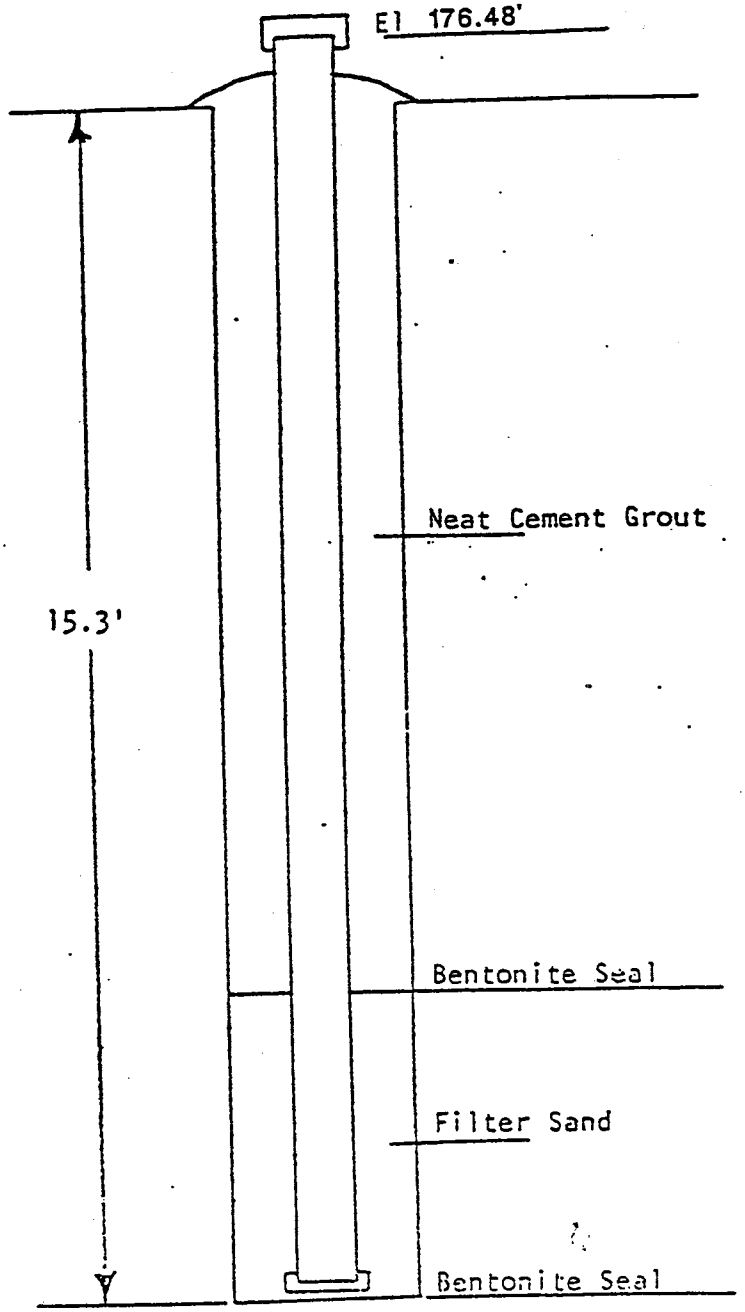
ATTACHMENT E-11

Lithologic and Well Construction Logs for the E&R Ponds and SWMU Area Compliance Monitoring Well System

