22"/24"	8.0 10.0		Same. -LACUSTRINE-
10	ND	10 100/0.5	S6 18"/12"	10.0 11.0		Very dense brown SILT and severely weathered shale.
	ND	34 100/0.4	S7 11"/11"	12.0 12.9		Same.
15	ND	27 63 46 43	S8 15"/24"	14.0 16.0		Same. -LACUSTRINE-
	0.5	100/0.4	S9 5"/5"	16.0 16.4	16.1	Moderate to severely weathered shaley SANDSTONE.
	2.0	100/0.1	S10 1"/1"	17.0 17.1	18.0	Same. -WEATHERED BEDROCK-
	5.0	100/0.5	S11 6"/6"	18.0 18.5		Top of Competent Rock at 18.0 ft.
20						Notes: 1. *Soil sample headspace screened under laboratory conditions using a Foxboro OVA (ND = Non Detect). Sample jars were heated in 40 Degree C water bath prior to screening. 2. See Core Boring Report, Page 2.
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
See Groundwater Level Monitoring Report					

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
R Rock Core

SUMMARY

OVERBURDEN (LIN FT): 19.0
ROCK CORED (LIN FT):
SAMPLES: 11S, 3R
BORING NO. RW-191

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. RW-191 FILE NO. 70307-40 SHEET NO. 2 OF 2

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. — DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
							Began Coring at 19.0 ft.
20	5	19.0					Red-brown fine to medium grained, thin to thick bedded SANDSTONE. Occasional greyish green mottling and bands.
	5						-GRIMSBY SANDSTONE-
	5						
	5						Shaley partings from 19.0 to 19.5 ft.
	5	R1	109/60	91/50			
25	5						
	5						Distinct swirly bedding from 25.6 to 27.4 ft.
	5						
	5						
	5	29.0					Minor unconformity at 28.2 ft. and 28.8 ft. Moderately weathered vertical cracks from 28.3 to 30.5 ft.
30	5	29.0					-GRIMSBY SANDSTONE-
	5						
	5	R2	55/46	92/77	SL		
	5						
	5	34.0					
35	5	34.0					Minor unconformity at 34.7, 36.0 and 36.4 ft.
	5						
	5						-GRIMSBY SANDSTONE-
	5						
	5	R3	113/108	94/90			
	5						
40	5						
	5						
	5						
	5						
	5	44.0					
45							Bottom of Boring at 44.0 ft.
							Notes:
							1. Cored from 19.0 ft. to 34.0 ft. Reamed borehole to 8 in. diameter and grouted 6-in. casing in place. Cored from 34.0 ft. to 44.0 ft., reamed borehole to 6 in. diameter. Borehole was flushed with water water until clear.
							2. Groundwater monitoring well installed in completed borehole. See Bedrock Groundwater Monitoring Well Report.
50							

H&A OF NEW YORK
CONSULTING-GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

BEDROCK GROUNDWATER MONITORING WELL REPORT

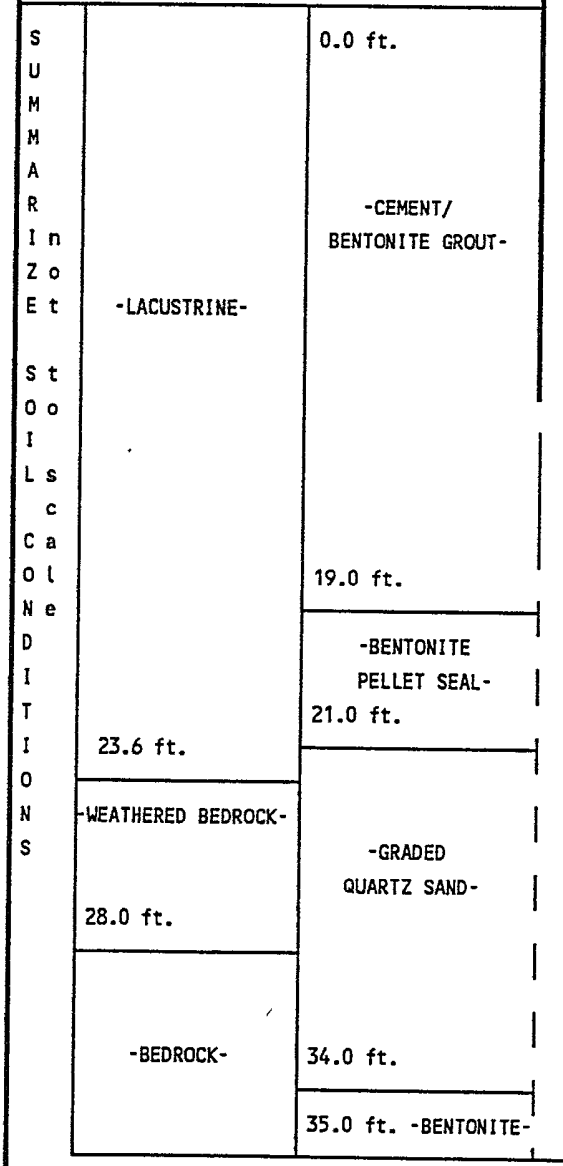
PROJECT:	XEROX BUILDING 218 INVESTIGATION
LOCATION:	WEBSTER, NEW YORK
CLIENT:	XEROX CORPORATION
CONTRACTOR:	NOTHNAGLE DRILLING
DRILLER:	S. Loranty RIG TYPE: CME 75
INSTALLATION DATE:	15-16 January 1992

FILE NO.:	70307-40
WELL NO.:	RW-20
LOCATION:	N1632.1
	E0088.9
SHEET:	1 OF 2
INSPECTOR:	D. Nostrant

Survey Datum NGVD

Ground Elevation: 389.68

SUMMARIZED SOIL CONDITIONS (Not to Scale)



Stickup above ground surface of protective casing.	2.50 ft.
Stickup above ground surface of riser pipe.	1.82 ft.
Thickness of Surface Seal	19.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Cement/Bentonite Grout
Type of Protective Casing	Zinc-Coated Steel
Inside Diameter of Protective Casing	6 in.
Depth of Bottom of Protective Casing	1.50 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Grout
Diameter of Borehole	8 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	23.0 ft.
Type of Wellscreen	304 Stainless
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2 in.
Type of Backfill Around Wellscreen	Graded Quartz Sand
Depth of Bottom of Wellscreen	33.0 ft.
Depth of Bottom of Borehole	35.0 ft.

Remarks: 30-gal. water lost during installation, 45 gal. removed by contractor during development.

Well No. RW-20

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. RW-20

PROJECT: XEROX BUILDING 218 INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70307-40
SHEET NO. 1 OF 1
LOCATION: N1632.1
E0088.9
ELEVATION: 389.68
DATUM: NGVD
START: 15 January 1992
FINISH: 16 January 1992
DRILLER: S. Loranty
H&A REP: D. Nostrant

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	---	---
INSIDE DIAMETER (IN)	4-1/4	---	---
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck Mounted
BIT TYPE: 5-7/8 in. Roller Bit
DRILL MUD:
OTHER: Advanced augers to 28.0 ft.
Roller bit from 28.0 to 35.0 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
10						Notes: 1. See RW-20I boring report for soil classification and core boring information. 2. Groundwater monitoring well installed in completed borehole. See Bedrock Groundwater Monitoring Well Report.
20						
30						
40						
50						Bottom of Boring at 35.0 ft.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
See Groundwater Level Monitoring Report					

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	35.0
ROCK CORED (LIN FT):	---
SAMPLES:	---
BORING NO.	RW-20

H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

BEDROCK GROUNDWATER MONITORING WELL REPORT

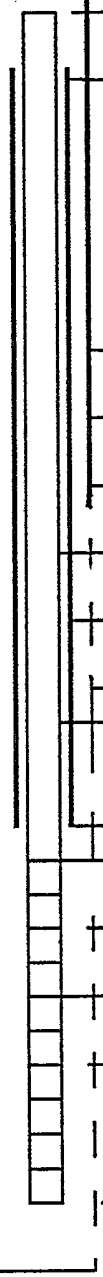
PROJECT:	XEROX BUILDING 218 INVESTIGATION	FILE NO.:	70307-40
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	RW-20I
CLIENT:	XEROX CORPORATION	LOCATION:	N1624.8 E0088.4
CONTRACTOR:	NOTHNAGLE DRILLING	SHEET:	1 OF 2
DRILLER:	S. Loranty RIG TYPE: CME 75	INSPECTOR:	D. Nostrant
INSTALLATION DATE:	10-13 January 1992 Reedrill SK-37		

Survey Datum NGVD

Ground Elevation: 389.54

SUMMARIZE Soil Conditions

-LACUSTRINE-	0.0 ft.	-CEMENT/ BENTONITE GROUT-
	23.6 ft.	
-WEATHERED BEDROCK-	28.0 ft.	
	39.0 ft.	-BENTONITE PELLET SEAL-
	41.0 ft.	
-BEDROCK-		-GRADED QUARTZ SAND-
	53.0 ft.	



Stickup above ground surface of protective casing.	2.4 ft.
Stickup above ground surface of riser pipe.	1.96 ft.
Depth to Top of Casing	0.0 ft.
Thickness of Surface Seal	39.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Cement/Bentonite Grout
Type of Protective Casing	Zinc-Coated Steel
Inside Diameter of Protective Casing	6 in.
Depth of Bottom of Protective Casing	1.6 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Grout
Diameter of Borehole	10 in.
Diameter of Casing	6 in. Steel
Type of coupling (threaded, welded, etc.)	Threaded
Depth to Bottom of Casing	43.0 ft.
Depth of Bottom of Riser	43.0 ft.
Type of Wellscreen	304 Stainless
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2 in.
Type of Backfill Around Wellscreen	Graded Quartz Sand
Depth of Bottom of Wellscreen	53.0 ft.
Depth of Bottom of Borehole	53.0 ft.

Remarks: 10 gal. of water lost during installation, 15 gal. removed by contractor during development.

Well No. RW-20I

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. RW-201

PROJECT: XEROX BUILDING 218 INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70307-40
SHEET NO. 1 OF 3
LOCATION: N1624.8 E0088.4
ELEVATION: 389.54
DATUM: NGVD
START: 10 January 1992
FINISH: 13 January 1992
DRILLER: S. Loranty
H&A REP: D. Nostrant

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	NX
INSIDE DIAMETER (IN)	4-1/4	1-3/8	2-1/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Reedrill SK-37
BIT TYPE: 5-7/8 in. Roller Bit
DRILL MUD:
OTHER: Advanced augers to 28.0 ft. See notes on core boring report for coring procedures.

DEPTH (FT)	OVA READINGS (ppm)	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
	ND	2 4 5 8	S1 23"/24"	0.0 2.0	1.1	Loose brown SILT, some grass and rootlets, trace medium to fine sand. -TOPSOIL-
	ND	8 9 12 14	S2 24"/24"	2.0 4.0		Medium dense light brown fine SAND, trace silt. Same. -LACUSTRINE-
5	ND	4 7 8 11	S3 24"/24"	4.0 6.0		Same.
	4.0	6 9 29 24	S4 24"/24"	6.0 8.0		Dense, light brown fine sandy SILT, damp. -LACUSTRINE-
	6.0	16 24 33 34	S5 24"/24"	8.0 10.0		Very dense light gray fine sandy SILT, damp.
10	6.0	14 32 33 42	S6 24"/24"	10.0 12.0		Same, except wet.
	6.0	17 29 34 35	S7 24"/24"	12.0 14.0		Same. -LACUSTRINE-
15	8.0	13 19 31 34	S8 23"/24"	14.0 16.0		Same.
	5.0	10 20 17 28	S9 20"/24"	16.0 18.0	17.1	Same, except dense.
	6.0	11 12 14 15	S10 21"/24"	18.0 20.0		Dense, red-brown fine sandy SILT, trace to little coarse to medium sand, trace coarse to fine gravel, wet. Same, except medium dense. -LACUSTRINE-
20	5.0	4 6 12 15	S11 17"/24"	20.0 22.0		Same.
	0.5	8 18 28 34	S12 14"/24"	22.0 24.0	23.6	Dense, red-brown sandy SILT, some coarse to fine gravel, trace to moderately weathered sandstone. -LACUSTRINE-
25	4.0	100/0.4	S13 3"/5"	24.0 24.4		Very dense moderately weathered SANDSTONE, some red-brown gravel, little coarse to fine sand, wet.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
See Groundwater Level Monitoring Report					

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
R Rock Core

SUMMARY

OVERBURDEN (LIN FT):	28.0
ROCK CORED (LIN FT):	25.0
SAMPLES:	15S, 4R
BORING NO.	RW-201

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. RW-201 FILE NO. 70307-40 SHEET NO. 2 OF 3

DEPTH (FT)	OVA READINGS (ppm)	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						Very dense moderately weathered SANDSTONE, some red-brown silt and fine gravel, little coarse to fine sand, wet.
	4.0	100/0.3	S14 3"/3"	26.0 26.3		Same, except moist.
	5.0	100/0.4				Same. -WEATHERED BEDROCK-
			S15 2"/4"	27.0 27.4		Top of Competent Rock at 28.0 ft.
30						
35						
40						
45						
50						
55						
60						

Notes:

1. *Soil sample headspace screened under laboratory conditions using a Foxboro OVA (ND = Non Detect). Sample jars were heated in 40 Degree C water bath prior to screening.
2. See Core Boring Report, Page 3.

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. RW-201 FILE NO. 70307-40 SHEET NO. 3 OF 3

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. — DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
							Began Coring at 28.0 ft.
	4	28.0					Red-brown, fine grained, thin to thick bedded SANDSTONE, some gray-green mottling bands with frequent swirly bedding.
	4	R1	30/26	100/87			
30	4	30.5					-GRIMSBY SANDSTONE-
	4	30.5					
	4						
	4						
	4						
	4	R2	95/82	93/80			
35	4						
	4						
	4						
	4						
	4	39.0					Minor unconformity at 39.6 ft.
	4	39.0					
40	4						
	4	R3	48/48	100/100	SL		-GRIMSBY SANDSTONE-
	4	43.0					
	4	43.0					Numerous shaley and clayey partings between 44.7 ft. and 51.0 ft.
	4						
45	4						Irregular, undulating to horizontal partings from 45.0 to 46.0 ft.
	4						
	5	R4	113/57	94/48			
	5						
	5						
50	5						Slightly to moderately weathered vertical crack from 50.2 to 50.8 ft.
	5						Irregular, moderately weathered low angle joint at 51.1 ft.
	5						Minor unconformity at 51.9 ft.
	5	53.0					-GRIMSBY SANDSTONE-
							Bottom of Boring at 53.0 ft.
55							Notes:
							1. Cored from 28.0 ft. to 43.0 ft. Reamed borehole to 8 in. diameter and grouted 6 in. casing in place. Cored from 43.0 to 53.0, reamed borehole to 6 in. diameter. Borehole was flushed with water until clear.
							2. Groundwater monitoring well installed in completed borehole. See Bedrock Groundwater Monitoring Well Report.
60							

H&A OF NEW YORK
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GEOLOGISTS AND HYDROGEOLOGISTS

BEDROCK GROUNDWATER MONITORING WELL REPORT

PROJECT:	XEROX BUILDING 218 INVESTIGATION
LOCATION:	WEBSTER, NEW YORK
CLIENT:	XEROX CORPORATION
CONTRACTOR:	NOTHNAGLE DRILLING
DRILLER:	N. SHORT RIG TYPE: CME 75, Truck-Mounted
INSTALLATION DATE:	16 March 1992

FILE NO.:	70307-40
WELL NO.:	RW-21
LOCATION:	W 1308.0
	E -126.6
SHEET:	1 OF 2
INSPECTOR:	R. Frank

Survey Datum NGVD

Ground Elevation: 388.02

SUMMARIZE SOIL CONDITIONS

-TOPSOIL-	0.0 ft.
	-CONCRETE- 1.0 ft.
1.5 ft.	
-LACUSTRINE-	-CEMENT/ BENTONITE GROUT-
	7.5 ft.
	-BENTONITE PELLET SEAL-
	9.5 ft.
15.7 ft.	-GRADED QUARTZ SAND-
-BEDROCK-	22.5 ft.
	23.5 ft. -BENTONITE PELLETS-

Stickup above ground surface of protective casing.	2.4 ft.
Stickup above ground surface of riser pipe.	2.5 ft.
Thickness of Surface Seal	1.5 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete Pad
Type of Protective Casing	Zinc-Coated Steel
Inside Diameter of Protective Casing	6 in.
Depth of Bottom of Protective Casing	2.6 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Cement/Bentonite Grout
Diameter of Borhole	8 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	11.5 ft.
Type of Wellscreen	304 Stainless Steel
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2 in.
Type of Backfill Around Wellscreen	Graded Quartz Sand
Depth of Bottom of Wellscreen	21.5 ft.
Depth of Bottom of Borehole	23.5 ft.

Remarks: No water lost during drilling. Contractor removed 40 gal. during development.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. RW-21

PROJECT: XEROX BUILDING 218 INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70307-40
SHEET NO. 1 OF 2
LOCATION: N 1308.0
E -126.6
ELEVATION: 388.02
DATUM: NGVD
START: 9 March 1992
FINISH: 16 March 1992
DRILLER: N. Short
H&A REP: R. Frank

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	NX
INSIDE DIAMETER (IN)	4-1/4	1-3/8	2-1/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 5-7/8 in. Tri-cone roller
DRILL MUD: --- bit
OTHER: Advanced augers to refusal at 15.7 ft. Cored from 15.7 to 18.2 ft. and from 18.5 to 24.5 ft.

DEPTH (FT)	OVA READING (PPM)	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
	3.0	1 3 4 5	S1 18"/24"	0.0 2.0	1.5	Loose brown sandy SILT, trace roots and gravel, damp. -TOPSOIL-
	0.4	1 4 6 6	S2 14"/24"	2.0 4.0	3.5	Medium dense brown fine sandy SILT, trace clay, damp. -LACUSTRINE-
5	7.5	2 4 15 30	S3 18"/24"	4.0 6.0	5.5	Medium dense brown fine to medium SAND, trace silt, damp. -LACUSTRINE- Same, except medium SAND, trace gravel.
	9.0	13 30 29 29	S4 18"/24"	6.0 8.0		Medium dense brown fine sandy SILT, moist to wet. Very dense brown to gray fine sandy SILT, moist. -LACUSTRINE- Same.
	6.0	15 35 45 55	S5 18"/24"	8.0 10.0	8.5	Very dense red-brown fine sandy SILT, little gravel, moist to wet. -LACUSTRINE-
10	15.0	12 26 31 30	S6 22"/24"	10.0 12.0		Same, except gray at base.
	15.0	35 35 33 34	S7 20"/24"	12.0 14.0		Very dense red-brown fine sandy SILT, little gravel, trace weathered sandstone, moist. -LACUSTRINE-
15	55.0	35 100/0.4	S8 6"/11"	14.0 14.9	15.7	Same, except green weathered bedrock (sandstone) at base. -LACUSTRINE-
						Auger Refusal at 15.7 ft.
20						
25						

Notes:

1. Soil samples headspace screened under laboratory conditions using a Foxboro OVA. (ND = Non Detect) Sample jars were heated in 40 Degree C water bath prior to screening.
2. See Core Boring Report, Page 2.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
See Groundwater Level Monitoring Report					

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
R Core Run

SUMMARY

OVERBURDEN (LIN FT):	15.7
ROCK CORED (LIN FT):	8.5
SAMPLES:	8S, 2R
BORING NO.	RW-21

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. RW-21 FILE NO. 70307-40 SHEET NO. 2 OF 2

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. / DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
15	3					15.7	Began Coring at 15.7 ft.
	5	15.7 R1 18.2	6 0	20 0	SL		Moderately hard green and red-brown fine to medium-grained, thin to thick-bedded SANDSTONE, mottled. -GRIMSBY SANDSTONE- Note: Core barrel blocked at 18.2 ft. Rough vertical joint from 18.5 to 19.2 ft. Swirly bedding from 19.8 to 20.0 ft.
	6						
	2	18.5			SL-MOD		
20	3						
	4						
	3	R2	56 29	78 40	MOD-COMP		Tight vertical crack at 22.1 ft.
	3				SL		Completely weathered clayey seam at 20.6 and from 21.2 - 21.4 ft.
	3						
	2	24.5					Thin-bedded shaley siltstone layers from 21.5 to 24.5 ft.
25							Bottom of Exploration at 24.5 ft.
							Notes: 1. Advanced 5-7/8 in. roller bit from 18.2 to 18.5 ft. 2. Reamed borehole to 6 in. diameter and installed bedrock interface monitoring well in completed borehole. 3. See Bedrock Well Installation Report.
30							
35							
40							
45							

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BEDROCK GROUNDWATER MONITORING WELL REPORT

PROJECT:	XEROX BUILDING 218 INVESTIGATION	FILE NO.:	70307-40
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	RW-22
CLIENT:	XEROX CORPORATION	LOCATION:	N 1032.4
CONTRACTOR:	NOTHNAGLE DRILLING		E -088.4
DRILLER:	N. Short RIG TYPE: CME 75, Truck-Mounted	SHEET:	1 OF 1
INSTALLATION DATE:	17 March 1992	INSPECTOR:	R. Frank

Survey Datum NGVD

Ground Elevation: 392.16

SUMMARIZE SOIL CONDITIONS

-TOPSOIL- 1.5 ft.

-LACUSTRINE- 13.1 ft.

-BEDROCK- 19.5 ft.

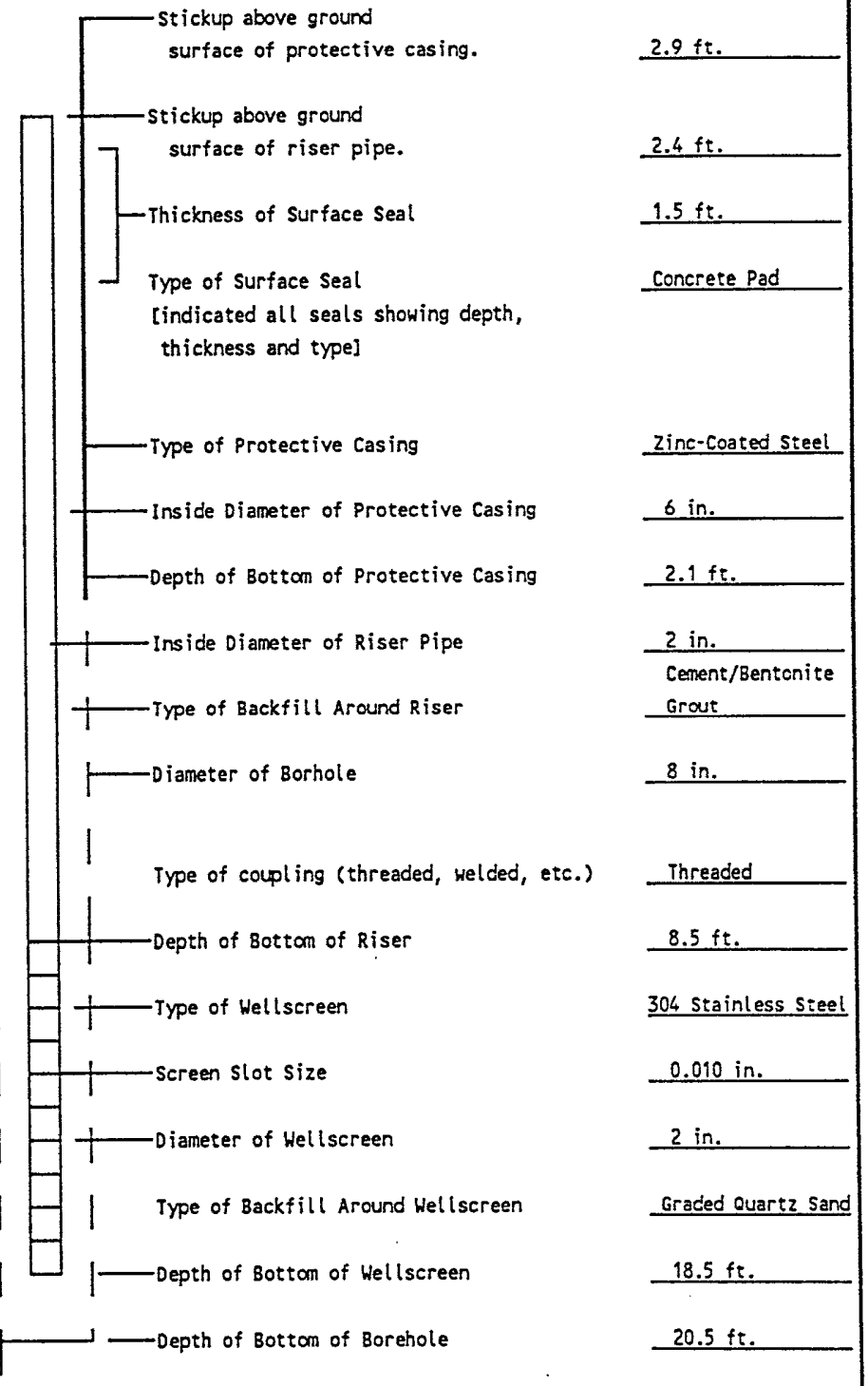
0.0 ft. -CONCRETE PAD- 1.0 ft.

-CEMENT/ BENTONITE GROUT- 4.0 ft.

-BENTONITE PELLET SEAL- 6.0 ft.

-GRADED QUARTZ SAND-

20.5 ft. -BENTONITE PELLETS-



Stickup above ground surface of protective casing.	2.9 ft.
Stickup above ground surface of riser pipe.	2.4 ft.
Thickness of Surface Seal	1.5 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete Pad
Type of Protective Casing	Zinc-Coated Steel
Inside Diameter of Protective Casing	6 in.
Depth of Bottom of Protective Casing	2.1 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Cement/Bentonite Grout
Diameter of Borhole	8 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	8.5 ft.
Type of Wellscreen	304 Stainless Steel
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2 in.
Type of Backfill Around Wellscreen	Graded Quartz Sand
Depth of Bottom of Wellscreen	18.5 ft.
Depth of Bottom of Borehole	20.5 ft.

Remarks: 20 gal. water lost during drilling. Contractor removed 23 gal. during development.

Well No. RW-22

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. RW-22

PROJECT: XEROX BUILDING 218 INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70307-40
SHEET NO. 1 OF 2
LOCATION: N 1032.4
E -088.4
ELEVATION: 392.19
DATUM: NGVD
START: 17 March 1992
FINISH: 17 March 1992
DRILLER: N. Short
H&A REP: R. Frank

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	SS	NX
INSIDE DIAMETER (IN)	4-1/4	1-3/8	2-1/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 5-7/8 in. Tri-cone roller
DRILL MUD: --- bit
OTHER: Advanced augers to refusal at 13.1 ft. Advanced roller bit to 13.5 ft. Cored from 13.5 ft. to 20.5 ft.

DEPTH (FT)	OVA READING (PPM)	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
	ND	1 3 4 5	S1 18"/24"	0.0 2.0	1.5	Loose brown sandy SILT, trace gravel, trace roots and grass, damp. -TOPSOIL-
	ND	12 8 10 14	S2 20"/24"	2.0 4.0		Medium dense light brown silty fine SAND, little gravel, damp. Reddish-brown at 3.5 ft. -LACUSTRINE-
5	1.0	4 20 22 15	S3 6"/24"	4.0 6.0		Dense reddish-brown silty fine SAND, little gravel, damp.
	1.2	13 16 19 19	S4 22"/24"	6.0 8.0	6.0	Dense brown fine sandy SILT, little gravel, damp. -LACUSTRINE-
	ND	8 14 13 12	S5 18"/24"	8.0 10.0		Medium dense brown fine sandy SILT, little gravel, damp. Thin sand lens at base. -LACUSTRINE-
10	8.0	9 18 34 21	S6 18"/24"	10.0 12.0		Same, except dense. Reddish-brown sandy SILT at 11.5 ft.
	1.0	17 100/0.2	S7 8"/8"	12.0 12.7	13.1	Very dense brown SILT, some gravel, trace sand and silt, trace clay, damp. -LACUSTRINE-
						Auger Refusal at 13.1 ft.
15						
20						
25						

Notes:

1. Soil samples headspace screened under laboratory conditions using a Foxboro OVA (ND = Non Detect). Sample jars were heated in 40 Degree C water bath prior to screening.
2. See Core Boring Report, Page 2.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
See Groundwater Level Monitoring Report					

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon
R Core Run

SUMMARY

OVERBURDEN (LIN FT):	13.1
ROCK CORED (LIN FT):	7.0
SAMPLES:	7S, 1R
BORING NO.	RW-22

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. RW-22 FILE NO. 70307-40 SHEET NO. 2 OF 2

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
							Began Coring at 13.5 ft.
	2	13.5				13.5	
	4				SL-MOD		Moderately hard reddish-brown, fine to medium-grained thin to medium-bedded SANDSTONE, some green-gray mottling and close to moderately spaced argillaceous partings. -GRIMSBY SANDSTONE-
15	5						
	5				HIGH		Swirly bedding from 13.5 - 15.0 and 19.0 - 20.1 ft.
	6	R1	80/51	85/54	SL-MOD		Tight, rough, vertical joint from 17.4 to 17.5 and 17.7 to 18.0 ft.
	5				HIGH		Thin-bedded shaley layers from 16.7 to 17.4 and 18.0 to 18.4 ft.
	6						Rough, closely spaced, high-angle joints at 15.5 and 15.7 ft. Smooth spaced argillaceous partings at 15.2, 16.9, 17.3 and 18.4 ft.
20	3	20.5			SL		
							Bottom of Exploration at 20.5 ft.
25							Notes: 1. Reamed borehole to 6 in. diameter and installed bedrock interface monitoring well in completed borehole. 2. See Bedrock Well Installation Report.
30							
35							
40							
45							

H&A OF NEW YORK
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GEOLOGISTS AND HYDROGEOLOGISTS

SHALLOW BEDROCK GROUNDWATER MONITORING WELL REPORT

PROJECT: BUILDING 201/206/218 MIGRATION CONTROL TRENCH INSTALLATION
LOCATION: WEBSTER, NEW YORK
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING
DRILLER: S. Loranty RIG TYPE: CME-75 Truck Mounted
INSTALLATION DATE: 7 July 1993

FILE NO.: 70198-49
WELL NO.: RW-23
LOCATION: 1140.26 N
445.97 E
SHEET: 1 OF 1
INSPECTOR: D. Nostrant

Survey Datum NGVD

Ground Elevation: 394.67

SUMMARIZE SOIL CONDITIONS

-FILL- 4.7 ft.
-CONCRETE- 0.5 ft.
-CEMENT/BENTONITE GROUT-
-LACUSTRINE- 11.2 ft.
10.0 ft.
-BENTONITE PELLETS- 14.5 ft.
-GLACIAL TILL- 17.7 ft.
-QUARTZ SAND-
-WEATHERED BEDROCK- 21.5 ft.
-GRIMBSY SANDSTONE- 27.5 ft.
-BENTONITE- 28.5 ft.

Stickup above ground surface of protective casing.	2.5 ft.
Stickup above ground surface of riser pipe.	2.45 ft.
Thickness of Surface Seal	0.5 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete
Type of Protective Casing	Steel
Inside Diameter of Protective Casing	6 in. x 6 in.
Depth of Bottom of Protective Casing	2.5 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Cement/Bentonite Grout
Diameter of Borehole	8.0 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	16.5 ft.
Type of Wellscreen	304 Stainless Steel
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Morie OON Quartz Sand
Depth of Bottom of Wellscreen	26.5 ft.
Depth of Bottom of Borehole	28.5 ft.

Remarks:

Well No. RW-23

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. RW-23

PROJECT: BUILDING 201/206/218 MIGRATION CONTROL TRENCH INSTALLATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70198-49
SHEET NO. 1 OF 2
LOCATION: 1140.26 N, 445.97 E
ELEVATION: 394.67
DATUM: NGVD
START: 7 July 1993
FINISH: 8 July 1993
DRILLER: S. Loranty
H&A REP: D. Nostrant

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Steel	SS	NX
INSIDE DIAMETER (IN)	6.0 in.	1-3/8	1-7/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck Mount
BIT TYPE: 5-7/8 in. tricone
DRILL MUD: Water
OTHER: Advanced augers to 20.0 ft.
Advanced core boring to 28.5 ft.

DEPTH (FT)	OVA READING (PPM)	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
	ND	2 6 13 10	S1 18"/24"	0.0 2.0	1.8	Medium dense light brown SILT, some coarse to fine sand, little coarse to fine gravel, with grass and rootlets. -FILL-
	ND	4 4 5 5	S2 21"/24"	2.0 4.0		Loose dark brown SILT, little coarse to fine sand, trace clay, trace rootlets. -FILL-
5	ND	4 5 6 7	S3 23"/24"	4.0 6.0	4.7	Medium dense light brown fine SAND, some silt, little weathered coarse to medium sand and fine gravel, moist. -LACUSTRINE-
	ND	13 18 20 23	S4 24"/24"	6.0 8.0		Same, except dense.
	ND	6 17 18 19	S5 16"/24"	8.0 10.0		Same, except dense. Wet from 9.5 to 11.2 ft.
10	ND	8 24 25 59	S6 21"/24"	10.0 12.0	11.2	-LACUSTRINE-
	ND	15 24 24 28	S7 21"/24"	12.0 14.0		Very dense red-brown gravelly SILT, little coarse to fine sand, trace clay, damp. -GLACIAL TILL- Same.
15	ND	18 18 18 28	S8 23"/24"	14.0 16.0		-GLACIAL TILL- Same, except medium dense, moist.
	ND	6 19 25 28	S9 19"/24"	16.0 18.0	17.7	Same. -GLACIAL TILL-
	ND	15 20 100/.5	S10 18"/18"	18.0 19.5		Very dense weathered SHALE fragements, moist. -WEATHERED BEDROCK-
20		Auger				Advanced augers to 20.0 ft. Same, except wet. Advanced 5-7/8 in. tricone roller bit to apparent top of competent bedrock at 21.5 ft.
	ND	14 18 100/.1	S11 12"/13"	20.0 21.1	21.5	Apparent Top of Competent Bedrock at 21.5 ft.
25						

Notes:
1. Soil samples were headspace screened under laboratory conditions using a Foxboro Century 128 GC OVA. Samples were heated in 40 deg C water bath prior to screening. Sample S2 delivered to General Testing Corp. for analysis.
2. See Core Boring Report.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
No Measurements Obtained					

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	21.5
ROCK CORED (LIN FT):	7.0
SAMPLES:	11S, 1R
BORING NO.	RW-23

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. RW-23 FILE NO. 70198-49 SHEET NO. 2 OF 2

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. — DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						21.5	Begin Coring at 21.5 ft.
25		21.5 R1 28.5	75/57	89/67	SL	28.5	Hard slightly weathered red-brown to red-gray fine grained thin bedded SANDSTONE with frequent bioturbation. -GRIMSBY SANDSTONE- Closely spaced shaley partings from 21.8 to 23.5 ft. Soft, severely weathered SHALE interbed at 27.2 ft. -GRIMSBY SANDSTONE- Bottom of Boring at 28.5 ft.
30							
35							
40							
45							
50							
55							

Notes:
1. Noted approximately 20 gallons of water loss during bedrock drilling.
2. Reamed corehole with 5-7/8 in. nominal tricone rollerbit, and installed monitoring well in completed borehole. See Shallow Bedrock Monitoring Well Report.

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SHALLOW BEDROCK GROUNDWATER MONITORING WELL REPORT

PROJECT:	BUILDING 201/206/218 MIGRATION CONTROL TRENCH INSTALLATION	FILE NO.:	70198-49
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	RW-24
CLIENT:	XEROX CORPORATION	LOCATION:	995.90 N 623.94 E
CONTRACTOR:	NOTHNAGLE DRILLING	SHEET:	1 OF 1
DRILLER:	S. Loranty RIG TYPE: CME-75 Truck Mounted	INSPECTOR:	D. Nostrant
INSTALLATION DATE:	6 July 1993		

Survey Datum NGVD

Ground Elevation: 397.89

SUMMARIZED SOIL CONDITIONS

-FILL- 5.1 ft.

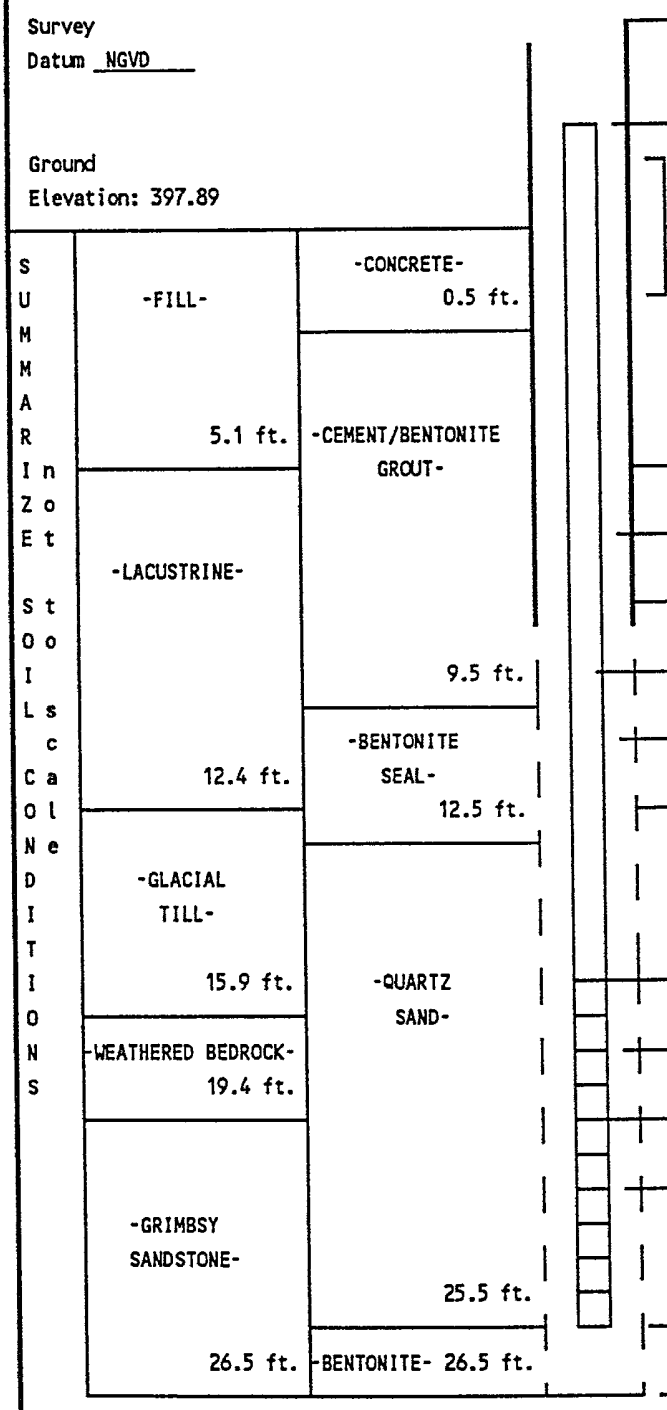
-LACUSTRINE- 12.4 ft.

-GLACIAL TILL- 15.9 ft.

-WEATHERED BEDROCK- 19.4 ft.

-GRIMBSY SANDSTONE- 26.5 ft.

-BENTONITE- 26.5 ft.



Stickup above ground surface of protective casing.	2.18 ft.
Stickup above ground surface of riser pipe.	2.02 ft.
Thickness of Surface Seal	0.5 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete
Type of Protective Casing	Steel
Inside Diameter of Protective Casing	6 in. x 6 in.
Depth of Bottom of Protective Casing	2.82 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Cement/Bentonite Grout
Diameter of Borehole	8.0 in.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	14.5 ft.
Type of Wellscreen	304 Stainless Steel
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2.0 in.
Type of Backfill Around Wellscreen	Morie OON Graded Quartz Sand
Depth of Bottom of Wellscreen	24.5 ft.
Depth of Bottom of Borehole	26.5 ft.

Remarks:

Well No. RW-24

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. RW-24

PROJECT: BUILDING 201/206/218 MIGRATION CONTROL TRENCH INSTALLATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70198-49
SHEET NO. 1 OF 2
LOCATION: 995.90 N
623.94 E
ELEVATION: 397.89
DATUM: NGVD
START: 6 July 1993
FINISH: 7 July 1993
DRILLER: S. Loranty
H&A REP: D. Nostrant

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Steel	SS	NX
INSIDE DIAMETER (IN)	6.0 in.	1-3/8	1-7/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck Mount
BIT TYPE: 5-7/8 in. tricone
DRILL MUD: Water
OTHER: Advanced augers to 19.4 ft.
Advanced core boring to 26.5 ft.

