

AGENDA

FEBRUARY 24, 1998 1:30 P.M.

Boliden-Metech Site Remediation Project Allens Avenue Facility, Providence RI

I. Background of Federal/State Involvement

- ◆ EPA/RIDEM Involvement at Boliden since 1986
- ◆ RIDEM collected on-site samples in April 1986; EPA notified of results in November 1986
- ◆ EPA issued Notice of Noncompliance to Boliden in March 1987
- ◆ PA in April 1989 by RIDEM; SI in 1993
- ◆ 1991 Consent Degree; 1993 and 1995 Amendments to Consent Degree
- ◆ SOW for Site Remediation approved 1994; 2 amendments 6/97
- ◆ November 1997 EPA letter to Boliden clarifying soil disposition

II. Status of Boliden Remediation To Date

- ◆ Shredder Fluff removed and disposed of
- ◆ Site Characterization under SOW begun 1996
- ◆ Surface and Subsurface soils exceeding 10 ppm removed from site and site restored with clean soil
- ◆ Concrete pads and on-site building status is unclear
- ◆ Installation of 8 GW monitoring wells

III. GW Monitoring Well Results

- ◆ MW-4 results PCBs @ 2.5 ppb; < 1.0 ppb in 7 remaining wells
- ◆ MW-7 results semi-volatile constituents
- ◆ Raw data indicates MW-4, MW-6, MW-7, MW-8 contains unidentified constituents in PCB range

IV. Future Activities @ Boliden

- ◆ Additional Sampling and Analysis
 - Petroleum Hydrocarbons
 - Total PCBs
 - High-Res GC/MS for PCB homologues
- ◆ Off-site Migration Potential Study

*Soil → clean fill
NFA action for PCBs / LOC sidewalk: Archive*



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Transmittal

To: Ms. Kimberly Tisa, PCB Coordinator
USEPA Region 1 Office

Date: February 16, 1998

Project No.: 05437

From: Marc J. Richards *MJR*

Re: Boliden Metech
Allens Avenue Facility
Providence, Rhode Island

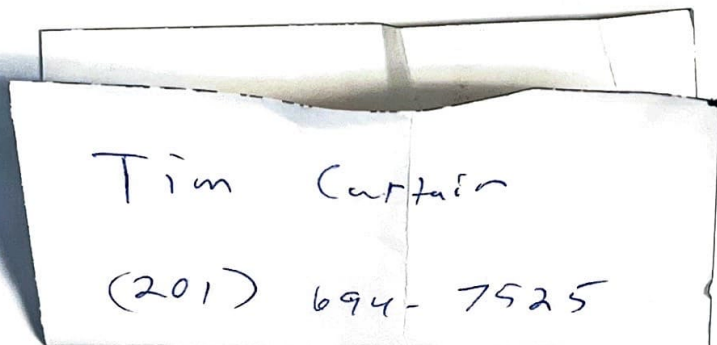
cc: Christian Jedson, BMI
Alan Hanscom, VHB

As requested, please find enclosed the following information:

- Revised groundwater sampling memorandum. Memorandum now includes raw data for laboratory analytical results, figure showing monitoring well locations, monitoring well construction logs, and minor text changes based on comments received from EPA;
- Draft table summarizing soil results for individual cells prior to excavation (Table 1);
- Draft table summarizing soil results for individual cells following soil excavation (Table 2); and
- Figure identifying cells which required additional excavation following receipt of initial cell closure samples.

All cell were excavated to a depth of one foot below the existing grade. Cells Q1, R1, and V3 were excavated to a depth of two feet below grade and cell K2 was excavated to a depth of three feet below grade to reach clean closure.

Please call me if you have any questions.





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Memorandum

To: Ms. Kimberly Tisa, PCB Coordinator
USEPA Region 1 Office

Date: February 3, 1998
(Revised February 13, 1998)

Project No.: 05437

From: Alan D. Hanscom &
Marc J. Richards

Re: Groundwater Sampling
Boliden Metech
Allens Avenue Facility
Providence, Rhode Island

cc: Christian Jedson, BMI

On January 19, 1998, Vanasse Hangen Brustlin, Inc. (VHB) gauged water levels and sampled the eight monitoring wells previously installed on January 14 and 15, 1998. Monitoring well locations are shown on Figure 1. Groundwater measurements were collected prior to and following well pumping and sampling. High tide was scheduled for the area at approximately 12:00 P.M. Results of the two rounds of groundwater measurements are as follows:

Table 1: Depth of Groundwater

Monitoring Well	Depth to Groundwater From Top of Protective Casing (feet)			
	Round 1		Round 2	
MW-1	7:36 AM	7.90'	11:37 AM	7.90'
MW-2	7:20	7.20'	11:30	7.25'
MW-3	7:43	10.40'	11:45	10.45'
MW-4	7:53	8.70'	11:56	8.70'
MW-5	7:47	8.70'	11:50	8.70'
MW-6	7:45	7.95'	11:47	7.95'
MW-7	7:56	6.90'	11:58	7.10'
MW-8	7:50	9.95'	11:53	8.30'

Based on a review of the groundwater measurements, it appears that tidal fluctuations did not significantly influence groundwater elevations over the approximate 4 hour lapse between the two gauging events. Monitoring well MW-8 had a slow recharge rate during pumping of the well, which may account for the 1.65 foot elevation difference observed within this well.