EMERGENCY AND RETENTION PONDS AREA

Well Number 2

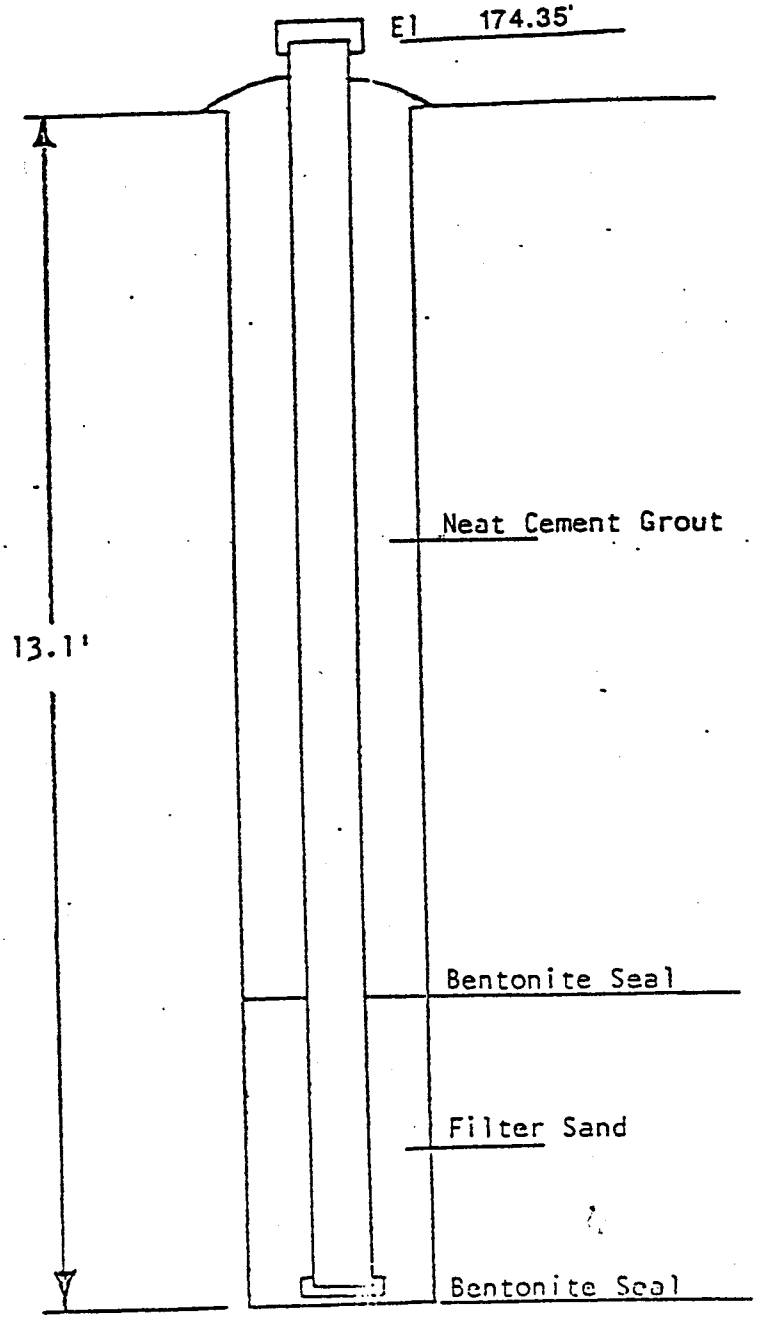


(not to scale)

WELL LOCATION DIAGRAM
Torrington Bearing Plant
Sylvania, Georgia

STS CONSULTANTS, LTD.
2605 ANNAPOLIS LANE, SUITE 200
MINNEAPOLIS, MINNESOTA 55441

Well Number 3



(not to scale)