DEPTH (FT)	OVA READING (PPM)	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
0	ND	4 15 20 20	S1 18"/24"	0.0 2.0	1.1	Dense brown SILT, little coarse to fine sand, trace fine gravel, with grass and rootlets, dry. -FILL-
	ND	7 15 21 14	S2 21"/24"	2.0 4.0		Same, except red-brown. Same, with plastic.
5	ND	14 16 12 8	S3 22"/24"	4.0 6.0	5.1	-FILL-
	ND	4 14 20 42	S4 23"/24"	6.0 8.0		Medium dense light and dark brown mottled fine sandy SILT, trace coarse to fine gravel, laminated, damp. -LACUSTRINE- Same, except dense, red-brown, and with trace clay.
	ND	18 21 25 30	S5 20"/24"	8.0 10.0	9.2	
10	ND	14 14 26 34	S6 23"/24"	10.0 12.0		Dense medium brown fine SAND, with occasional red-brown silty laminae, trace fine gravel, moist. -LACUSTRINE- Same.
	ND	58 100/.3 Auger Auger	S7 15"/16"	12.0 12.8	12.4	Very dense medium brown fine SAND, little silt, little coarse to fine rounded gravel, moist to wet. -GLACIAL TILL-
15	ND	45 100/.5 Auger	S8 15"/18"	15.0 16.0	15.9	Same, except some coarse to fine sand and gravel.
	ND	58 100/.5	S9 13"/17"	17.0 18.0		Very dense red and gray mottled SANDSTONE fragments, dry. -WEATHERED BEDROCK- Same, except wet.
	ND	28 100/.3	S10 8"/16"	18.0 18.8		Same.
20						Auger Refusal on Competent Bedrock at 19.4 ft.
25						Notes: 1. No split spoon samples from 14.0 to 15.0 ft. Driller inadvertently augered to 15.0 ft. instead of 14.0 ft. 2. Soil samples were headspace screened for volatiles under laboratory conditions using a Foxboro Century 128 GC OVA. Samples were heated in a 40 deg. C water bath prior to screening. Sample S6 delivered to General Testing Corp. for analysis. 3. See Core Boring Report.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
No Measurements Obtained					

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	19.4
ROCK CORED (LIN FT):	7.1
SAMPLES:	10S
BORING NO.	RW-24

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. RW-24 FILE NO. 70198-49 SHEET NO. 2 OF 2

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. — DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						19.4	Began Core Boring at 19.4 ft.
20	1	19.4					Hard moderately to slightly weathered red-brown fine grained medium to thin bedded SANDSTONE, with occasional gray-green banding and frequent bioturbation.
	2						-GRIMSBY SANDSTONE-
	2				SL		Moderately weathered steeply inclined fractures from 22.6 to 23.1, and 23.9 to 24.4 ft.
	2						
	2	R1	75/59	88/69			Closely spaced moderately weathered shale partings from 22.4 to 26.5 ft.
25	2				MOD		Severely fractured from 23.6 to 26.2 ft.
	2						-GRIMSBY SANDSTONE-
	1	26.5				26.5	Bottom of Boring at 26.5 ft.
30							Notes: 1. No apparent water loss during bedrock drilling. 2. Reamed corehole with 5-7/8 in. nominal tricone rollerbit, and installed monitoring well in completed borehole. See Shallow Bedrock Monitoring Well Report.
35							
40							
45							
50							

H&A OF NEW YORK
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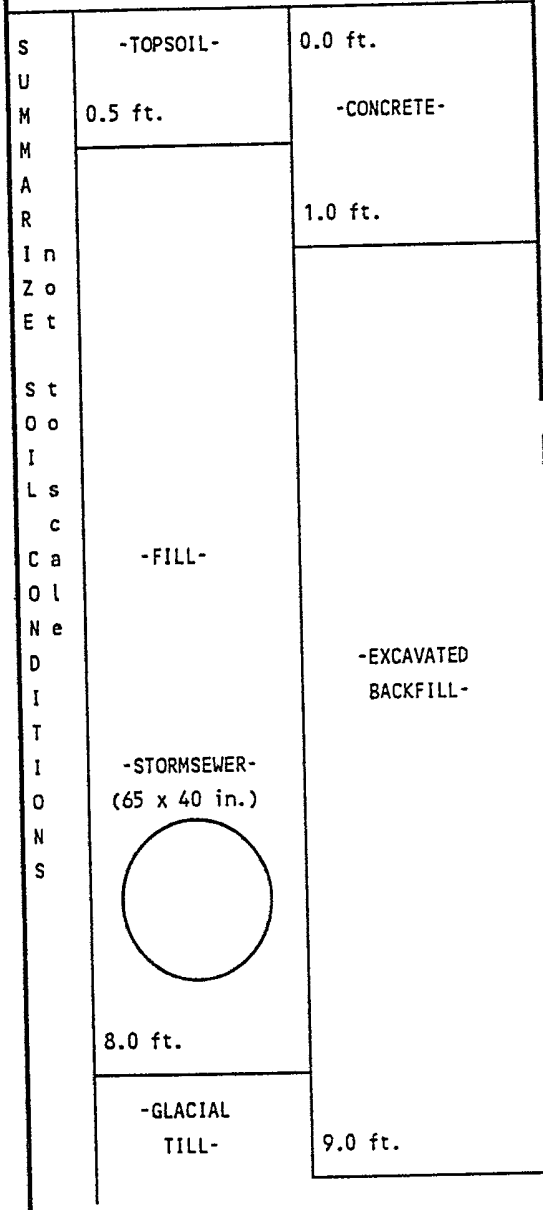
PIEZOMETER INSTALLATION REPORT

PROJECT:	XEROX BUILDING 218 INVESTIGATION
LOCATION:	WEBSTER, NEW YORK
CLIENT:	XEROX CORPORATION
CONTRACTOR:	NOTHNAGLE DRILLING
EQUIPMENT USED:	JCB 1400B BACKHOE
INSTALLATION DATE:	18 March 1992

FILE NO.:	70307-40
WELL NO.:	SP-1
LOCATION:	N 0503.8
	E 0774.3
SHEET:	1 OF 2
INSPECTOR:	W. Lanik

Survey Datum NGVD

Ground Elevation: 399.6



Stickup above ground surface of protective casing.	2.8 ft.
Stickup above ground surface of riser pipe.	3.1 ft.
Thickness of Surface Seal	1.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete
Type of Protective Casing	Zinc-Coated Steel
Inside Diameter of Protective Casing	6 in.
Depth of Bottom of Protective Casing	2.2 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Excavated Backfill
Dimensions of Exploration	6 x 6 ft.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	3.9 ft.
Type of Wellscreen	Pre-Sandpacked PVC
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2 in./ 4 in.
Type of Backfill Around Wellscreen	Excavated Backfill
Depth of Bottom of Wellscreen	8.9 ft.
Depth of Bottom of Exploration	9.0 ft.

Remarks:

Well No. SP-1

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. SP-1 FILE NO. 70307-40

PROJECT:	XEROX BUILDING 218 INVESTIGATION	LOCATION:	N 0503.8 E 0774.3
LOCATION:	WEBSTER, NEW YORK	ELEVATION:	399.6
CLIENT:	XEROX CORPORATION	EXPLORATION DATE:	3/18/92
CONTRACTOR:	NOTHNAGLE DRILLING	H&A REP.:	W. Lanik
EQUIPMENT USED:	JCB 1400B BACKHOE		

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			0.5	-TOPSOIL-	
				Brown to dark brown sandy SILT, little gravel, with cobbles.	Looking west.
2				-FILL-	
4				64 x 40 in. storm sewer (corrugated metal) -Invert El. 392.0 -Top of Pipe El. 395.3	Storm sewer runs west. No gravel bed.
6					Water seeps from 6.0 to 8.0 ft.
8			8.0	Light brown fine sandy SILT, trace coarse to medium sand, with cobbles and boulders (well bonded in-situ). -GLACIAL TILL-	
				Bottom of Exploration at 9.0 ft.	
10				Note: 1. Installed test pit utilizing a JCB 1400B backhoe in proximity of 65 x 40-in. storm sewer. 2. Installed piezometer in completed exploration. See Piezometer Installation Report.	
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE	SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 6 feet WIDTH 6 feet	DEPTH: 9.0 ft.
				JAR SAMPLES: ---
None Obtained			BOULDERS	BAG SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft	WATER LEVEL: ---
* Hrs after completed			Over 18" DIAMETER: No. = Vol. cu ft	TEST PIT NO. SP-1

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PIEZOMETER INSTALLATION REPORT

PROJECT:	XEROX BUILDING 218 INVESTIGATION	FILE NO.:	70307-40
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	SP-2
CLIENT:	XEROX CORPORATION	LOCATION:	N 0503.9
CONTRACTOR:	NOTHNAGLE DRILLING		E 0405.1
EQUIPMENT USED:	JCB 1400B BACKHOE	SHEET:	1 OF 1
INSTALLATION DATE:	17 March 1992	INSPECTOR:	W. Lanik

Survey Datum NGVD

Ground Elevation: 396.1

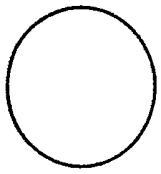
SUMMARIZE SOIL CONDITIONS

-TOPSOIL- 0.5 ft.

-CONCRETE- 0.0 ft. to 1.0 ft.

-FILL- 1.0 ft. to 7.5 ft.

Storm Sewer (65 x 40 in.)



-EXCAVATED BACKFILL- 1.0 ft. to 10.0 ft.

-GLACIAL TILL- 7.5 ft. to 10.0 ft.

Stickup above ground surface of protective casing.	3.1 ft.
Stickup above ground surface of riser pipe.	3.5 ft.
Thickness of Surface Seal	1.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete
Type of Protective Casing	Zinc-Coated Steel
Inside Diameter of Protective Casing	6 in.
Depth of Bottom of Protective Casing	1.5 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Excavated Backfill
Dimensions of Exploration	7 x 3 ft.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	3.5 ft.
Type of Wellscreen	Pre-Sandpacked PVC
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2 in./4 in.
Type of Backfill Around Wellscreen	Excavated Backfill
Depth of Bottom of Wellscreen	8.5 ft.
Depth of Bottom of Exploration	10.0 ft.

Remarks:

Well No. SP-2

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. SP-2 FILE NO. 70307-40

PROJECT:	XEROX BUILDING 218 INVESTIGATION	LOCATION:	N 0503.9 E 0405.1
LOCATION:	WEBSTER, NEW YORK	ELEVATION:	396.1
CLIENT:	XEROX CORPORATION	EXPLORATION DATE:	3/17/92
CONTRACTOR:	NOTHNAGLE DRILLING	H&A REP.:	W. Lanik
EQUIPMENT USED:	JCB 1400B BACKHOE		

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			0.5	-TOPSOIL-	Looking west.
				Brown to dark brown sandy SILT, little gravel, with cobbles and boulders. -FILL-	
2					
4				65 x 40-in. storm sewer (corrugated metal) -Invert El. 389.0 -Top of Pipe El. 392.3	Storm sewer runs west. No gravel bed.
6					
			7.5	Light brown sandy SILT, with cobbles and boulders (well bonded in-situ). -GLACIAL TILL-	Minor water seeps from 7.0 to 8.0 ft.
8					
10				Bottom of Exploration at 10.0 ft.	
12				Note: 1. Installed test pit utilizing a JCB 1400B backhoe in proximity to 65 x 40-in. storm sewer. 2. Installed piezometer in completed exploration. See Piezometer Installation Report.	

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE	SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 7 feet WIDTH 3 feet	DEPTH: 10.0 ft.
				JAR SAMPLES: ---
None Obtained			BOULDERS	BAG SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft	WATER LEVEL: ---
* Hrs after completed			Over 18" DIAMETER: No. = Vol. cu ft	TEST PIT NO. SP-2

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PIEZOMETER INSTALLATION REPORT

PROJECT:	XEROX BUILDING 218 INVESTIGATION
LOCATION:	WEBSTER, NEW YORK
CLIENT:	XEROX CORPORATION
CONTRACTOR:	NOTHNAGLE DRILLING
EQUIPMENT USED:	JCB 1400B BACKHOE
INSTALLATION DATE:	17 March 1992

FILE NO.:	70307-40
WELL NO.:	SP-3
LOCATION:	N 1040.1
	E 0085.7
SHEET:	1 OF 2
INSPECTOR:	W. Lanik

Survey Datum NGVD

Ground Elevation: 390.6

SUMMARIZED SOIL CONDITIONS

-TOPSOIL- 0.5 ft.

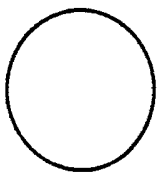
-FILL- 5.0 ft.

-LACUSTRINE- 7.0 ft.

0.0 ft. -CONCRETE- 1.0 ft.

-EXCAVATED BACKFILL-

Storm Sewer (65 x 40 in.)



Stickup above ground surface of protective casing.	2.2 ft.
Stickup above ground surface of riser pipe.	2.5 ft.
Thickness of Surface Seal	1.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete
Type of Protective Casing	Zinc-Coated Steel
Inside Diameter of Protective Casing	6 in.
Depth of Bottom of Protective Casing	2.8 ft.
Inside Diameter of Riser Pipe	2 in.
Type of Backfill Around Riser	Excavated Backfill
Dimensions of Exploration	5 x 4 ft.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	1.7 ft.
Type of Wellscreen	Pre-Sandpacked PVC
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2 in./4 in.
Type of Backfill Around Wellscreen	Excavated Backfill
Depth of Bottom of Wellscreen	6.7 ft.
Depth of Bottom of Exploration	7.0 ft.

Remarks:

Well No. SP-3

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. SP-3 FILE NO. 70307-40

PROJECT:	XEROX BUILDING 218 INVESTIGATION	LOCATION:	N 1040.1 E 0085.7
LOCATION:	WEBSTER, NEW YORK	ELEVATION:	390.6
CLIENT:	XEROX CORPORATION	EXPLORATION DATE:	3/17/92
CONTRACTOR:	NOTHNAGLE DRILLING	H&A REP.:	W. Lanik
EQUIPMENT USED:	JCB 1400B BACKHOE		

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			0.5	-TOPSOIL-	Looking north.
				Brown to gray-brown silty SAND, little gravel, with cobbles and boulders.	
				-FILL-	Storm sewer runs north. No gravel bed.
2				65 x 40-in. storm sewer (corrugated metal) ~Invert El. 385.6 ~Top of Pipe El. 388.9	
4					Water seeps from 3.0 to 5.0 ft.
			5.0	Red-brown sandy SILT, with weathered bedrock pieces and fragments.	
6				-LACUSTRINE-	
				Bottom of Exploration at 7.0 ft.	
8				Note:	
				1. Installed test pit utilizing a JCB 1400B backhoe in proximity to 65 x 40-in. storm sewer.	
10				2. Installed piezometer in completed exploration. See Piezometer Installation Report.	
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE	SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 5 feet WIDTH 4 feet	DEPTH: 7.0 ft.
				JAR SAMPLES: ---
None Obtained			BOULDERS	BAG SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft	WATER LEVEL: ---
* Hrs after completed			Over 18" DIAMETER: No. = Vol. cu ft	TEST PIT NO. SP-3

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PIEZOMETER INSTALLATION REPORT

PROJECT:	XEROX BUILDING 218 INVESTIGATION
LOCATION:	WEBSTER, NEW YORK
CLIENT:	XEROX CORPORATION
CONTRACTOR:	NOTHNAGLE DRILLING
EQUIPMENT USED:	JCB 1400B BACKHOE
INSTALLATION DATE:	18 March 1992

FILE NO.:	70307-40
WELL. NO.:	SP-4
LOCATION:	N 0385.4
	E 0838.1
SHEET:	1 OF 2
INSPECTOR:	W. Lanik

Survey Datum NGVD

Ground Elevation: 399.0

SUMMARIZE SOIL CONDITIONS

-TOPSOIL- 0.5 ft.

-FILL-

Storm Sewer (8-in. diam.)

5.2 ft.

-GLACIAL TILL-

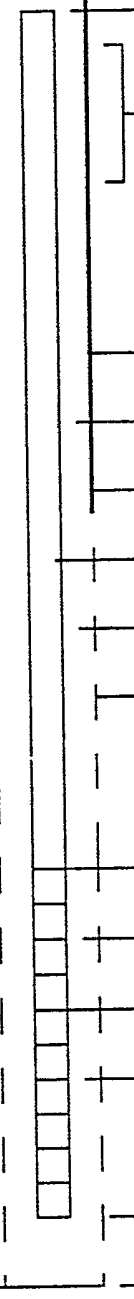
7.0 ft.

0.0 ft.

-CONCRETE-

1.0 ft.

-EXCAVATED BACKFILL-



Stickup above ground surface of protective casing.	3.0 ft.
Stickup above ground surface of riser pipe.	2.7 ft.
Thickness of Surface Seal	1.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Concrete
Type of Protective Casing	Zinc-Coated Steel
Inside Diameter of Protective Casing	6 in.
Depth of Bottom of Protective Casing	2.0 ft.
Inside Diameter of Riser Pipe	2.0 in.
Type of Backfill Around Riser	Excavated Backfill
Dimensions of Exploration	7 x 3 ft.
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	1.7 ft.
Type of Wellscreen	Pre-Sanccacked PVC
Screen Slot Size	0.010 in.
Diameter of Wellscreen	2 in/4 in.
Type of Backfill Around Wellscreen	Excavated Backfill
Depth of Bottom of Wellscreen	6.7 ft.
Depth of Bottom of Exploration	7.0 ft.

Remarks:

Well No. SP-4

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. SP-4 FILE NO. 70307-40

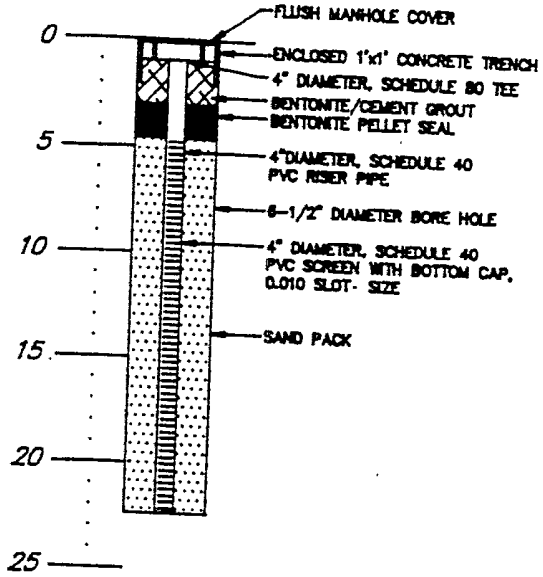
PROJECT:	XEROX BUILDING 218 INVESTIGATION	LOCATION:	N 0385.4 E 0838.1
LOCATION:	WEBSTER, NEW YORK	ELEVATION:	399.0
CLIENT:	XEROX CORPORATION	EXPLORATION DATE:	3/18/92
CONTRACTOR:	NOTHNAGLE DRILLING	H&A REP.:	W. Lanik
EQUIPMENT USED:	JCB 1400B BACKHOE		

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			0.5	-TOPSOIL-	Looking west.
				Brown to dark brown sandy SILT, some to little gravel, with wood and plastic scrap.	
2				-FILL-	Storm sewer runs northwest. No gravel bed.
4				8-in. storm sewer (tile encased in concrete) -Invert El. 393.8 -Top of Pipe El. 394.5	Water seeps from 3.0 to 5.0 ft.
			5.2	Light brown fine sandy SILT, trace coarse to medium sand, with cobbles and boulders (well bonded in-situ).	
6				-GLACIAL TILL-	
				Bottom of Exploration at 7.0 ft.	
8				Note:	
				1. Installed test pit utilizing a JCB 1400B backhoe in proximity to 8-in. storm sewer.	
10				2. Installed piezometer in completed exploration. See Piezometer Installation Report.	
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE	SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 7 feet WIDTH 3 feet	DEPTH: 7.0 ft.
				JAR SAMPLES: ---
None Obtained			BOULDERS	BAG SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft	WATER LEVEL: ---
* Hrs after completed			Over 18" DIAMETER: No. = Vol. cu ft	TEST PIT NO. SP-4

WELL VE-1A

TOP OF PVC ELEVATION = NOT SURVEYED

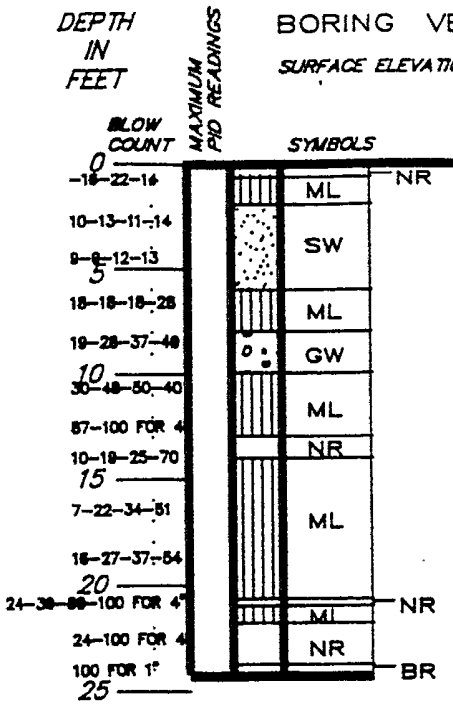


WELL CONSTRUCTION DETAIL
XEROX CORPORATION
WEBSTER, NEW YORK

DAMES & MOORE

BORING VE-1A

SURFACE ELEVATION = NOT SURVEYED



0'-2'0"	SANDY SILT, LITTLE GRAVEL TO 1/4", RED-BROWN, DAMP, NO ODOR
2'0"-4'0"	FINE SAND, TRACE SILT, TRACE GRAVEL TO 1/4", RED-BROWN, DRY, NO ODOR
4'0"-6'0"	FINE SAND, TRACE SILT, TRACE GRAVEL TO 1/4", RED-BROWN, DAMP, NO ODOR
6'0"-8'0"	SANDY SILT, SOME GRAVEL TO 1", RED-BROWN
8'0"-10'0"	GRAVEL TO 1", TRACE SILT, GRAY TO RED-BROWN, PLASTIC , WET, NO ODOR
10'0"-12'10"	SANDY SILT, LITTLE GRAVEL TO 1/2", RED-BROWN, PLASTIC, WET, NO ODOR
12'10"-14'0"	NO RECOVERY
14'0"-18'0"	SANDY SILT, RED-BROWN, DAMP, TCE ODOR
18'0"-20'0"	SANDY SILT, RED-BROWN, DAMP, STRONG TCE ODOR
20'0"-21'10"	SANDY SILT, RED-BROWN, DAMP, TCE ODOR
21'10-22'0"	NO RECOVERY
22'0"-22'10"	SANDY SILT, TRACE GRAVEL, SATURATED, TCE ODOR
22'10"-24'0"	NO RECOVERY
24'0"-24'1"	BEDROCK

NOTES:

BORING COMPLETED 8/24/88

NR = NO RECOVERY
0' = BASE OF 6" THICK CONCRETE FLOOR
T.D. = 24'-1", AUGER REFUSAL
BR = BEDROCK

LOG OF SOIL BORING
XEROX CORPORATION
WEBSTER, NEW YORK

DAMES & MOORE

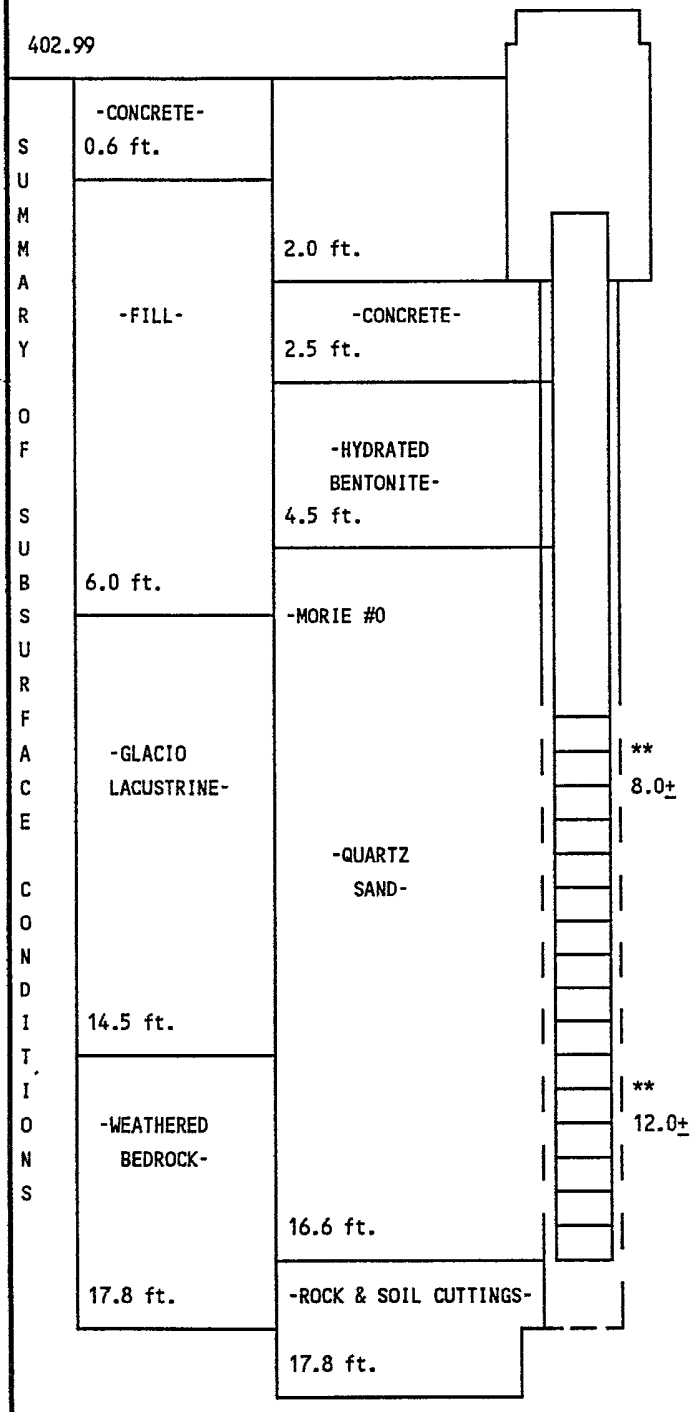
H&A OF NEW YORK
CONSULTING GEOTECHNICAL ENGINEERS
GEOLOGISTS AND HYDROGEOLOGISTS

RECOVERY WELL COMPLETION REPORT

PROJECT: BUILDING 201 VES EXTRACTION WELL INSTALLATION
LOCATION:
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE
DRILLER: S. LORANTY, K. BUSH RIG TYPE: Gus Pech Mite-E-Mite
INSTALLATION DATE: 9 to 11 April 1993

FILE NO.: 70198-43
WELL NO.: VE-2
LOCATION:
SHEET: 1 OF 2
INSPECTOR: R. FRANK

Survey Datum NGVD



Stick-Up of Vault Cover	0.00 in.
Inside Diameter of Riser Casing	8.0 in.
Depth Below Top of Vault Cover to Top of Riser	1.5 ft.
Depth to Bottom of Vault	2.0 ft.
Borehole Diameter, 0 to 4 ft.:	30 in. +/-
Borehole Diameter, 4 to 17.8 ft.:	15 in. +/-
Wellscreen and Riser Type:	Stainless Steel
Wellscreen and Riser Manufacturer:	Houston Wellscreen
Wellscreen and Riser Wall Thickness:	Schedule 5 (10.9 in)
Wellscreen/Casing Connection:	F-480 flush-joint threaded (2 threads/in.)
Bottom of Outer Casing	6.6 ft.
Top of Wellscreen	6.6 ft.
Inside Diameter of Wellscreen	8.0 in.
Slot Size	0.02 in. wire wrapped screen
Backfill Around Screen and Riser	
Concrete:	2.0 to 2.5 ft.
Bentonite Pellets:	2.5 to 4.5 ft.
Washed Quartz Sand (Morie #0):	4.5 to 16.6 ft.
Bottom of Wellscreen	16.6 ft.
Bottom of Borehole	17.8 ft.

Remarks: ** Shield-point monitoring probes set in wellscreen sandpack at 8.0± and 12.0±

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. VE-2

PROJECT: BUILDING 201 VES EXTRACTION WELL INSTALLATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70198-43
SHEET NO. 1 OF 1
LOCATION: See Plan

ELEVATION:
DATUM: NGVD
START: 9 April 1993
FINISH: 10 April 1993
DRILLER: S. Loranty/ K. Busch
H&A REP: W. Lanik/R.Frank

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	S	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: GP-750C; Mobile skid rig
BIT TYPE: Auger (10-1/4 in.)
DRILL MUD: Water
OTHER: Advanced augers to refusal at 17.8 ft.

DEPTH (FT)	GC READING (PPM)	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		-Augered-			0.6	-CONCRETE SLAB-
	22	4 7 6 6	S1 10"/24"	2.0 4.0		Medium dense brown coarse to fine SAND, trace gravel, damp. -FILL-
5	225	5 4 6 17	S2 10"/24"	4.0 6.0		Medium dense brown silty fine SAND, moist, with boulders and steel rebar. -FILL-
	227	17 71 100/0.3	S3 6"/15"	6.0 7.3	6.0	Very dense sandy SILT, some to little gravel, wet. -LACUSTRINE-
	832	25 31 39 45	S4 24"/24"	8.0 10.0		Very dense fine sandy SILT, trace coarse to medium sand, trace gravel, wet. Same.
10	915	18 30 89 100/.2	S5 20"/20"	10.0 11.7	10.4	Very dense SILT, wet. -LACUSTRINE-
	768	47 100/.3	S6 6"/9"	12.0 12.8	12.0	Very dense silty coarse to fine SAND, little gravel, wet. -LACUSTRINE- Very dense red to red-brown silty fine SAND, trace gravel, wet. Weathered bedrock in base on spoon.
15	650	100/.3	S7 4"/4"	14.0 14.3	14.5	-WEATHERED BEDROCK- Very dense red to red-brown, weathered sandstone, damp to dry.
	365	100/.4	S8 8"/8"	16.0-16.4		No Recovery.
		100/.2	S9 0"/2"	17.5 17.7	17.8	-Auger Refusal at 17.8 ft.- Broke off auger drag-bit at 18.0 ft. ± Fished for drag-bit approximately 6 hours. Removed augers and set 12-in. temporary steel casing. Could not advance rotary tricone rollerbit past 18.0 ft. Set well at 16.6 ft. See Recovery Well Installation Report.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
NOT MEASURED					

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	17.8
ROCK CORED (LIN FT):	---
SAMPLES:	S9
BORING NO.	VE-2

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	OVERBURDEN GROUNDWATER MONITORING WELL REPORT

PROJECT:	BUILDING 201 - INTERIOR DRILLING	FILE NO.:	70198-43
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	VE-3
CLIENT:	XEROX CORPORATION	LOCATION:	See Plan
CONTRACTOR:	NOTHNAGLE DRILLING		
DRILLER:	K. Busch/N. Short RIG TYPE: Gus Peck-750C	SHEET:	1 OF 1
INSTALLATION DATE:	27 November 1993	INSPECTOR:	B. Hanna/W. Lanik

Survey Datum NGVD

Floorslab Elevation: 402.99

SUMMARIZED SOIL CONDITIONS

-COVERED FLOOR TRENCH-

2.0 ft.

-CEMENT/ BENTONITE GROUT-

6.0 ft.

-BENTONITE PELLETS-

8.0 ft.

-QUARTZ SAND- (#1)

20.1 ft.

-SANDSTONE BEDROCK-

30.1 ft.

Depth below ground surface of protective casing.	0.0 ft.
Depth below ground surface of riser pipe.	1.80 ft.
Thickness of Surface Seal	4.0 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Bentonite Cement Grout
Type of Protective Casing	Covered Floor Trench
Inside Diameter of Protective Casing	2 ft. x 2 ft.
Depth of Bottom of Protective Casing	2 ft.
Inside Diameter of Riser Pipe	4 in.
Type of Backfill Around Riser	Cement/ Bentonite Grout
Diameter of Borehole	8 in. +/-
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	10.1 ft.
Type of Wellscreen	Stainless Steel
Screen Slot Size	0.020 in.
Diameter of Wellscreen	4 in.
Type of Backfill Around Wellscreen	#1 Morie Quartz Sand
Depth of Bottom of Wellscreen	30.1 ft.
Depth of Bottom of Borehole	30.1 ft.

Remarks: Not to scale, installed shield points in sand pack at 30 ft.

Well No. VE-3

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. VE-3

PROJECT: XEROX BUILDING 201 SOUTHEAST INTERNAL INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70198-43
SHEET NO. 1 OF 2
LOCATION: See Plan
ELEVATION: 402.99
DATUM:
START: 27 Nov. 1993
FINISH: 27 Nov. 1993
DRILLER: K. Busch
H&A REP: W. Lanik

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	NX
INSIDE DIAMETER (IN)	6-1/4	1-7/8	2-1/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: GP-750C
BIT TYPE: Auger, NX Core, tricone
DRILL MUD: Water rollerbit
OTHER: Advanced augers to 20.1 ft with split spoon sampling.

DEPTH (FT)	GC READING (PPM)	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						Began drilling at 2 ft. inside of trench.
5	92	100/.4	S1 5"/5"	5.0 5.4		Very dense gray boulder fragment, some brown sandy SILT. Advanced augers through gray LIMESTONE BOULDER from approx. 5.0 to 6.0 ft. Removed augers and recovered 0.5 ft. boulder core from auger shoe.
10	41	105	S2 21"/6"*	10.0 10.5		Very dense brown gravelly SILT, some fine sand, moist, with root fibers. Gray limestone fragments at base of sample. Split spoon refusal on apparent boulder ta 10.5 ft. -GLACIAL TILL- Very dense red-brown fine sandy SILT, trace gravel, trace clay, moist. -GLACIAL TILL-
15	S3A-430 S3B-420	100/.2	S3 A,B 24"/3"*	15.0 15.2		Very dense red-brown fine sandy SILT, damp to dry, with pulverized texture. -WEATHERED BEDROCK- Very dense red-brown angular GRAVEL with fine sandy SILT, trace clay, wet. -WEATHERED BEDROCK-
20	360	100/.1	S4 10"/1"*	20.0 20.1		Auger Refusal at 20.1 ft. Split Sppon Refusal at 20.1 ft.
25						Notes: 1. *Sample recovery reflects soil in augers. 2. Field screened soil sample headspace using a Photovac Microtip organic vapor meter. 3. See Core Boring Report.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
11/27/93	1040	---	20.1	20.1	18.8

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	20.1
ROCK CORED (LIN FT):	10.1
SAMPLES:	5S, 1R
BORING NO.	VE-3

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. VE-3 FILE NO. 70198-43 SHEET NO. 2 OF 2

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
							Set temporary 8-in. I.D. steel casing to 20.1 ft. Began Core Boring at Top of Bedrock at 20.1 ft.
20	3	20.1			MOD		Medium hard red-brown fine-grained thin to medium bedded SHALEY SANDSTONE, with occasional gray color banding, numerous smooth horizontal bedding-plane joints. -CAMBRIA SANDSTONE- Gray color banding from 21.0 to 21.1 and 23.8 to 24.0 ft. consists of hard fine grained siliceous sandstone with rough planar vertical joints.
	7						
	7						
	7						
	8	R1	103/58	86/48		24.0	
25	3				SL		Hard, red-brown mottled gray fine grained medium to thick-bedded SANDSTONE, with bioturbation. -THOROLD SANDSTONE-
	3						
	4						
	3-1/2						
30	4	30.1					Bottom of Boring at 30.1 ft.
							Notes: 1. Monitored washtub and work area breathing-zone for organic vapors with a Photovac Microtip. Maximum VOC readings were approximately 10 ppm at washtub and 3 ppm in work area. 2. Reamed core boring with 7-7/8 in. tricone rollerbit. 3. Installed Extraction Well VE-3 in completed borehole. See Extraction Well Report Form.
35							
40							
45							
50							

H&A OF NEW YORK CONSULTING GEOTECHNICAL ENGINEERS GEOLOGISTS AND HYDROGEOLOGISTS	OVERBURDEN GROUNDWATER MONITORING WELL REPORT

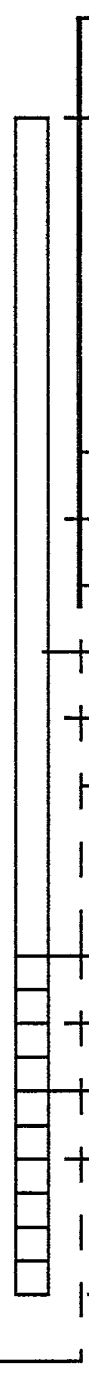
PROJECT:	BUILDING 201 - INTERIOR DRILLING	FILE NO.:	70198-43
LOCATION:	WEBSTER, NEW YORK	WELL NO.:	VE-4
CLIENT:	XEROX CORPORATION	LOCATION:	See Plan
CONTRACTOR:	NOTHNAGLE DRILLING		
DRILLER:	K. Busch/N. Short RIG TYPE: Gus Peck-750C	SHEET:	1 OF 1
INSTALLATION DATE:	26 to 27 November 1993	INSPECTOR:	B. Hanna/W. Lanik

Survey Datum NGVD

Floorslab Elevation: 402.99

SUMMARIZED SOIL STRATIGRAPHY AND CONDITIONS

- -COVERED FLOOR TRENCH- 2.0 ft.
- -GLACIAL TILL OVERBURDEN- 23.9 ft.
- -SANDSTONE BEDROCK- 33.5 ft.



Depth below ground surface of protective casing.	0.0 ft.
Depth below ground surface of riser pipe.	1.45 ft.
Thickness of Surface Seal	5.5 ft.
Type of Surface Seal [indicated all seals showing depth, thickness and type]	Bentonite Cement Grout
Type of Protective Casing	Covered Floor Trench
Inside Diameter of Protective Casing	2 ft. x 2 ft.
Depth of Bottom of Protective Casing	2 ft.
Inside Diameter of Riser Pipe	4 in.
Type of Backfill Around Riser	Cement/ Bentonite Grout
Diameter of Borehole	8 in. +/-
Type of coupling (threaded, welded, etc.)	Threaded
Depth of Bottom of Riser	13.5 ft.
Type of Wellscreen	Stainless Steel
Screen Slot Size	0.020 in.
Diameter of Wellscreen	4 in.
Type of Backfill Around Wellscreen	#1 Morie Quartz Sand
Depth of Bottom of Wellscreen	33.5 ft.
Depth of Bottom of Borehole	33.5 ft.

Remarks: Not to scale, installed shield points in sand pack at 30 ft.

Well No. VE-4

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. VE-4

PROJECT: XEROX BUILDING 201 SOUTHEAST INTERNAL INVESTIGATION
CLIENT: XEROX CORPORATION
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70198-43
SHEET NO. 1 OF 1
LOCATION: See Plan Bldg. 201
ELEVATION:
DATUM:
START: 26 Nov. 1993
FINISH: 27 Nov. 1993
DRILLER: K. Busch
H&A REP: W. Lanik

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	6-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: GP-750C
BIT TYPE: Auger, tricone rollerbit
DRILL MUD: Water
OTHER: Advanced to top of rock. Roller bit 10 ft. into rock.