On January 19, 1998 Boliden Metech surveyed the top-of-casing elevation for each of the eight groundwater monitoring wells. Each top-of-casing elevation was based on an assumed height of instrument of 100 feet. The results of the survey were used to calculate groundwater flow direction

through triangulation of the wells based on the first round of groundwater measurements. The top-of-casing and groundwater elevations are as follows:

Table 2: Monitoring Well Survey Results

Monitoring Well	Height of Instrument (feet)	Back Sight (feet)	Top-of-Casing Elevation (feet)	Groundwater Elevation (feet)
MW-1	100	4.58	95.42	87.52
MW-2	100	5.12	94.88	87.68
MW-3	100	2.46	97.54	87.14
MW-4	100	4.41	95.59	86.69
MW-5	100	4.38	95.62	86.92
MW-6	100	4.76	95.24	87.29
MW-7	100	7.34	92.66	85.76
MW-8	100	4.70	95.30	85.35

Groundwater was calculated to generally flow radially from the Site; south towards Thurbers Channel and east/northeast towards the Providence River.

Groundwater samples were collected from the eight monitoring wells in accordance to the USEPA Region 1 Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, dated July 30, 1996. PCB results are summarized in Table 3 and monitoring well installation logs are attached.

As shown in Table 3 , all groundwater analytical results are below the established groundwater cleanup standard of 4 micrograms per liter (ug/l). The concentration of 2.5 ug/l identified in groundwater collected from MW-4 was reported by the laboratory as Aroclor 1260. The laboratory reported that the chromatogram peak pattern for MW-4 could not be perfectly matched to either Aroclor 1254 or 1260. The MW-4 results was reported as Aroclor 1260 due to a slightly better correlation . The turbidity of the groundwater sample collected from MW-4 was slightly cloudy; therefore, the PCB concentration may be attributable to PCB-impacted sediment in the water sample.

Laboratory results for field quality control indicators for the field equipment rinsate (PERB-1), field duplicate (MW-5D), and the rinse water blank (WB-1) were below method detection limits, as shown in Table 3. The laboratory method blank did not identify concentrations of PCB above laboratory method detection limits. The PE results, 2.1 ug/l (Aroclor 1254) and 2.4 ug/l (Aroclor 1242) fell within the performance acceptance limits of 1.36 - 2.33 ug/l and 1.34 - 2.76 ug/l, respectively. All laboratory results and raw data are attached.

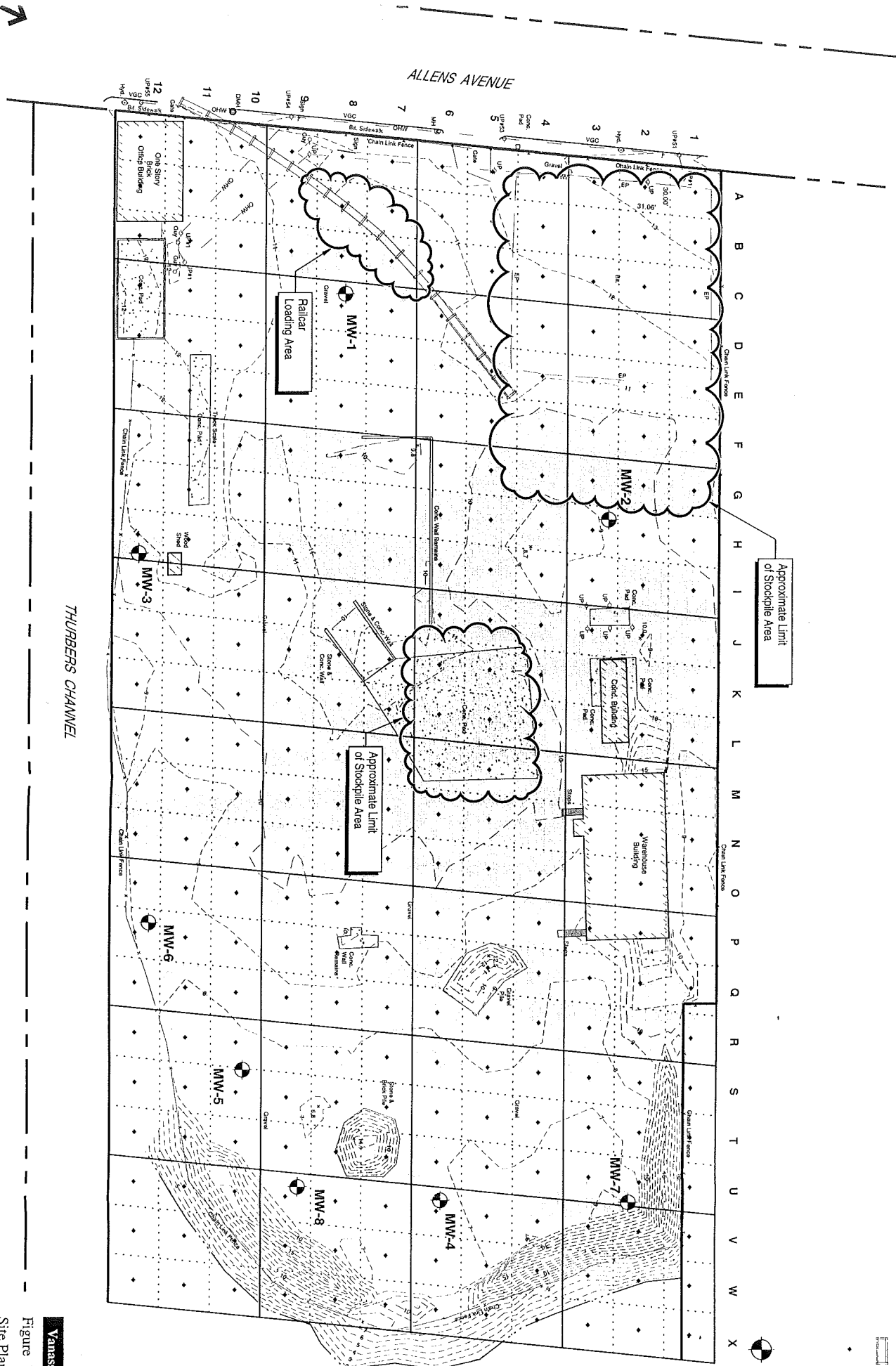
Please call either Marc Richards or me if you have any questions.