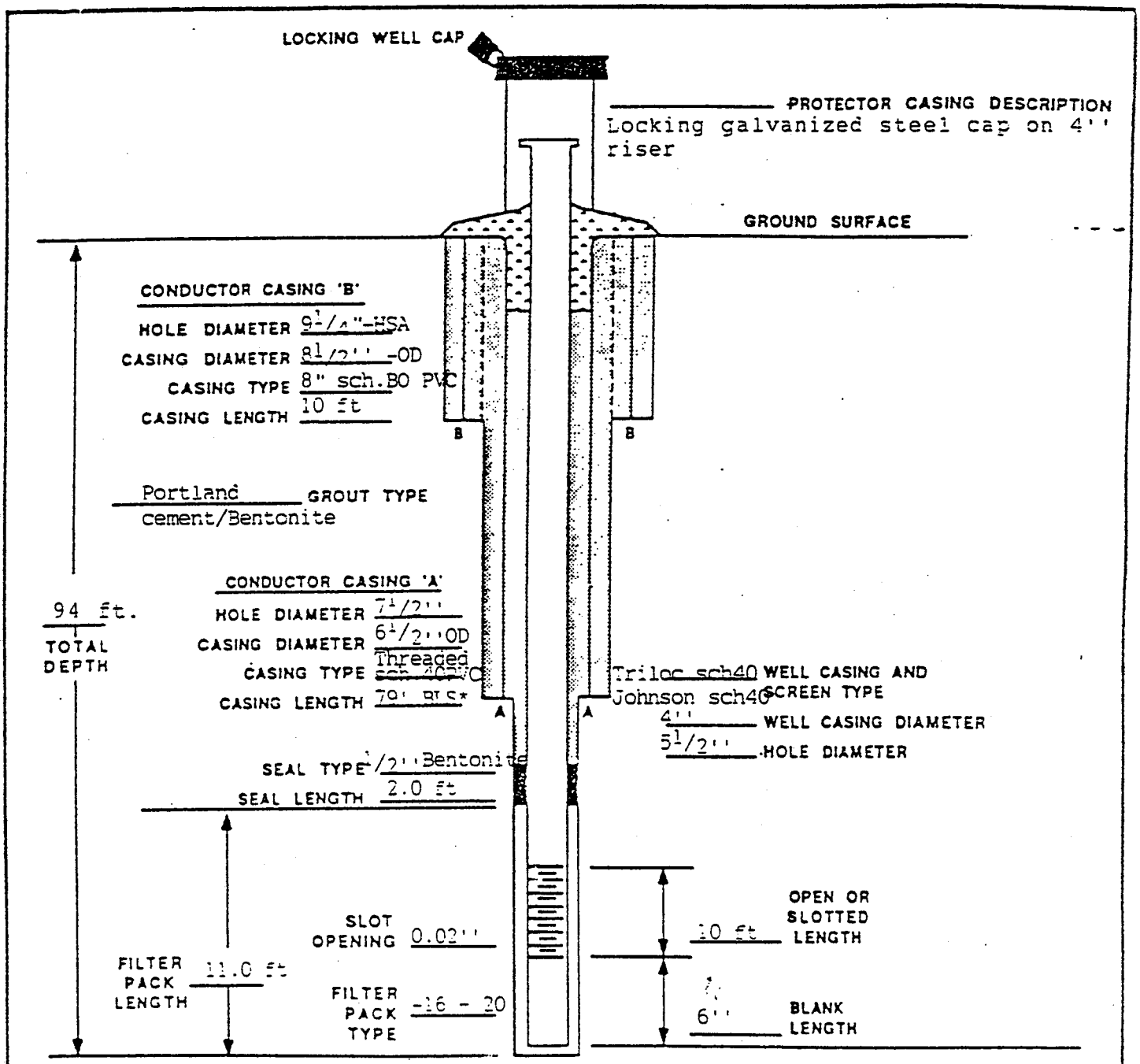
WELL LOCATION DIAGRAM
Torrington Bearing Plant
Sylvania, Georgia

STS CONSULTANTS, LTD.
2405 ANNAPOLIS LANE, SUITE 209
MINNEAPOLIS, MINNESOTA 55441

ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: TORRINGTON CO.
LOCATION: SYLVANIA, GEORGIA
WELL NUMBER: W-3D
ELEVATION: 175.09 FEET
DATE INSTALLED: April 21-27, 1988
☐ GROUND ☒ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☒ ABOVE MEAN SEA LEVEL



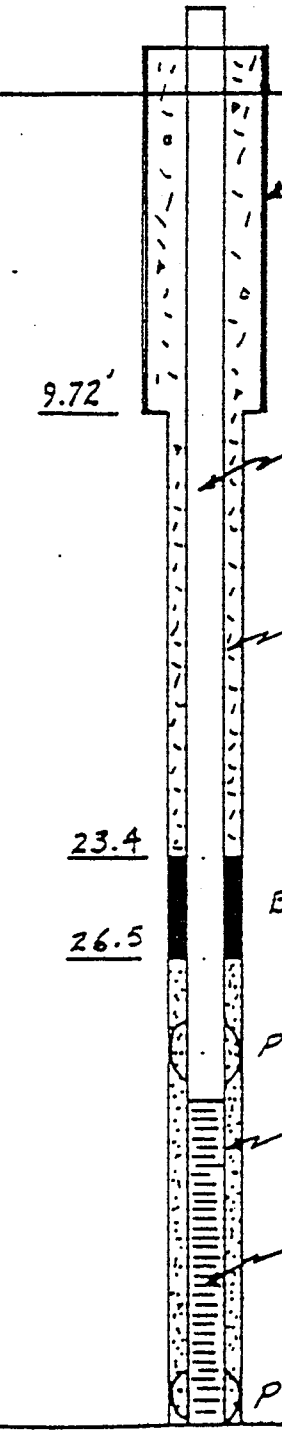
COMMENTS: 2 outer casings were set. The first using hollow stem augers and the second using mud rotary. A 4'' well was set to toal depth. The filter patch was tremied with 1/2'' PVC pipe. Well was sealed with 1/2'' bentonite pellets. Grout was tremied using the same tremie pipe for the sand. A locking well cover was installed at the top of the well. The well was developed using a submersible Brainard-Kilman hand pump.
*BLS = Below Land Surface