DEPTH (FT)	GC READING (PPM)	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						Open floor trench to 2.0 ft. below surface.
5	15	8 7 10 18	S1 12"/24"	5.0 7.0		Medium dense brown coarse to fine SAND, trace gravel, damp. -FILL-
10	73	24 27 52 40	S2 20"/24"	10.0 12.0		Very dense brown gravelly fine SAND, little silt, moist with platy rock fragments. -GLACIAL TILL-
15	230	32 53 100/4	S3 22"/17"	15.0 16.4		Very dense dark brown gravelly coarse to fine SAND, wet. -GLACIAL TILL-
20	120	100/6	S4 6"/6"	20.0 20.5		Very dense dark brown fine SAND with light gray weathered rock fragments, wet.
25						Split Spoon Refusal at 20.5 ft. Auger Refusal at 23.9 ft. on Top of Rock

Notes:
1. Field screened soil sample headspace for organic vapors using a Photovac Microtip.
2. Advanced 7-7/8-in. nominal rollerbit to 33.2 ft.
3. Installed extraction well in completed boring. See Extraction Well Installation Report.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
11/27/93	1035	5	13.5	33.5	9.8
11/27/93	2312	18	13.5	33.5	10.15

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	23.9
ROCK CORED (LIN FT):	9.3
SAMPLES:	4S
BORING NO.	VE-4

LOG of BORING No. B-Ex

DATE 6/20-21 '88 SURFACE ELEVATION _____ LOCATION See Figure 1

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE	DESCRIPTION SOIL BORING REPORT	ELEVATION	USCS SYMBOL	OVA HEADSPACE MEASUREMENT (ppm)	OTHER TESTS	OTHER TESTS
0			Brown to dark gray silt and fine sand					
		12				ND		
2			-becomes brown in color with less silt		SM			
		17				ND		
4			Hard consolidated silty fine sand with a trace of coarse sand and gravel			0.2		
6		52	(Fill)		SM	0.2		
8		167	Red-brown silty fine sand and rounded coarse to fine gravel -becomes gray-brown		GM	0.2		
10		112	Red-brown fine sand with a trace of silt and gravel		SP	0.6		
			Red-brown coarse to fine sand and coarse to fine gravel		GW			
12		165/11"	Red-brown fine sand with a trace of silt		SP	0.2		
		100/3"	Red-brown gravelly silty medium to fine sand		GM/SM	-		
14			Gravel and cobble zone					
		180/11"	Red-brown silty fine sand interbedded with silty coarse to fine sand and gravel		SM/GM	-		
16		193/9"	(Glacial Till)			-		
18								

Completion Depth 17 Feet Water Depth ~ 8 Feet Date 7/11/88

Project Name Xerox; Building 201 Expansion Project Number 88C2183

Woodward-Clyde Consultants

LOG of BORING No. B-1

DATE 7/6/88 SURFACE ELEVATION 402.99 LOCATION See Figure 2

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE (1)	DESCRIPTION SOIL BORING REPORT	ELEVATION	USCS SYMBOL	OVA HEADSPACE MEASUREMENT (ppm)	OTHER TESTS (2)	OTHER TESTS (3)
0			10-inch reinforced concrete slab	402.2			(2) MC (%)	(3) AL (%)
		17 / 2"	Very dense brown silty coarse to fine sand, trace gravel (FILL)	401.0	SM	--	14.5	
2		9	Medium dense brown to yellow-brown coarse to fine sandy silt, trace fine gravel		ML	5	14.5	
4			-becoming very dense		ML		10.3	
		26	(LACUSTRINE)	398.0				
			Very dense red-brown silty coarse to fine sand, trace fine gravel		SM	70	12.6	NP/ NP
6		39			SM	500	17.9	
8			-becoming wet with increasing gravel		SM/GM		12.6	
		65	-becoming a fine silty sand		SM	300	18.8	
10				393.0				
		126 / 8"	Very dense wet brown gravelly coarse to fine sand, trace silt		SP	200	9.1	
12			(GLACIOFLUVIAL)	391.0				
		98	-Very dense wet brown silty gravelly coarse to fine sand		SM/GM	140	14.1	
14		100 / 6"			SM/GM	120	12.6	
			-increasing silt		SM		19.4	
16		90 / 6"						
				386.0	SM	120	19.2	
			Continued on next page					

Completion Depth 18.8 Feet Water Depth ∿ 6 Feet Date 7/6/88

Project Name Xerox Corporation Bldg. 201 Deep Borings Project Number 88C2198

Woodward-Clyde Consultants

FIGURE B-6

LOG of BORING No. B-1 (continued)

DATE 7/6/88 SURFACE ELEVATION 402.99 LOCATION See Figure 2

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE (1)	DESCRIPTION SOIL BORING REPORT	ELEVATION	USCS SYMBOL	OVA HEADSPACE MEASUREMENT (ppm)	OTHER TESTS (2)	OTHER TESTS (3)
16							(2)	(3)
		90/6"	Continued from previous page	386.0		120	MC(%)	AL(%)
			For soil description see previous page					
18		86/4" *	(GLACIAL TILL)	384.2	SC	70	23	
			*Augers "seized-up" in borehole					
			Notes: (1) 300 lb. hammer, 3-in. split spoon, 24-in. drop (2) Moisture content (3) Atterberg Limits (Liquid Limit/ Plasticity					

Completion Depth 18.8 Feet Water Depth ~ 6 Feet Date 7/6/88

Project Name Xerox Corporation Bldg. 201 Deep Borings Project Number 88C2198

Woodward-Clyde Consultants

FIGURE B-6 (continued)

LOG of BORING No. B-2

DATE 6/23-24/88 SURFACE ELEVATION 402.99 LOCATION See Figure 2

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE (1)	DESCRIPTION SOIL BORING REPORT	ELEVATION	USCS SYMBOL	OVA HEADSPACE MEASUREMENT (ppm)	OTHER TESTS (2)	OTHER TESTS (3)
0			6-inch reinforced concrete slab	402.5				
		47	Very dense brown silty gravelly coarse to fine sand (FILL)	401	SM/GM	--	MC (%) 4.6	AL (%)
2			Stiff brown silty clay with wood (4) fragments	400.5	CL		22.0	29/9
		16	Very dense brown and yellow-brown silty fine sand		SM	25		
4			trace gravel, becoming moist					
		28			SM	30	10.3 12.5	
6								
		37			SM	22	11.2	
8				395.0				
					SP		7.2	
		84				36	14.3	
			Very dense brown coarse to fine sand and gravel sized red siltstone fragments		SM SP	32	-	
10		75/3						
12		89/5			SP	14	6.0	
		*	(GLACIOFLUVIAL)	389.9				
14			* Auger refusal at 13.1'					
16			Notes: (1) 300 lb. hammer, 3-in. split spoon, 24-in. drop (2) Moisture content (3) Atterberg Limits (Liquid Limit/Plasticity Index) (4) Organic Content = 3.46%					

Completion Depth 13.1 Feet Water Depth ~ 6 Feet Date 6/24/88

Project Name Xerox Corporation Bldg. 201 Deep Borings Project Number 88C2198

Woodward-Clyde Consultants

FIGURE B-7

LOG of BORING No. B-3

DATE 7/7/88 SURFACE ELEVATION 402.99 LOCATION See Figure 2

DEPTH, ft. / SAMPLES	SAMPLING RESISTANCE (1)	DESCRIPTION SOIL BORING REPORT	ELEVATION	USCS SYMBOL	OVA HEADSPACE MEASUREMENT (ppm)	OTHER TESTS (2)	OTHER TESTS (3)
0		7-inch reinforced concrete slab	402.4				
2	15	Very dense moist brown silty gravelly coarse to fine sand, trace wood fragments (FILL)	400.5	SM/GM	65	13.0	
4	13	Firm dark brown coarse to fine sandy silt, trace gravel		ML	100	19.6	
6	33	-becoming hard and interbedded with yellow-brown layers		ML	320	19.8	
8	38	-becoming wet (LACUSTRINE)	394.5	ML	720	19.4	
10	50/3"	Very dense moist to wet silty gravelly coarse to fine sand interbedded with brown silty fine sand seams		SM/GM	-	-	
12	91			SM	250	17.7	
14	100/5"			SM	600	19.5	
16	55/2" *	-becoming very dense gravelly coarse to fine sand (GLACIOFLUVIAL)	387.0	SP	500	7.5	
		* Auger refusal					

Notes:
(1) 300 lb. hammer, 3-in. split-spoon, 24-in. drop
(2) Moisture content

Completion Depth 16 Feet Water Depth ∿ 6 Feet Date 7/7/88

Project Name Xerox Corporation Bldg. 201 Deep Boring Project Number 88C2198

Woodward-Clyde Consultants

FIGURE B-8

LOG of BORING No. B-4

DATE 6/30-7/1/88 SURFACE ELEVATION 402.99 LOCATION See Figure 2

DEPTH, ft.	SAMPLES	SAMPLING RESISTANCE (1)	DESCRIPTION SOIL BORING REPORT	ELEVATION	USCS SYMBOL	OVA HEADSPACE MEASUREMENT (ppm)	OTHER TESTS (2)	OTHER TESTS (3)
0			14-in. reinforced concrete slab	401.8			(2) MC(%)	(3) AL(%)
2		7	Medium dense brown silty coarse to fine sand, trace gravel		SM	60	13.5	
4		6	becoming wet with increasing gravel (LACUSTRINE)	398.0	SM/GM	42	6.4	
6		122	Very dense moist red-brown gravelly coarse to fine sand, trace silt		SP	48	6.4	
8		123/7"	becoming wet		SM/GM	240	12.0	
10		168/10"	(GLACIOFLUVIAL)	393.0	SP	720	8.2	
12		105/5"	Very dense red-brown silty gravelly coarse to fine sand		SM/GM	-	-	
14					SM/GM	160	11.0	NP/NP
16		*	(GLACIAL TILL)	387.8				

* Auger refusal

(1) 300 lb. hammer, 3-in. split-spoon, 24-in drop

(2) Moisture content

(3) Atterberg Limits (Liquid Limit/Plasticity Index)

Completion Depth 15.2 Feet Water Depth - Feet Date -

Project Name Xerox Corporation Bldg. 201 Deep Borings Project Number 88C2198

Woodward-Clyde Consultants

FIGURE B-9

DRILLING CONTRACTOR:
iller: Empire
pector: G. Goodman
CME 45

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. TB-11
Sheet ____ of ____
Location Inside Bldg. 201

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather Warm - 75°F Inside
Remarks

Surface Elev.
Date Start 5/5/86 1200
Date Finish 5/5/86 1312

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
	0-2	SS	11	12	11 12	28.1/22.1	Red brown sand and silt, some clay, trace rounded gravel	
2	2-4	SS	13	11	11 12	23/22.7	Red brown silt and sand	
	4-6	SS	8	14	24 23	21.4/22	Red brown fine sand and silt, trace coarse gravel rounded more.	Grout →
6	6-7.5	SS	34	38	60 0	31.6/22.2	Same.	
	8-10						No sample.	
9.5	9.5-11.5	SS	61	31	33 36	32.8/29.2	Brown rounded gravel and silt - trace clay, moist.	
..5	11.5-13.5	SS	30	25	34 89	66/79.4	Brown/red coarse angular gravel, trace clay poulets, very tight.	
13.5	13.5-15.5	SS	15	50/0		200/29	Grey brown angular to rounded gravel (5mm) and sand, some silt.	
16	16-16.5	SS	100			58/29	Red brown gravel angular-rounded 10-30mm and fine sand.	
7.5	17.5-19.5	SS					No sample - rock/weathered.	
19.5	19.5	SS	50/0				Brown red weathered sandstone very weathered.	
							Refusal @ 19.5'	
							BOH @ 1512 hrs.	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
'er: Empire
ector: G. Goodman

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. TB-12
Sheet ____ of ____
Location SE laoding dock Bldg. 201

GROUND WATER OBSERVATIONS
T__ FT. AFTER __ HOURS
AT__ FT. AFTER __ HOURS

Weather Inside - cool cloudy outside
Remarks

Surface Elev.
Date Start 5/6/86 1130
Date Finish 5/6/86 1245

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
)	0-2	SS	7	4	8 10	148/4.5	Brown organge fine sand and silt little gravel (angular 20 mm)	
2	2-4	SS	1	1	2 1		No recovery.	
4	4-6	SS	3	2	1 3	9.2/4.8	Brown fine sand and silt, little black mottling clay throughout	
6	6-8	SS	2	3	3 3	9.4/4.2	Same.	Grout
3	8-10	SS	2	6	9 16	31/4.4	Dark brown fine silt and sand.	
10	10-12	SS	20/.4	50/0		309/2.4	Brown orange fine sand and silt.	
12	12						No sample - cobbles.	
14	14-15	SS	14	55	50/0	115.2/3	1 Brown red fine silt and sand.	
16	15-16	A					Hard drilling, possible gravel.	
17.5	16-17.5	SS	100/2				Red brown weathered sandstone BOH @ 17.5' @ 1245 hrs.	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
ller: Empire
pector: G. Goodman
CME 45

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. TB-13
Sheet ____ of ____
Location Inside Bldg. 201 Just north of buffing line

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather Warm - 85° outside, inside-humid.
Remarks Rig broke down 5/6/86 @ 1550, completed hole 5/7/86

Surface Elev. ____
Date Start 5/6/86 1500
Date Finish 5/7/86 0905

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0-6	6-12	12-18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
0	0-2	SS	20	22	24 8	39/4.3	Brown/grey-brown mottled silt/sand some gravel - dry.	
2	2-4	SS	10	18	22 8	8.6/4.2	Olive brown fine to medium sand/gravel	
4	4-6	No Sample					Large obstruction - drilled to 9.5'	
4.5	4.5-6	SS	6	10	7 5	68.3/4.3	Brown grey sand/gravel, some silt.	
6	6-7	SS	1	5	10 12	*	Olive brown sand/gravel.	
7	7-8	SS	1	2	2 7	7.4/3.1	Red/brown mottled fine silt/clay.	Grout
Hammer adapter broke @ 1550 - repaired 5/7, commenced drilling.								
8	8-10	SS	1	5	10 7	10.2/2.4	Red brown silt/sand/clay, trace angular to rounded gravel.	
12.5	12.5-13.5	SS	68	100/.2		86.5/7.6	Red brown silt/sand, trace clay grading into red brown sand and gravel angular 10mm.	
14	14-16	SS	14	81	100/.3	6.8/7.3	Red brown sand grading into red brown sand with trace of silt and clay.	
Augered through hard material								
19	19	SS	100/0			62/7.1	Red grey highly weathered sandstone and rock fragments (ss) - some sand, little silt. BOH @ 19' @ 0905 hours.	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
er: Empire
ector: G. Goodman
ME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. TB-14
Sheet ____ of ____
Location N of SW-3, RW-3, just outside fence - near ER low

GROUND WATER OBSERVATIONS
T__ FT. AFTER __ HOURS
AT__ FT. AFTER __ HOURS

Weather Sunny 60°F Wind SE 5-8 mph
Remarks

Surface Elev.
Date Start 5/14/86 0820
Date Finish 5/14/86 0945

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
.5	0.5-2.5	SS	4	6	9 11	6.2/7.4	Brown mottled silt, some fine sand, organics and roots. Very dry loose,	
2.5	2.5-4.5	SS	10	11	6 9	6.5/7.3	crumbly. Same - slightly moister	
5	5-7	SS	10	14	30 29	7.1/6.1	Red brown/grey brown mottled silt and rounded gravel 10mm.	
	7-7.5	SS	100/.5			7.3/6.6	Red brown sandstone cobble and silt some sand.	
9	9-11	SS	22	22	30 37	14.1/6.4	Red brown with pathces of grey, medium sand, some silt and gravel.	Grout
11	11-13	SS	11	15	24 26	9.5/7.1	Same, no gravel, more grey with individusal black, white, and red sands.	
13	13-15	SS	7	15	22 26	7.2/6.8	Same, brown grey fine sand/silt.	
15	15-17	SS	3	10.	26 40	7.1/6.6	Same -	
17	17-17.5	SS	100/.5			7.4/6.4	Red brown weathered sandstone/ clay, some silt.	
19	19-19.5	SS	100/.3				Red brown silt/gravel 10mm. Rounded angular, abruptly into red weathered sandstone.	
							BOH @ 19.5' @ 0945 hrs.	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
ler: Empire
pector: G. Goodman
CME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. TB-15
Sheet ____ of ____
Location Adjacent to Xylene toxic fume stack (NW)

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather Sunny/Ptl. Cloudy 65° SE 7-10 mph
Remarks

Surface Elev.
Date Start 5/14/86 1110
Date Finish 5/14/86 1410

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0-6	6-12	12-18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
1	1-3	SS	12	10	9 23	7.1/6.4	Dark brown silt/clay, little sand large green cobble	
3	3-5	SS	10	9	22 24	5.8/6.2	Red brown silt and clay (grey-orange), little sand trace gravel	
5	5-7	SS	25	40	20 50	6.1/6.0	Same.	
7	7-9	SS	33	50	40 70	7.2/6.1	Brown fine sand/silt, trace gravel 20 mm.	GROUT
9	9-9.9	SS	60	100/.4		7.2/6.1	Brown fine silt/gravel 10mm rounded tightly packed, dry.	
11	11-11.8	SS	40	100/.3		4.2/5	Brown sand/gravel (20mm rounded subangular) some medium silt.	
13	13-14	SS	45	100		25/5.0	Brown to red brown silt/sand, some gravel angular to subangular	
15	15-15.8	SS	40	100/.3		15/5.6	Same - till.	
16	16-16.3	SS	100/.3			10.1/5.2	Green grey sandstone and weathered red sandstone, little silt, trace sand - refusal	
							BOH @ 16.5' @ 1410 hrs.	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
iler: Empire
pector: G. Goodman
ME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. TB-16
Sheet ____ of ____
Location N side Bldg. 201 W of critical care unit dock adjacent to large 33' red pine

GROUND WATER OBSERVATIONS

AT__ FT. AFTER __ HOURS

AT__ FT. AFTER __ HOURS

Weather Cloudy 55°F S 5 mph
Remarks

Surface Elev.
Date Start 5/15/86 0800
Date Finish 5/15/86 0935
Steam clean @ 1015

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
0.5	0.5-2.5	SS	4	8	10 15	10.1/5.6	Brown silt/sand, some clay silt loam root traces and organics.	
	Very little recovery							
3	3-5	SS	22	30	32 36	15.4/5.8	Same	
5	5-7	SS	27	48	43 52	5.2/5.6	Brown/red brown fine silt/sand, some rounded gravel 25mm.	GRWT
7	7-9	SS	44	30	30 35	15.8/5	Brown fine sand, some silt, little to trace subangular gravel 20 mm.	
9	9-11	SS	40	40	35 50	9.6/5.2	Red brown fine sand/silt, some rounded gravel (15-20mm)	
11	11-13	SS	45	100		18.1/5.1	Same.	
13	13-13.3	SS	100/3			10.1/5.2	Brown/red sandstone fragments.	
15	15-15.1	SS	100/1				No sample, auger refusal 0.2'/15 mins. BOH @ 15' @ 0935 hrs.	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
iller: Empire
ispector: G. Goodman
CME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. TB-17
Sheet ____ of ____
Location NW corner of Bldg. 201 E of dock #3, near manhole along dock front

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather Sunny 75°F Humid - S 5 mph
Remarks

Surface Elev.
Date Start 5/15/86 1050
Date Finish 5/15/86 1445

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0-6	6-12	12-18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
1	1-3	SS	4	4	7 11	6.1/5.9	Brown/red brown mottled sand and silt - little gravel - 5-10 mm.	
3	3-5	SS	7	7	11 15	6.8/5.8	Brown/orange mottled fine sand/ silt, some rounded gravel.	
5	5-7	SS	12	32	30 31	32.5/5.6	Dark red brown medium to coarse sand/gravel subrounded to rounded.	
7	7-9	SS	35	30	30 76	21.2/6.1	Brown medium to carse sand (2mm) and gravel grounded 10-15mm.	
9	9-11	SS	50	50	70 100	8.8/7.1	Red brown very fine silt and fine sand.	SLOUGHT
	No sample - hard augering						No sample @ 11-13	
13	13-13.2	SS	100/.2			10.1/7.0	Red brown fine silt and sand, little angular 5mm gravel.	
15	15-15.7	SS	100/.2			12.4/11.1	Brown gravel, some silt. Augered through gravel.	
18.6	18.6	SS	Refusal - no sample taken, spoon bounced off bottom - attempt to core 1.4' - boulders.					
18.6	18.6-20 C						Red/green grey sandstone cobbles	
	20-21	SS	24	100			Red fine weathered sandstone. BOH @ 21.0' @ 1445 hrs.	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
iller: Empire
spector: G. Goodman
CME 75

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. TB-18
Sheet ____ of ____
Location Adjacent to buried fuel oil tank

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather Cloudy Cool 65°F
Remarks

Surface Elev.
Date Start 5/19/86 0800
Date Finish 5/19/86 0935

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
1	1-3	SS	4	4	6 7	8.7/8.6	Dark brown silt and clay, some organics.	
3	3-5	SS	14	14	15 45	8.9/8.6	Brown silt and clay, some sand, little gravel 5mm.	
5	5-7	SS	25	32	35 38	8/8.5	Brown to red brown silt and clay, some coarse sand.	
7	7-8.5	SS	40	55	100	8.6/8.6	Red brown fine silt and sand.	
9	9-9.1	SS	100/.1				No recovery 0%.	
10	10-10.4	SS	100/.4			8.8/8.6	Red brown silt and some sand.	
12	12	SS	100/0			9.1/8.4	No recovery.	
15	15-17	SS	32	35	40 45	7.6/8.2	Red brown weathered sandstone, sandstone fragments and silt.	
18.4	SS		100/0				Spoon refusal BOH @ 18.4' @ 0935 hrs.	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

DRILLING CONTRACTOR:
ller: Empire
pector: G. Goodman

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Xerox Webster RI
PROJECT NO. 66302

BORING NO. TB-19
Sheet ____ of ____
Location SW of Bldg. 201 near ER low

GROUND WATER OBSERVATIONS
AT ___ FT. AFTER ___ HOURS
AT ___ FT. AFTER ___ HOURS

Weather Cloudy cool 55°F
Remarks

Surface Elev.
Date Start 5/21/86 1455
Date Finish 5/21/86 1630

DEPTH BELOW SURFACE	SAMPLE DEPTHS	TYPE OF SAMPLE	STANDARD PENETRATION TEST 0–6	6–12	12–18	Photovac Reading	REMARKS FIELD IDENTIFICATION OF MATERIAL (Incl. Color, Loss of Wash Water, Seams in Rock, etc.)	WELL CONSTRUCTION DETAILS
	1–3	SS	2	3	5 9	7.1/6.5	Brown/orange mottled silt and clay, some sand (loam) organics/roots.	
3	3–5	SS	8	9	10 13	8.6/6.3	Orange/brown mottled silt/clay.	
5	5–7	SS	30	22	22 34	6.9/6.2	Red brown coarse sand and silt.	
7	7–8	SS	43	100		6.9/6.2	Brown orange fine sand, some silt trace angular gravel.	
9	9–9.5	SS	100			7.5/6.2	Brown silt and gravel, most likely crushed boulder.	
11	11–12.4	SS	34	46	100/.4	6.8/6.2	Red brown coarse sand and gravel.	
13	13–14	SS	12	100		7.7/6.6	Red brown fine sand/silt, trace gravel (1 large 30mm cobble).	
15	15–17	SS	6	16	20 32	6.4/6.8	Red brown fine sand, some silt.	
17	17–17.9	SS	50	100/.4		9.3/6.9	Red black/grey coarse sand, little silt, trace gravel (rounded 5mm)	
19	19–19.9	SS	55	100/.4		7.4/6.6	Red brown fine sand, some silt, little 20mm rounded gravel.	
21	21–21.2	SS	100/.2			7.9/6.5	BOH @ 21.2'	

D = DRY W = WASHED C = CORED P = PIT A = AUGER CUTTINGS
U = UNDISTURBED SS = SPLIT SPOON

PAY QUANTITIES	
FOOTAGE IN EARTH	
FOOTAGE IN ROCK	
NO. OF SAMPLES	
CORE BARREL	

APPENDIX E

Water Level Information

SUMMARY OF WATER LEVEL DATA
BUILDING 201/206/218 FINAL RFI REPORT

WELL	DATE	GROUNDWATER ELEVATION
201-P1	05JUL94	395.82
201-P2	05JUL94	394.75
201-P3	05JUL94	394.22
201-P4	05JUL94	393.85
201-P5	05JUL94	393.09
201-P6	05JUL94	394.75
206-1	01JAN92	396.43
206-1	01APR92	396.28
206-1	01JUL92	395.87
206-1	01OCT92	396.11
206-1	01APR93	395.31
206-1	01JUL93	393.86
206-1	01OCT93	395.29
206-1	01JAN94	395.11
206-1	25MAY94	395.77
206-1	10JUN94	394.85
206-1	05JUL94	395.27
206-1-OB	01JAN92	396.53
206-1-OB	01APR92	397.39
206-1-OB	01JUL92	396.09
206-1-OB	01OCT92	396.32
206-1-OB	01JAN93	395.26
206-1-OB	01APR93	395.49
206-1-OB	01JUL93	393.73
206-1-OB	01OCT93	395.41
206-1-OB	01JAN94	395.63
206-1-OB	25MAY94	396.02
206-1-OB	10JUN94	395.2
206-1-OB	05JUL94	394.83
206-2	01JAN92	396.47
206-2	01APR92	396.38
206-2	01JUL92	396.02
206-2	01OCT92	396.01
206-2	01JAN93	395.26
206-2	01APR93	394.7
206-2	01JUL93	393.85
206-2	01OCT93	394.81
206-2	01JAN94	395.01
206-2	25MAY94	394.98
206-2	10JUN94	394.47
206-2	05JUL94	394.06
206-2D	01JAN93	394.64
206-2D	01APR93	380.15
206-2D	01JUL93	377.85
206-2D	01OCT93	378.07
206-2D	01JAN94	378.86
206-2I	01JAN92	389.96
206-2I	01APR92	389.39
206-2I	01JUL92	390.05
206-2I	01OCT92	389.6
206-2I	01APR93	389.98
206-2I	01JUL93	387.19
206-2I	01OCT93	389.41
206-2I	01JAN94	388.47
206-3	01JAN92	395.71
206-3	01APR92	394.88
206-3	01JUL92	395.17
206-3	01OCT92	394.52
206-3	01JAN93	388.9
206-3	01APR93	393.62
206-3	01JUL93	391.98
206-3	01OCT93	393.18
206-3	01JAN94	392.94
206-3	25MAY94	394.11
206-3	10JUN94	393.26
206-3	05JUL94	393.21

SUMMARY OF WATER LEVEL DATA
BUILDING 201/206/218 FINAL RFI REPORT

WELL	DATE	GROUNDWATER ELEVATION
218-1	01JAN92	394.66
218-1	01APR92	394.13
218-1	01JUL92	394.43
218-1	01OCT92	394.63
218-1	01JAN93	393.55
218-2	01JAN92	386.81
218-2	01APR92	387.21
218-2	01JAN93	394.06
218-3	01JAN92	385.99
218-3	01APR92	386.22
218-3	01JAN94	384.7
218-3D	01JAN92	379.75
218-3D	01APR92	380.32
218-3D	01JUL92	380.2
218-3D	01OCT92	380.65
218-3D	01APR93	380.07
218-3D	01JUL93	377.64
218-3D	01OCT93	378.9
218-3D	01JAN94	379.32
218-3I	01JAN92	384.79
218-3I	01APR92	384.64
218-3I	01JAN93	380.55
218-3I	01OCT93	383.03
218-3I	01JAN94	383.24
218-4	01JAN92	394.86
218-4	01APR92	394.33
218-4	01JUL92	393.91
218-4	01OCT92	394.19
218-4	01APR93	394.35
218-4	01JUL93	393.07
218-4	01OCT93	393.74
218-4	01JAN94	392.7
218-5	01JAN92	390.35
218-5	01APR92	390.44
218-5	01JUL92	390.05
218-5	01OCT92	389.95
218-5	01JAN93	393.21
218-5	01APR93	390.68
218-5	01JUL93	389.07
218-5	01OCT93	389.24
218-5	01JAN94	393.67
218-5	25MAY94	389.87
218-5	10JUN94	389.74
218-5	05JUL94	389.57
218-5I	01JAN92	386.83
218-5I	01APR92	388.17
218-5I	01JUL92	387.48
218-5I	01OCT92	387.23
218-5I	01JAN93	389.86
218-5I	01APR93	386.18
218-5I	01JUL93	383.07
218-5I	01OCT93	385.08
218-5I	01JAN94	386.3
218-6	01JAN92	389.22
218-6	01APR92	388.9
218-6	01JUL92	389.07
218-6	01OCT92	388.86
218-6	01JAN93	386.16
218-6	01APR93	389.27
218-6	01JUL93	386.43
218-6	01OCT93	386.08
218-6	01JAN94	386.67
218-6	25MAY94	387.95
218-6	10JUN94	387.34
218-6	05JUL94	387.02
218-7	01JAN92	383.51

SUMMARY OF WATER LEVEL DATA
BUILDING 201/206/218 FINAL RFI REPORT

WELL	DATE	GROUNDWATER ELEVATION
218-7	01APR92	382.29
218-7	01JUL92	382.65
218-7	01OCT92	382.91
218-7	01JAN93	388.95
218-7	01APR93	381.84
218-7	01JUL93	379.85
218-7	01OCT93	381.82
218-7	01JAN94	382.11
218-7	11MAY94	382.05
218-7	10JUN94	380.6
218-7	05JUL94	380.6
218-7D	01JAN93	381.88
218-7D	01APR93	376.75
218-7D	01JUL93	374.17
218-7D	01OCT93	375.93
218-7D	01JAN94	377.09
218-7I	01JAN92	380.78
218-7I	01APR92	380.7
218-7I	01JUL92	381.16
218-7I	01OCT92	381.18
218-7I	01APR93	380.31
218-7I	01JUL93	378.13
218-7I	01OCT93	379.6
218-7I	01JAN94	379.9
218-9	01JAN92	386.21
218-9	01APR92	386.31
218-9	01JUL92	386.11
218-9	01OCT92	386.3
218-9	01JAN93	380.8
218-9	01APR93	385.77
218-9	01JUL93	377.7
218-9	01OCT93	382.24
218-9	01JAN94	382.8
218-9	11MAY94	386.16
218-9	10JUN94	380.09
218-9	05JUL94	380.97
218-9D	01JAN93	385.77
218-9D	01APR93	376.24
218-9D	01JUL93	373.29
218-9D	01OCT93	375.84
218-9D	01JAN94	376.85
218-9I	01JAN92	380.14
218-9I	01APR92	380.33
218-9I	01JUL92	380.67
218-9I	01OCT92	381.14
218-9I	01APR93	379.84
218-9I	01JUL93	377.75
218-9I	01OCT93	379.49
218-9I	01JAN94	379.78
218-P1	25MAY94	391.84
218-P1	10JUN94	391.06
218-P1	05JUL94	390.58
218-P2	25MAY94	392.67
218-P2	10JUN94	392.17
218-P2	05JUL94	391.75
218-P3	25MAY94	392.55
218-P3	05JUL94	392.13
218-P4	25MAY94	392.88
218-P4	10JUN94	393.89
218-P4	05JUL94	394.27
218-P5	25MAY94	392.62
218-P5	10JUN94	392.53
218-P5	05JUL94	392.67
218-P6	25MAY94	393.28
218-P6	10JUN94	393.16
218-P6	05JUL94	395.45

SUMMARY OF WATER LEVEL DATA
BUILDING 201/206/218 FINAL RFI REPORT

WELL	DATE	GROUNDWATER ELEVATION
218-P7	25MAY94	393.1
218-P7	05JUL94	393.33
REC 218-	01JAN93	380.44
REC218-1	10JUN94	376.64
REC218-1	05JUL94	376.4
RW-1	01JAN92	399.6
RW-1	01APR92	399.28
RW-1	01JUL92	398.33
RW-1	01OCT92	398.18
RW-1	01APR93	398.72
RW-1	01JUL93	396.32
RW-1	01OCT93	396.63
RW-1	01JAN94	397.41
RW-1	13MAY94	397.9
RW-1	10JUN94	397.28
RW-1	05JUL94	396.48
RW-10	01JAN93	398.6
RW-10I	01JAN92	389.26
RW-10I	01APR92	389.15
RW-10I	01JUL92	389.49
RW-10I	01OCT92	389.19
RW-10I	01APR93	388.52
RW-10I	01JUL93	388.19
RW-10I	01OCT93	390.89
RW-10I	01JAN94	387.27
RW-11	01JAN92	398.1
RW-11	01APR92	396.75
RW-11	01JUL92	396.2
RW-11	01OCT92	396.2
RW-11	01JAN93	388.39
RW-11	01APR93	396.07
RW-11	01JUL93	395.41
RW-11	01OCT93	395.45
RW-11	01JAN94	395.45
RW-11	25MAY94	396
RW-11	10JUN94	395.42
RW-11	05JUL94	395.33
RW-12	01JAN92	397.59
RW-12	01APR92	391.64
RW-12	01JUL92	396.49
RW-12	01OCT92	396.86
RW-12	01JAN93	396.08
RW-12	01APR93	396.87
RW-12	01JUL93	394.14
RW-12	01OCT93	395.61
RW-12	01JAN94	396.39
RW-12	10JUN94	396.07
RW-12	05JUL94	395.44
RW-12D	01JAN93	396.9
RW-12I	01JAN92	391.22
RW-12I	01APR92	395.47
RW-12I	01JUL92	391.1
RW-12I	01OCT92	391.22
RW-12I	01APR93	390.65
RW-12I	01JUL93	386.89
RW-12I	01OCT93	389.24
RW-12I	01JAN94	388.4
RW-13	01JAN92	392.75
RW-13	01APR92	391.89
RW-13	01JUL92	391.8
RW-13	01OCT92	391.54
RW-13	01JAN93	390.67
RW-13	01APR93	391.46
RW-13	01JUL93	388.52
RW-13	01OCT93	389.89
RW-13	01JAN94	388.57

SUMMARY OF WATER LEVEL DATA
BUILDING 201/206/218 FINAL RFI REPORT

WELL	DATE	GROUNDWATER ELEVATION
RW-13	12MAY94	390.6
RW-13	10JUN94	388.74
RW-13	05JUL94	388.35
RW-14	01JAN92	393.64
RW-14	01APR92	392.31
RW-14	01JUL92	392.26
RW-14	01OCT92	392.09
RW-14	01JAN93	390.92
RW-14	01APR93	392.03
RW-14	01JUL93	387.9
RW-14	01OCT93	389.49
RW-14	01JAN94	388.79
RW-14	12MAY94	391.1
RW-14	10JUN94	389.72
RW-14	05JUL94	388.5
RW-14D	01JAN92	379.13
RW-14D	01JAN93	391.56
RW-14D	01JUL93	378.11
RW-14D	01OCT93	377.97
RW-14D	01JAN94	379.1
RW-14I	01JAN92	386.26
RW-14I	01APR92	385.93
RW-14I	01JUL92	386.04
RW-14I	01OCT92	386.08
RW-14I	01APR93	385.86
RW-14I	01JUL93	378.54
RW-14I	01OCT93	382.58
RW-14I	01JAN94	382.63
RW-15	01JAN92	391.75
RW-15	01APR92	390.82
RW-15	01JUL92	391.16
RW-15	01OCT92	391.37
RW-15	01JAN93	386.01
RW-15	01APR93	390.5
RW-15	01JUL93	383.12
RW-15	01OCT93	386.77
RW-15	01JAN94	385.98
RW-15	10MAY94	389.26
RW-15	10JUN94	384.45
RW-15	05JUL94	384.35
RW-15D	01JAN93	390.63
RW-15I	01JAN92	386.09
RW-15I	01APR92	385.78
RW-15I	01JUL92	385.97
RW-15I	01OCT92	386.34
RW-15I	01APR93	385.76
RW-15I	01JUL93	377.08
RW-15I	01OCT93	381.84
RW-15I	01JAN94	381.79
RW-15I	10MAY94	386.53
RW-15I	10JUN94	379.03
RW-15I	05JUL94	378.95
RW-16	01JAN92	386.32
RW-16	01APR92	385.86
RW-16	01JUL92	385.88
RW-16	01OCT92	386.25
RW-16	01JAN93	385.94
RW-16	01APR93	385.96
RW-16	01JUL93	374.77
RW-16	01OCT93	380.76
RW-16	01JAN94	380.83
RW-16	10MAY94	386.72
RW-16	10JUN94	377.24
RW-16	05JUL94	376.97
RW-16D	01JAN93	385.93
RW-16I	01JAN92	384.41

SUMMARY OF WATER LEVEL DATA
BUILDING 201/206/218 FINAL RFI REPORT

WELL	DATE	GROUNDWATER ELEVATION
RW-16I	01APR92	383.67
RW-16I	01JUL92	383.95
RW-16I	01OCT92	384.44
RW-16I	01APR93	383.86
RW-16I	01JUL93	377.94
RW-16I	01OCT93	381.54
RW-16I	01JAN94	382.49
RW-16I	10MAY94	384.78
RW-16I	10JUN94	379.82
RW-16I	05JUL94	379.57
RW-17	01JAN92	381.65
RW-17	01APR92	380.68
RW-17	01JUL92	380.89
RW-17	01OCT92	381.44
RW-17	01JAN93	384.14
RW-17	01APR93	380.44
RW-17	01JUL93	378.01
RW-17	01OCT93	380.44
RW-17	01JAN94	380.62
RW-17	10MAY94	381.3
RW-17	10JUN94	379.53
RW-17	05JUL94	379.36
RW-18	01JAN92	377.95
RW-18	01APR92	377.37
RW-18	01JUL92	377.39
RW-18	01OCT92	377.86
RW-18	01JAN93	381.2
RW-18	01APR93	377.09
RW-18	01JUL93	374.86
RW-18	01OCT93	376.64
RW-18	01JAN94	377.25
RW-18	10MAY94	377.71
RW-18	10JUN94	376.23
RW-18	05JUL94	376.07
RW-19	01JAN92	386.03
RW-19	01APR92	387.03
RW-19	01JUL92	386.43
RW-19	01OCT92	386.58
RW-19	01JAN93	377.64
RW-19	01APR93	386.15
RW-19	01JUL93	374.87
RW-19	01OCT93	381.4
RW-19	01JAN94	381.85
RW-19	11MAY94	387.08
RW-19	10JUN94	378.45
RW-19	05JUL94	378.19
RW-19I	01APR92	375.95
RW-19I	01JUL92	378.74
RW-19I	01OCT92	376.96
RW-19I	01JAN93	385.98
RW-19I	01APR93	380.23
RW-19I	01JUL93	377.55
RW-19I	01OCT93	373.95
RW-19I	01JAN94	374.82
RW-19I	11MAY94	379.25
RW-19I	10JUN94	366.01
RW-19I	05JUL94	371.31
RW-1D	01JAN93	380.39
RW-1I	01JAN92	390.4
RW-1I	01APR92	389.7
RW-1I	01JUL92	389.73
RW-1I	01OCT92	389.75
RW-1I	01APR93	389.18
RW-1I	01JUL93	388.85
RW-1I	01OCT93	390.59
RW-1I	01JAN94	387.84

SUMMARY OF WATER LEVEL DATA
BUILDING 201/206/218 FINAL RFI REPORT

WELL	DATE	GROUNDWATER ELEVATION
RW-2	01JAN92	396.62
RW-2	01APR92	394.4
RW-2	01JUL92	393.9
RW-2	01JAN93	388.92
RW-20	01JAN92	382.6
RW-20	01APR92	384.31
RW-20	01JUL92	382.22
RW-20	01OCT92	382.73
RW-20	01APR93	381.18
RW-20	01JUL93	378.51
RW-20	01OCT93	381.01
RW-20	01JAN94	382.12
RW-20	10MAY94	382.08
RW-20	10JUN94	380.21
RW-20	05JUL94	379.87
RW-20I	01JAN92	379.45
RW-20I	01APR92	379.77
RW-20I	01JUL92	378.88
RW-20I	01OCT92	379.45
RW-20I	01JAN93	382
RW-20I	01APR93	378.28
RW-20I	01JUL93	376.9
RW-20I	01OCT93	379.03
RW-20I	01JAN94	380.14
RW-21	01APR92	385.04
RW-21	01JUL92	385.04
RW-21	01OCT92	385.51
RW-21	01JAN93	380.15
RW-21	01APR93	384.25
RW-21	01JUL93	379.18
RW-21	01OCT93	382.41
RW-21	01JAN94	383.54
RW-21	10MAY94	385.11
RW-21	10JUN94	381.43
RW-21	05JUL94	381.11
RW-22	01APR92	387.67
RW-22	01JUL92	386.91
RW-22	01OCT92	387.29
RW-22	01JAN93	384.9
RW-22	01APR93	386.86
RW-22	01JUL93	382.97
RW-22	01OCT93	384.88
RW-22	01JAN94	386.4
RW-22	10MAY94	386.94
RW-22	10JUN94	385.73
RW-22	05JUL94	384.89
RW-23	01JAN93	386.89
RW-23	01JUL93	380.45
RW-23	01OCT93	383.84
RW-23	10MAY94	387.78
RW-23	10JUN94	382.23
RW-23	05JUL94	382.19
RW-24	01JUL93	388.12
RW-24	01OCT93	388.69
RW-24	01JAN94	388.74
RW-24	10MAY94	390.59
RW-24	05JUL94	389.6
RW-3	01JAN92	394.63
RW-4	01JAN92	396.56
RW-5	01JAN92	397.32
RW-5	01APR92	396.67
RW-5	01JUL92	396.45
RW-5	01OCT92	396.03
RW-5	01APR93	396.13
RW-5	01JUL93	395.34
RW-5	01OCT93	396.17

SUMMARY OF WATER LEVEL DATA
BUILDING 201/206/218 FINAL RFI REPORT

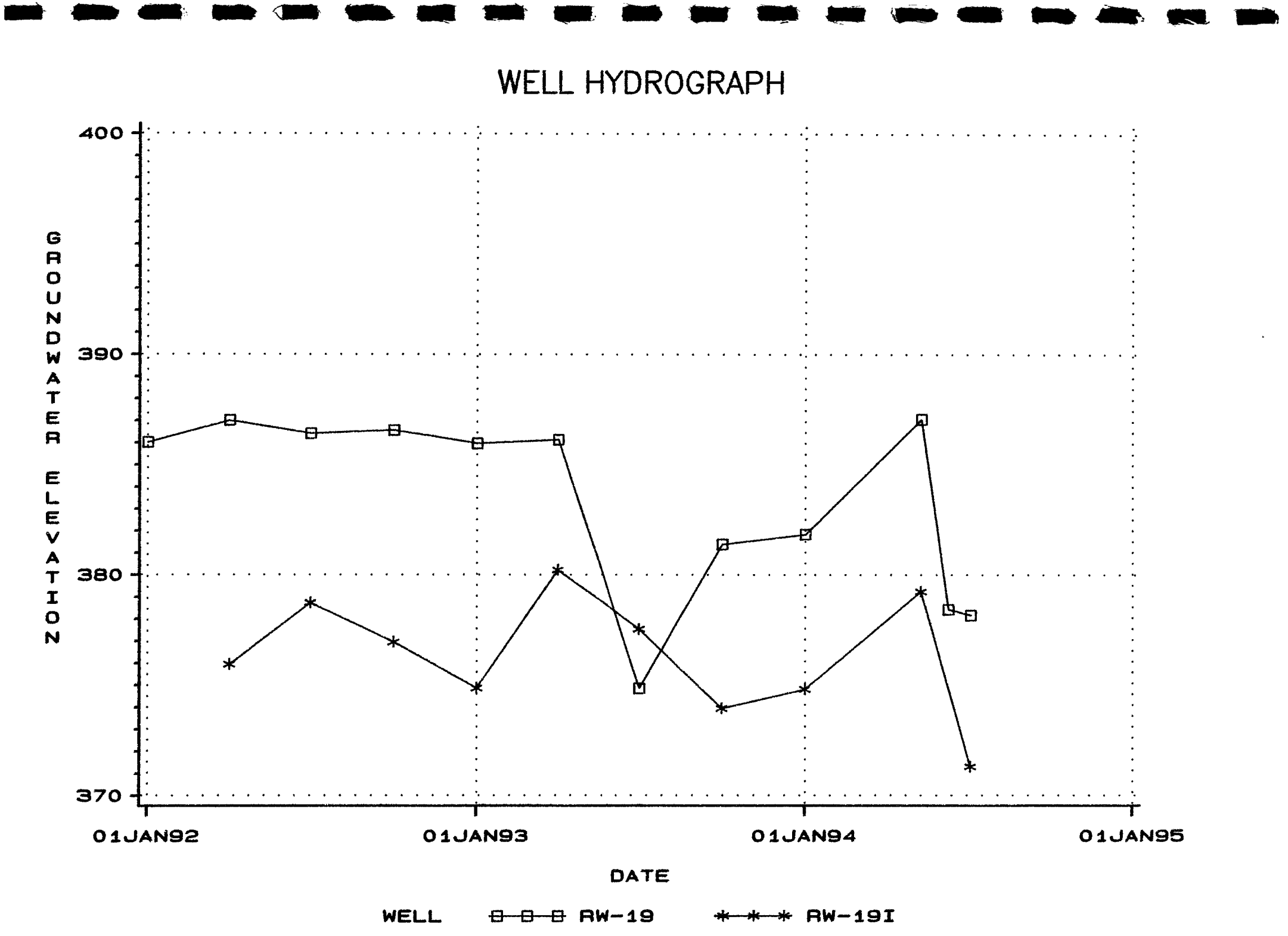
WELL	DATE	GROUNDWATER ELEVATION
RW-5	01JAN94	395.59
RW-5	25MAY94	396.05
RW-5	10JUN94	395.46
RW-5	05JUL94	394.93
RW-6	01JAN92	396.66
RW-6	01APR92	395.1
RW-6	01JUL92	394.94
RW-6	01OCT92	394.85
RW-6	01JAN93	396.27
RW-6	01APR93	394.53
RW-6	01JUL93	393.78
RW-6	01OCT93	394.68
RW-6	01JAN94	394.36
RW-6	25MAY94	394.65
RW-6	10JUN94	394.05
RW-6	05JUL94	393.88
RW-7	01JAN92	397.71
RW-7	01APR92	396.69
RW-7	01JUL92	396.4
RW-7	01OCT92	396.03
RW-7	01JAN93	394.24
RW-7	01APR93	396.21
RW-7	01JUL93	395.53
RW-7	01OCT93	395.96
RW-7	01JAN94	396.03
RW-7	13MAY94	395.1
RW-7	10JUN94	394.42
RW-7	05JUL94	394.06
RW-8	01JAN92	397.38
RW-8	01APR92	396
RW-8	01JUL92	395.9
RW-8	01OCT92	394.65
RW-8	01JAN93	395.62
RW-8	01APR93	395.02
RW-8	01JUL93	395.67
RW-8	01OCT93	395.99
RW-8	01JAN94	393.31
RW-8	10JUN94	393.05
RW-8	05JUL94	394.01
RW-9	01JAN92	398.93
RW-9	01APR92	397.72
RW-9	01JUL92	397.28
RW-9	01OCT92	396.89
RW-9	01JAN93	394.42
RW-9	01APR93	396.42
RW-9	01JUL93	395.51
RW-9	01OCT93	395.62
RW-9	01JAN94	393.35
RW-9	10JUN94	394.12
RW-9	05JUL94	393.09
SP-1	25MAY94	394.19
SP-1	10JUN94	394.06
SP-1	05JUL94	393.52
SP-2	25MAY94	393.23
SP-2	10JUN94	391.72
SP-2	05JUL94	391.84
SP-3	25MAY94	386.16
SP-3	10JUN94	385.77
SP-3	05JUL94	385.11
SP-4	25MAY94	395.12
SP-4	10JUN94	394.53
SP-4	05JUL94	394.05
SW-1	01JAN92	399.51
SW-1	01APR92	399.19
SW-1	01JUL92	398.25
SW-1	01OCT92	398.09