Table 3: Summary of Laboratory Analytical Results

Sample ID	Media	Aroclor 1242 (ug/l)	Aroclor 1254 (ug/l)	Aroclor 1260 (ug/l)	Surrogate Recovery	
					1	2
MW-1	Groundwater	<1.0	<1.0	<1.0	98%	50%
MW-2	Groundwater	<1.0	<1.0	<1.0	92%	45%
MW-3	Groundwater	<1.0	<1.0	<1.0	93%	58%
MW-4	Groundwater	<1.0	<1.0	2.5	90%	46%
MW-5	Groundwater	<1.0	<1.0	<1.0	85%	46%
MW-6	Groundwater	<1.0	<1.0	<1.0	84%	45%
MW-7	Groundwater	<1.0	<1.0	<1.0	100%	61%
MW-8	Groundwater	<1.0	<1.0	<1.0	84%	57%
WB-1	Rinse Water	<1.0	<1.0	<1.0	79%	83%
PERB-1	Equipment Rinsate	<1.0	<1.0	<1.0	78%	76%
MW-5 (D)	Field Duplicate	<1.0	<1.0	<1.0	88%	47%
PS-65005	PE Sample	<1.0	2.1	<1.0	81%	85%
PS-63006	PE Sample	2.4	<1.0	<1.0	93%	92%
Method Blank	Lab Blank	<1.0	<1.0	<1.0	104%	129%
Blank Spike	Lab Spike	--	--	--	TCB 102%	HCB 108%

Notes: Surrogate Compounds : 1) 2,4,5,6-Tetrachloro-m-xylene 2) Decachlorobiphenyl

Spike Compounds are TCB: 2,4,4'-Trichlorobiphenyl and HCB:2,2',3,3',4,4'-Hexachlorobiphenyl



- Railroad Spur
- Sampling Point
- Identified Area
- 10 ppm PCB
- Proposed Mon Well Location

Figure 1

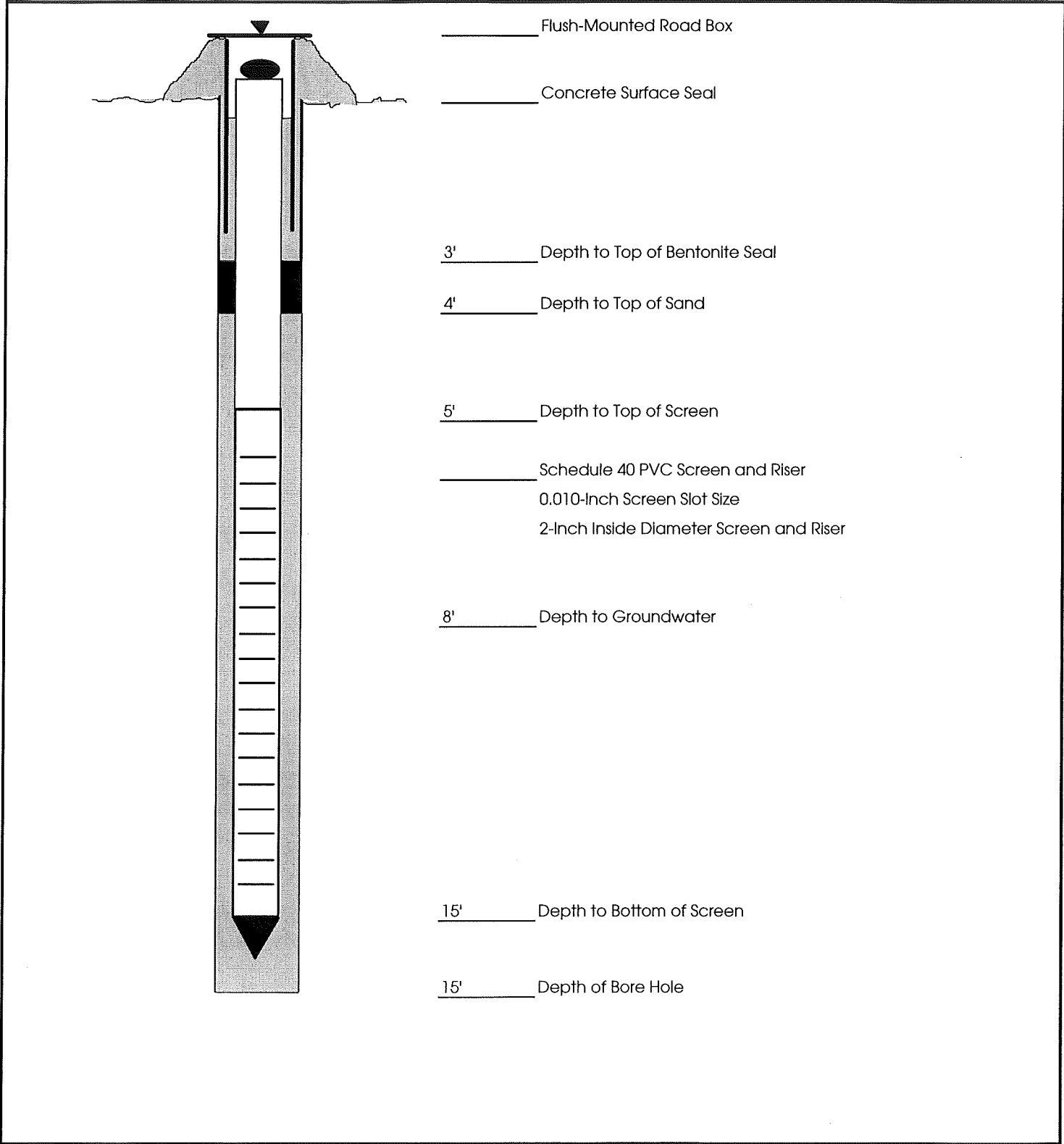
Vanasse Hangen Brustlin
 Site Plan
 Boliden Metch, Inc.
 434 Allens Avenue
 Providence, Rhode Island