CONSULTANT IN GEOLOGY

Monitoring Well W8

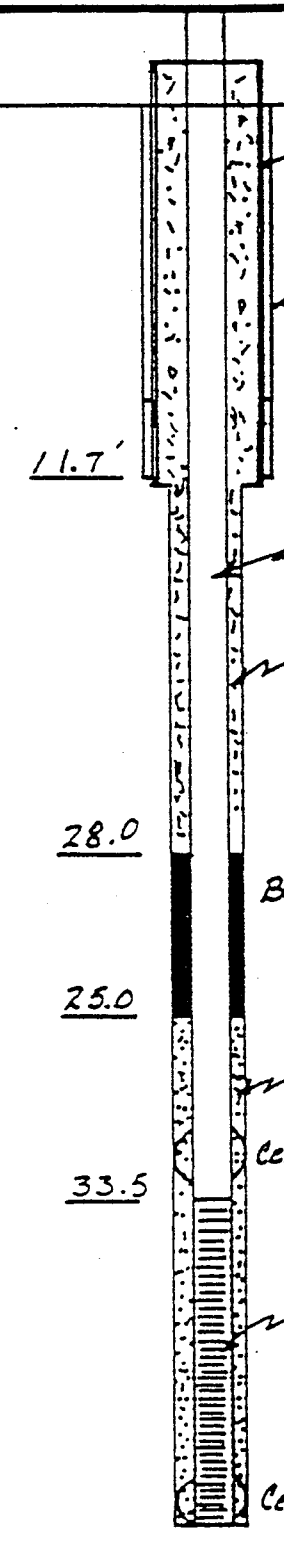
DRILLING LOG	COMPANY Torrington	INSTALLATION	SHEET 1 OF 1 SHEETS
LOCATION (Coordinates or Stacon)		SIZE AND TYPE OF BIT	
DRILLING AGENCY Geothermics		TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	
THICKNESS OF OVERBURDEN		DATE HOLE STARTED 1 June 85	COMPLETED 19 June 85
DEPTH DRILLED INTO ROCK		ELEVATION TOP OF HOLE	
TOTAL DEPTH OF HOLE		ELEVATION GROUND WATER	
NAME OF DRILLER Paul N. Clawson		SIGNATURE OF INSPECTOR OR GEOLOGIST Paul F. Tikvart P.G.	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Descripcon)	SPT	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
174.21						
171.47	0					Augered to 8.0' on 16 June 85 with 4" hand auger. Obtained water level from open hole
166.72						
16 June 85	6					
	12					
	18					
	24					
	30					
140.52						
30 Aug 85						
	36					
	42					



DRILLING LOG	COMPANY Torrington	INSTALLATION Sylvania, Ga	SHEET 1 OF 1 SHEETS
LOCATION (Coordinates or Station)		SIZE AND TYPE OF BIT	
DRILLING AGENCY Geothermics		TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	
THICKNESS OF OVERBURDEN		DATE HOLE STARTED 15 June 85	COMPLETED 18 June 85
DEPTH DRILLED INTO ROCK		ELEVATION TOP OF HOLE	
TOTAL DEPTH OF HOLE		ELEVATION GROUND WATER	
NAME OF DRILLER Paul N. Clawson		SIGNATURE OF INSPECTOR OR GEOLOGIST Earl F. Tolsmith, P.G.	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
175.32						
172.17	0					
165.07	6					
15 June 85						
	12					
	18					
	24					
142.17	30					
30 Aug 85						
	36					
	42					
	45					