SUMMARY OF WATER LEVEL DATA
BUILDING 201/206/218 FINAL RFI REPORT

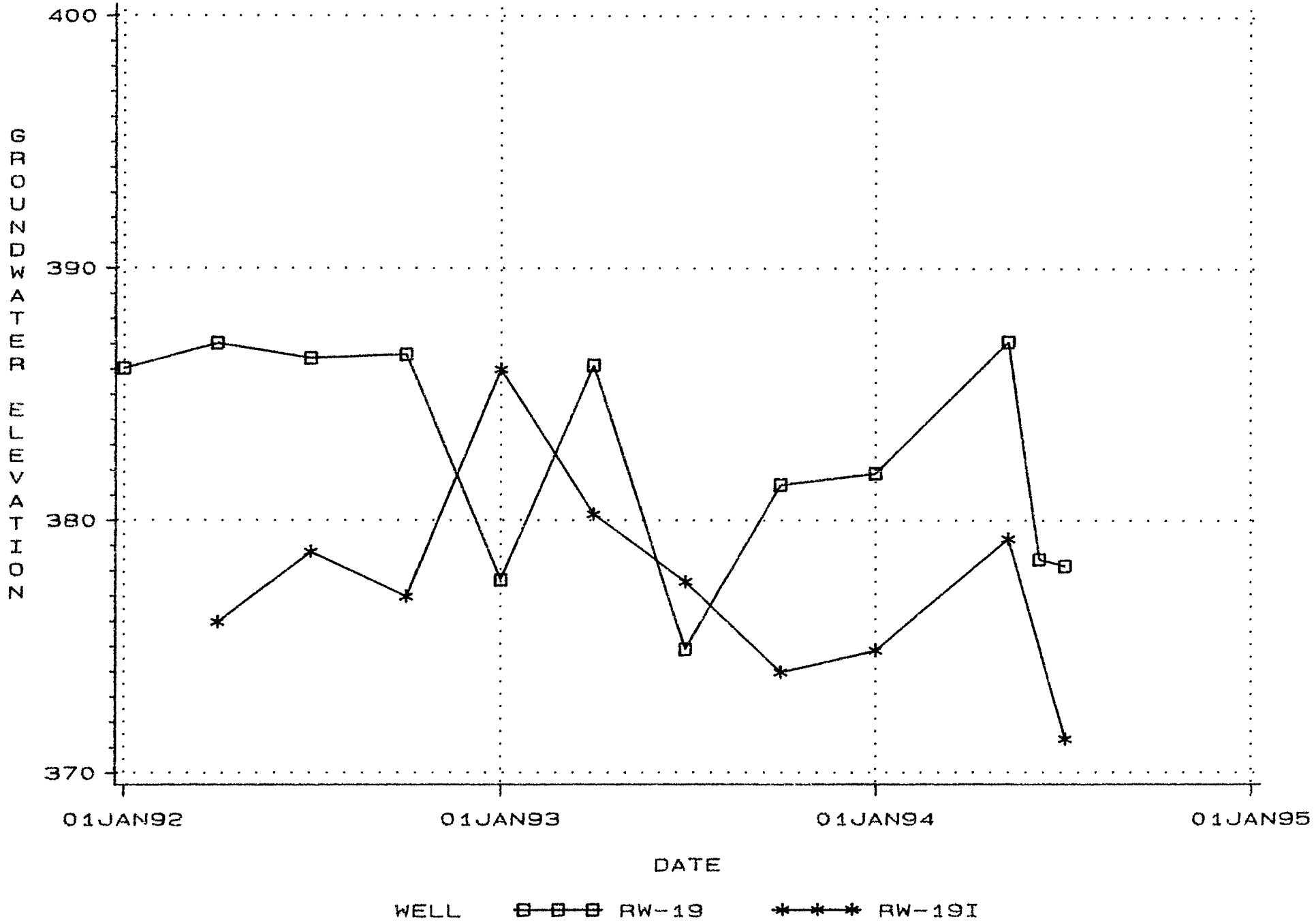
WELL	DATE	GROUNDWATER ELEVATION
SW-1	01JAN93	396.35
SW-1	01APR93	398.64
SW-1	01JUL93	396.26
SW-1	01OCT93	396.6
SW-1	01JAN94	397.34
SW-1	13MAY94	397.88
SW-1	10JUN94	397.23
SW-1	05JUL94	396.77
SW-2	01JAN92	395.7
SW-2	01APR92	397.3
SW-2	01JUL92	397.08
SW-2	01JAN93	398.55
SW-3	01JAN92	395.42
SW-4	01JAN92	397.03