VHB Monitoring Well Diagram

Project Name: Bolden Metech
Location: Allens Avenue
Providence, RI

Project No. 5437
Contractor: Technical Drilling Services
Engineer: Marc Richards, VHB

Date: 15-Jan-98
Well No. MW-1
GW Depth: 8 feet

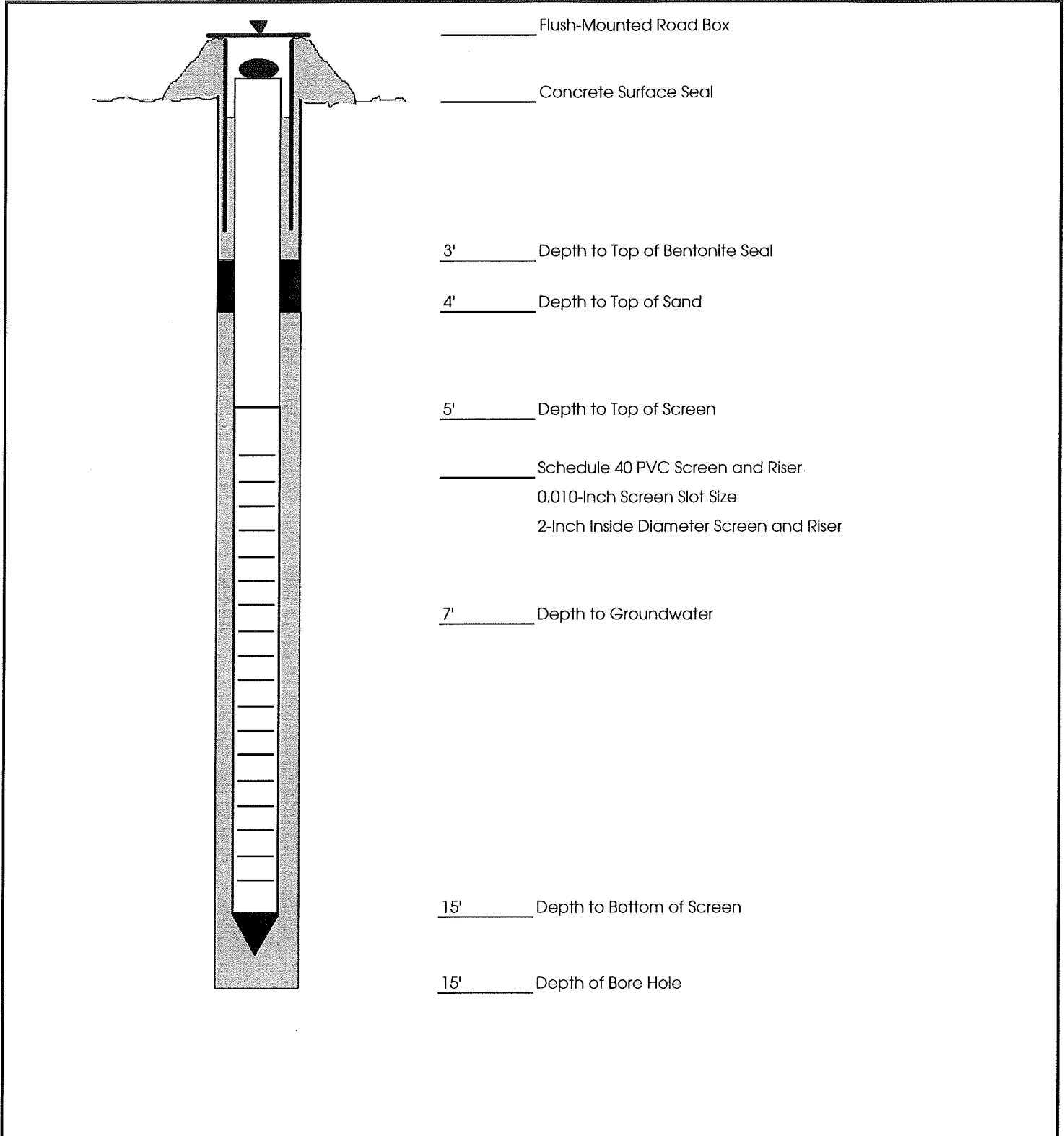


VHB Monitoring Well Diagram

Project Name: Bollden Metech
Location: Allens Avenue
Providence, RI