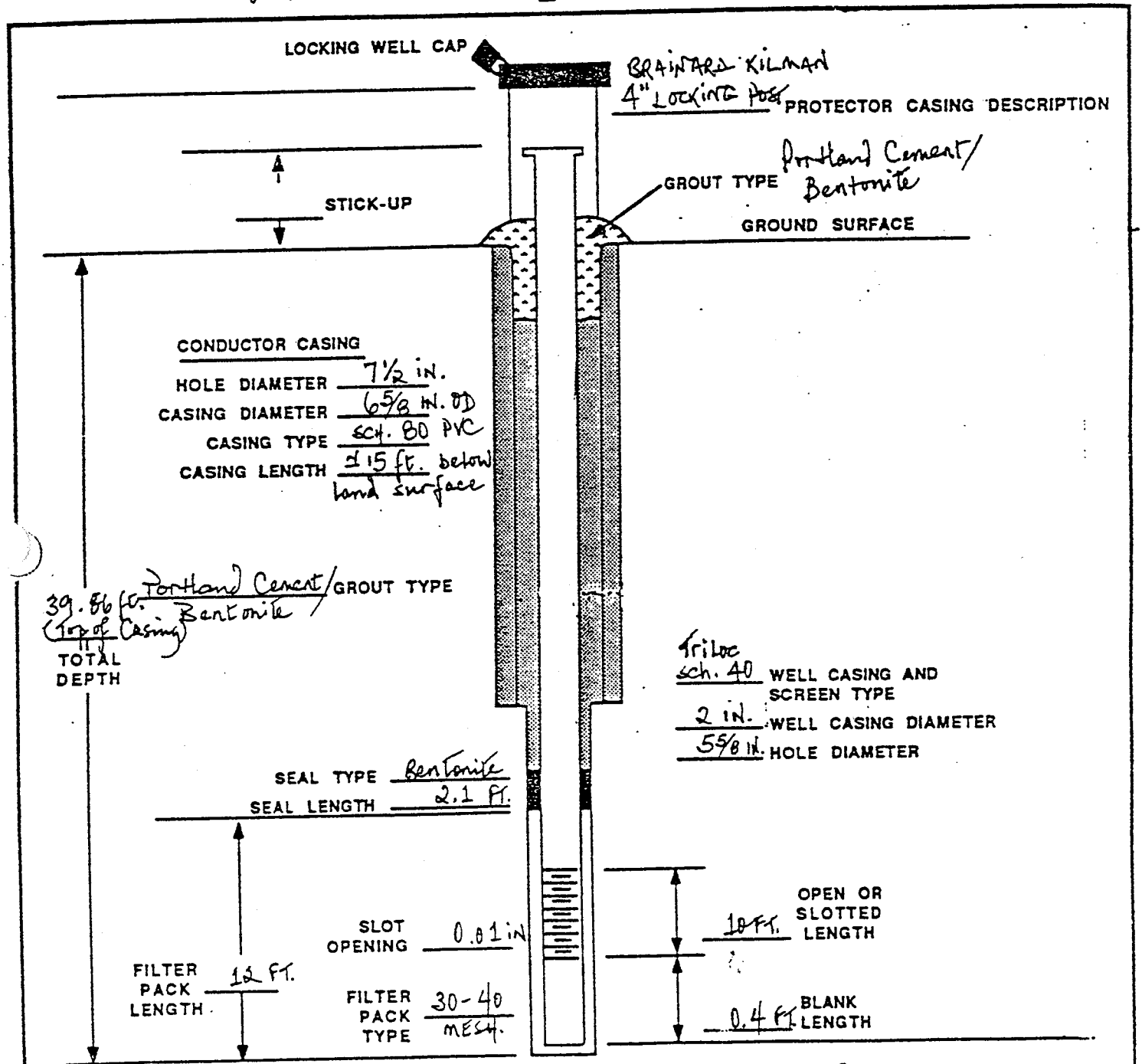


Augered to 12.0' with hand auger "A". Obtained water level in this hole prior to using drill.

ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington
LOCATION: Sylvania GA. W boundary
WELL NUMBER: W-15. northernmost ELEVATION: 150.32
DATE INSTALLED: July 26-27, 1987
☐ GROUND ☐ CASING ☒ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☒ ABOVE MEAN SEA LEVEL



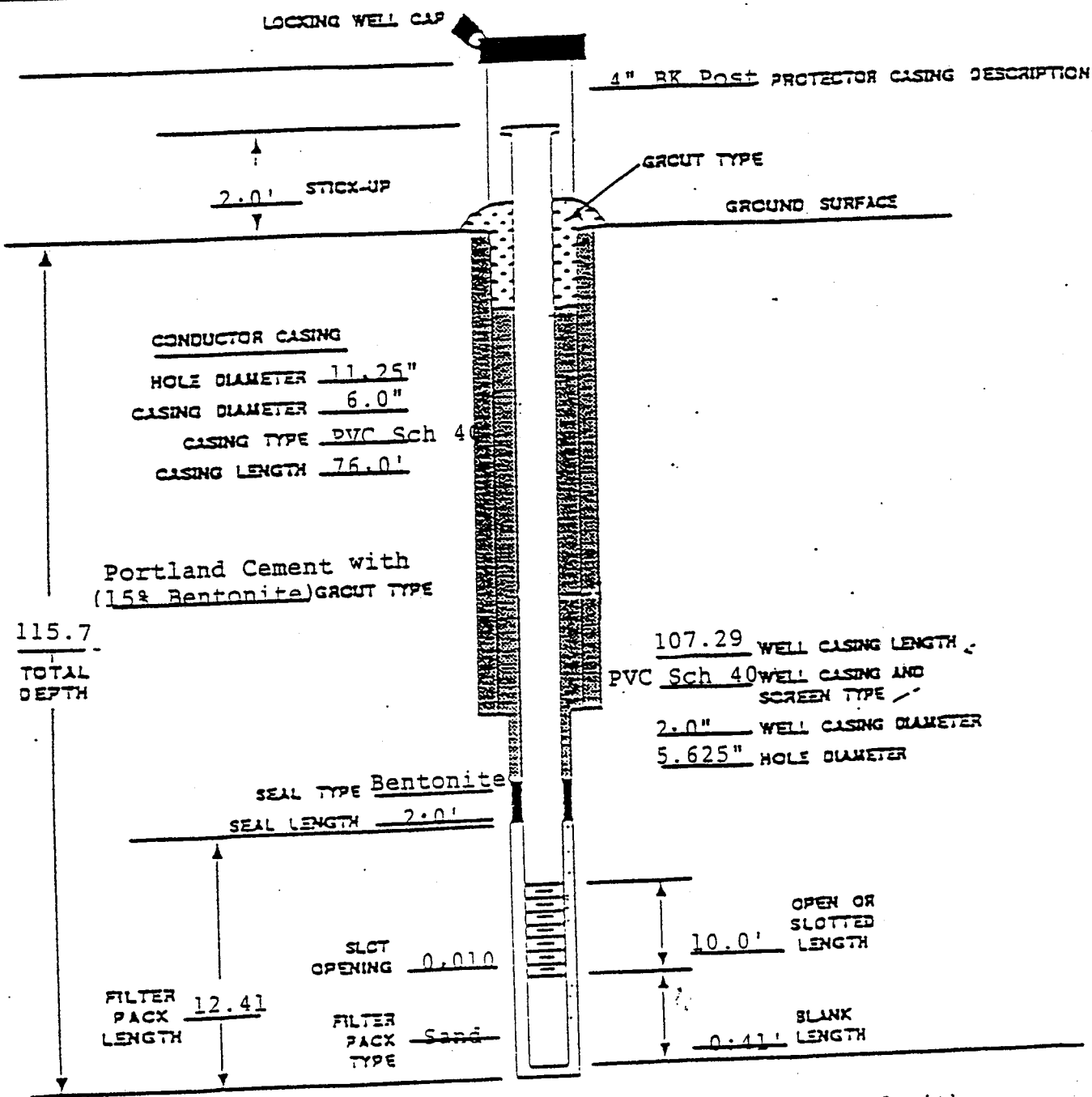
COMMENTS: An upper casing was set into a stiff, fat clay (CH). The well was developed using a B-K submersible hand pump.