APPENDIX F

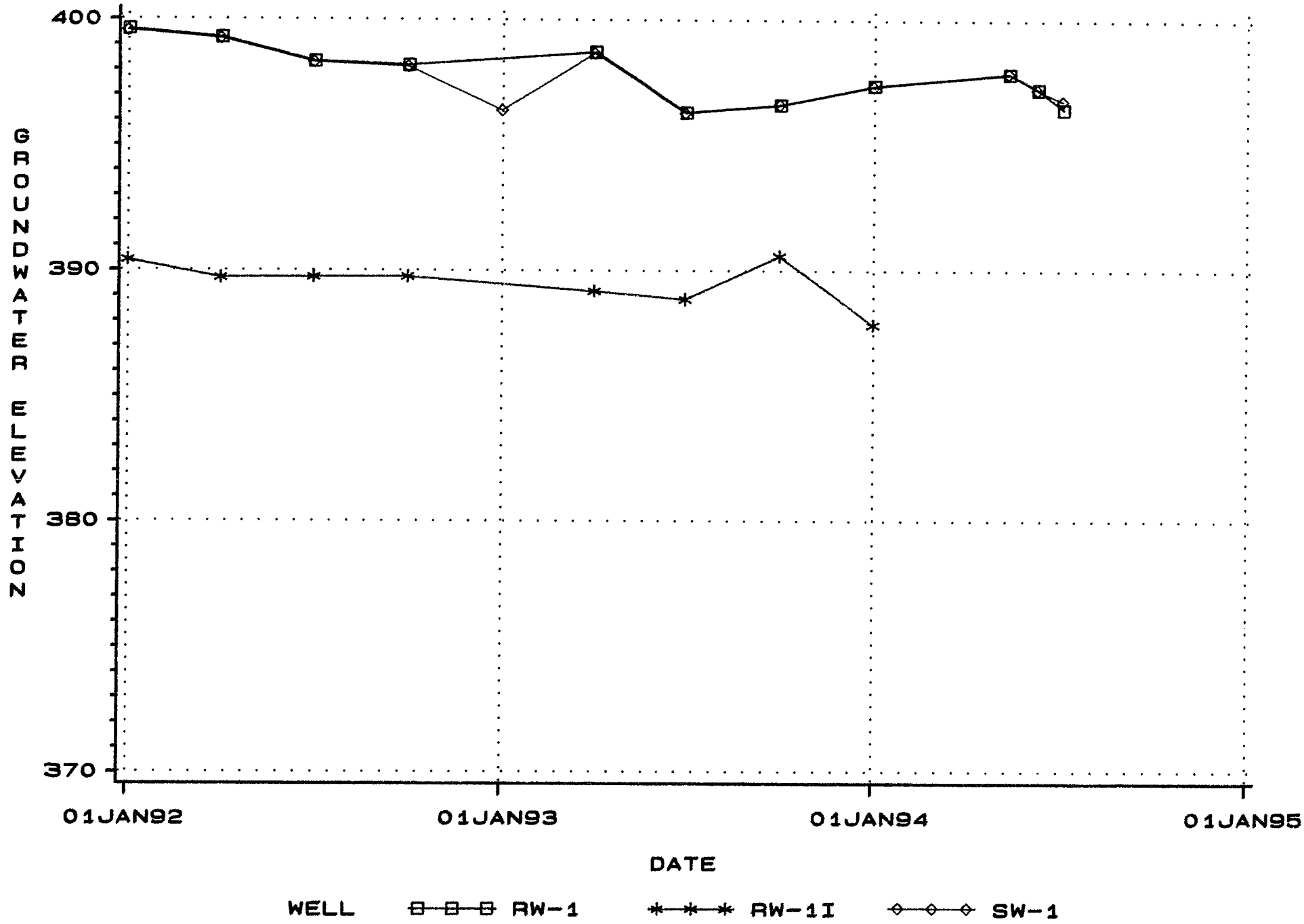
Hydrographs


WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-19
RW-19I

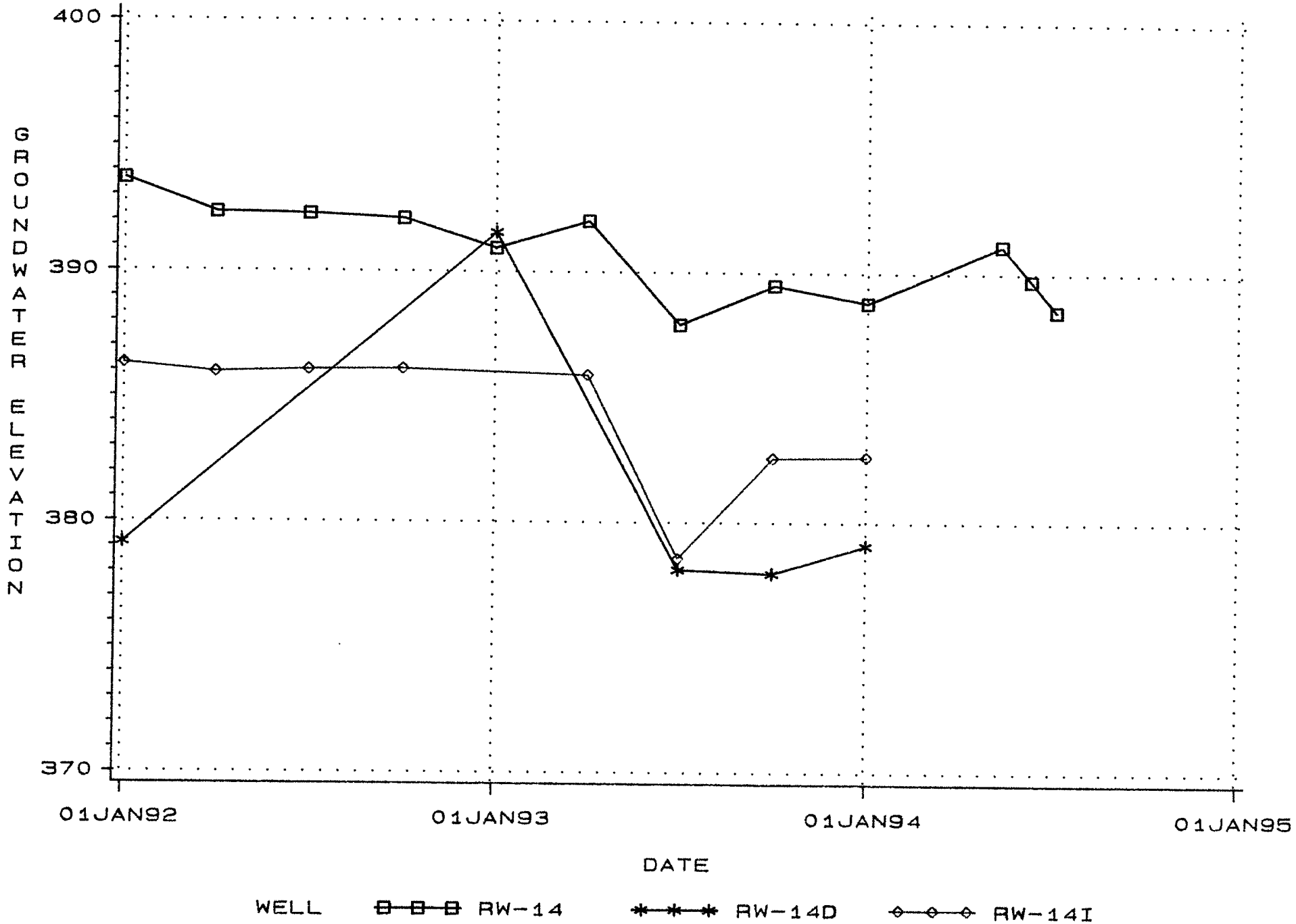
WELL HYDROGRAPH



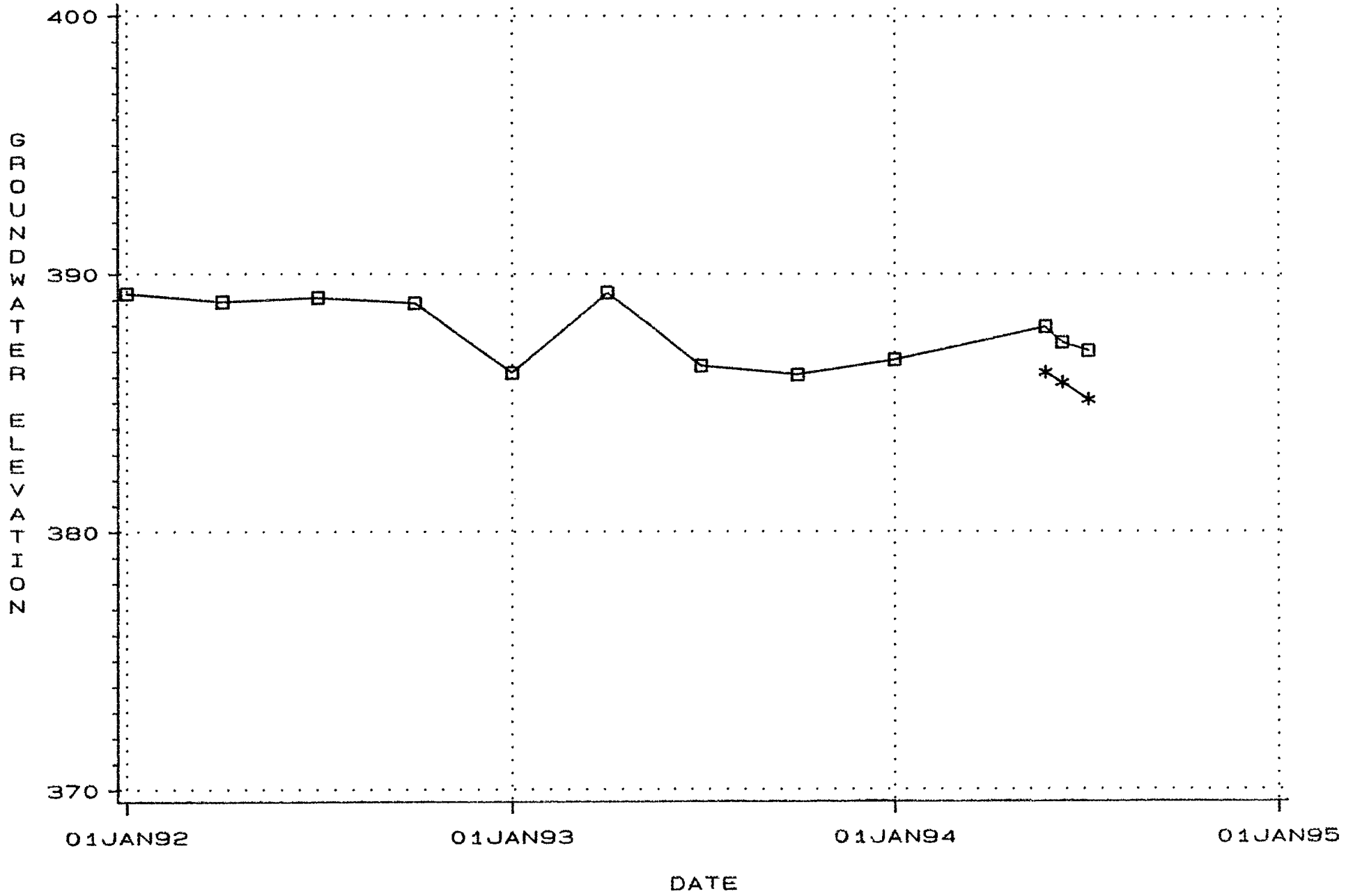
WELL HYDROGRAPH



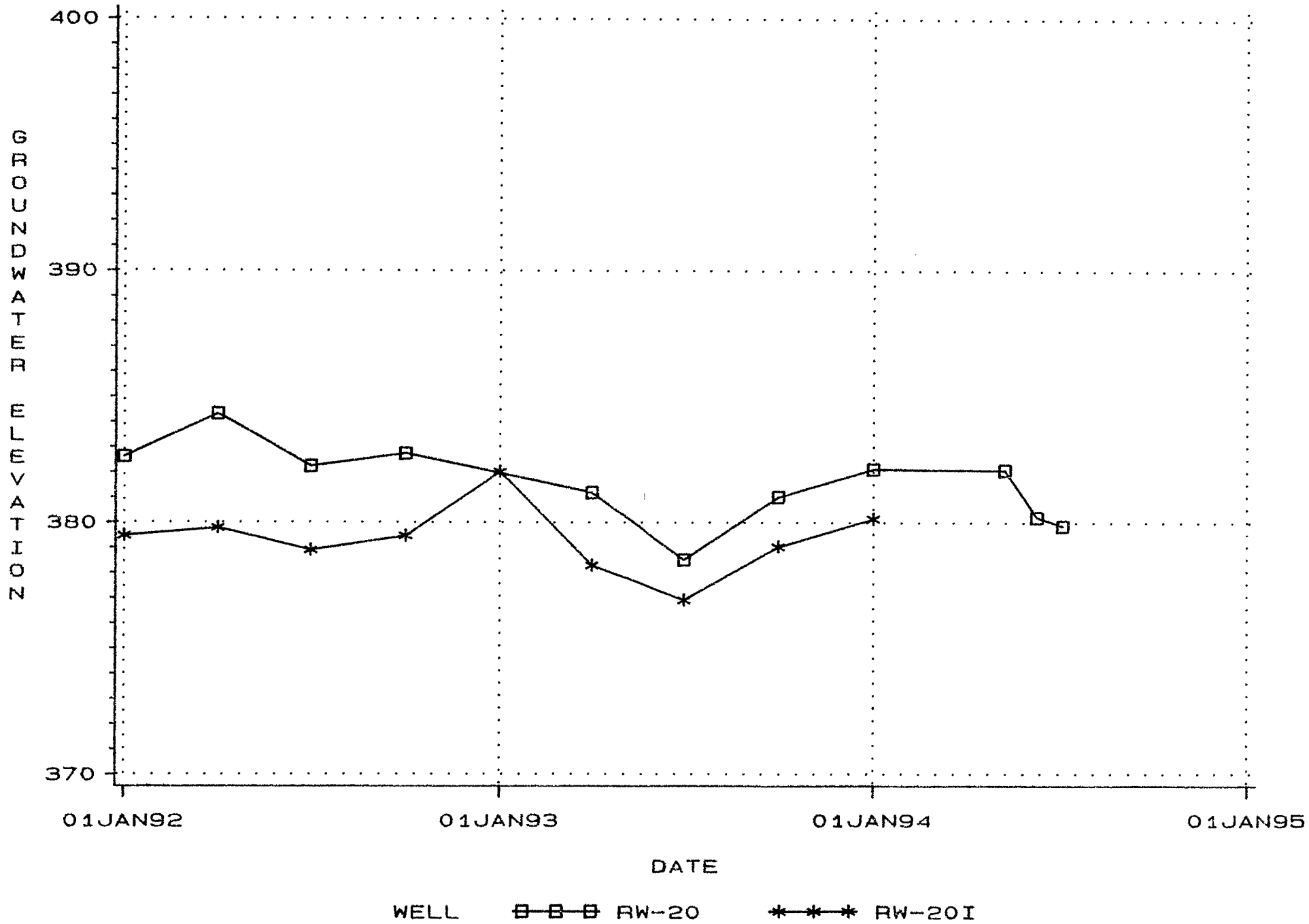
WELL HYDROGRAPH



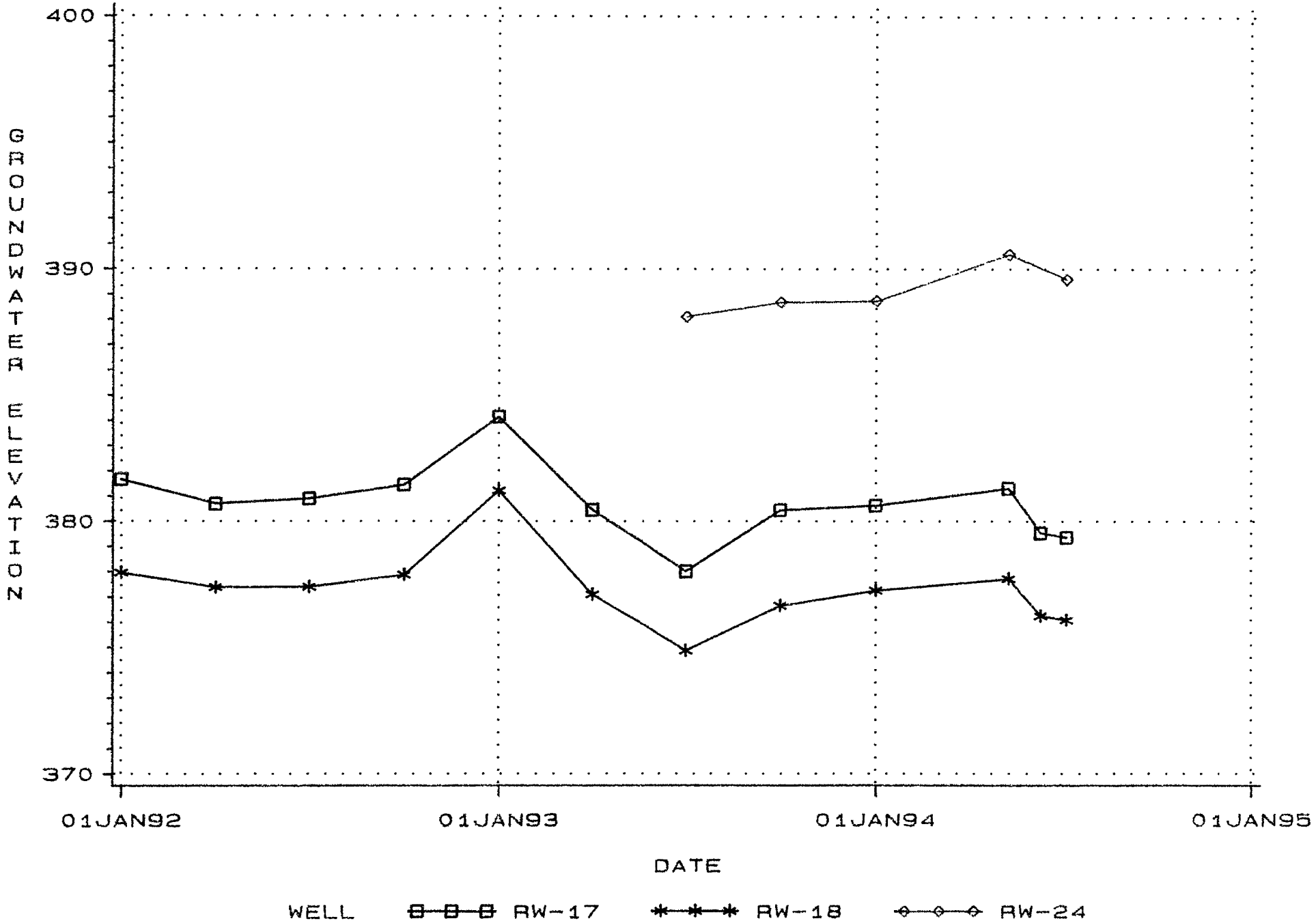
WELL HYDROGRAPH



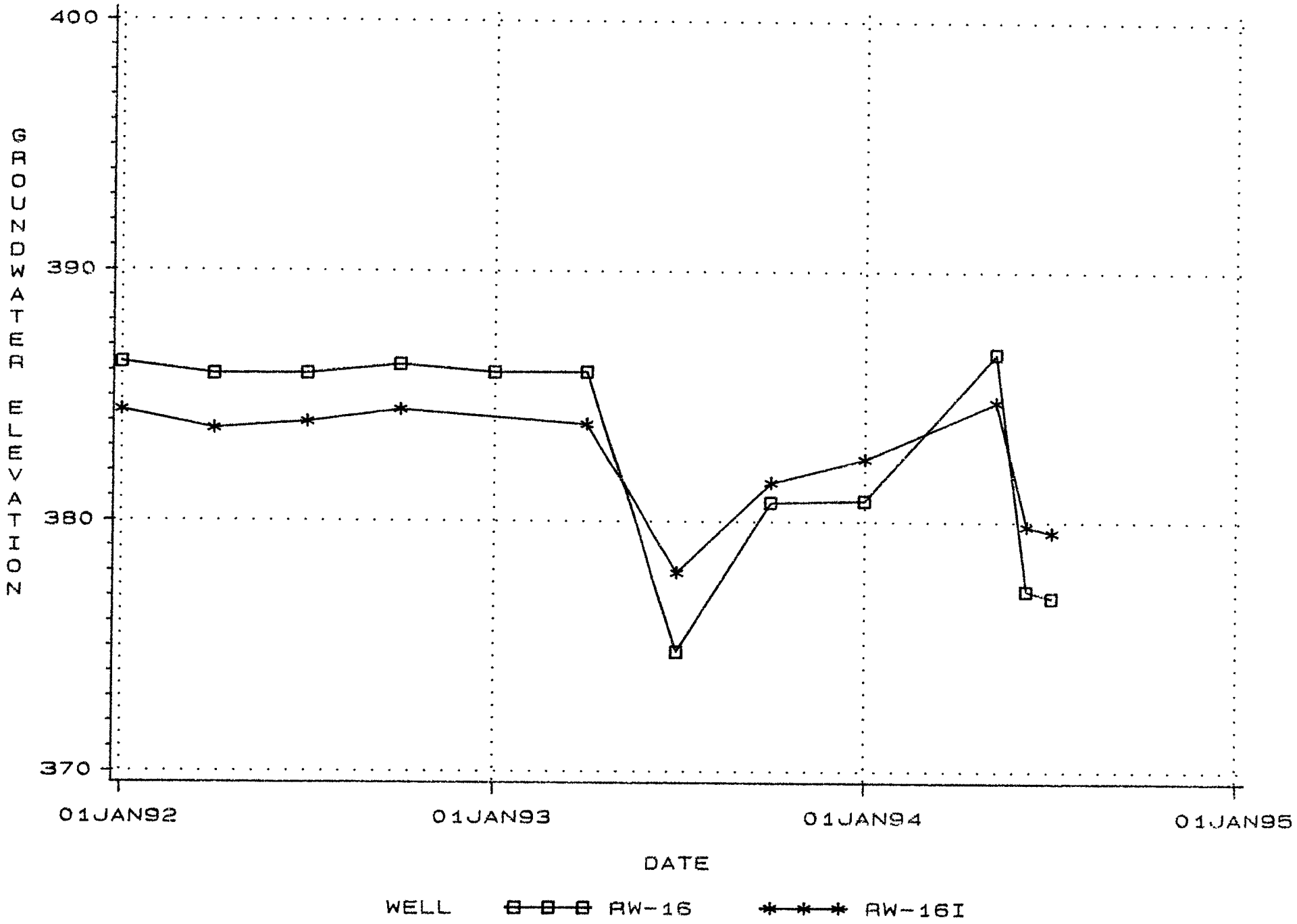
WELL HYDROGRAPH

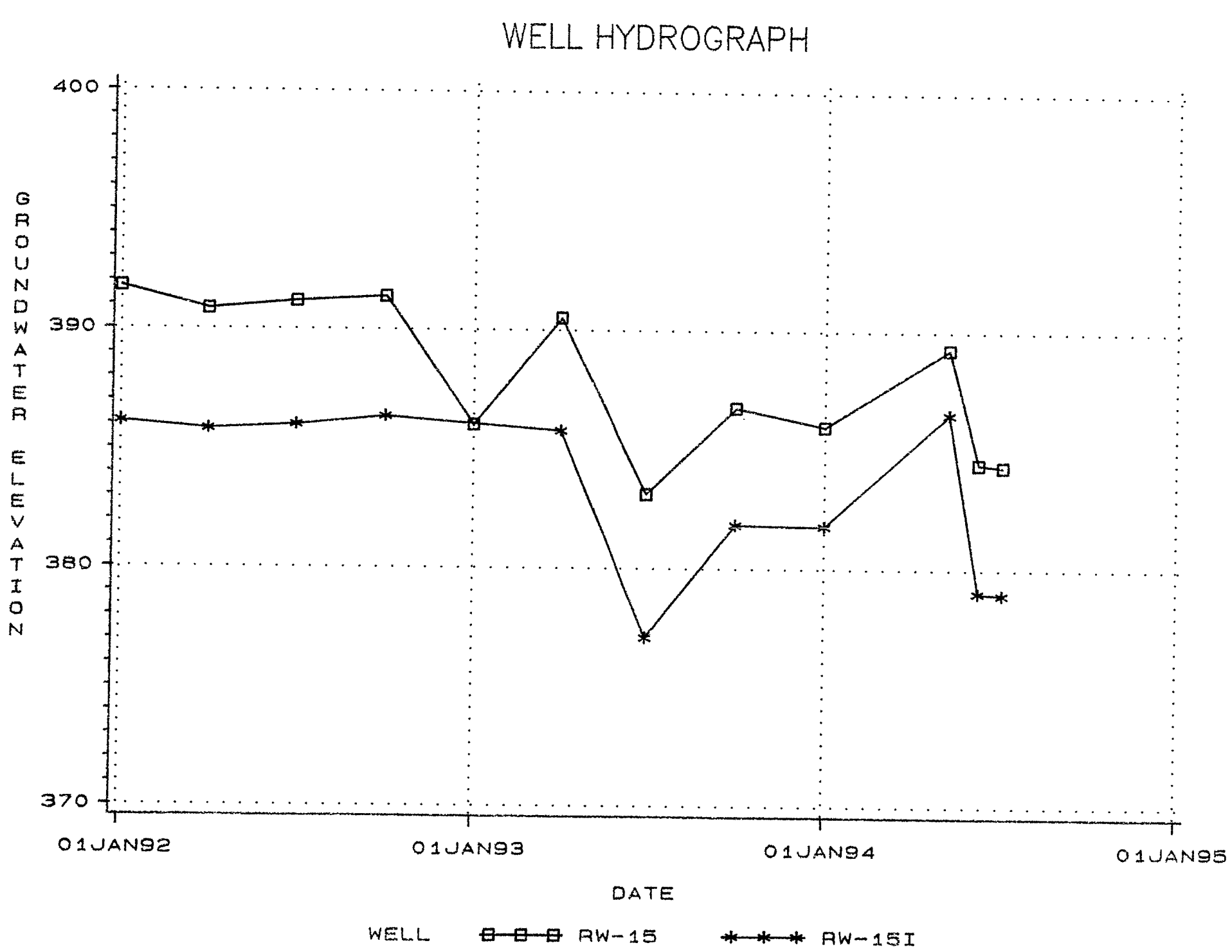


WELL HYDROGRAPH

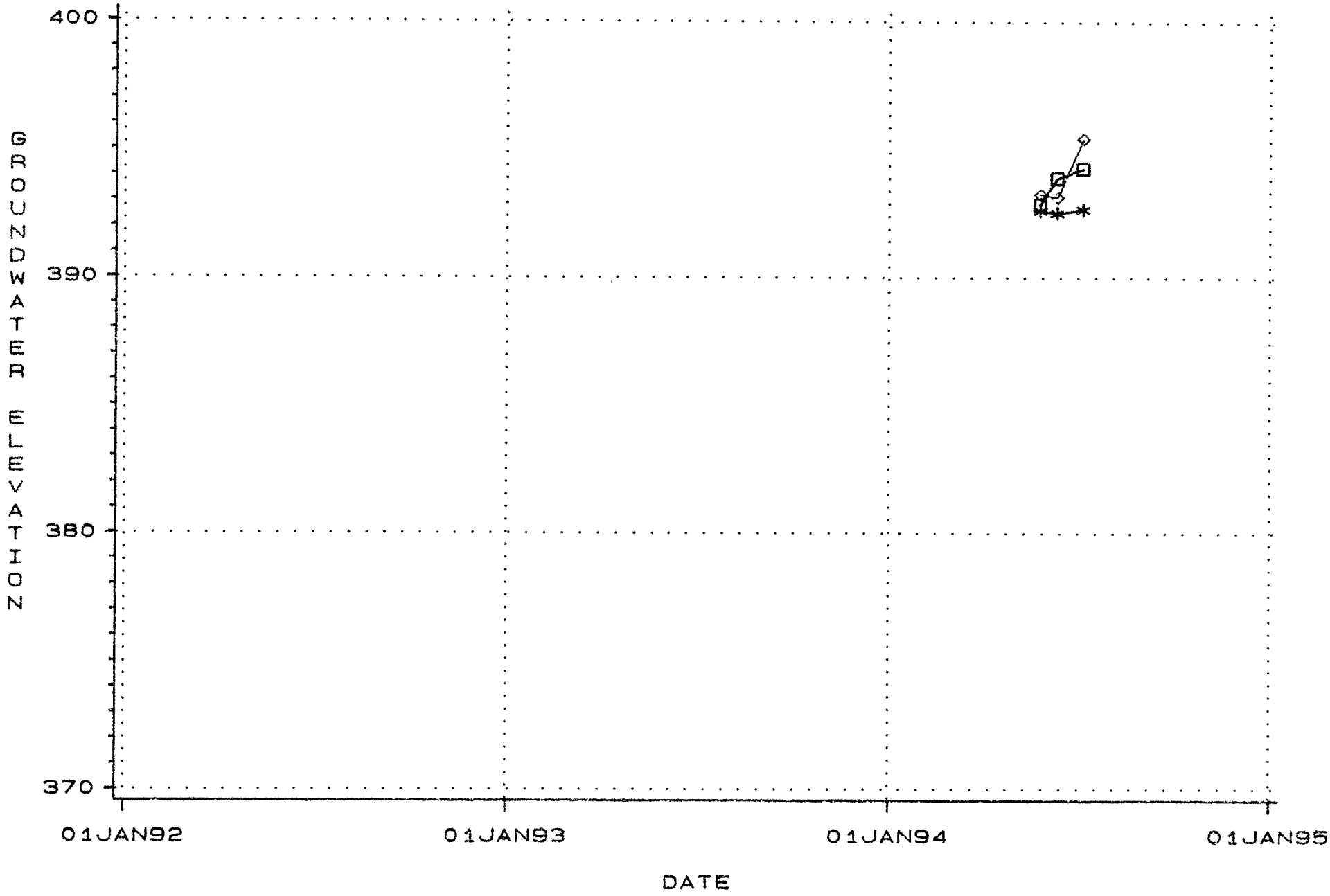


WELL HYDROGRAPH

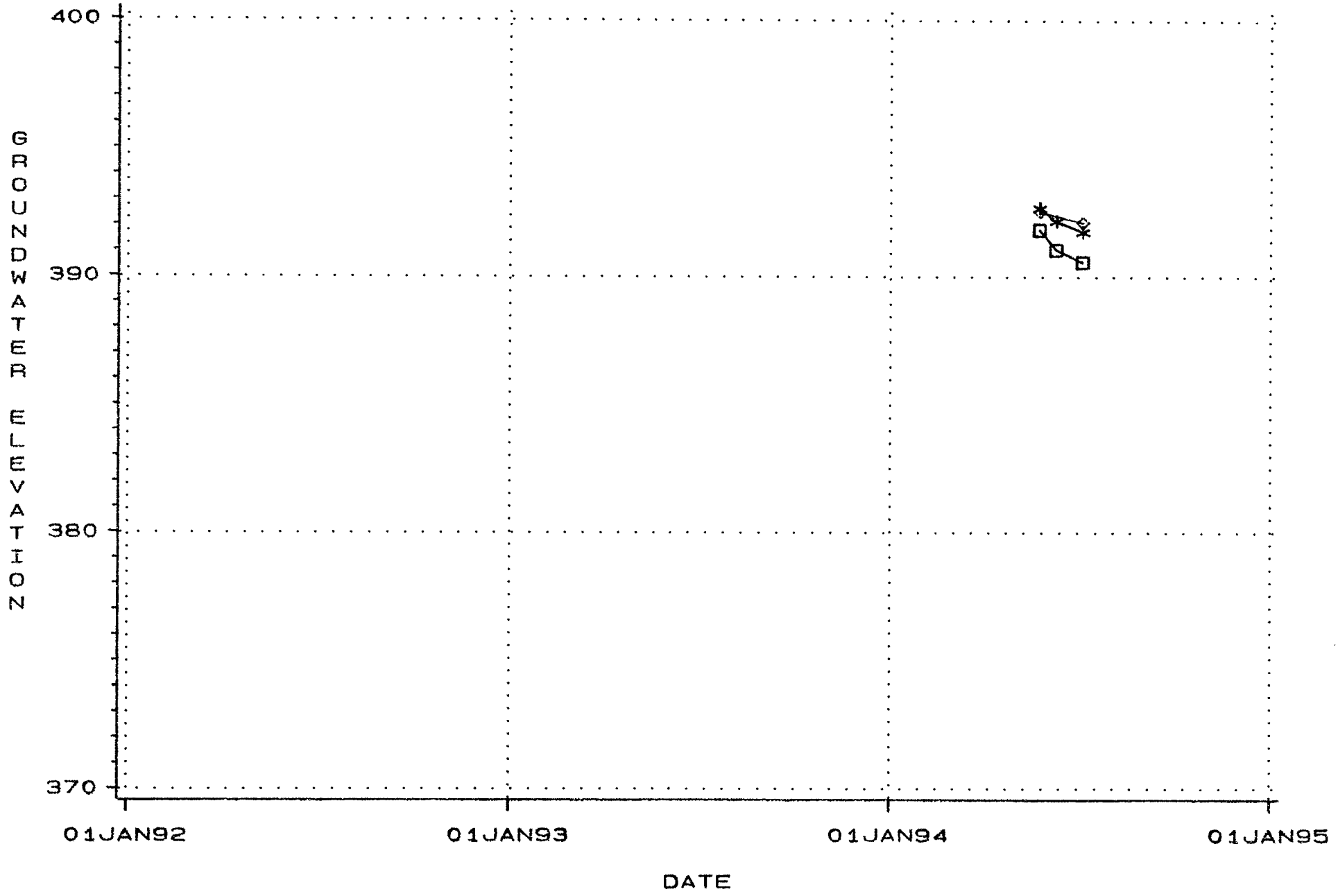


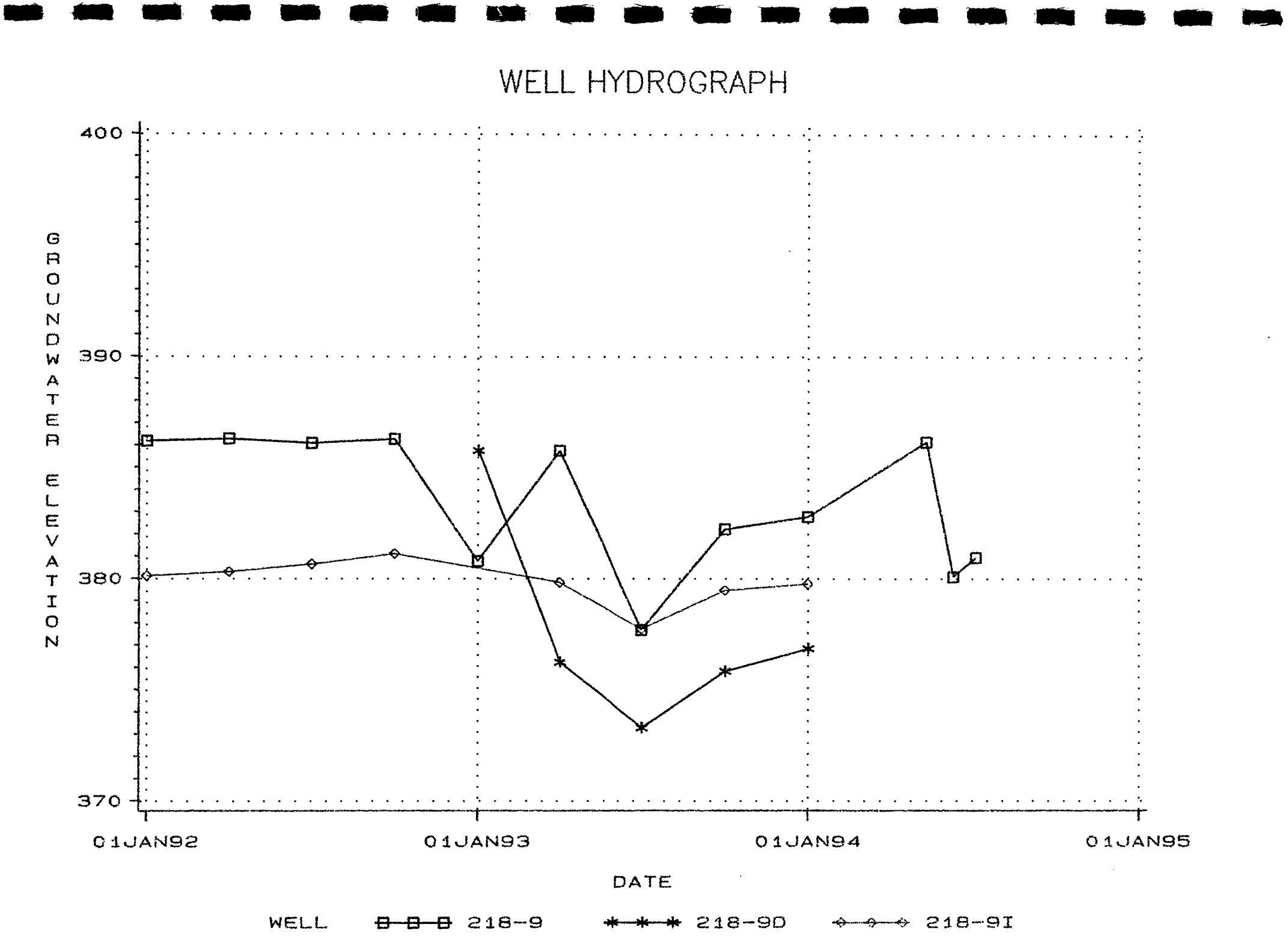

WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-15
RW-15I

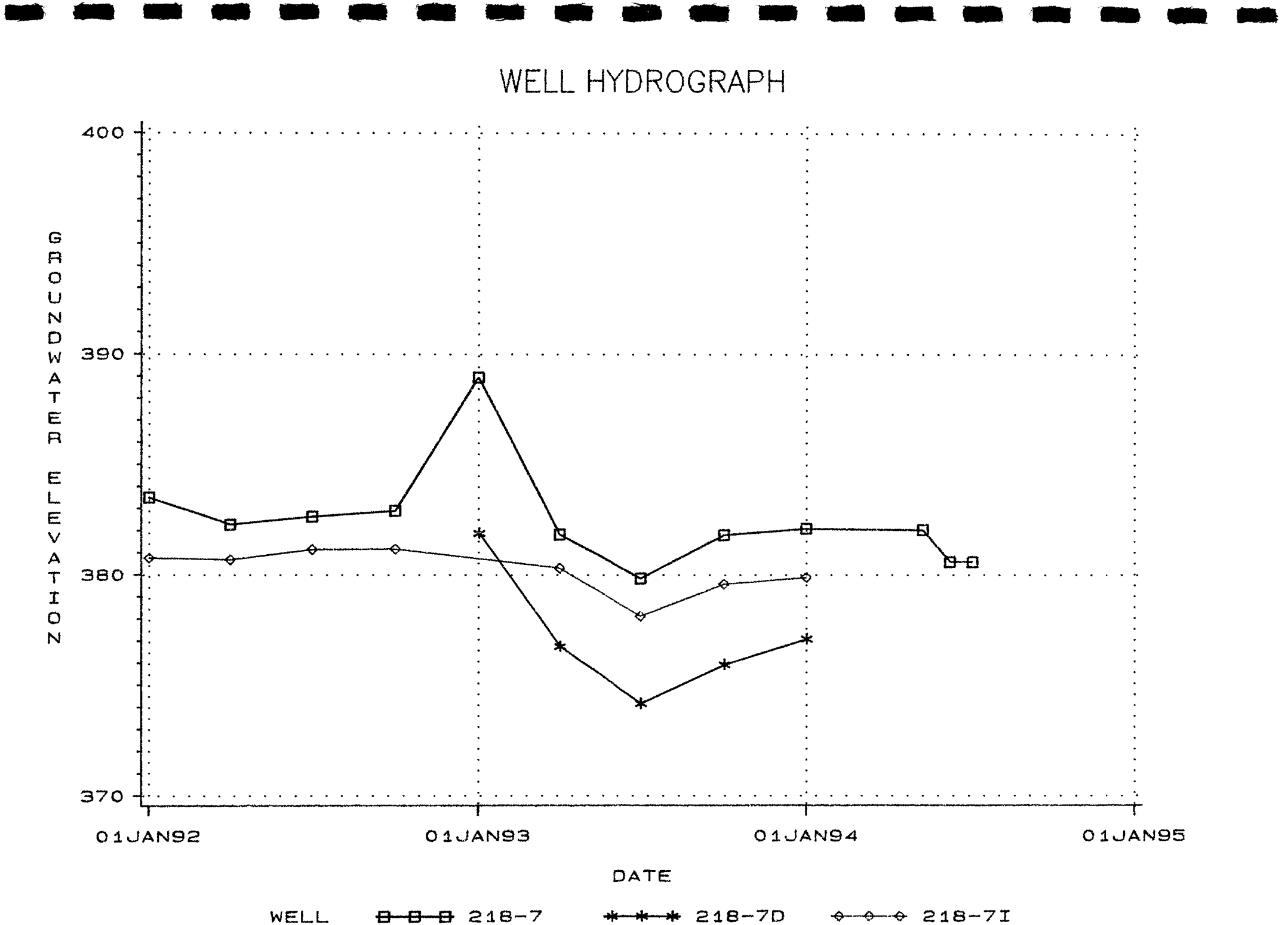
WELL HYDROGRAPH

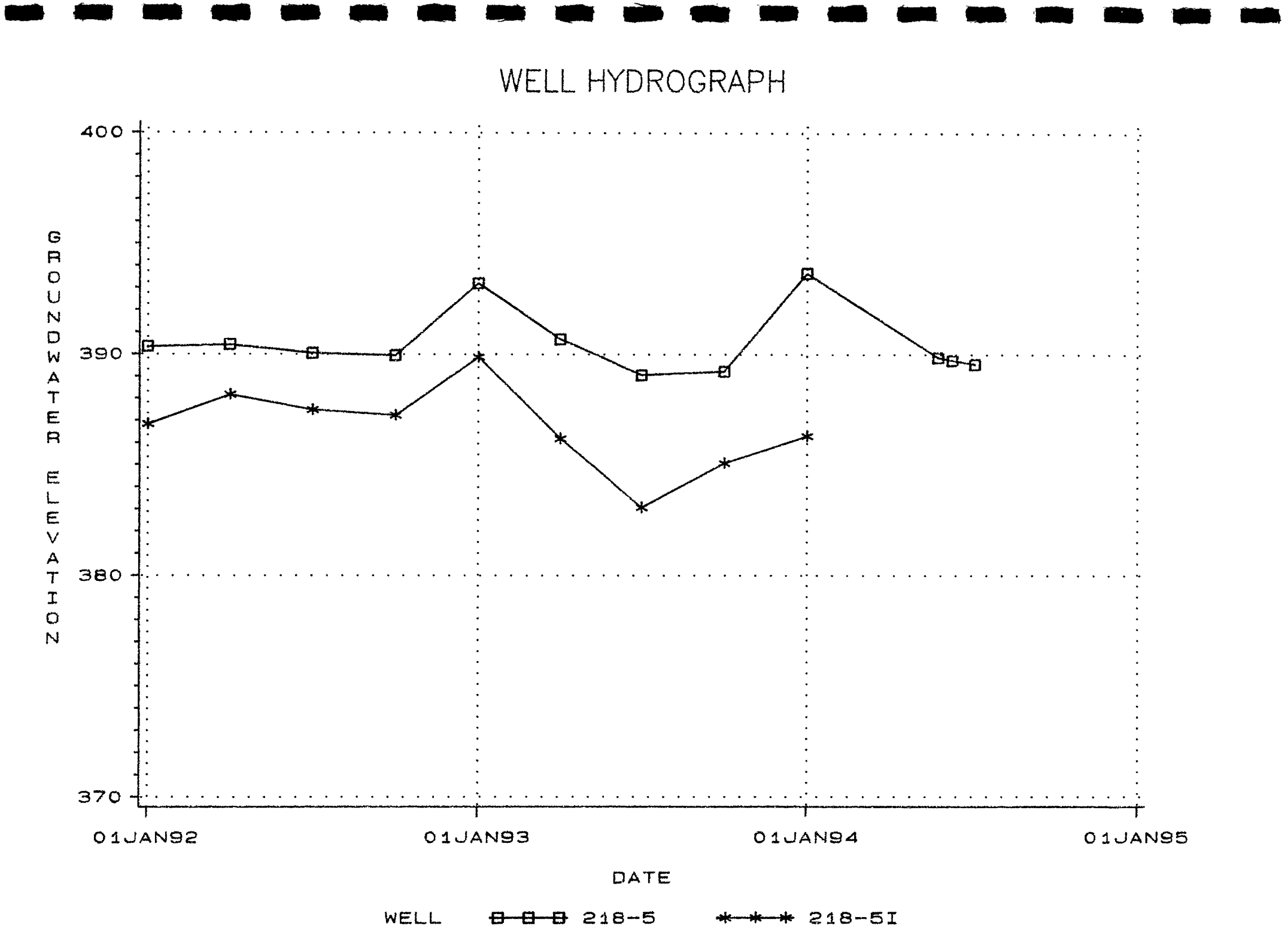


WELL HYDROGRAPH

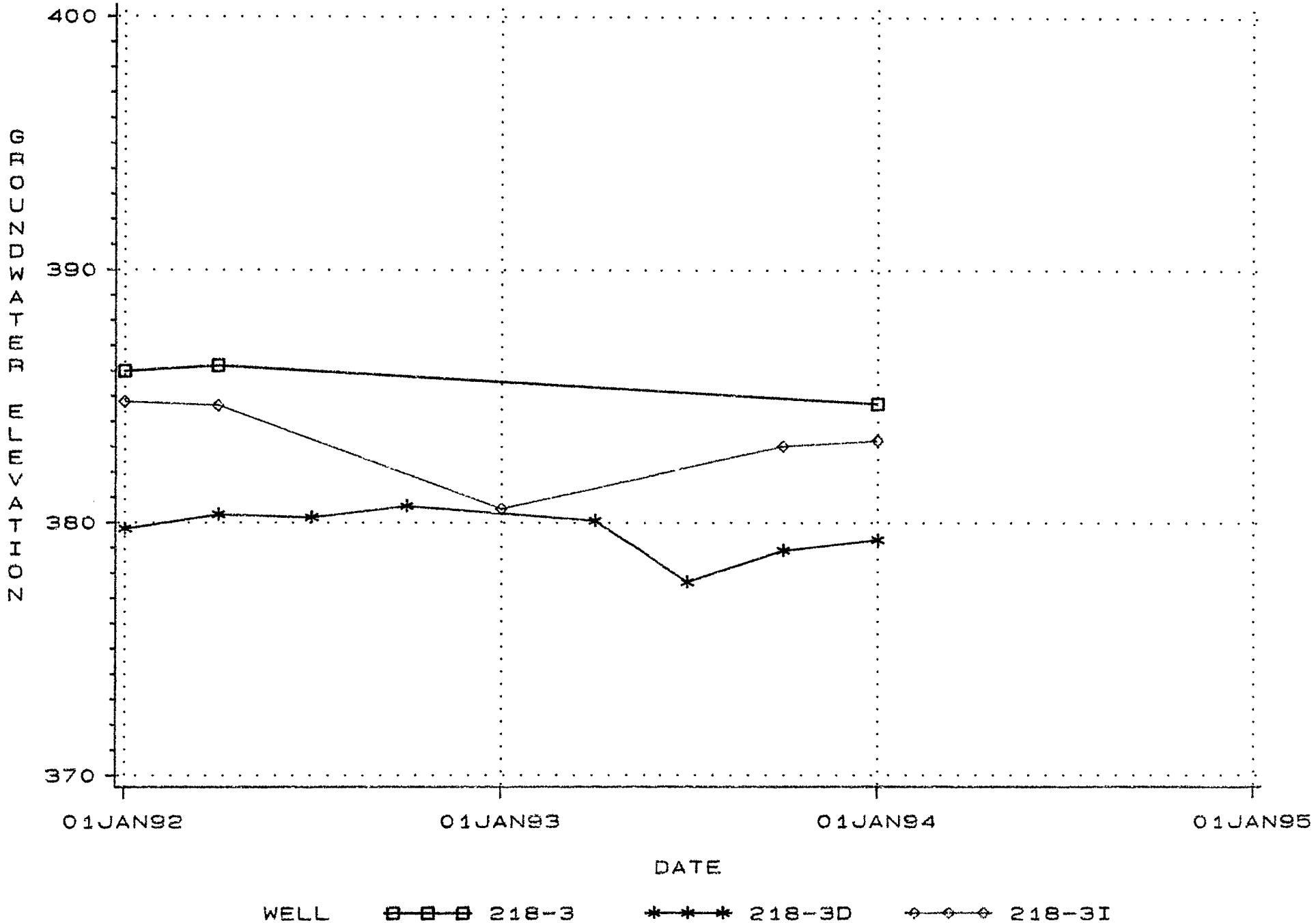


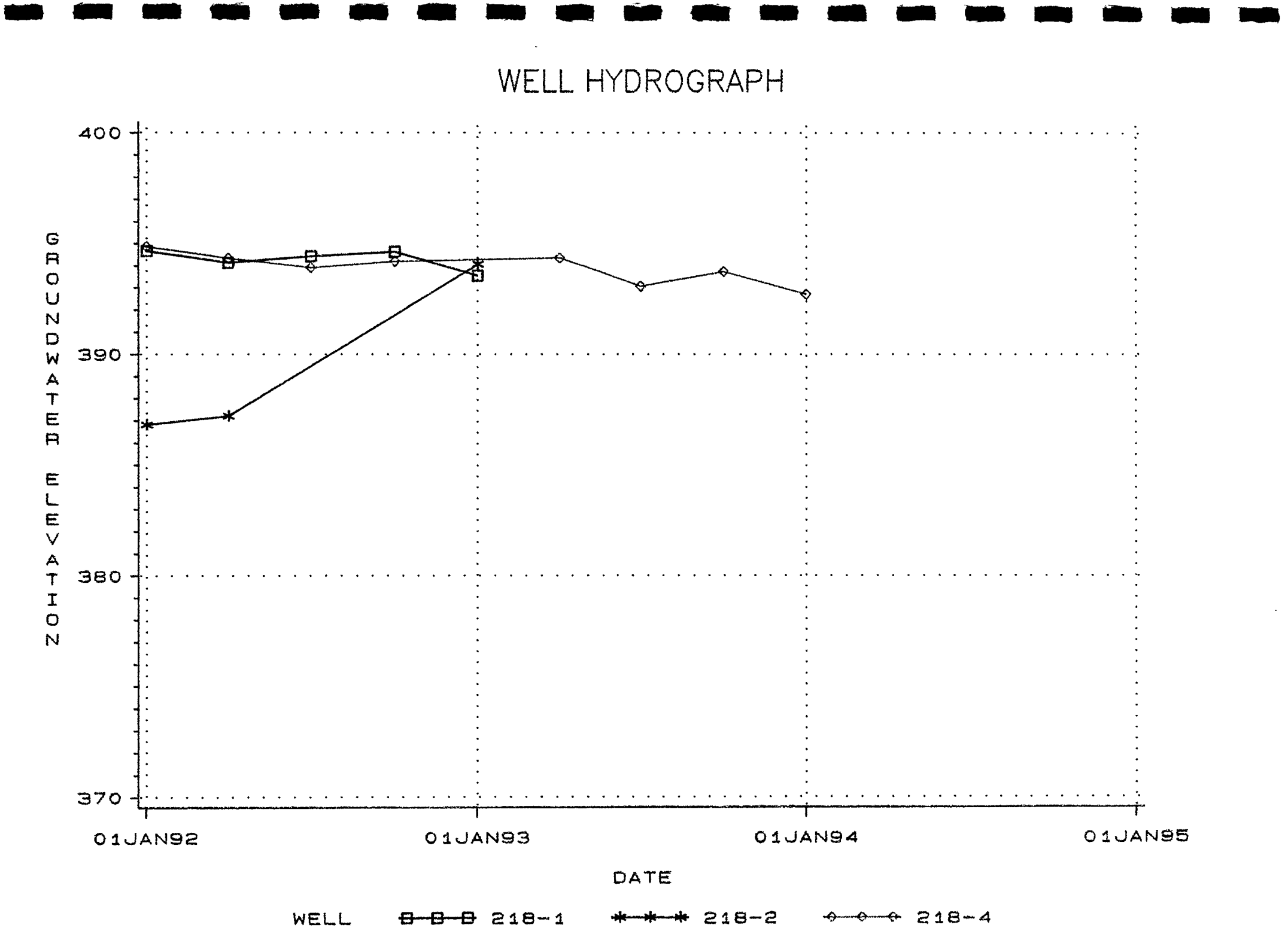

WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
218-9
218-9D
218-9I

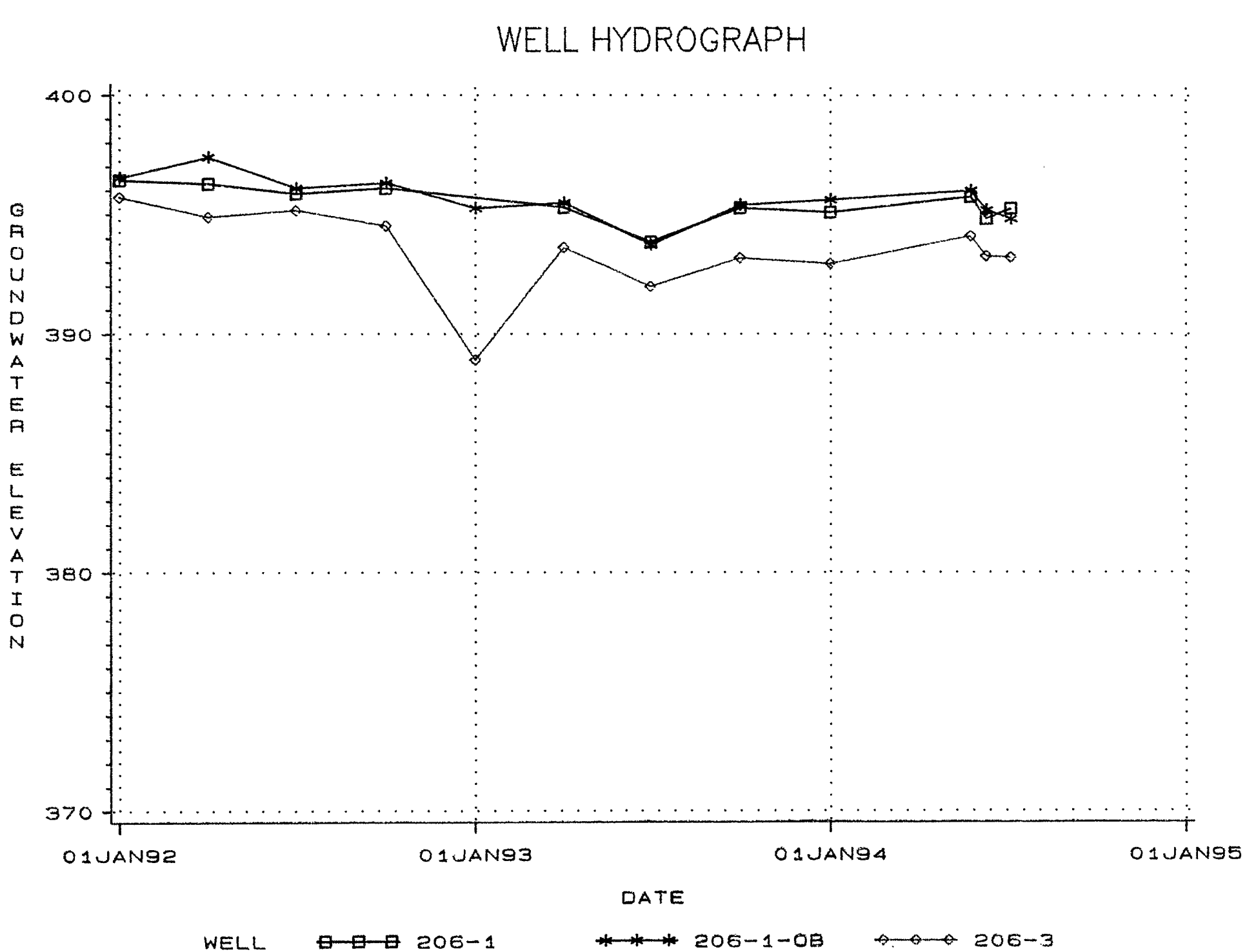

WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
218-7
218-7D
218-7I

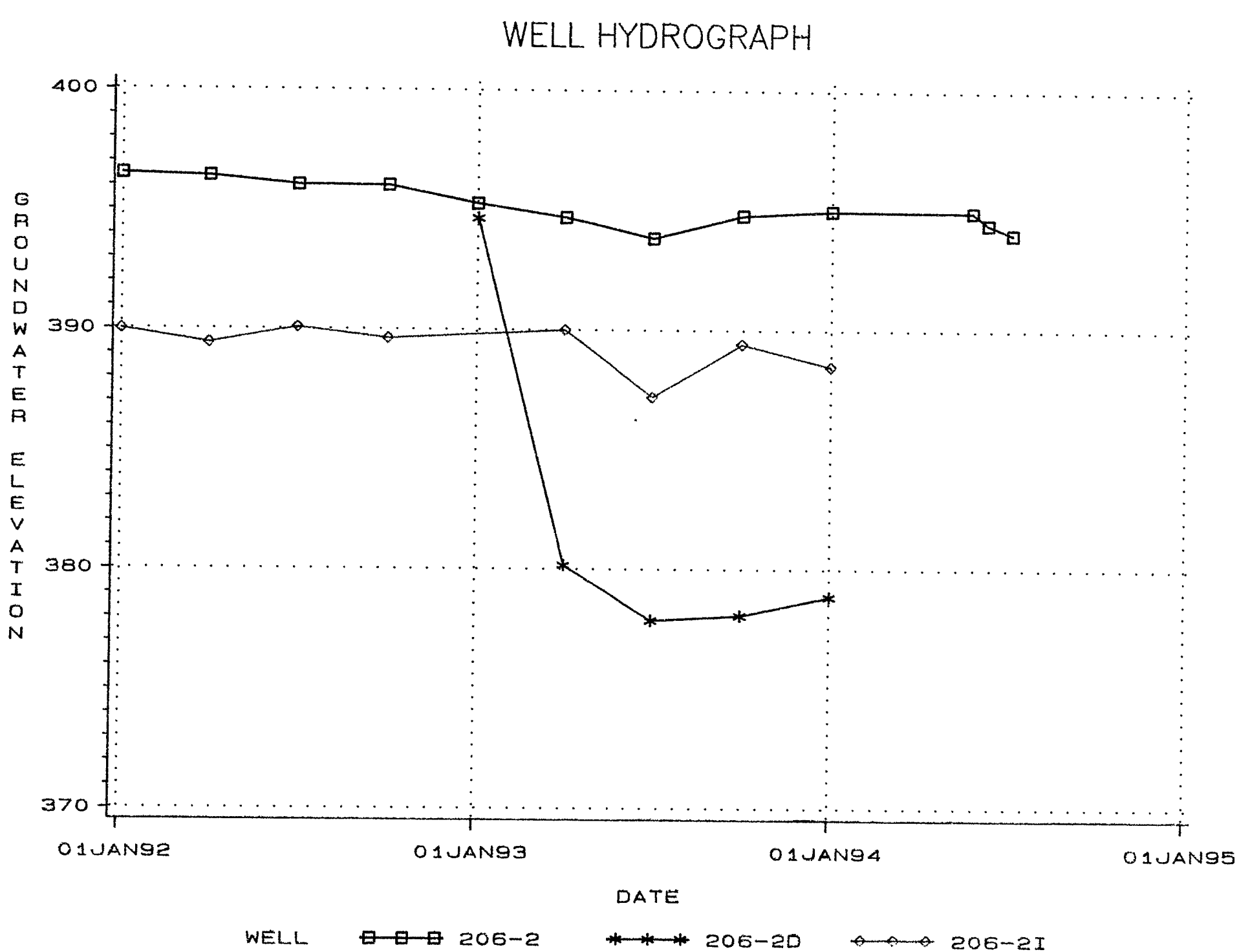

WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
218-5
218-5I

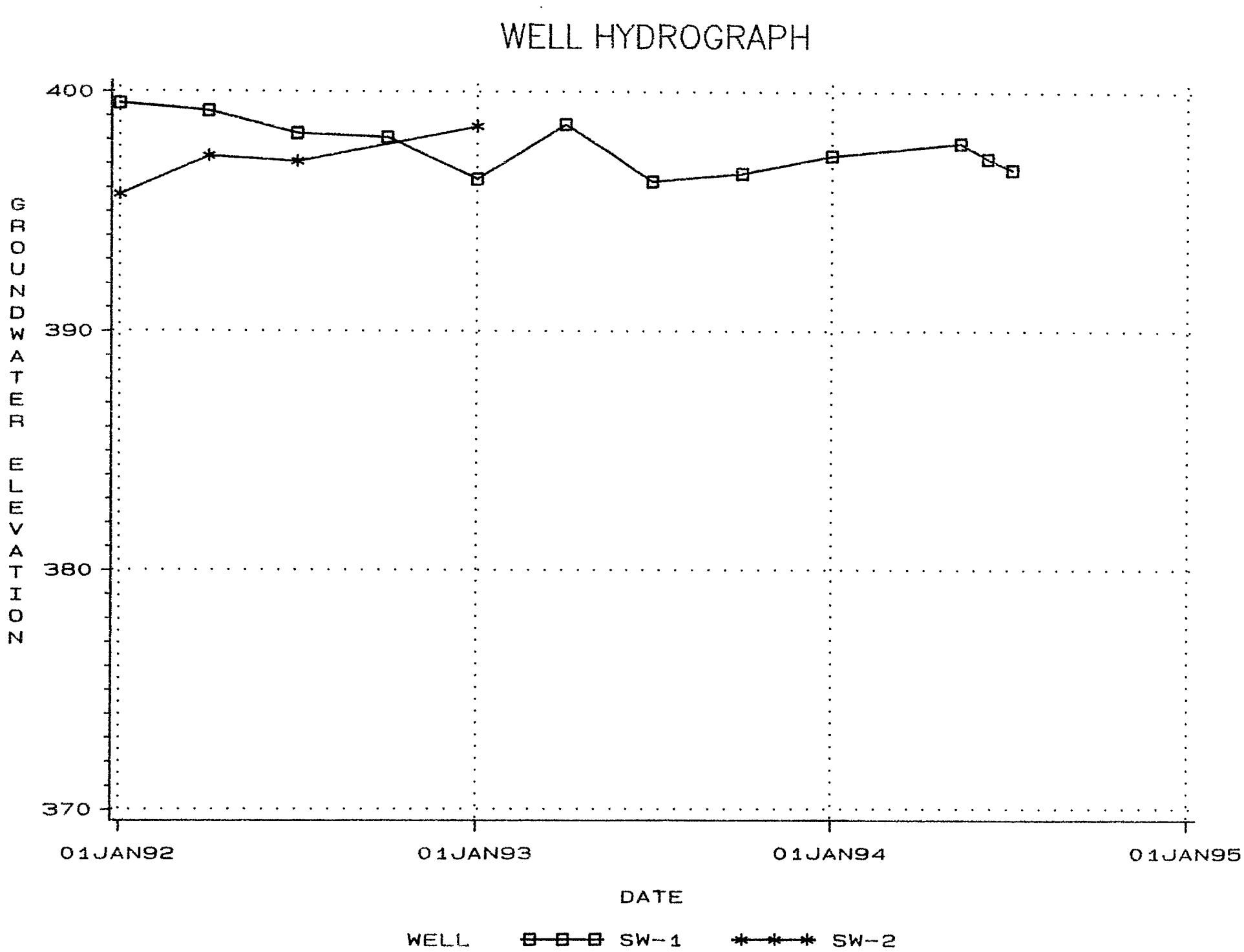
WELL HYDROGRAPH

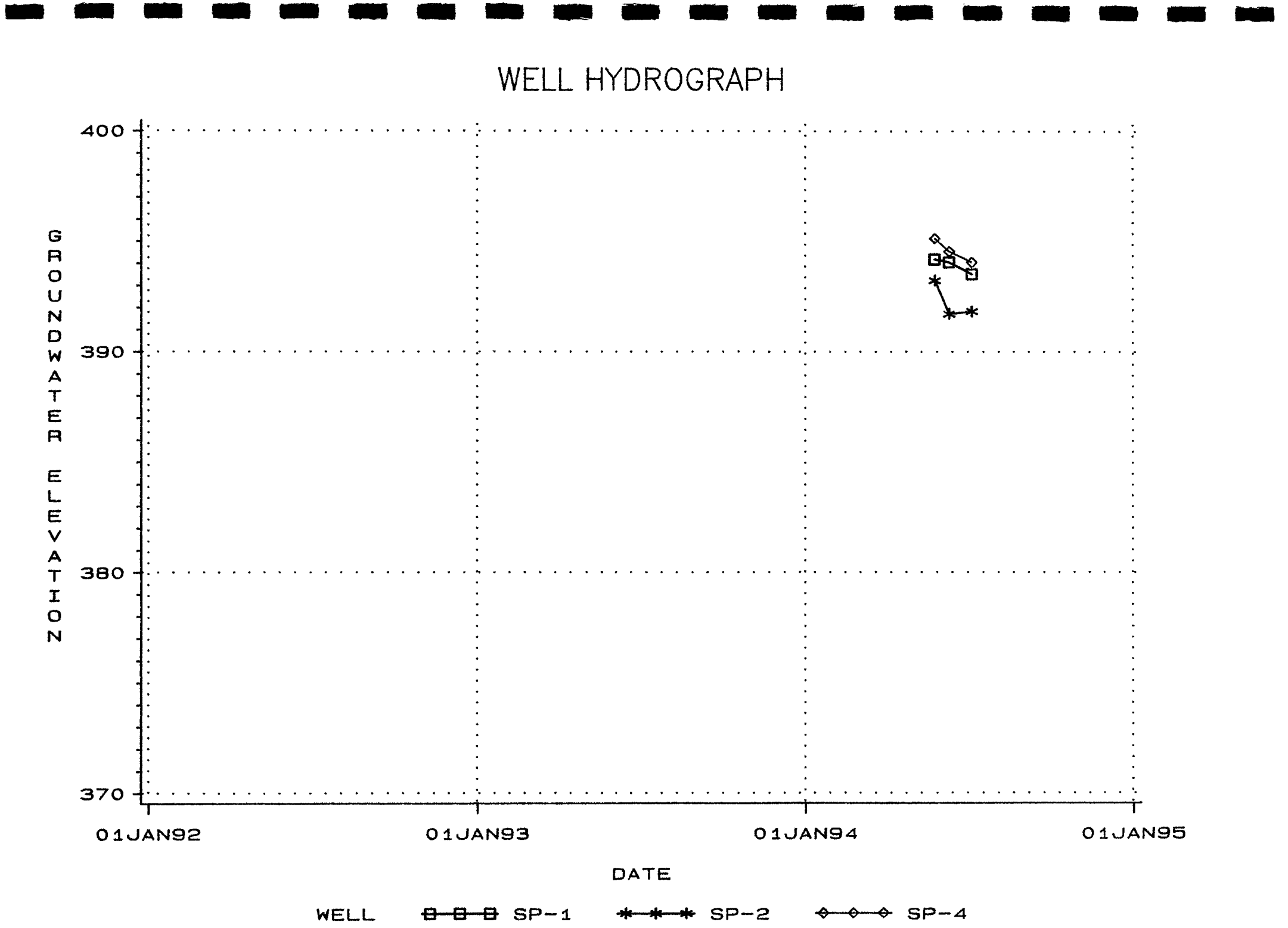


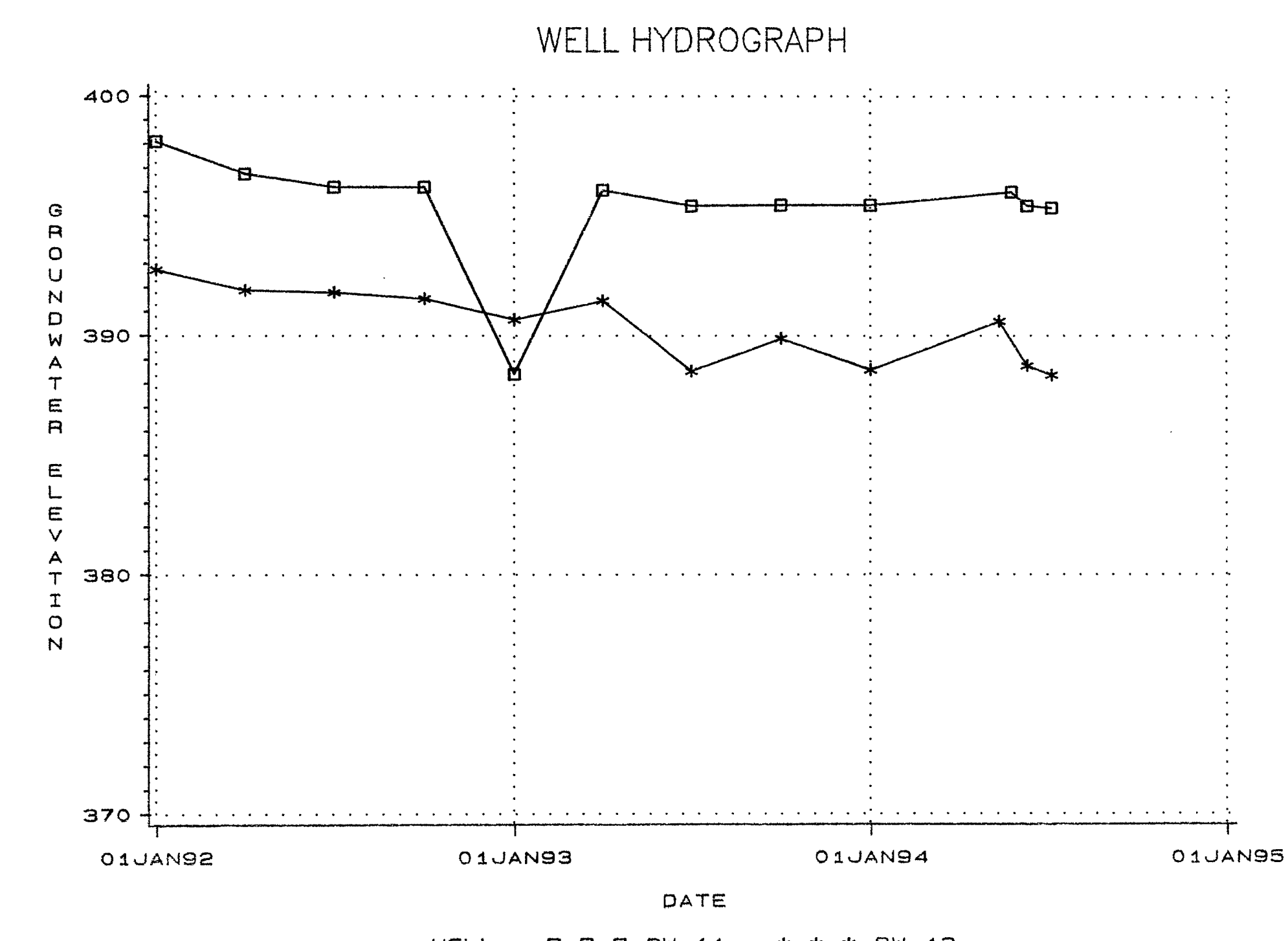

WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
218-1
218-2
218-4

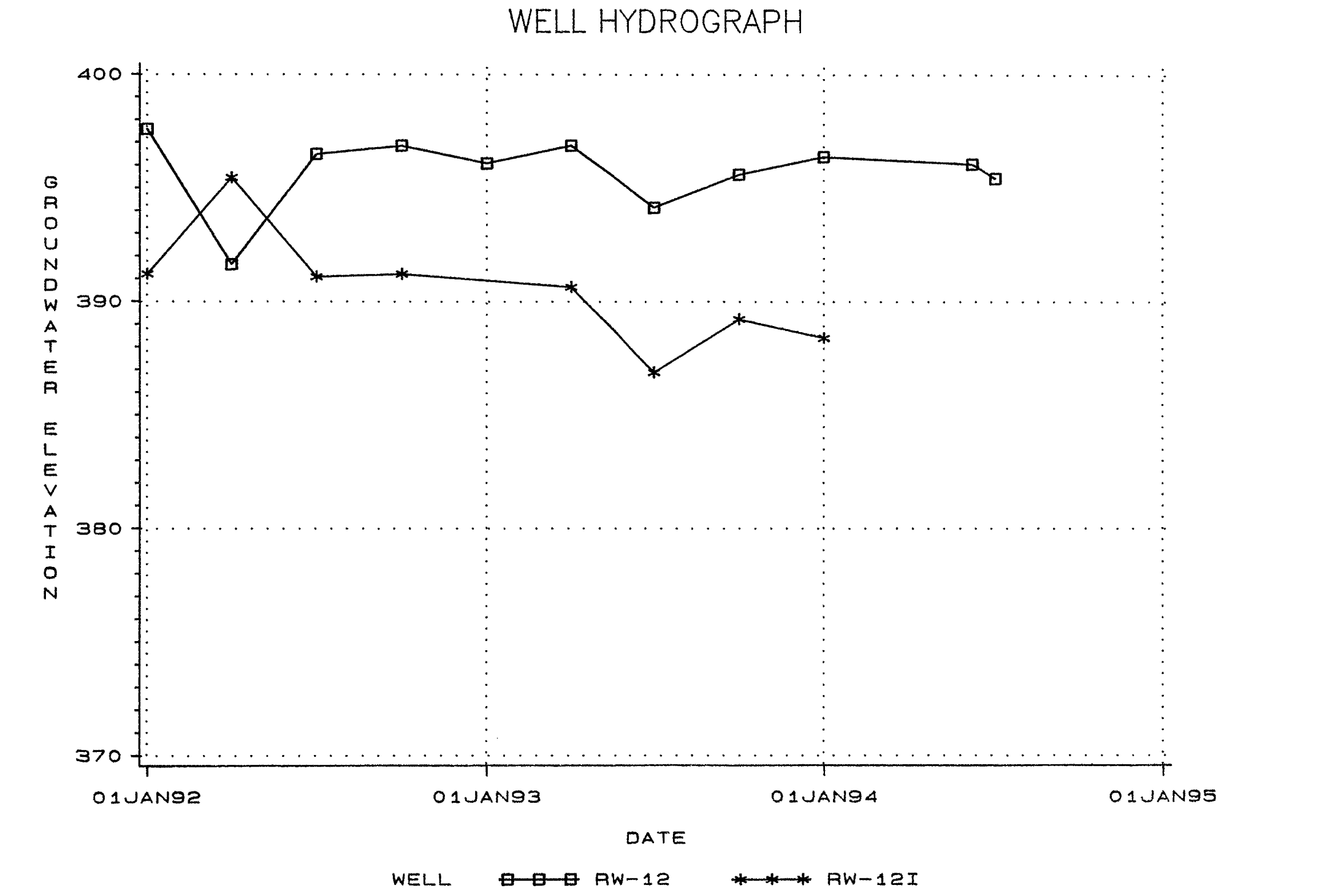

WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
206-1
206-1-OB
206-3

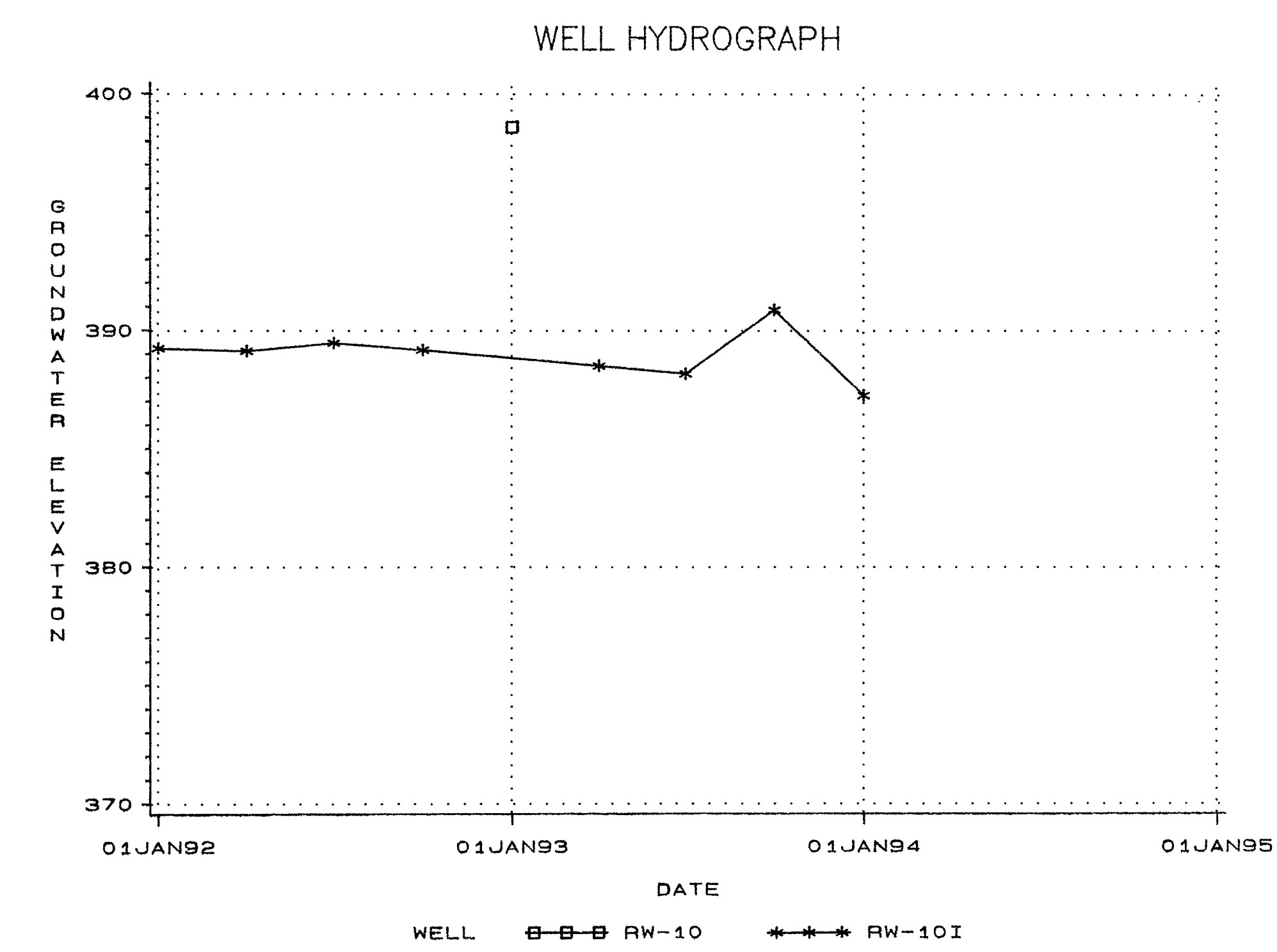

WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
206-2
206-2D
206-2I

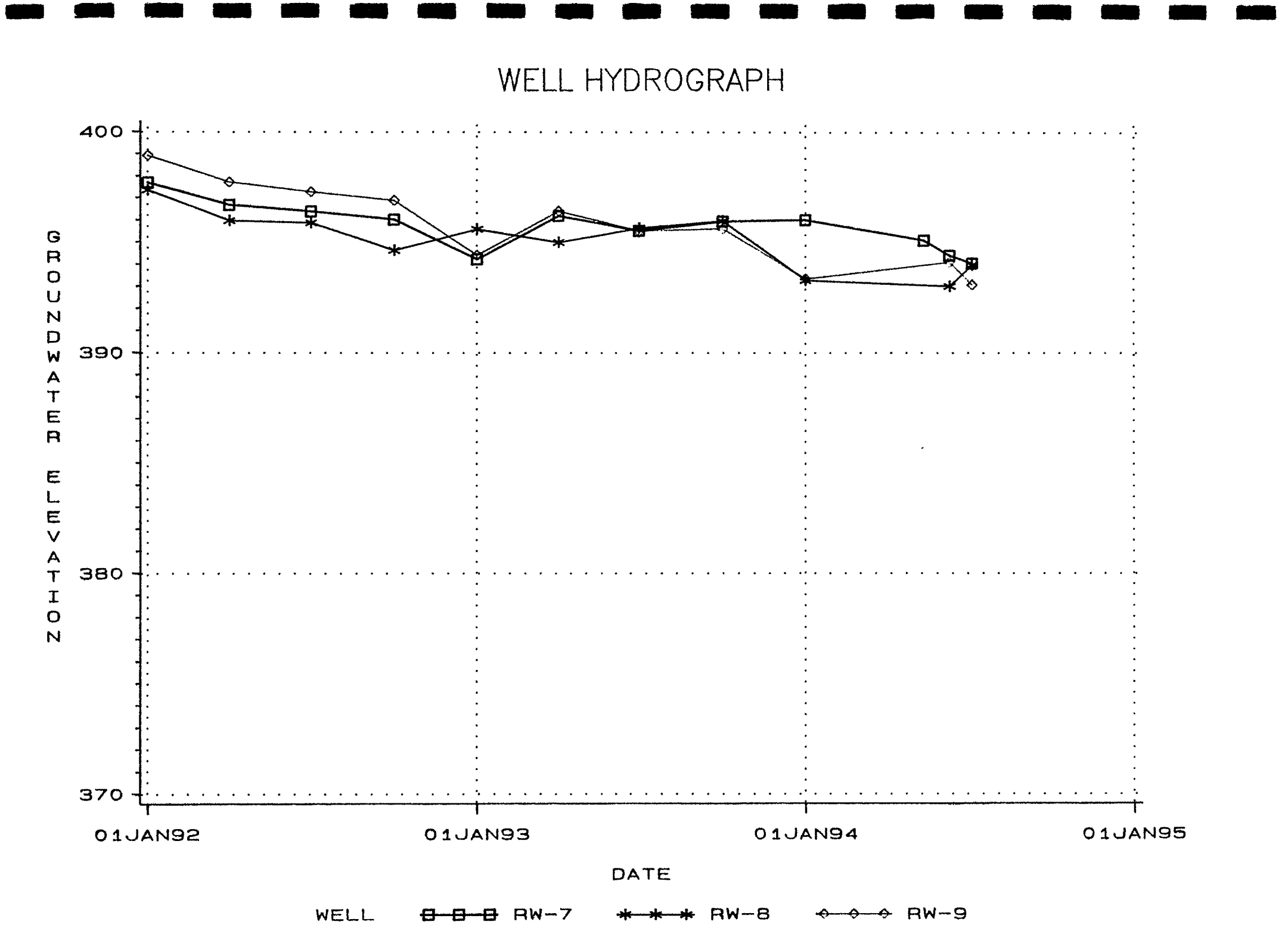

WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
SW-1
SW-2


WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
SP-1
SP-2
SP-4

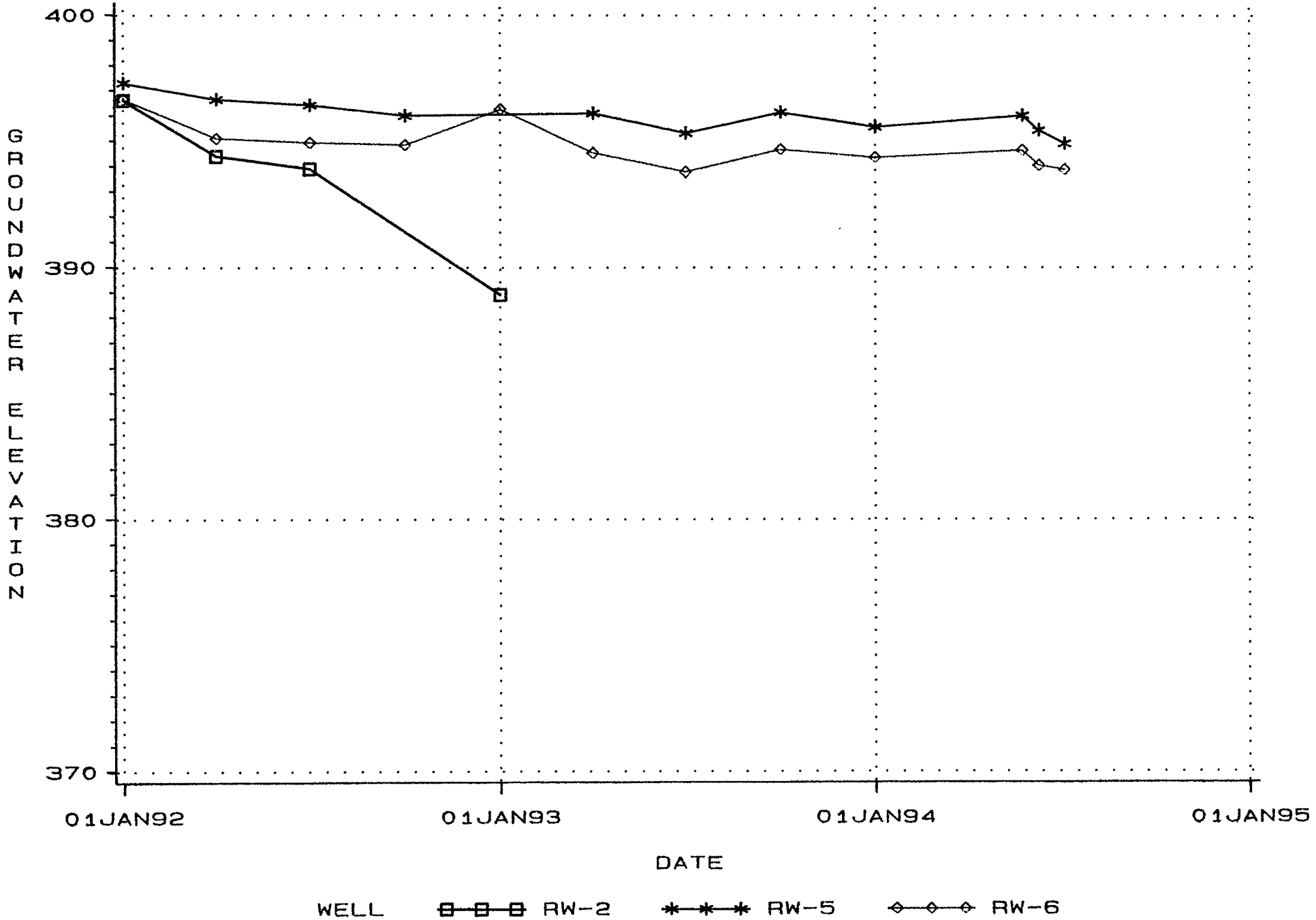

WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-11
RW-13


WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-12
RW-12I

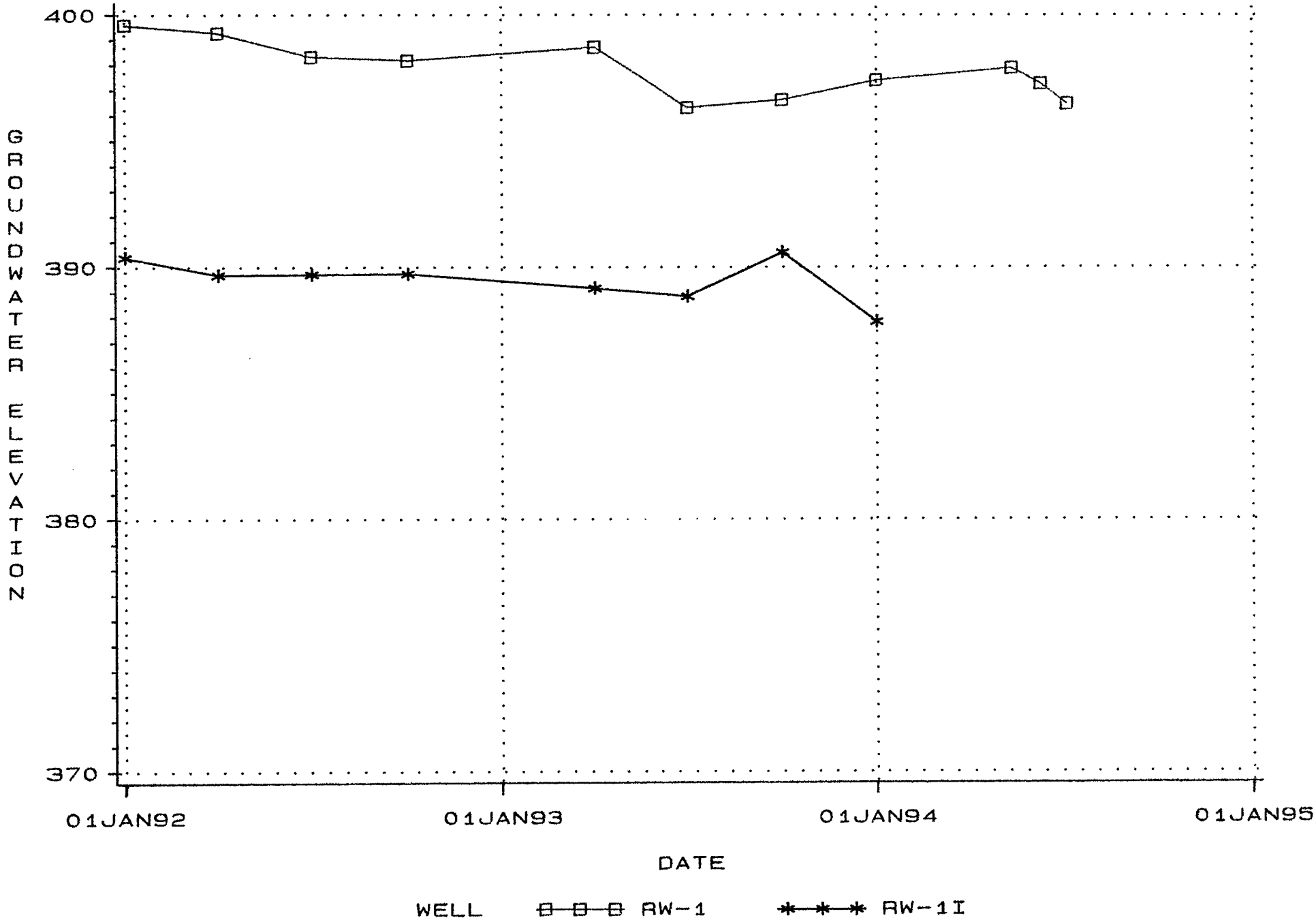

WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-10
RW-10I


WELL HYDROGRAPH
400
390
380
370
GROUNDWATER ELEVATION
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-7
RW-8
RW-9

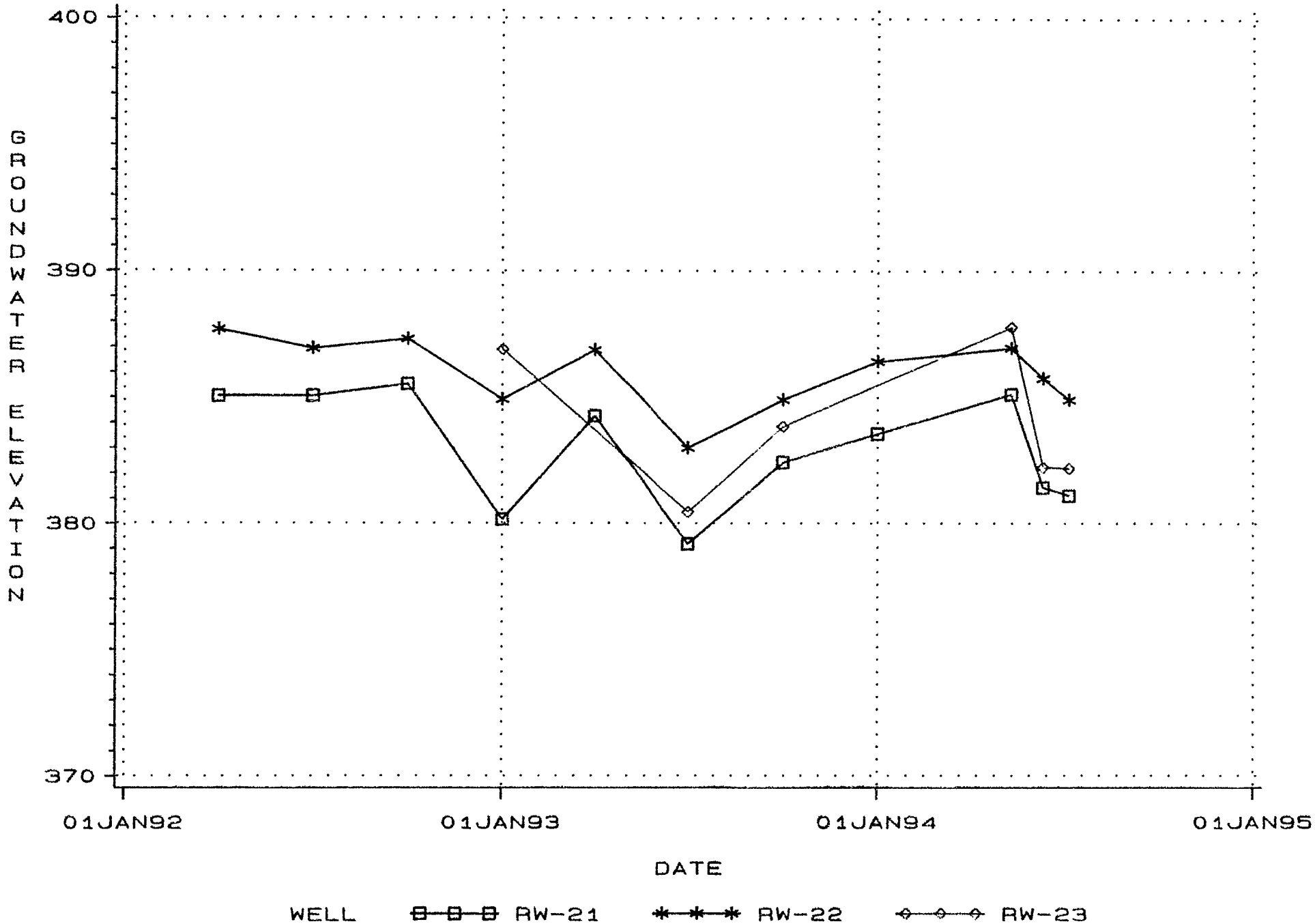
WELL HYDROGRAPH



WELL HYDROGRAPH



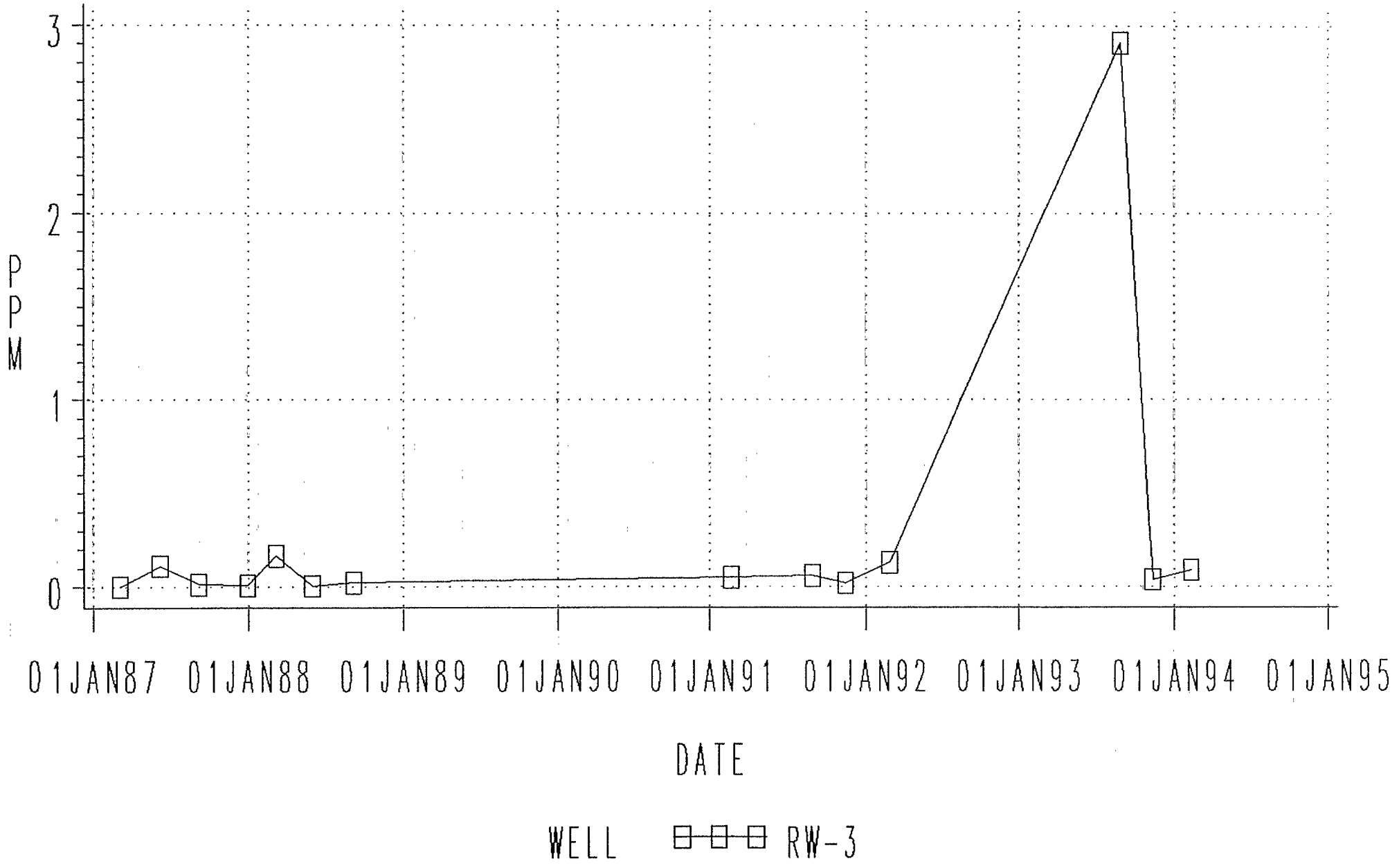
WELL HYDROGRAPH



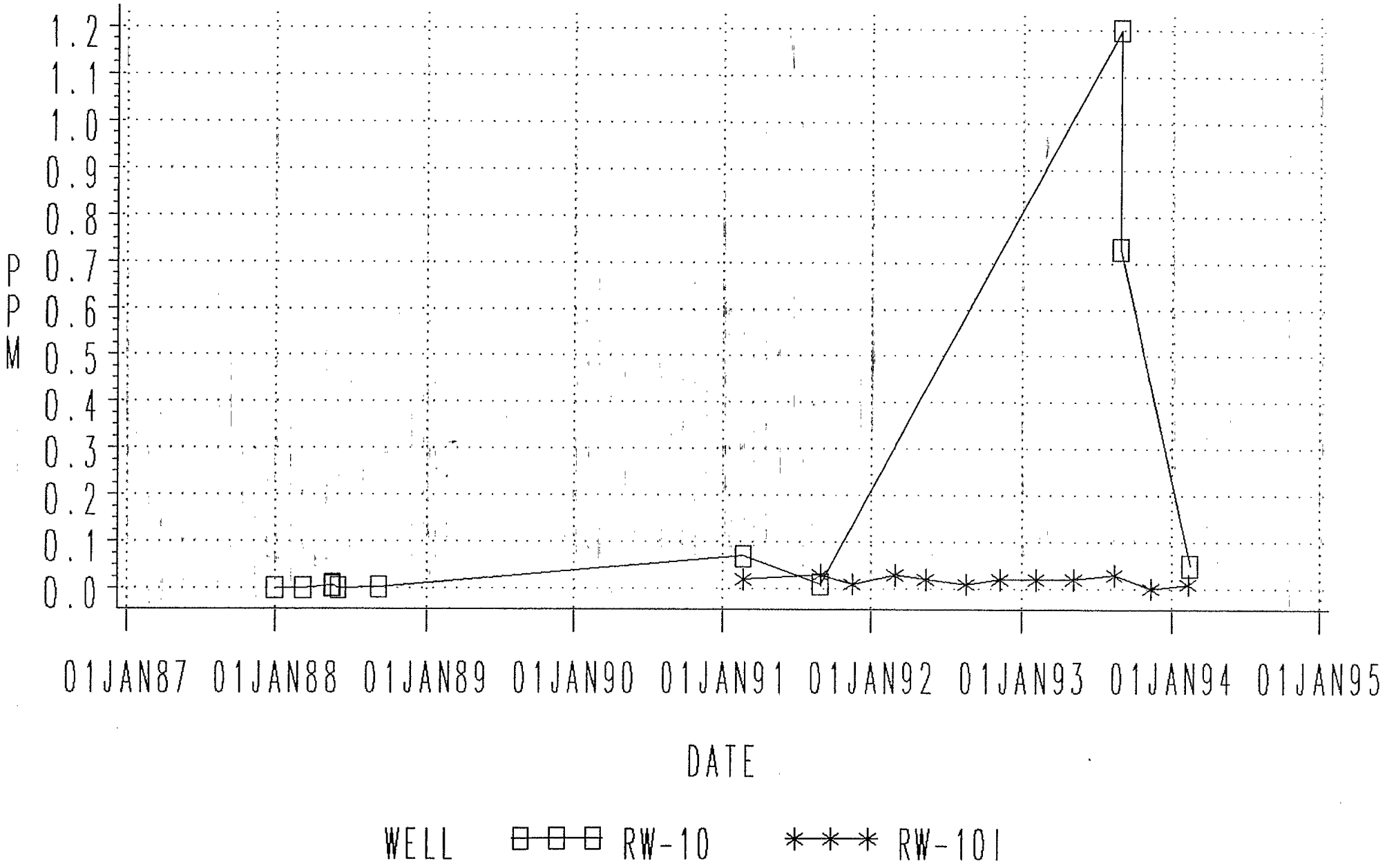
APPENDIX G

Arsenic vs. Time

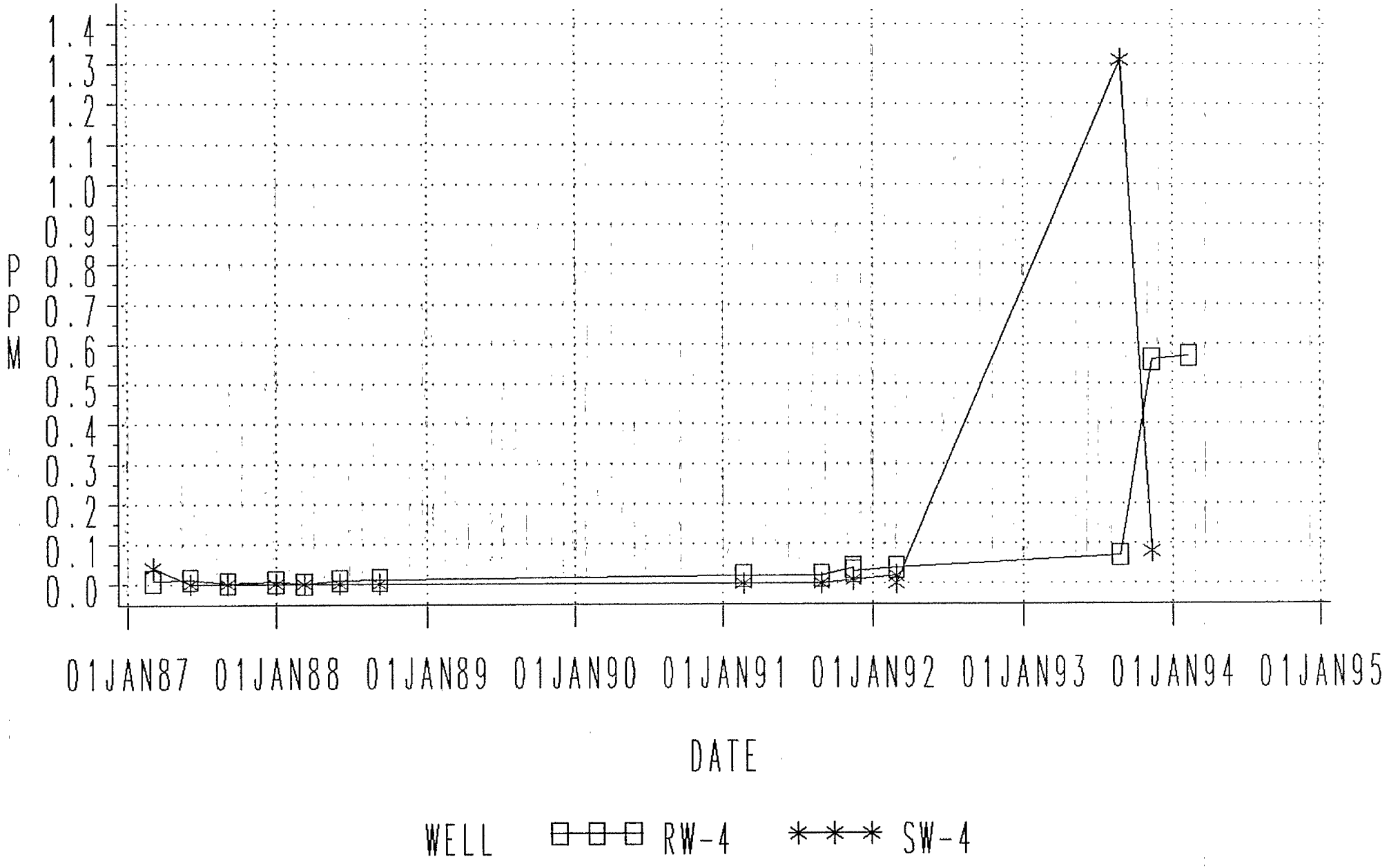
ARSENIC


3
2
1
0
PPM
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-3

ARSENIC

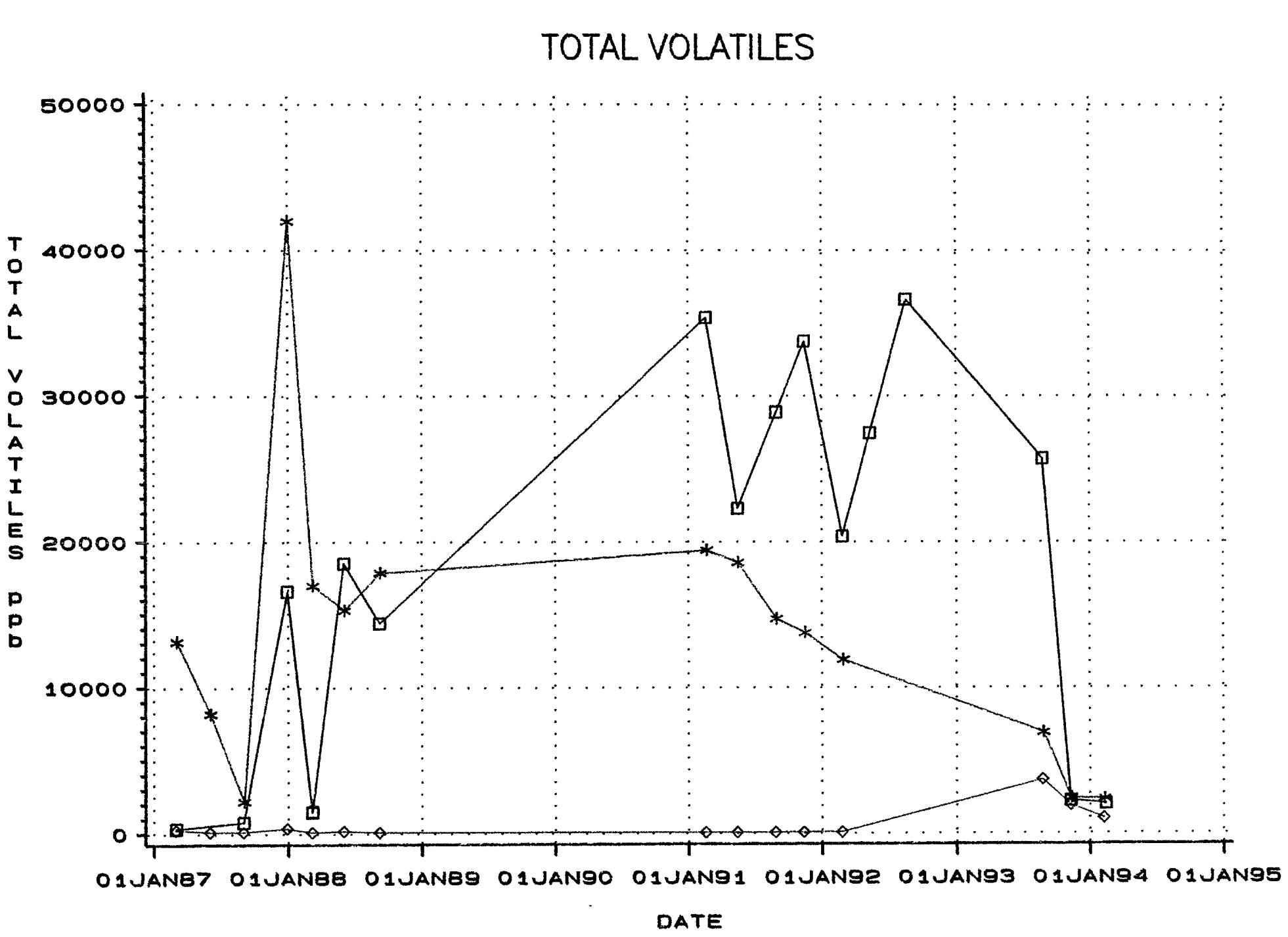

1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
PPM
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-10
RW-101

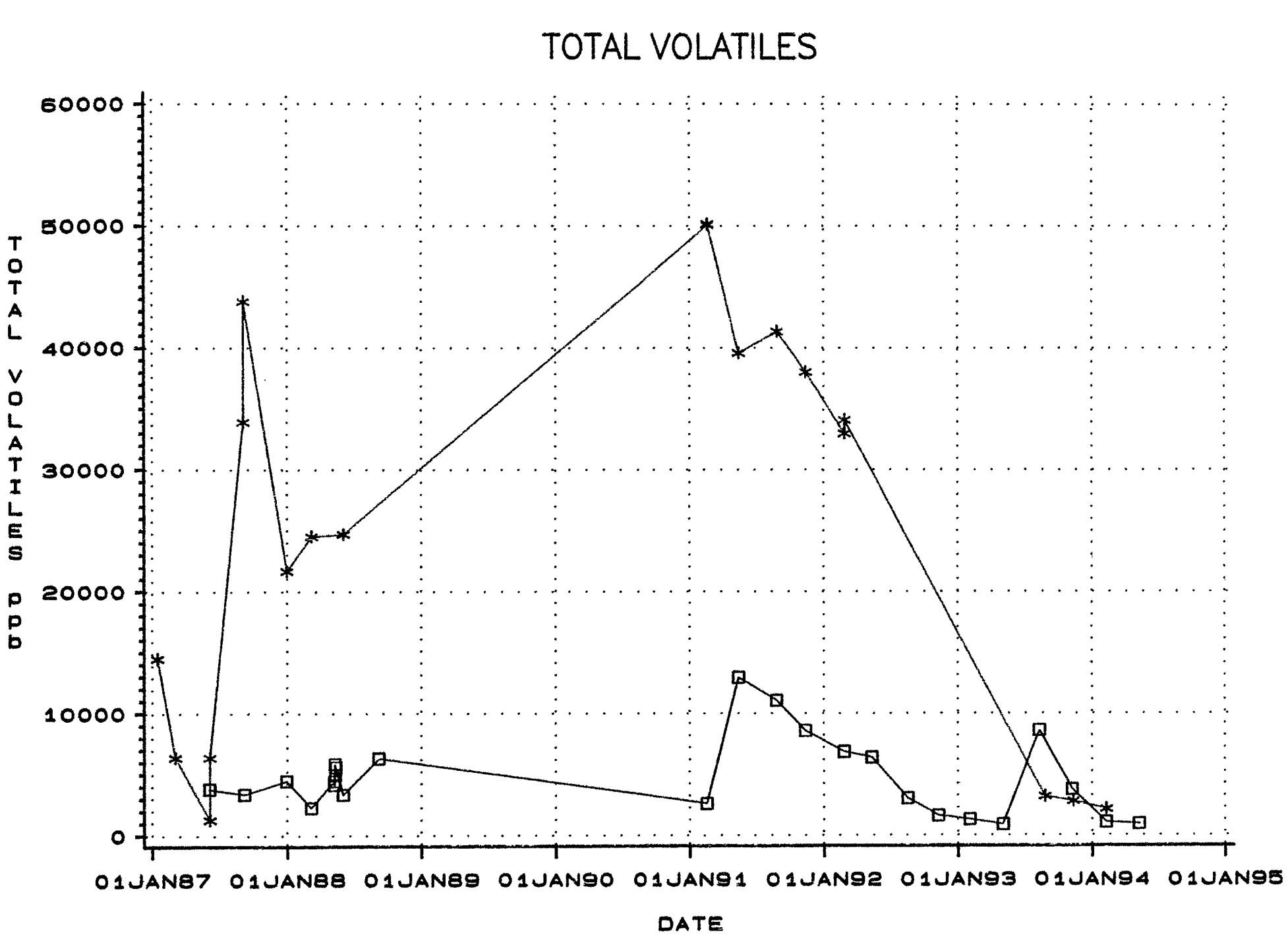
ARSENIC


1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
PPM
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-4
SW-4