Project No. 5437
Contractor: Technical Drilling Services
Engineer: Marc Richards, VHB

Date: 15-Jan-98
Well No. MW-2
GW Depth: 7 feet

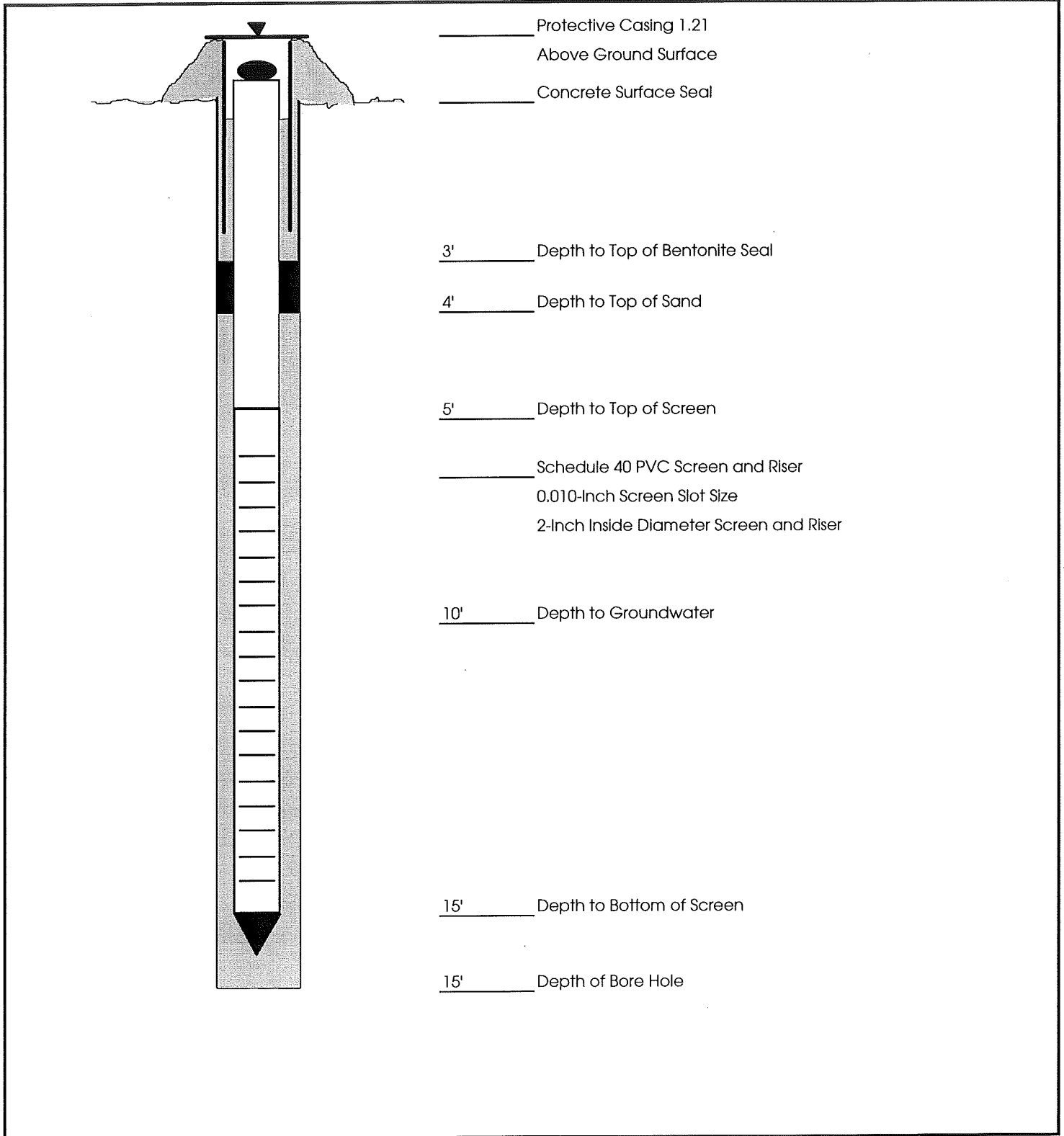


VHB Monitoring Well Diagram

Project Name: Bolden Metech
Location: Allens Avenue
Providence, RI

Project No. 5437
Contractor: Technical Drilling Services
Engineer: Marc Richards, VHB