ENVIRONMENTAL MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington/Sylvania
LOCATION: Adjacent to W-15 and W-31
WELL NUMBER: W-15D
DATE INSTALLED: 3/21/89

ELEVATION:
☐ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL

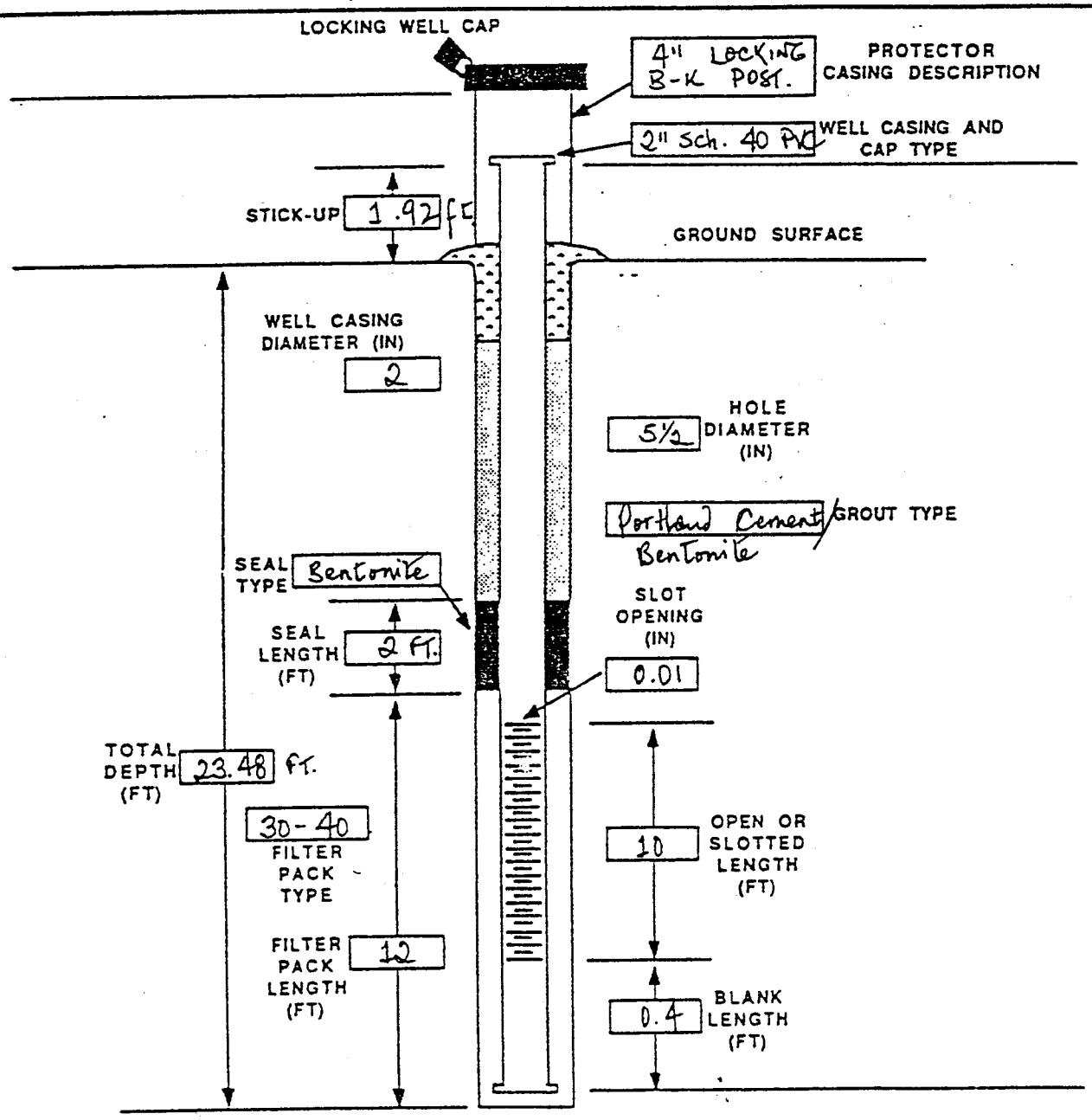


COMMENTS: Hole was drilled with mud rotary and cemented with Portland cement and 5% Benonite. Well was developed using compressed air.

MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: TORRINGTON
LOCATION: Sylvania, GA
WELL NUMBER: W-16
DATE INSTALLED: July 23, 1987
ELEVATION: 149.20
☐ GROUND ☐ CASING ☒ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



COMMENTS: The well was developed using bailing and a submersible Brainard-Kilman hand pump.