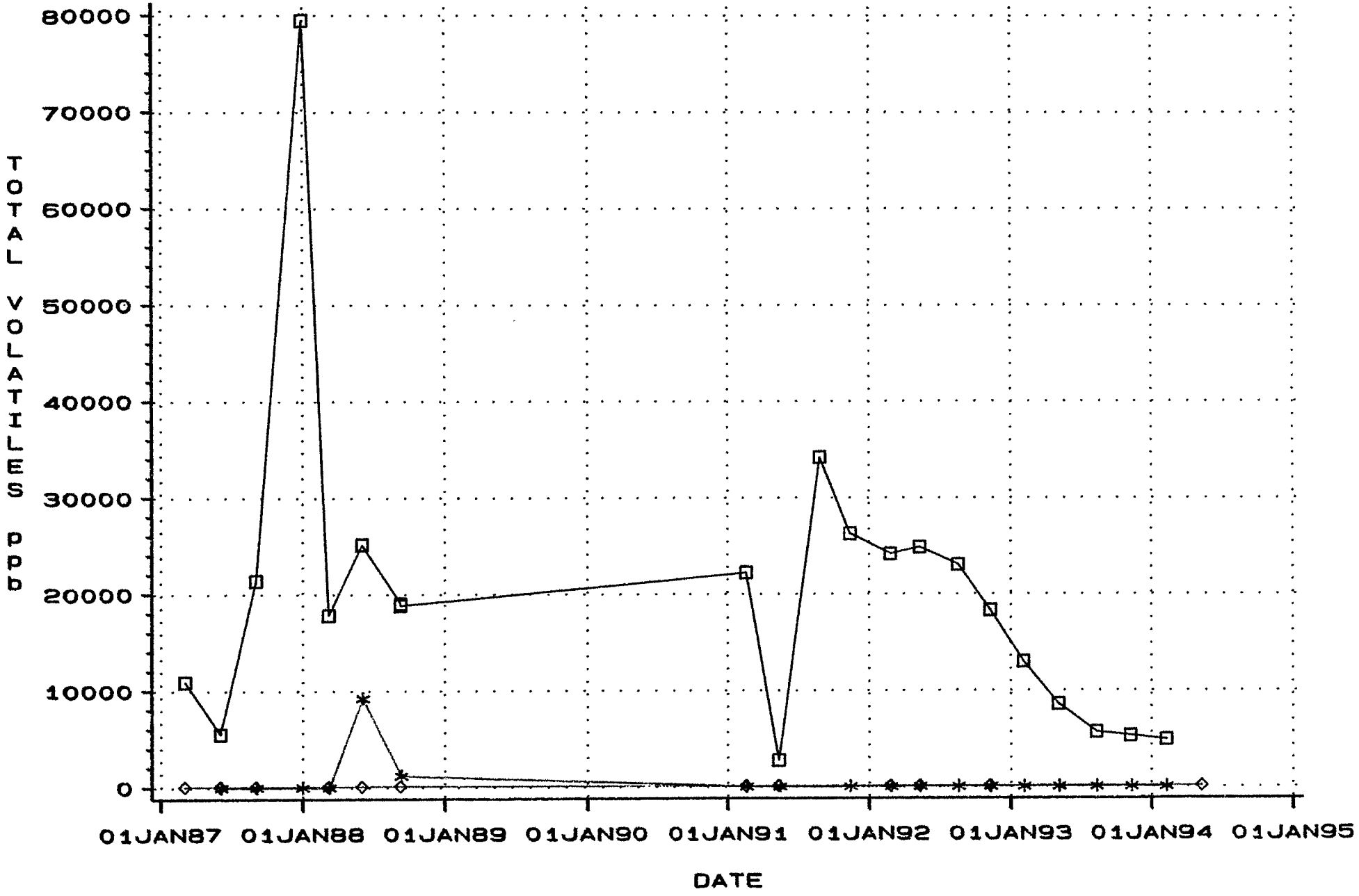
APPENDIX H

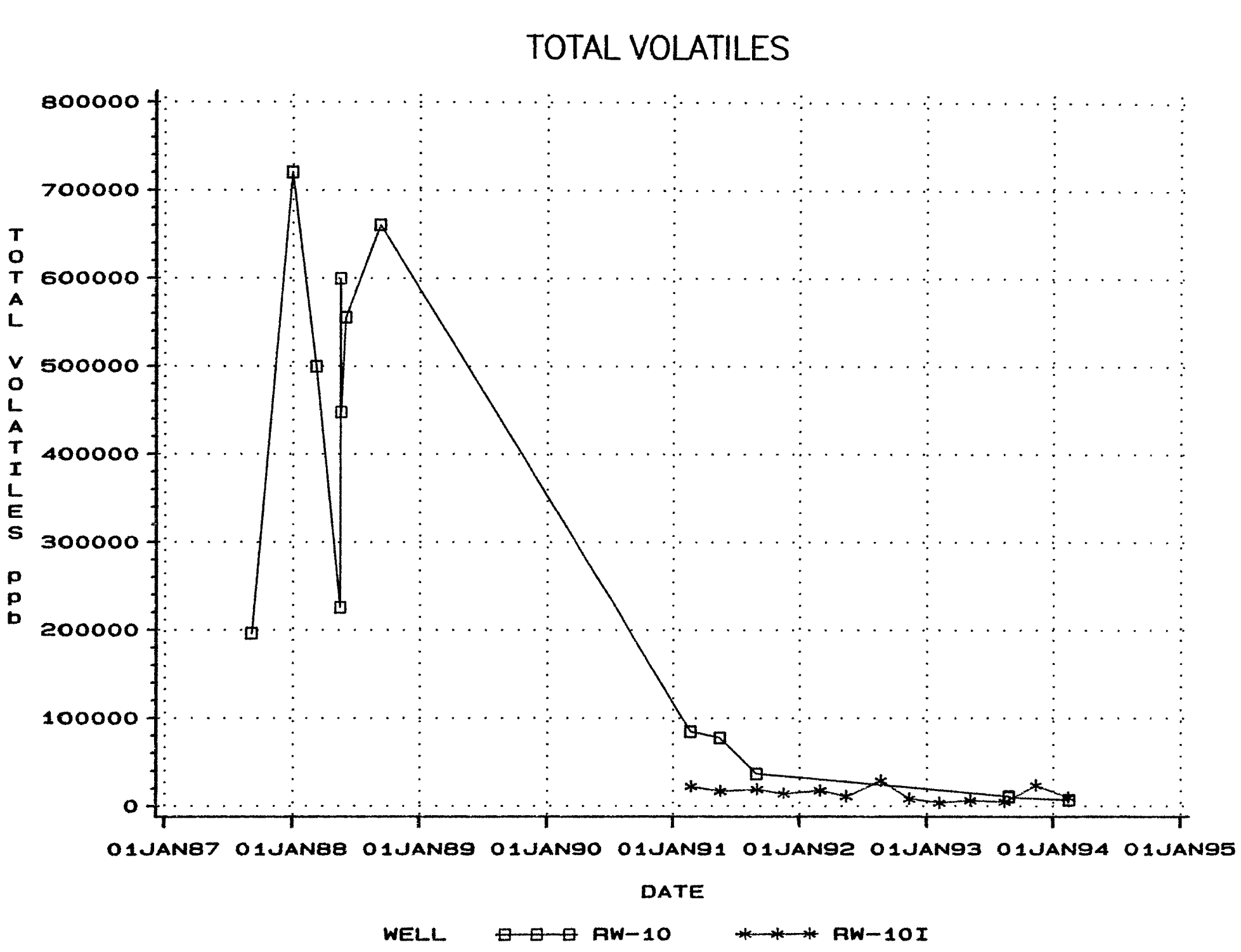
VOC Time-Series

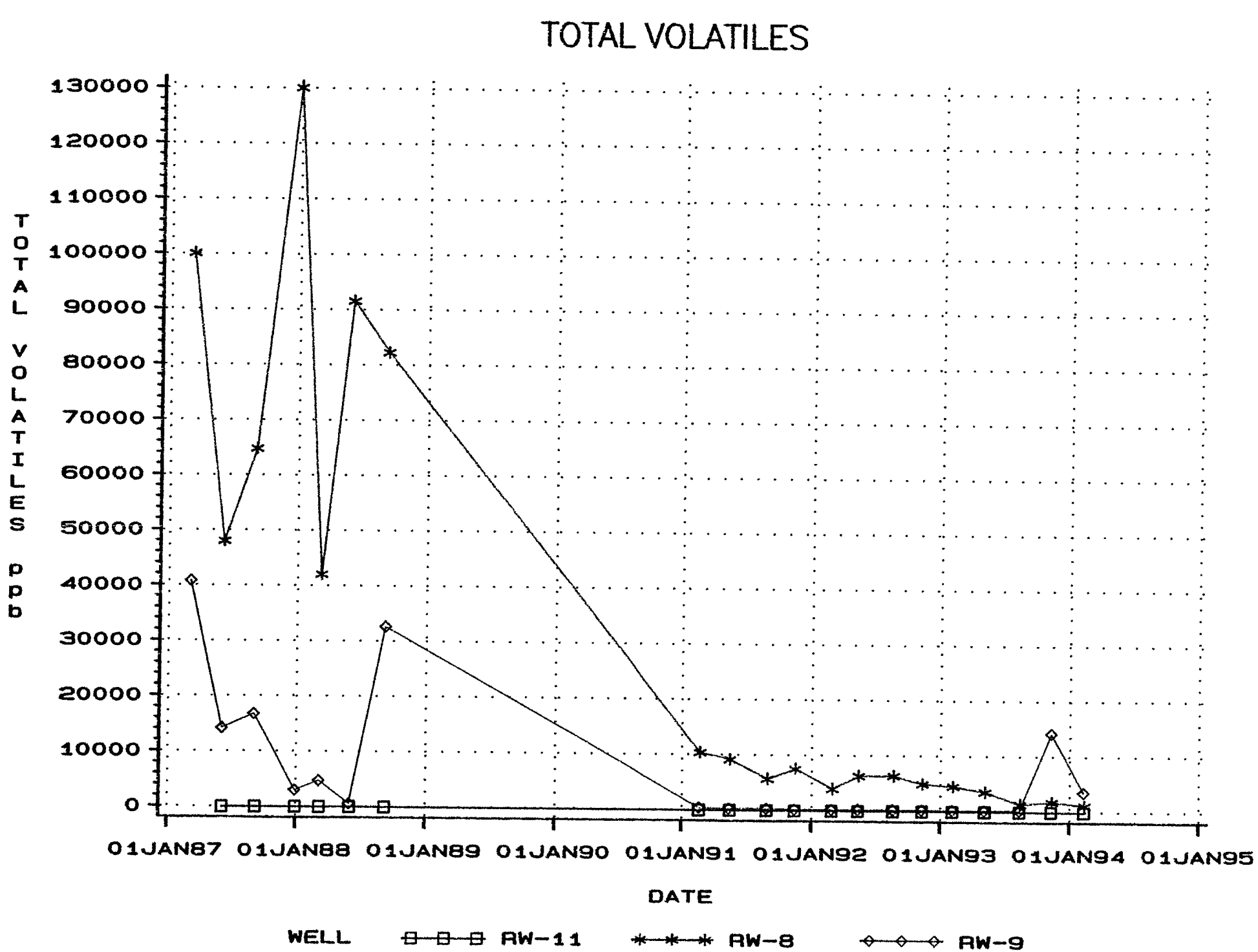

TOTAL VOLATILES
TOTAL VOLATILES ppb
50000
40000
30000
20000
10000
0
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-2
RW-3
RW-4


TOTAL VOLATILES
60000
50000
40000
30000
20000
10000
0
TOTAL VOLATILES ppb
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-13
SW-4

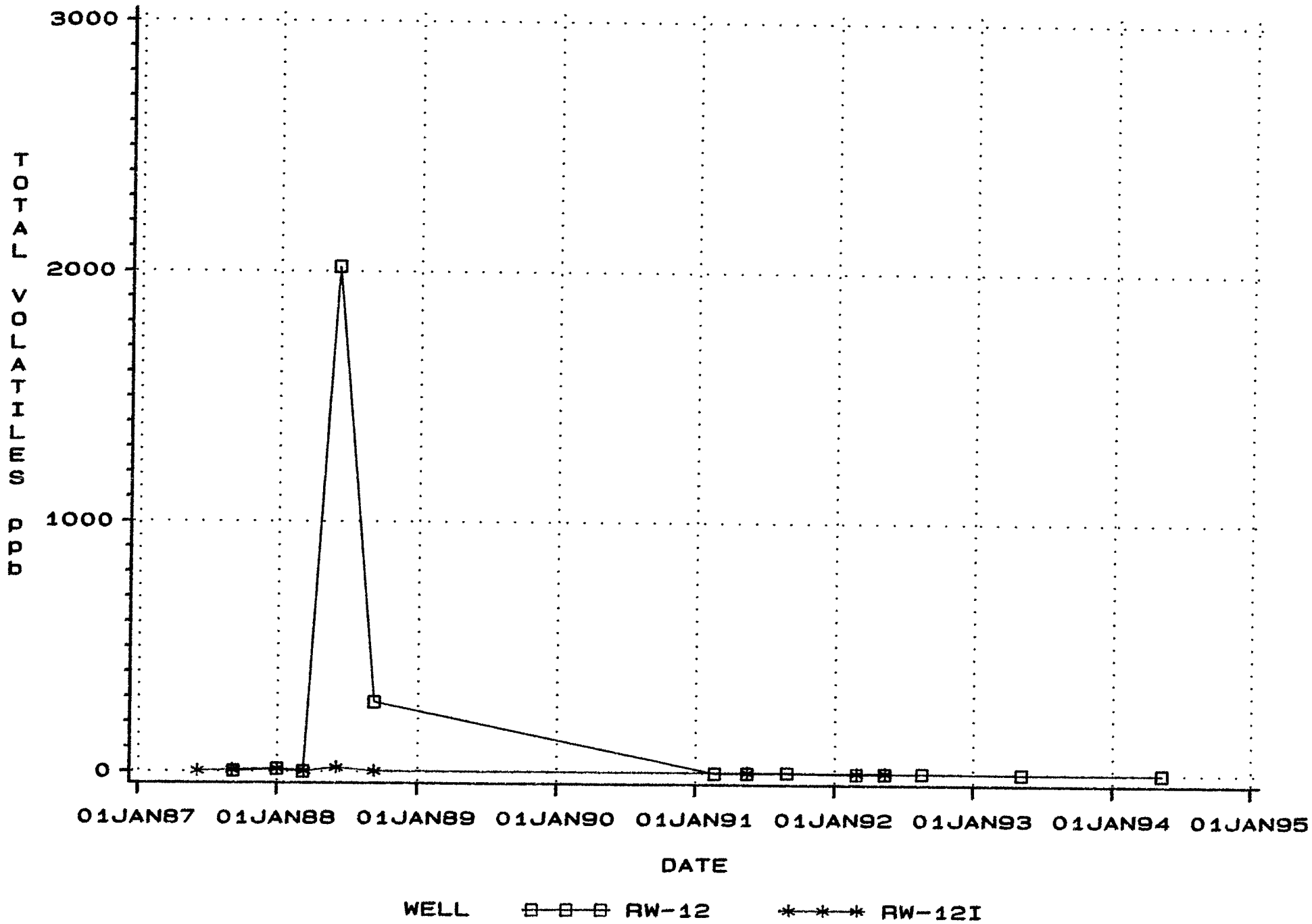
TOTAL VOLATILES



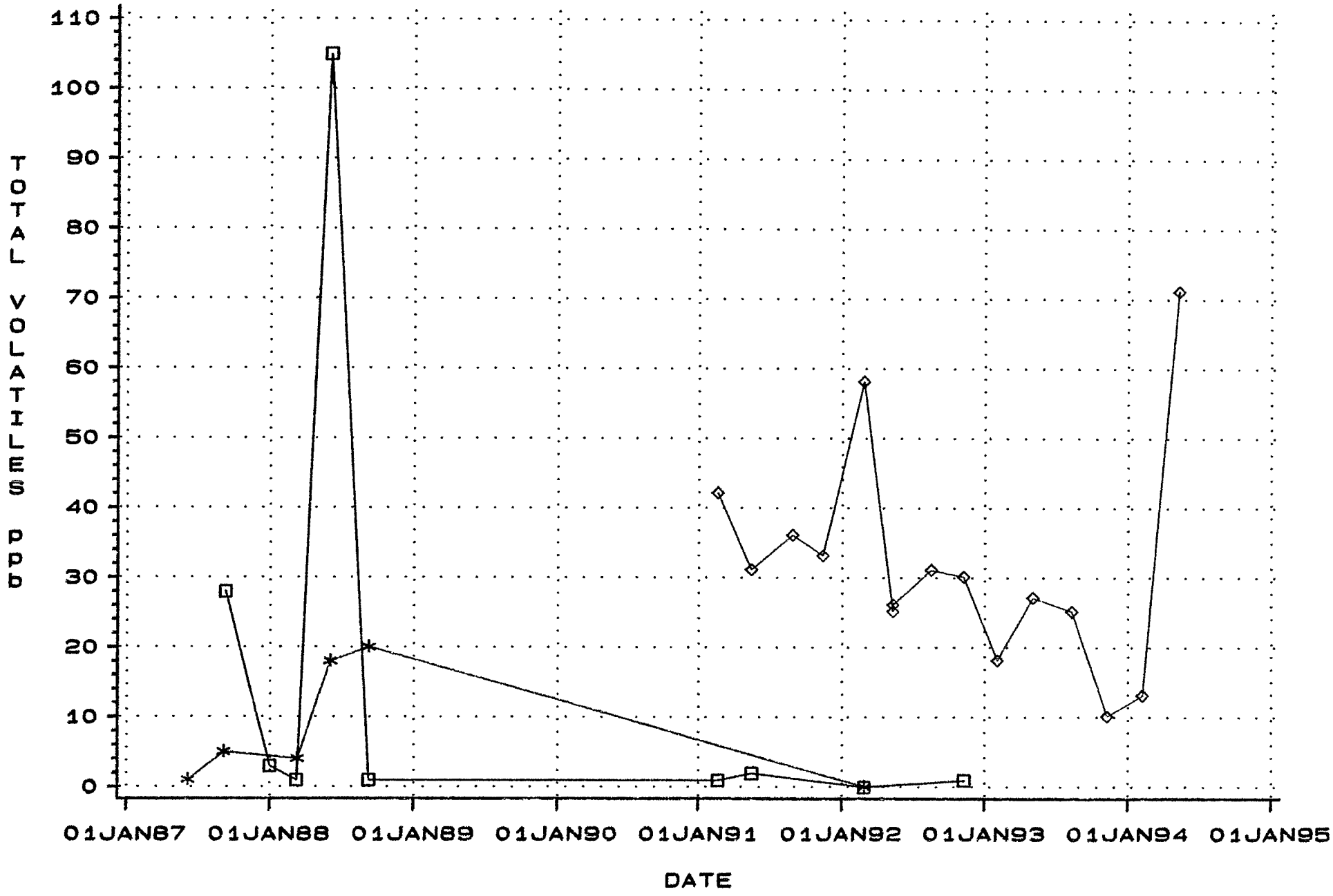

TOTAL VOLATILES
800000
700000
600000
500000
400000
300000
200000
100000
0
TOTAL VOLATILES ppb
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-10
RW-10I

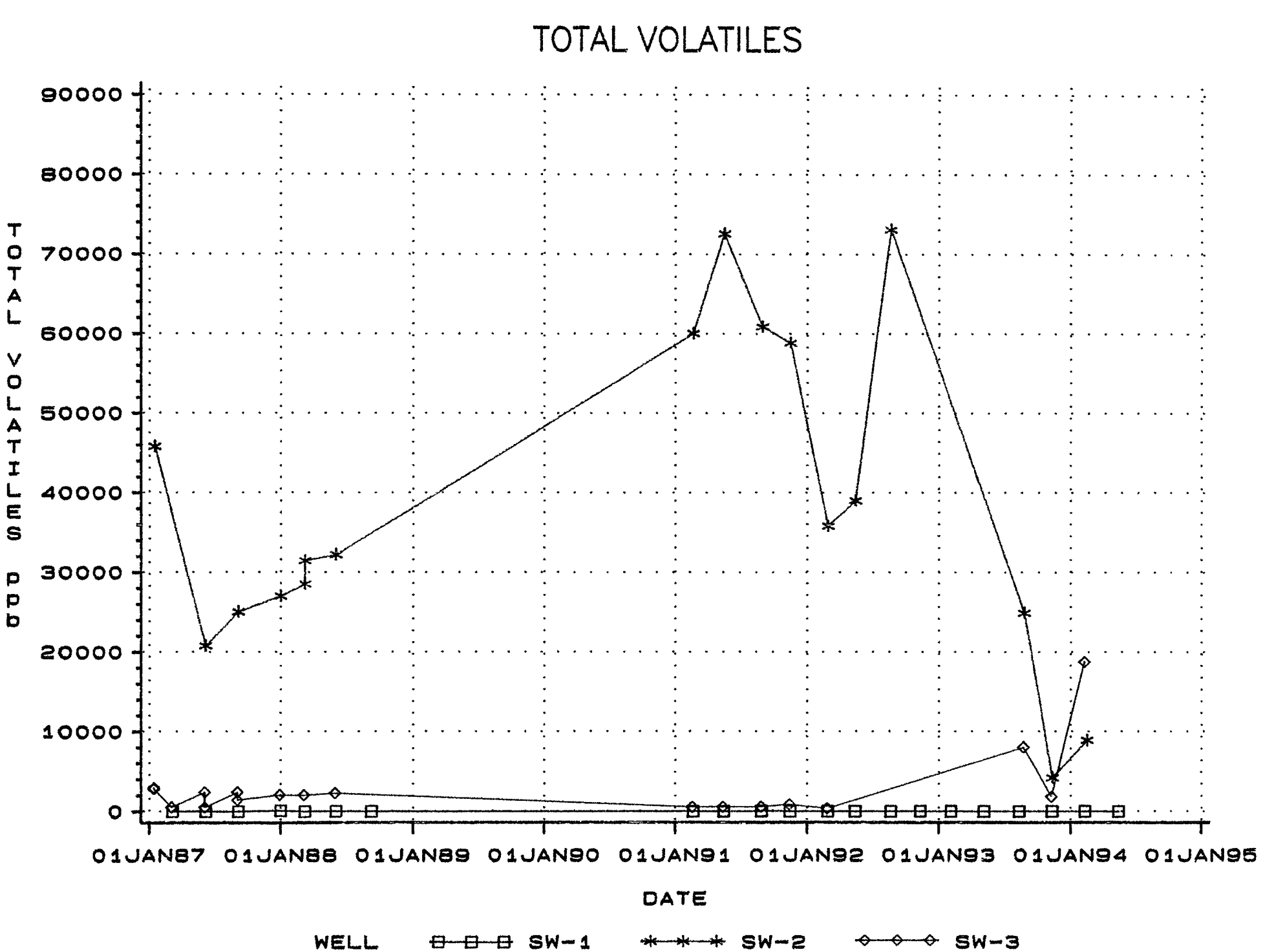

TOTAL VOLATILES
TOTAL VOLATILES ppb
130000
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-11
RW-8
RW-9

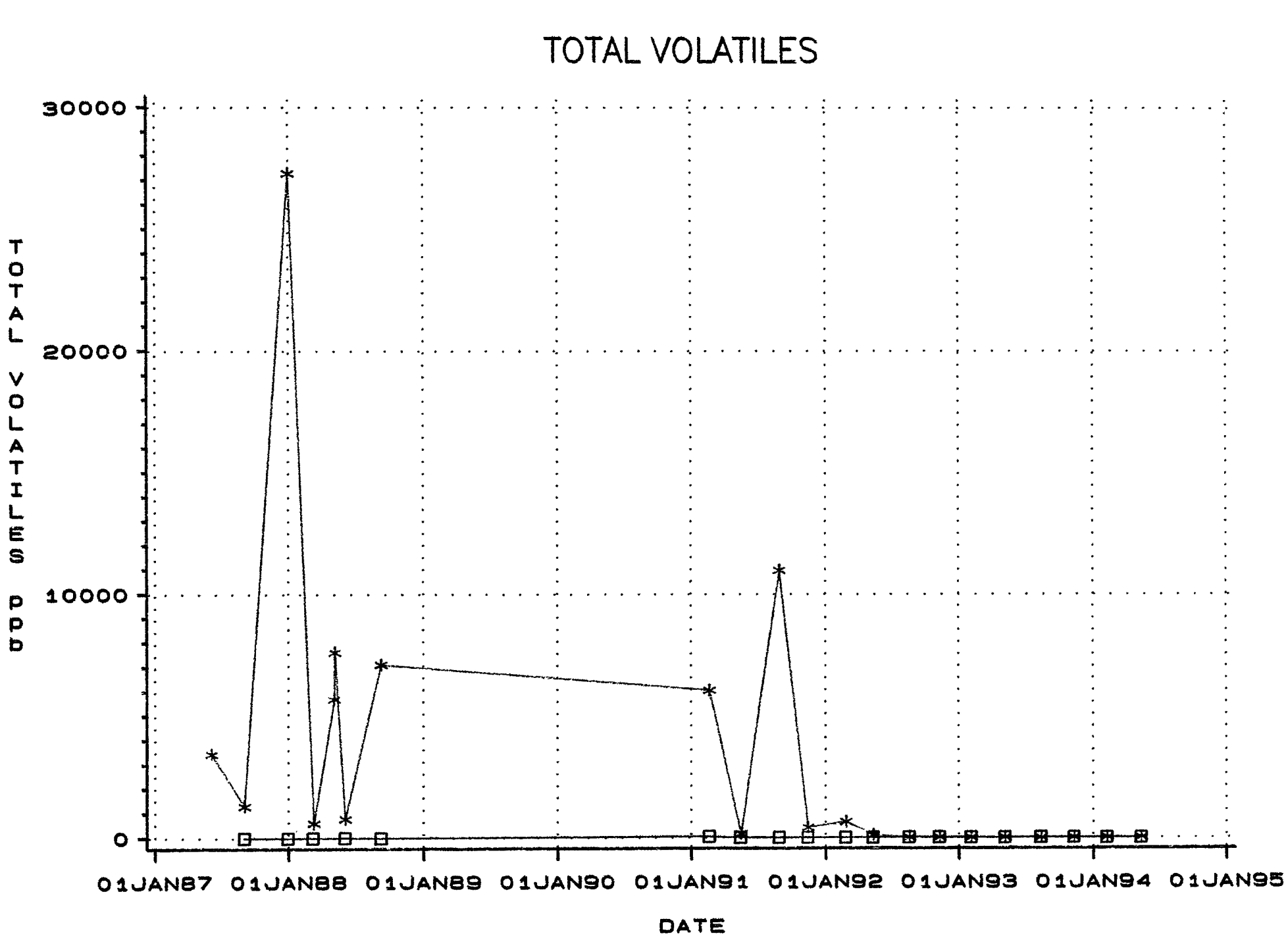
TOTAL VOLATILES

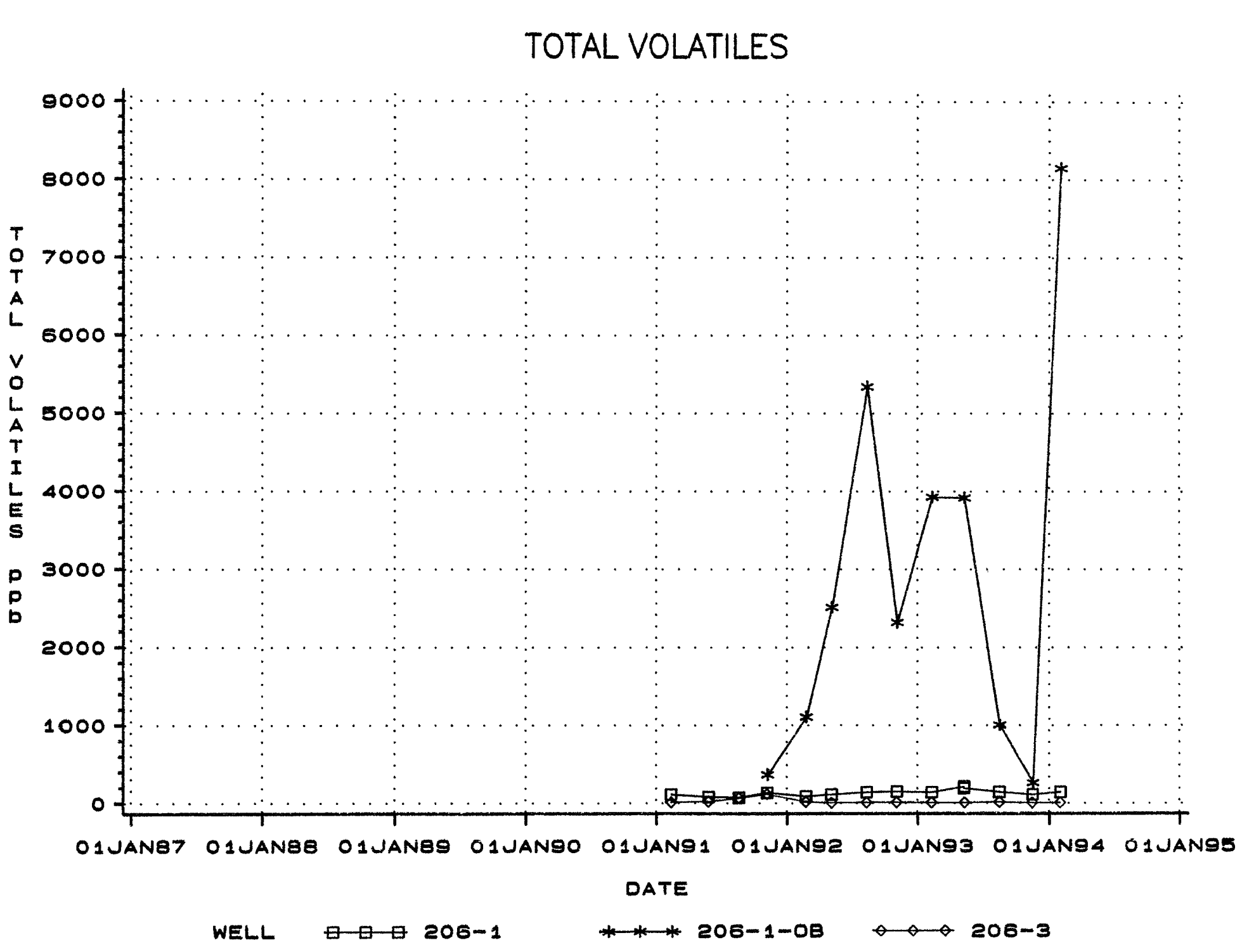


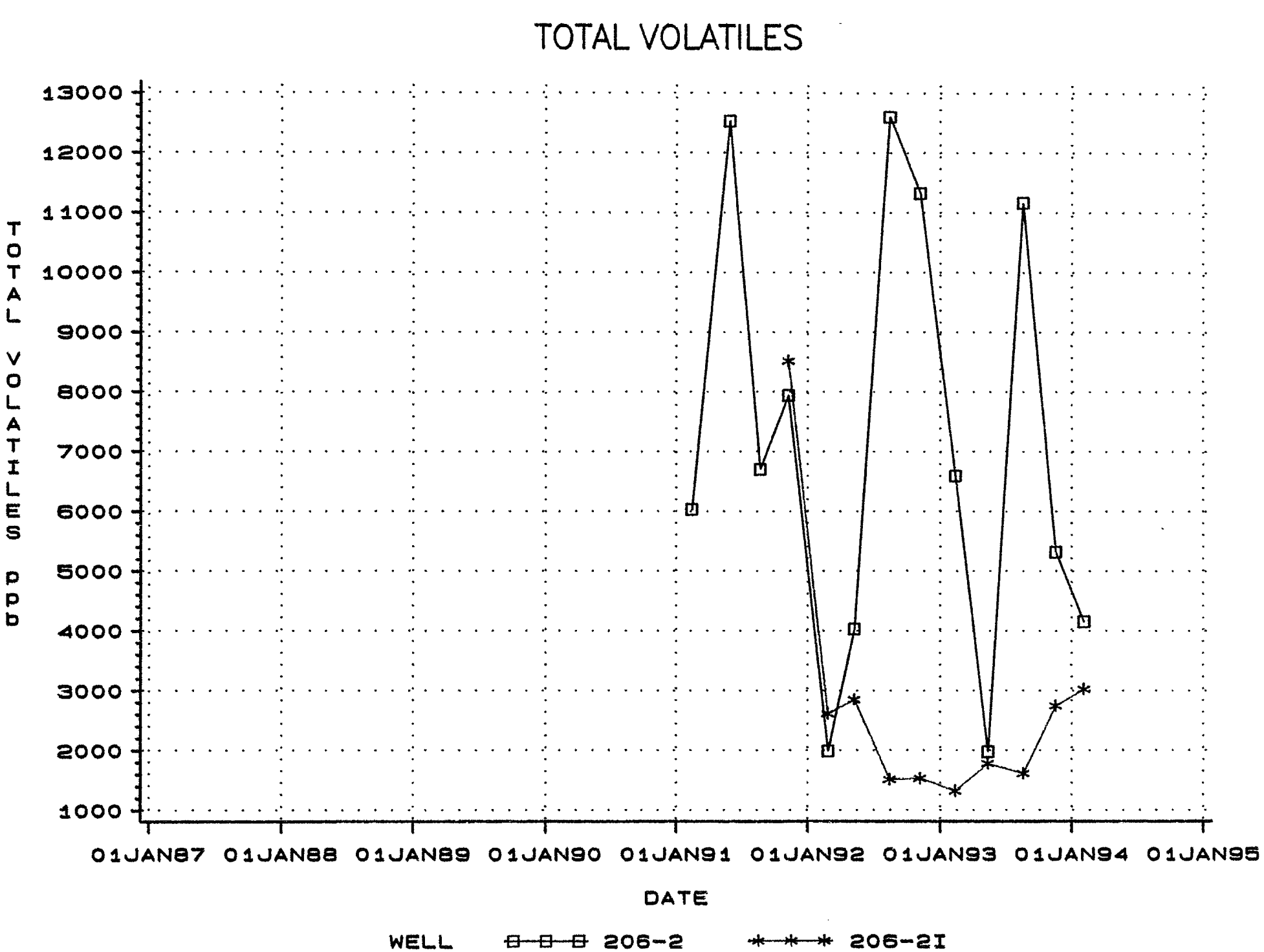
TOTAL VOLATILES

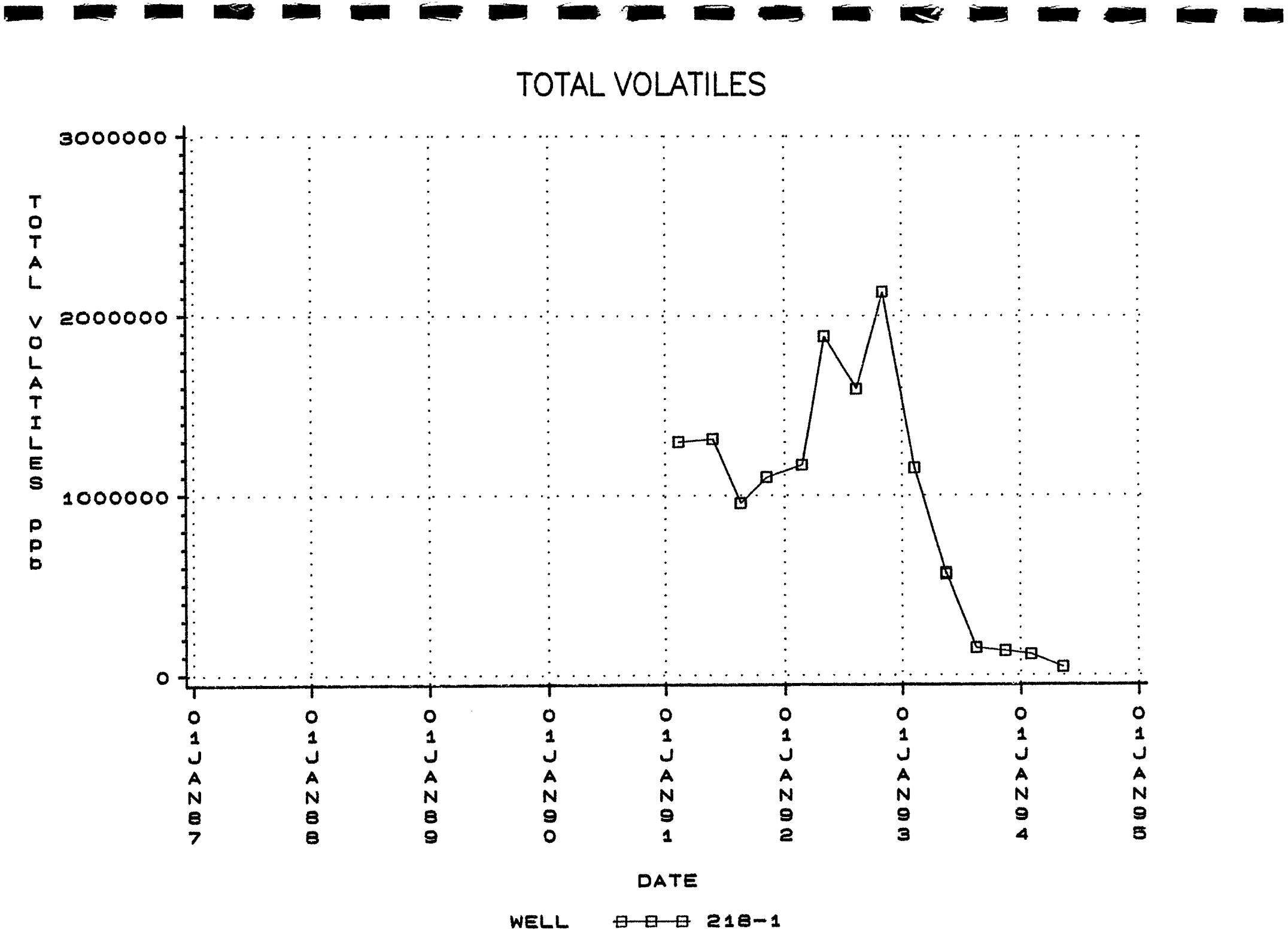



TOTAL VOLATILES
TOTAL VOLATILES ppb
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
SW-1
SW-2
SW-3

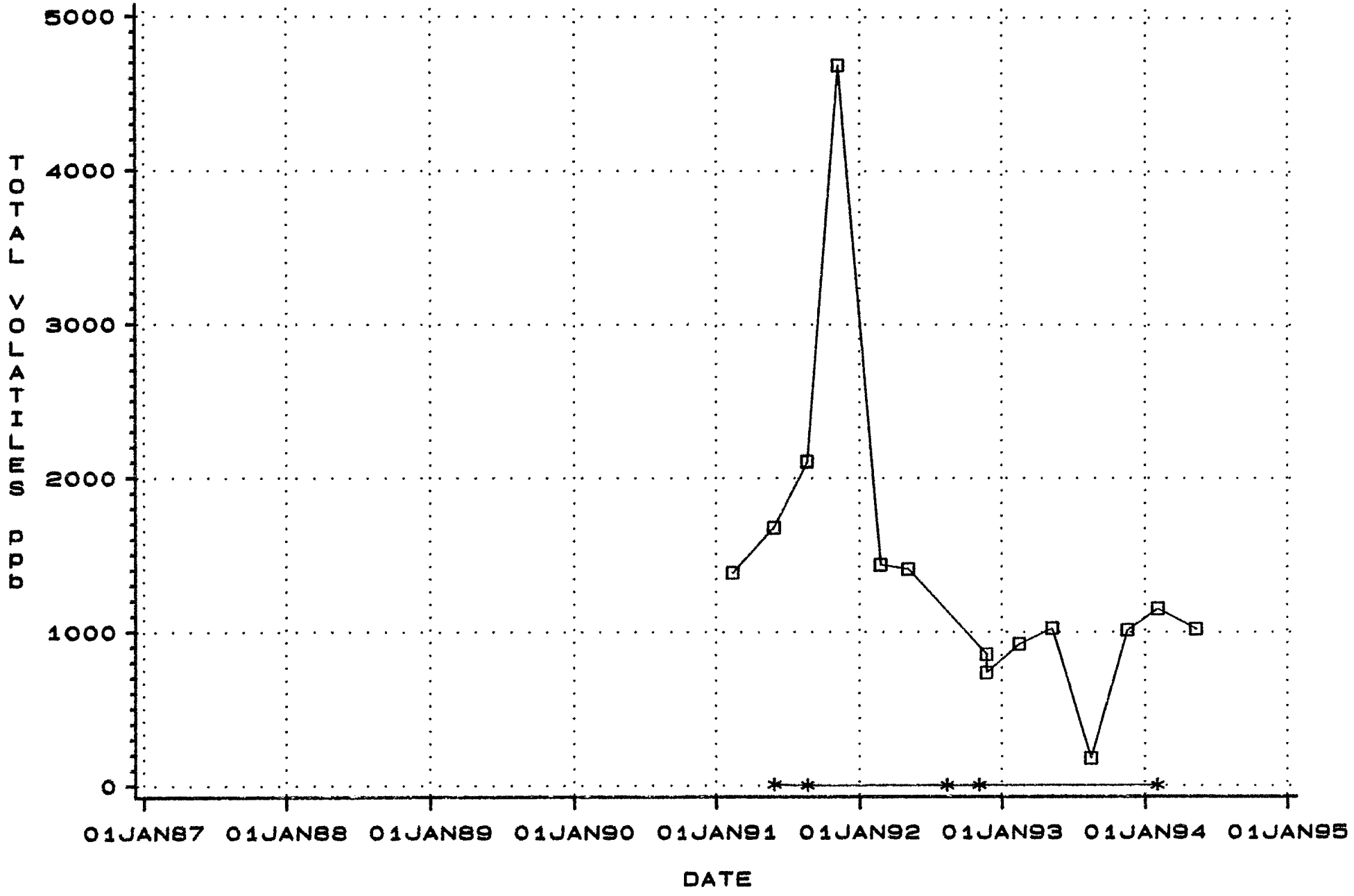

TOTAL VOLATILES
30000
20000
10000
0
TOTAL VOLATILES ppb
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-1
RW-1I

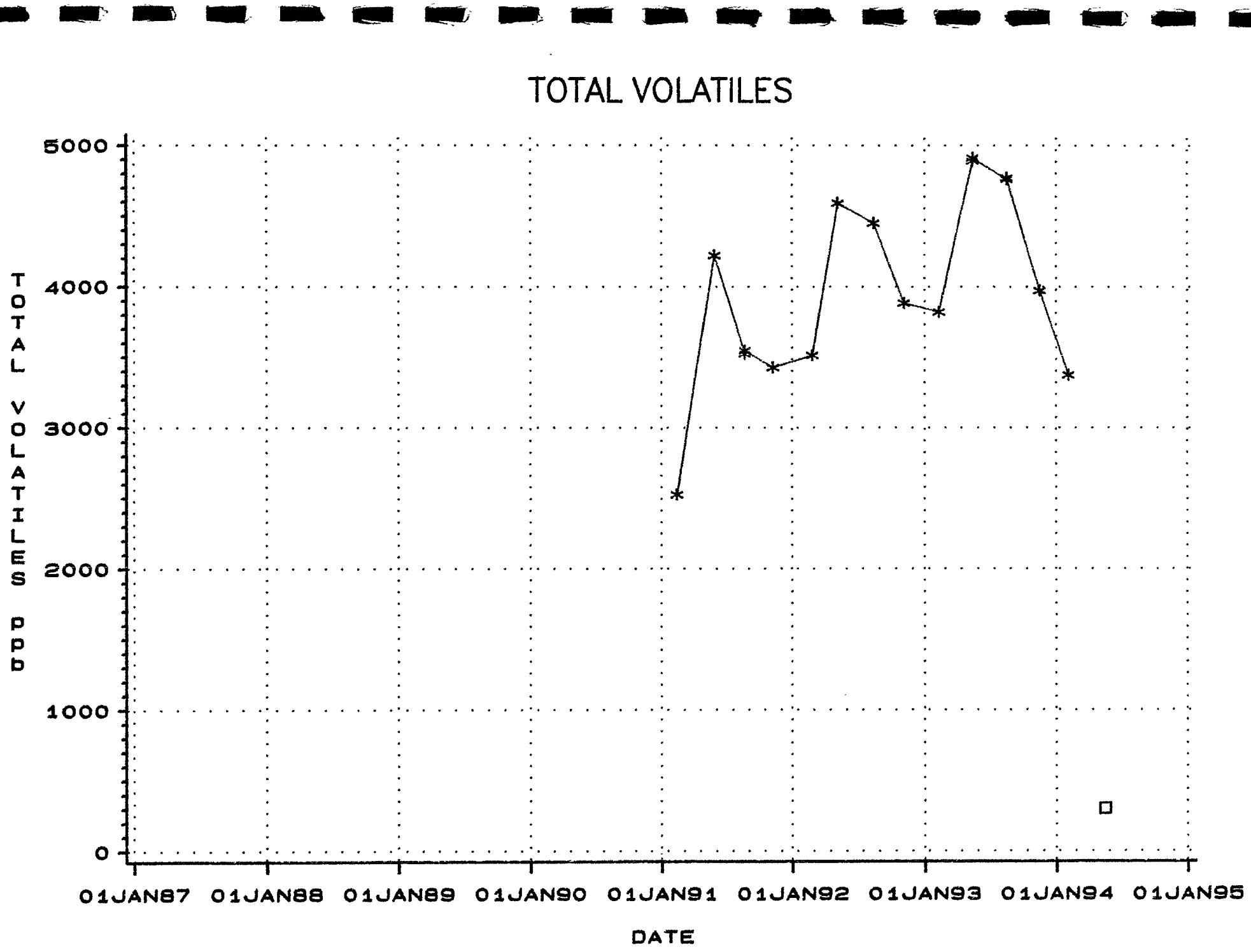

TOTAL VOLATILES
TOTAL VOLATILES ppb
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
206-1
206-1-OB
206-3


TOTAL VOLATILES
TOTAL VOLATILES ppb
13000
12000
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
206-2
206-2I


TOTAL VOLATILES
TOTAL VOLATILES PPB
3000000
2000000
1000000
0
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL 218-1