Date: 15-Jan-98
Well No. MW-3
GW Depth: 10 feet

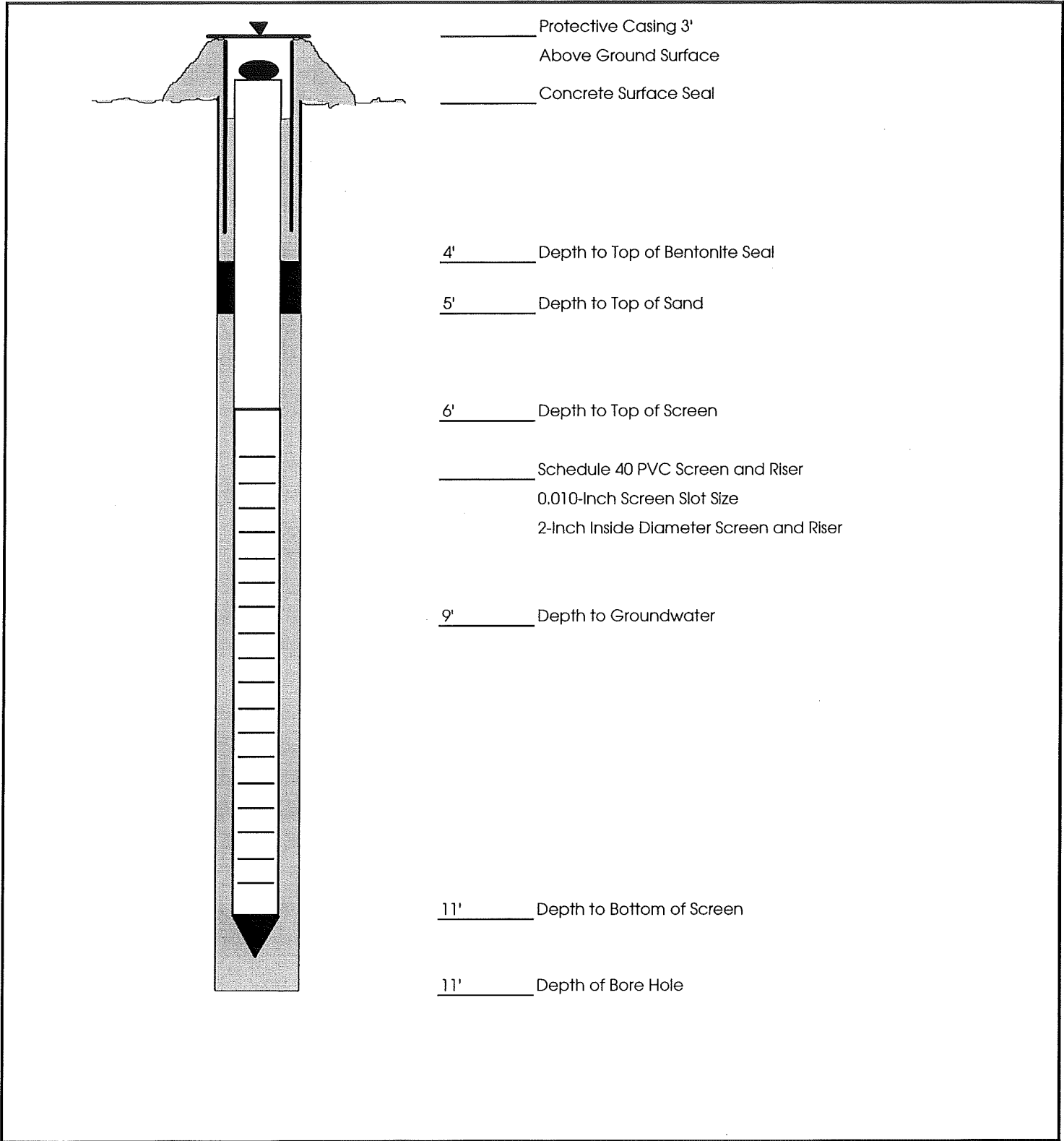


VHB Monitoring Well Diagram

Project Name: Bollden Metech
Location: Allens Avenue
Providence, RI

Project No. 5437
Contractor: Technical Drilling Services
Engineer: Marc Richards, VHB

Date: 14-Jan-98
Well No. MW-4
GW Depth: 9 feet

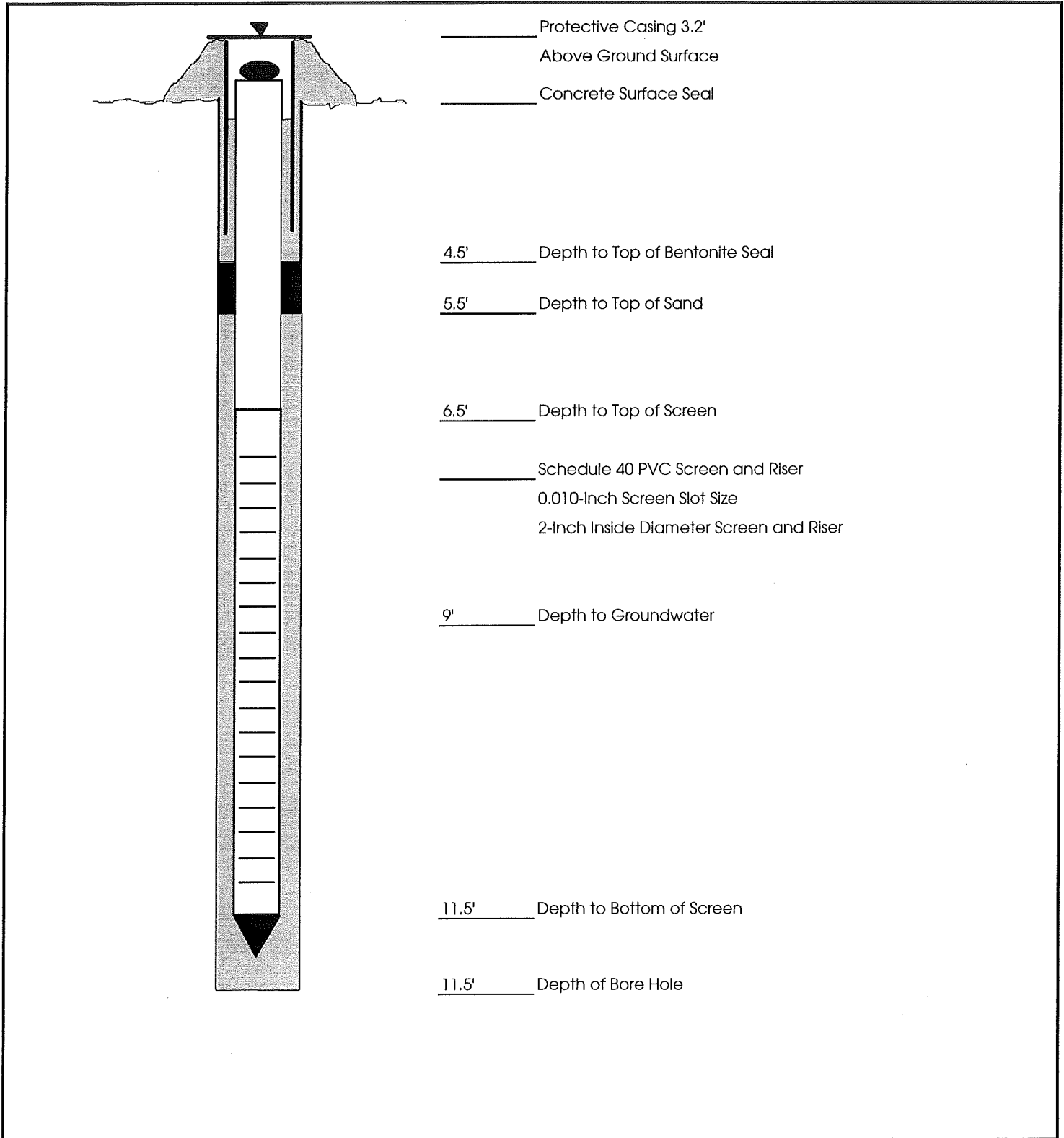


VHB Monitoring Well Diagram

Project Name: Bollden Metech
Location: Allens Avenue
Providence, RI

Project No. 5437
Contractor: Technical Drilling Services
Engineer: Marc Richards, VHB