TOTAL VOLATILES




TOTAL VOLATILES
TOTAL VOLATILES ppb
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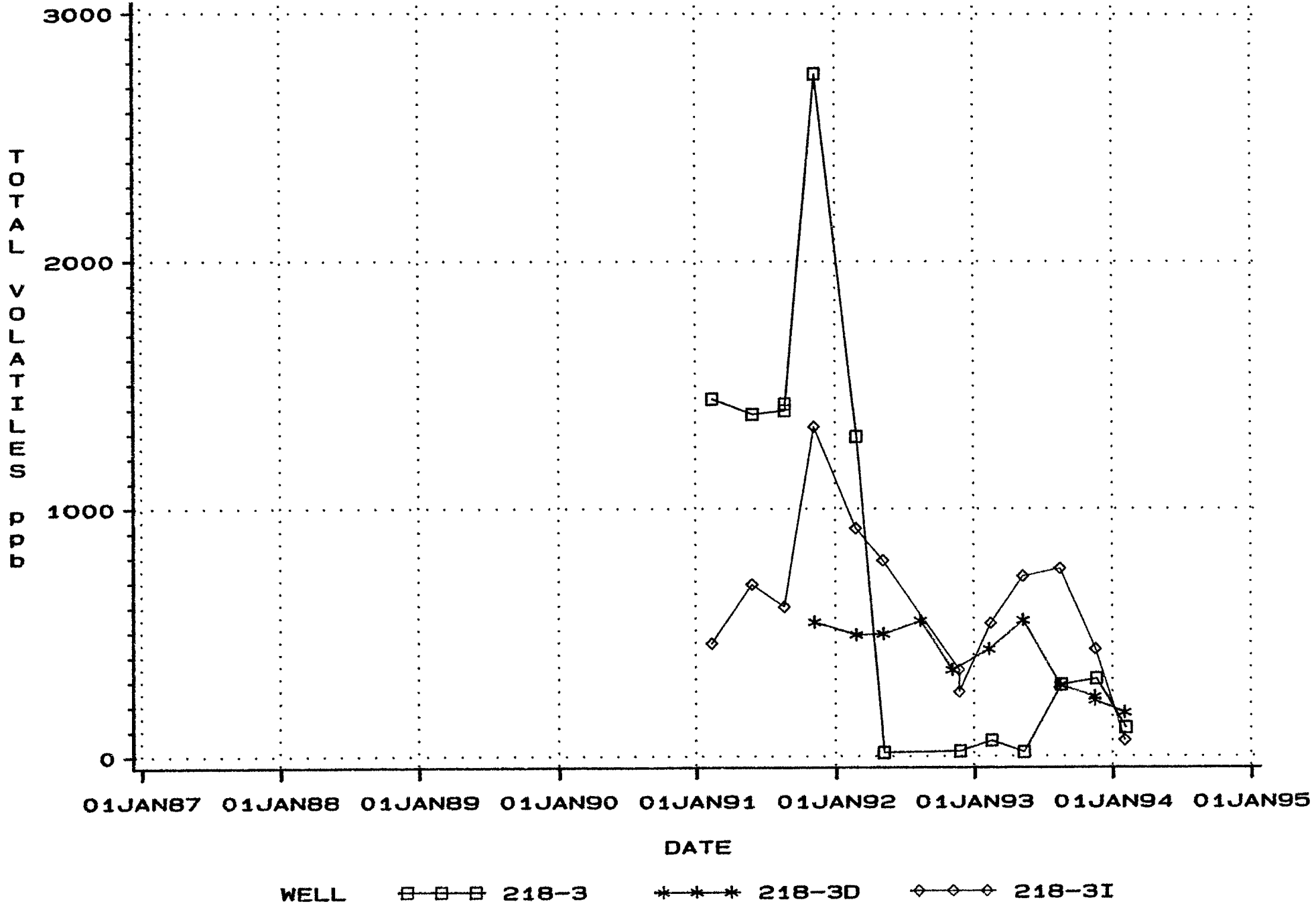
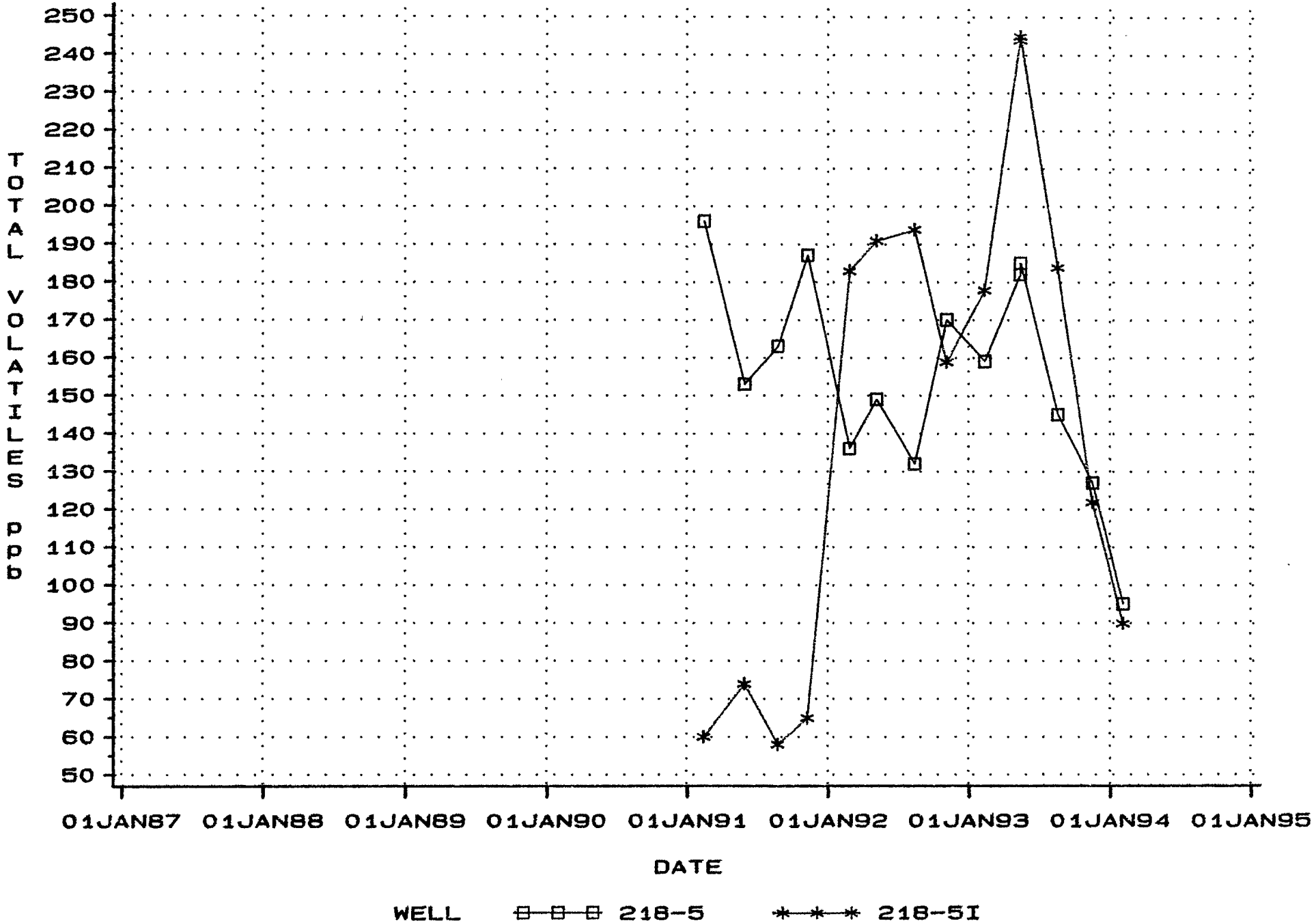
4000
3000
2000
1000
0
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
218-10
218-6

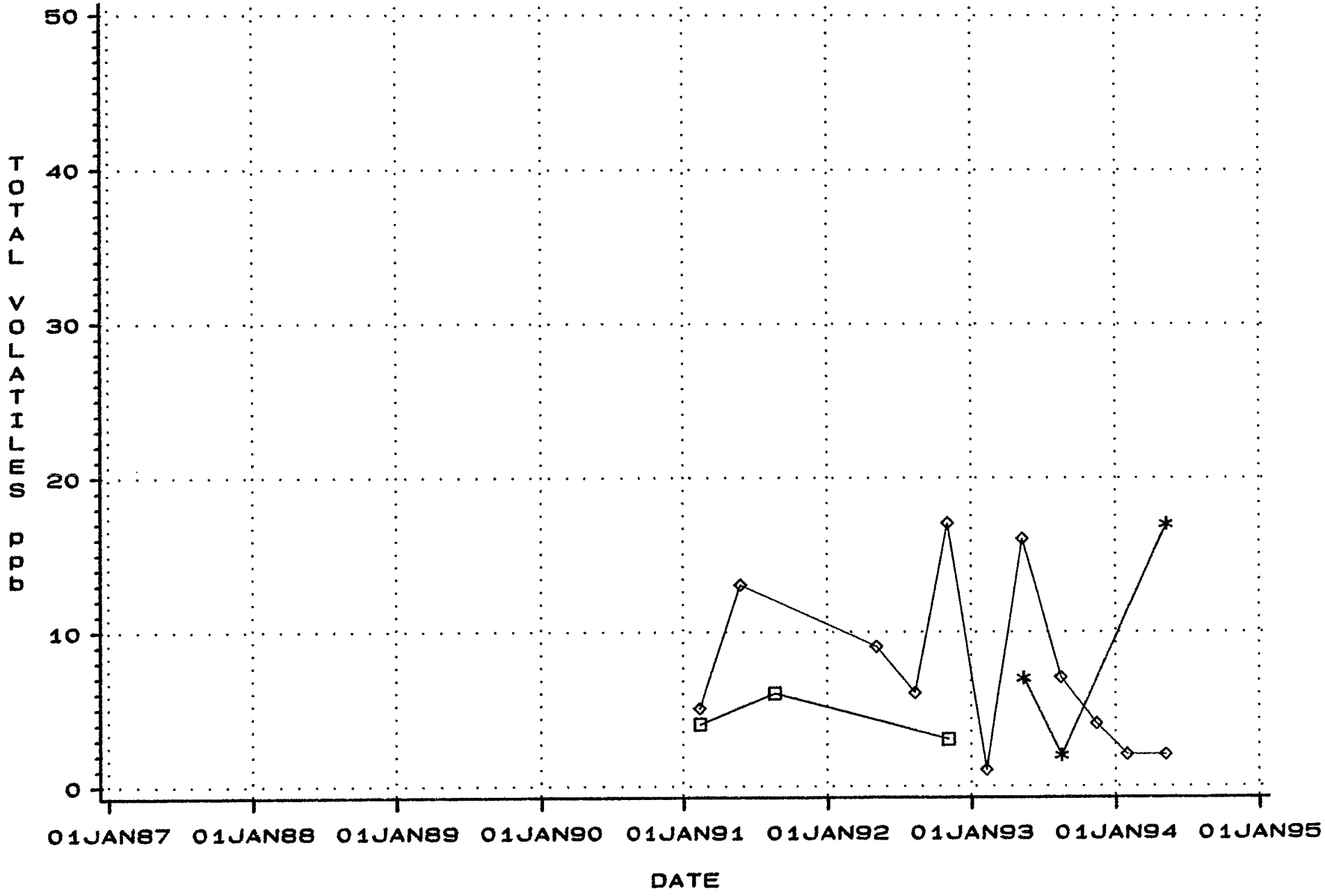
TOTAL VOLATILES

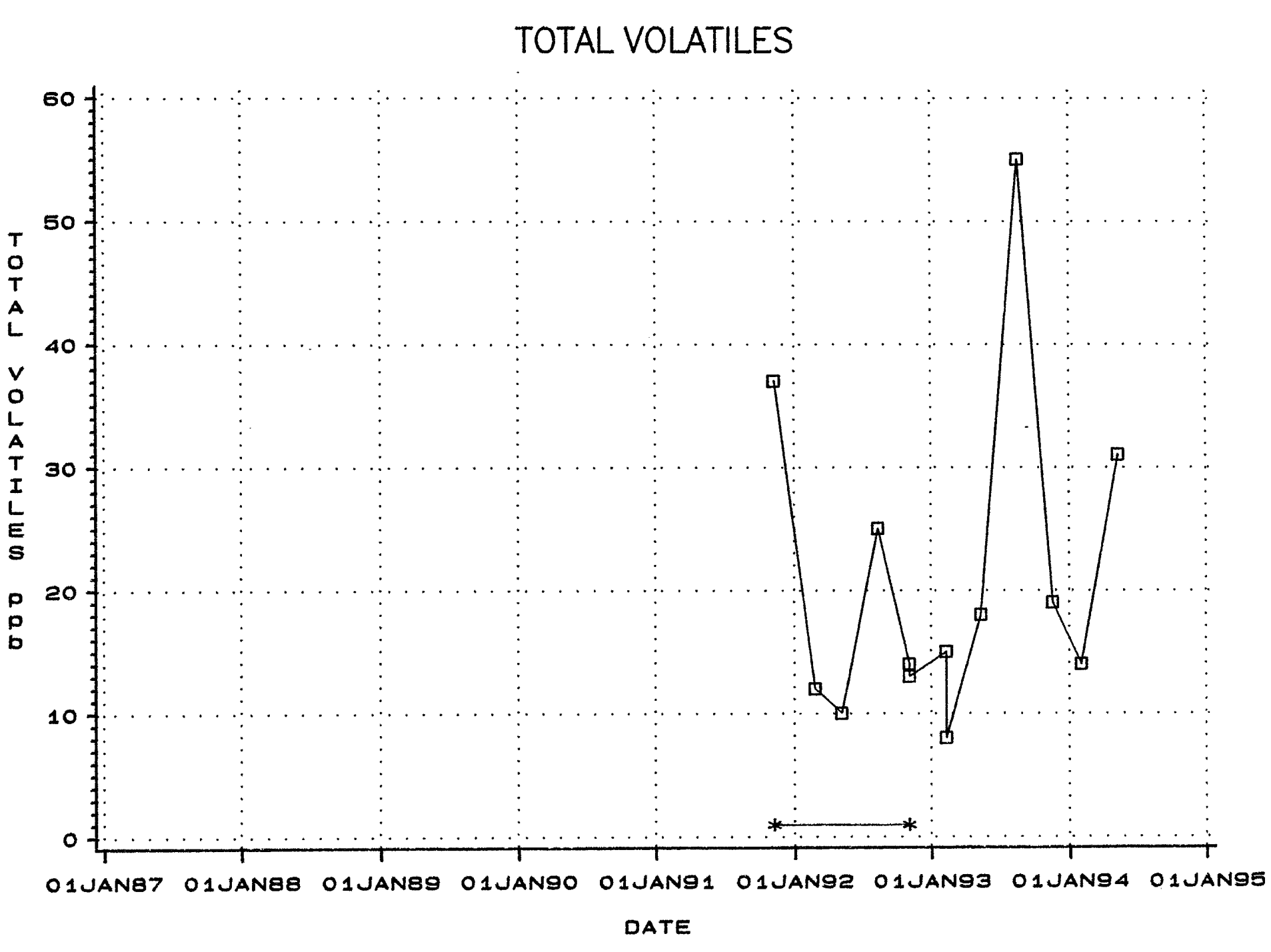


TOTAL VOLATILES

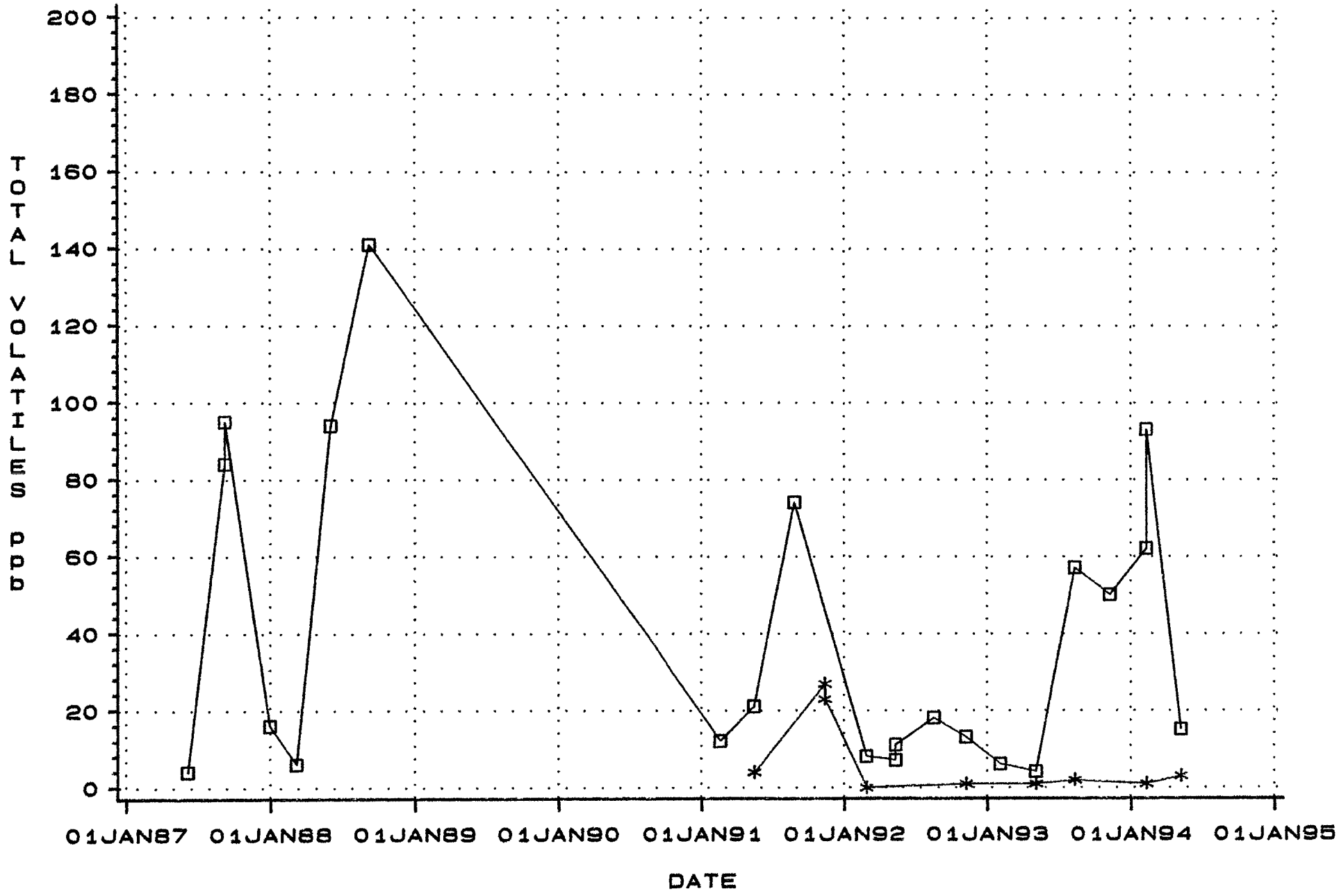


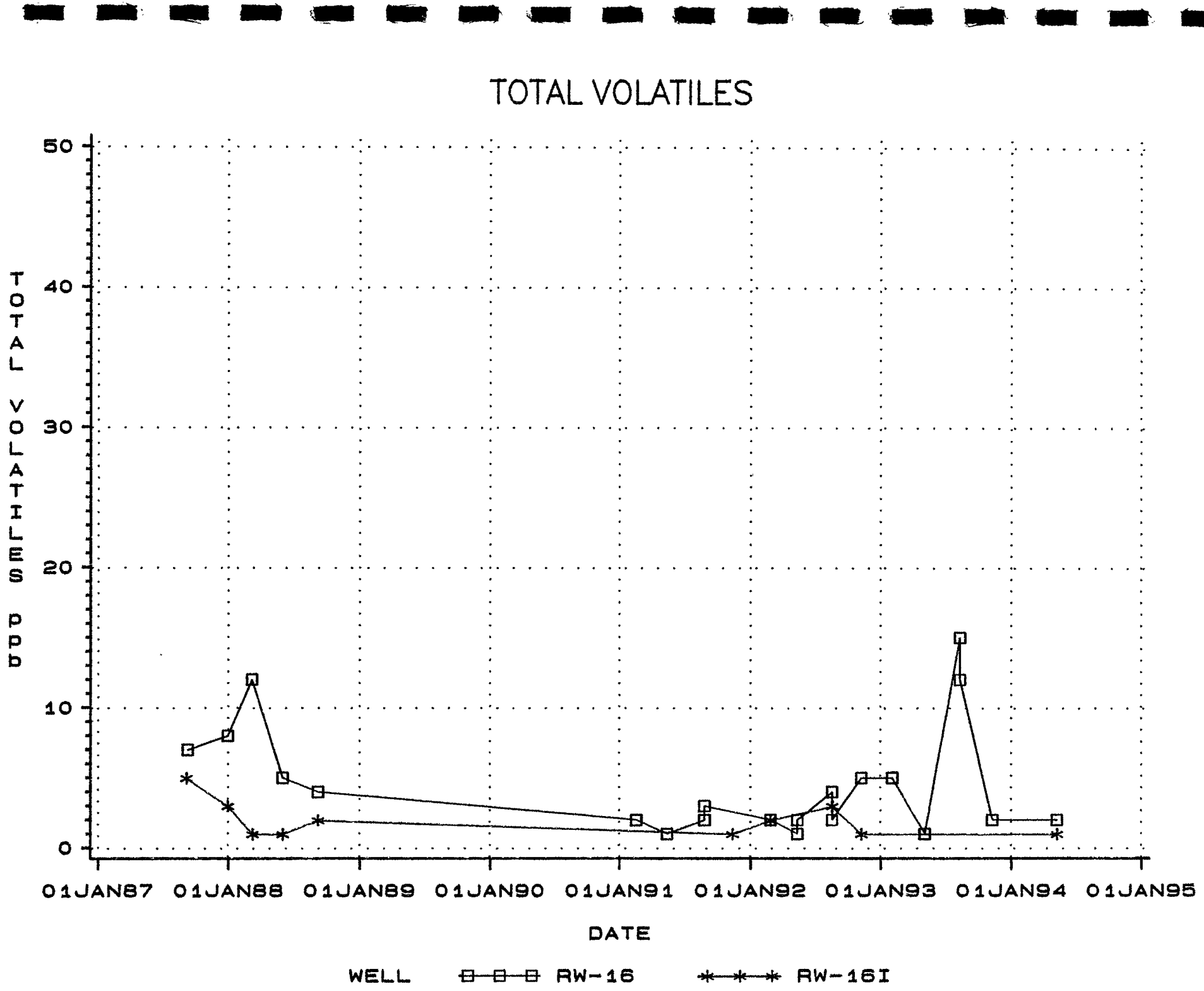
TOTAL VOLATILES

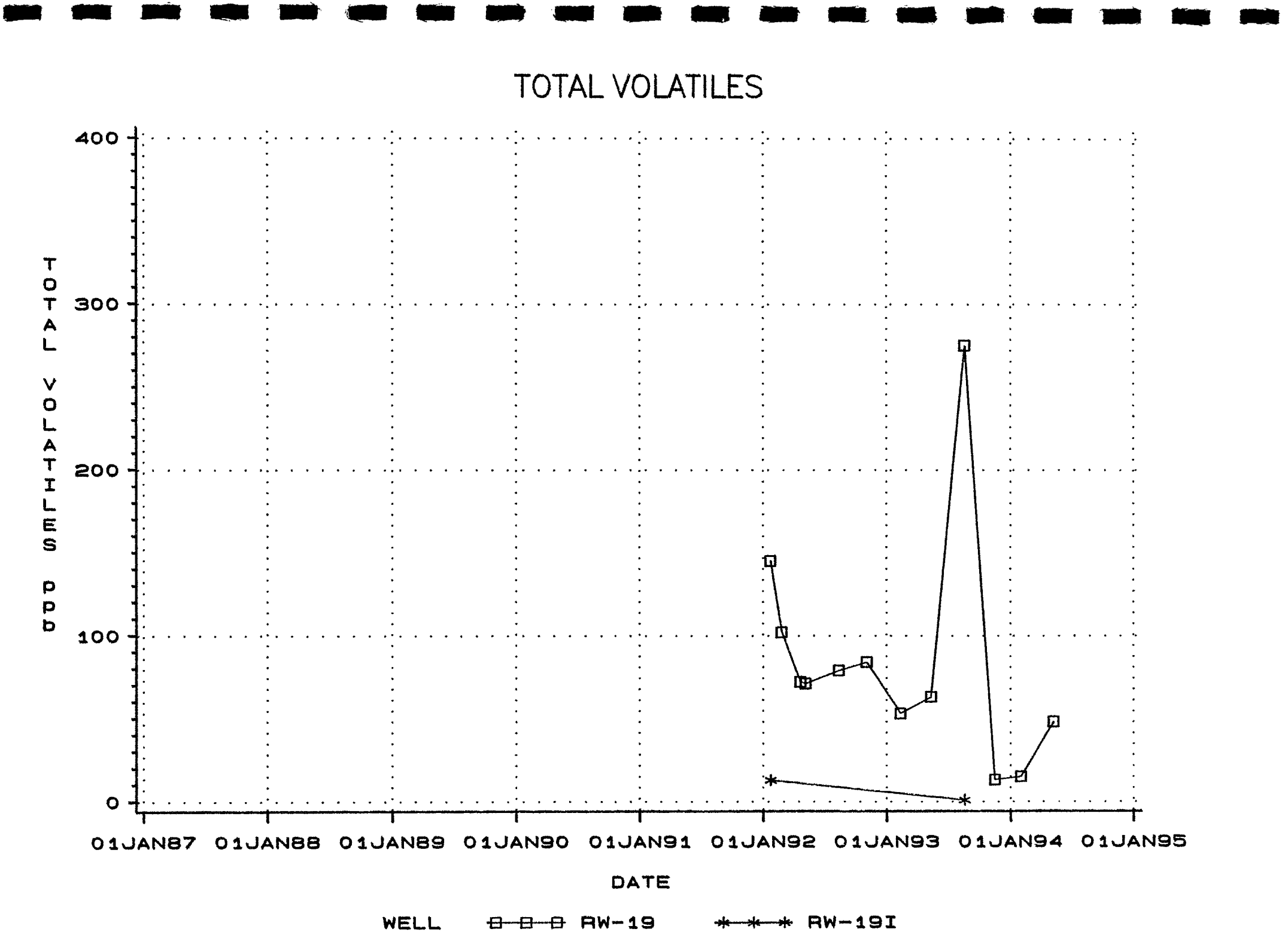



TOTAL VOLATILES
TOTAL VOLATILES ppb
60
50
40
30
20
10
0
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
218-9
218-9I

TOTAL VOLATILES




TOTAL VOLATILES
TOTAL VOLATILES ppb
50
40
30
20
10
0
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-16
RW-16I


TOTAL VOLATILES
TOTAL VOLATILES PPB
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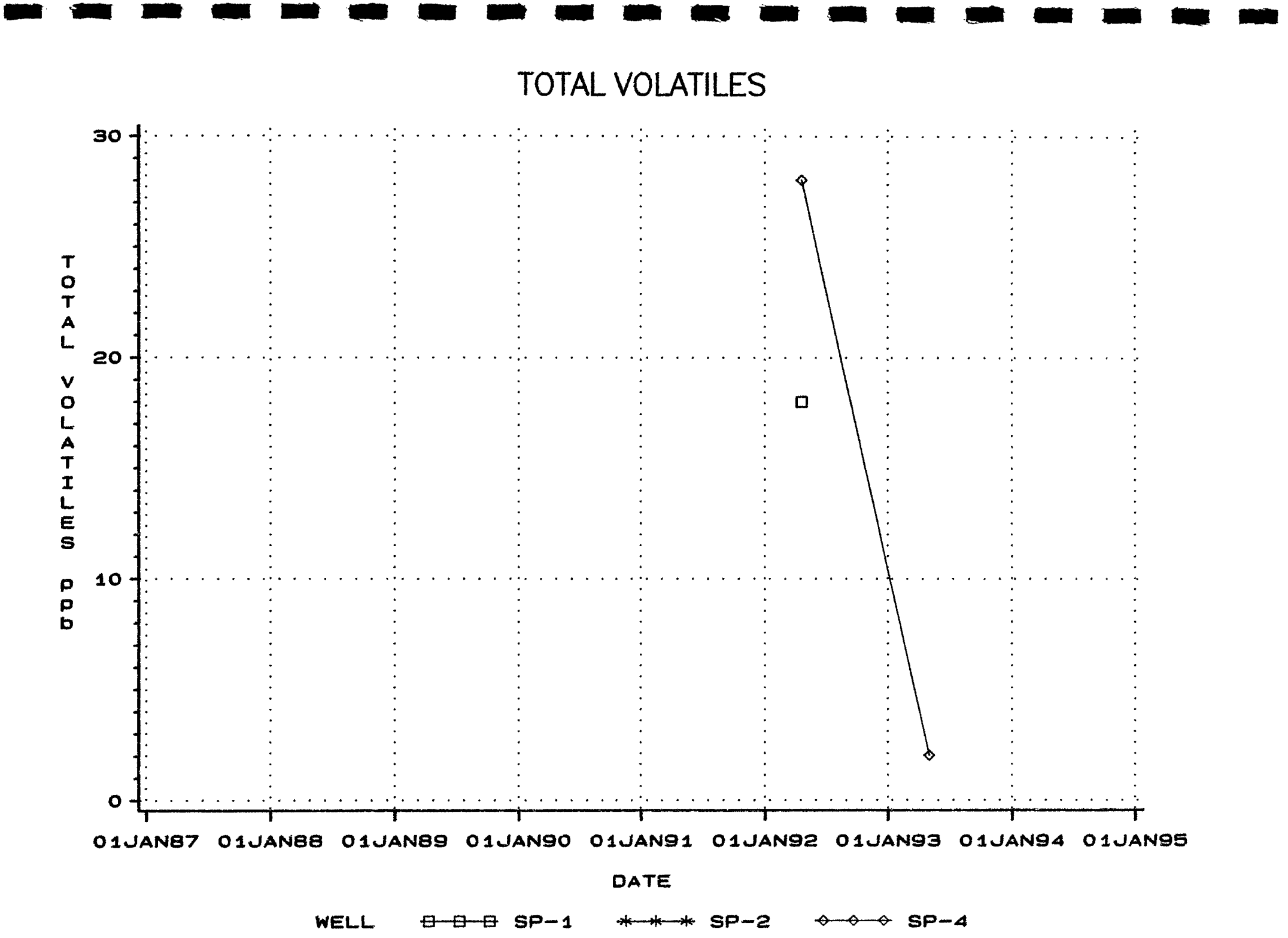
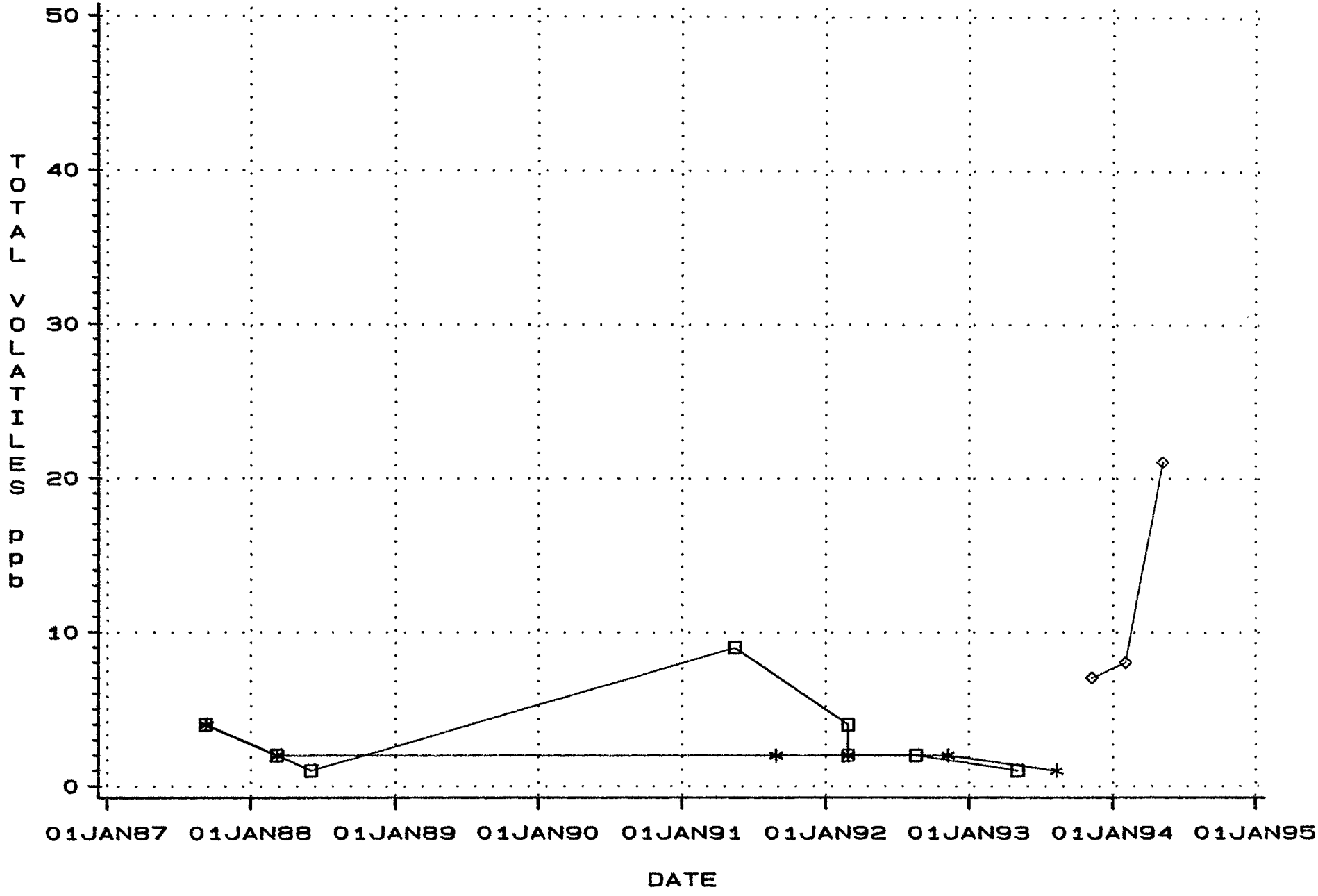
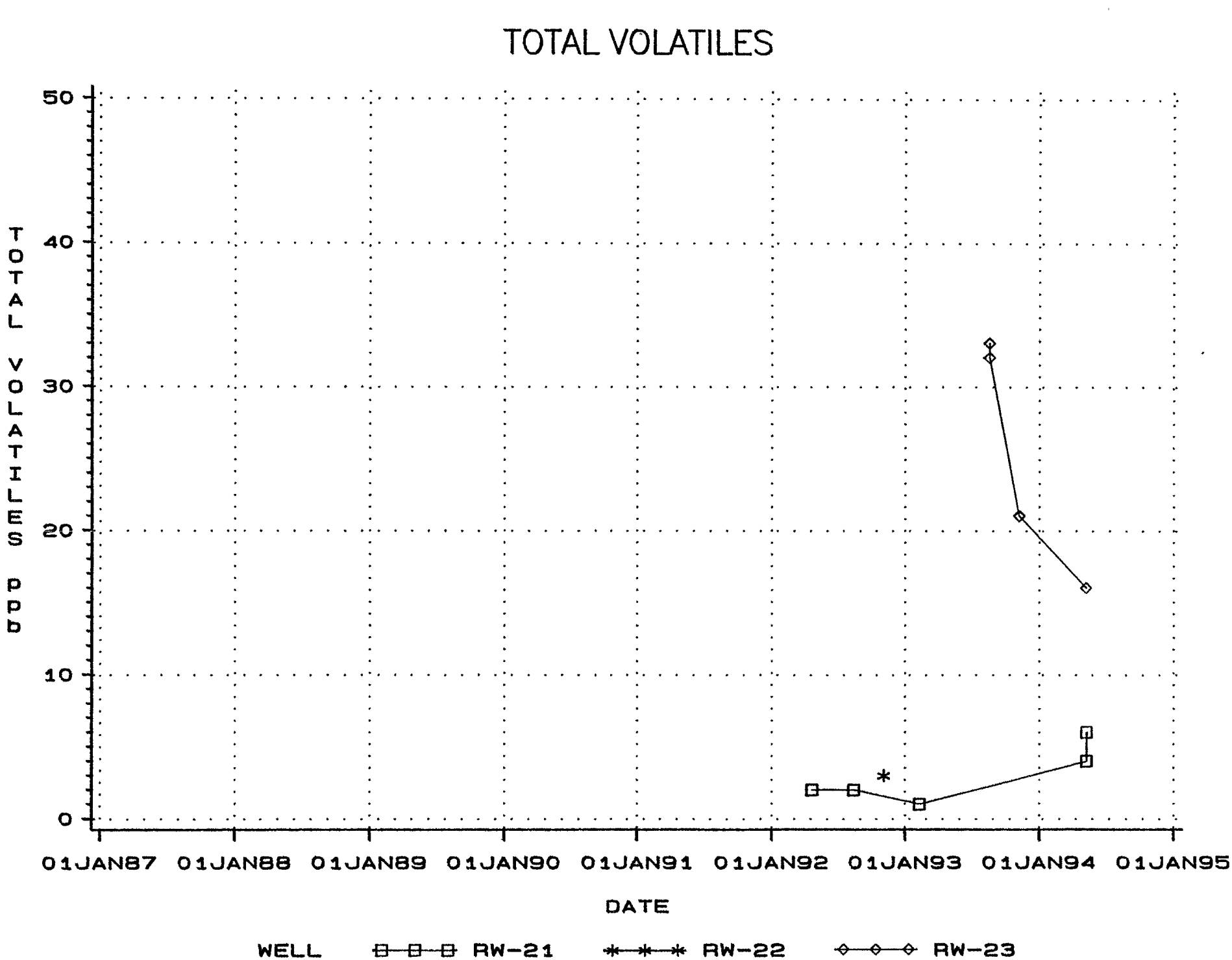
300
200
100
0
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-19
RW-19I


TOTAL VOLATILES
TOTAL VOLATILES ppb
30
20
10
0
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
SP-1
SP-2
SP-4

TOTAL VOLATILES




TOTAL VOLATILES
TOTAL VOLATILES ppb
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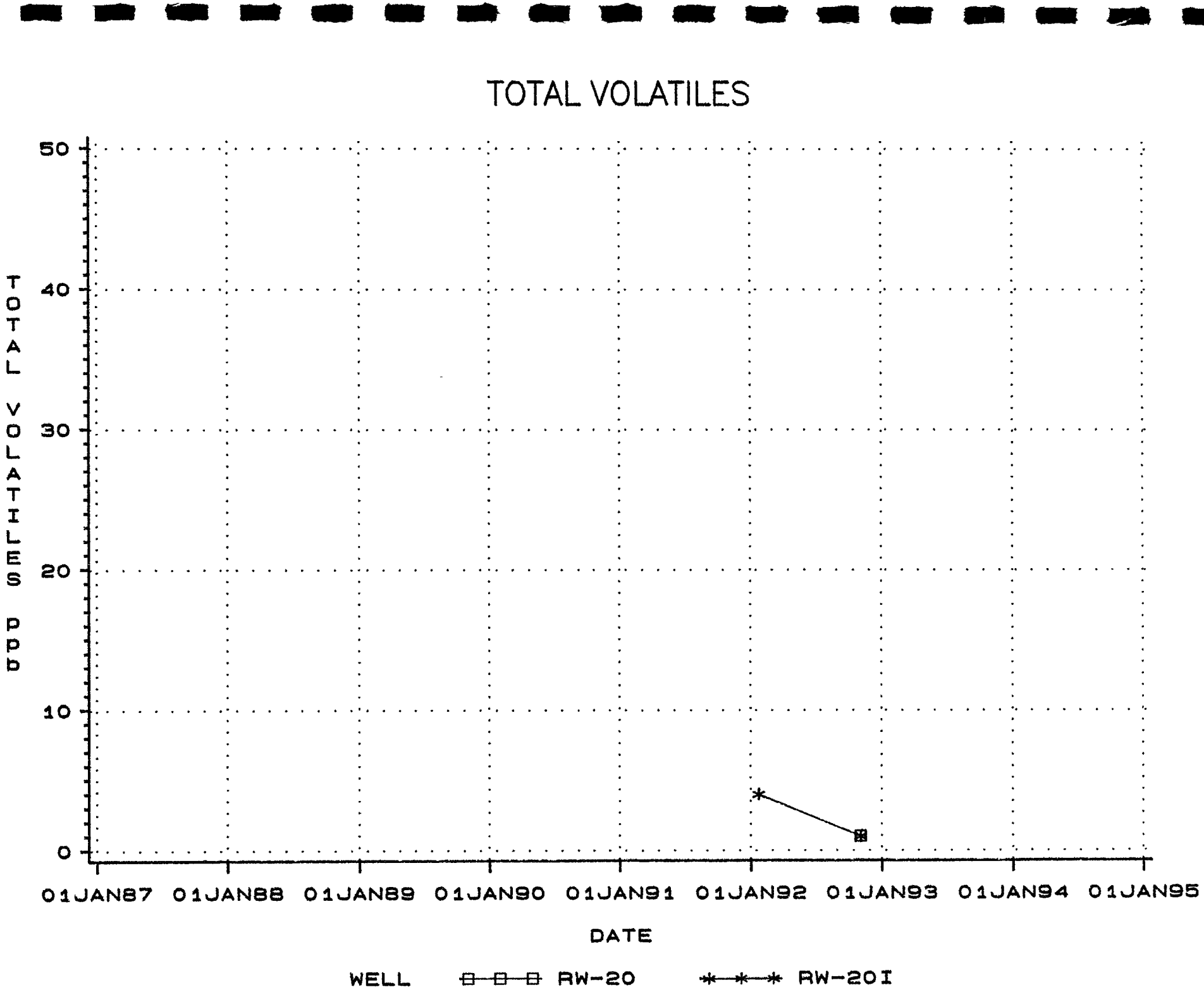
40
30
20
10
0
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-21
RW-22
RW-23


TOTAL VOLATILES
TOTAL VOLATILES PPB
50
40
30
20
10
0
01JAN87
01JAN88
01JAN89
01JAN90
01JAN91
01JAN92
01JAN93
01JAN94
01JAN95
DATE
WELL
RW-20
RW-20I