Date: 14-Jan-98
Well No. MW-5
GW Depth: 9 feet

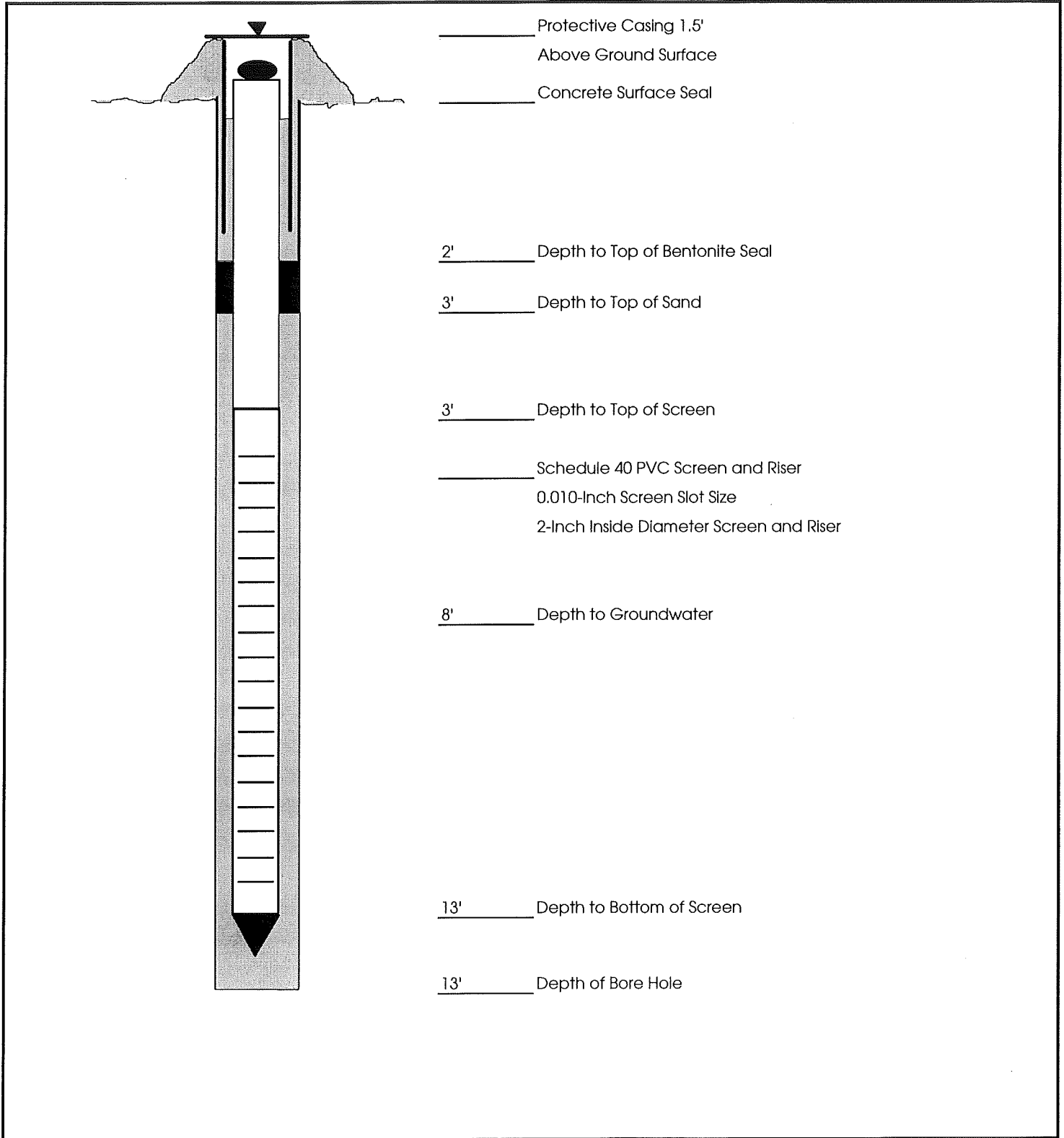


VHB Monitoring Well Diagram

Project Name: Bolden Metech
Location: Allens Avenue
Providence, RI

Project No. 5437
Contractor: Technical Drilling Services
Engineer: Marc Richards, VHB

Date: 15-Jan-98
Well No. MW-6
GW Depth: 8 feet

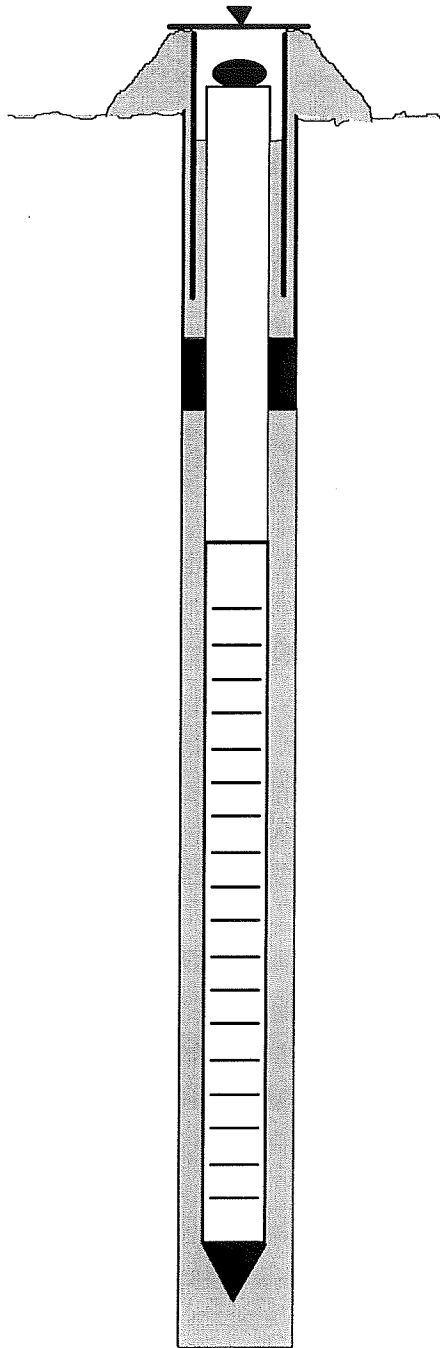


VHB Monitoring Well Diagram

Project Name: Bolden Metech
Location: Allens Avenue
Providence, RI

Project No. 5437
Contractor: Technical Drilling Services
Engineer: Marc Richards, VHB

Date: 15-Jan-98
Well No. MW-7
GW Depth: 7 feet



_____ Protective Casing 2.7'
_____ Above Ground Surface
_____ Concrete Surface Seal

1' _____ Depth to Top of Bentonite Seal

2' _____ Depth to Top of Sand

3' _____ Depth to Top of Screen

_____ Schedule 40 PVC Screen and Riser
0.010-Inch Screen Slot Size
2-Inch Inside Diameter Screen and Riser

7' _____ Depth to Groundwater

12.5' _____ Depth to Bottom of Screen

12.5' _____ Depth of Bore Hole

VHB Monitoring Well Diagram

Project Name: Bolden Metech
Location: Allens Avenue
Providence, RI

Project No. 5437
Contractor: Technical Drilling Services
Engineer: Marc Richards, VHB

Date: 15-Jan-98
Well No. MW-8
GW Depth: 10 feet