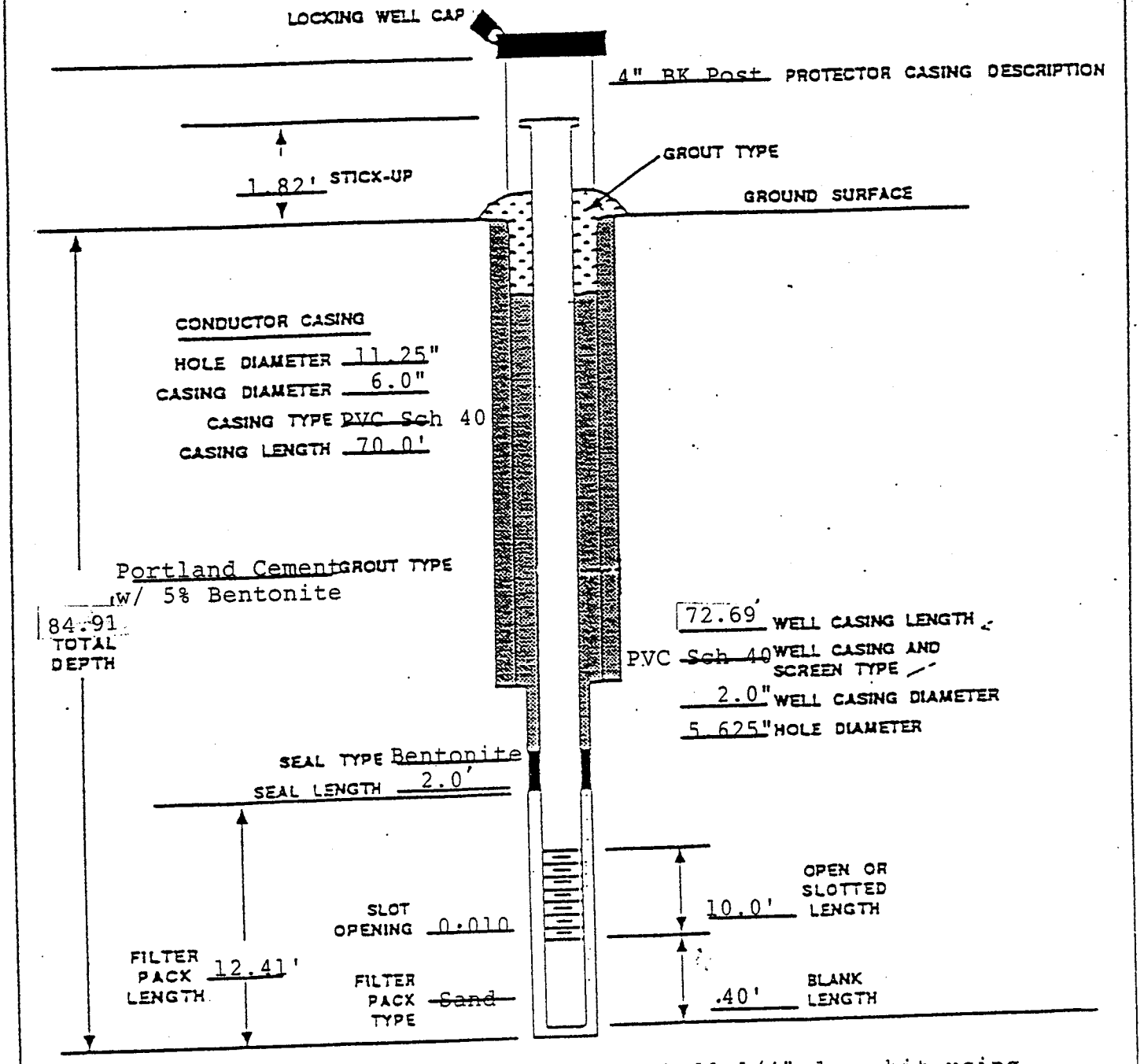
PAGE _____ OF _____

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington/Sylvania
LOCATION: Adjacent to W-16 and W-16D
WELL NUMBER: W-16DD
DATE INSTALLED: 3-30-89

ELEVATION:
☐ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL

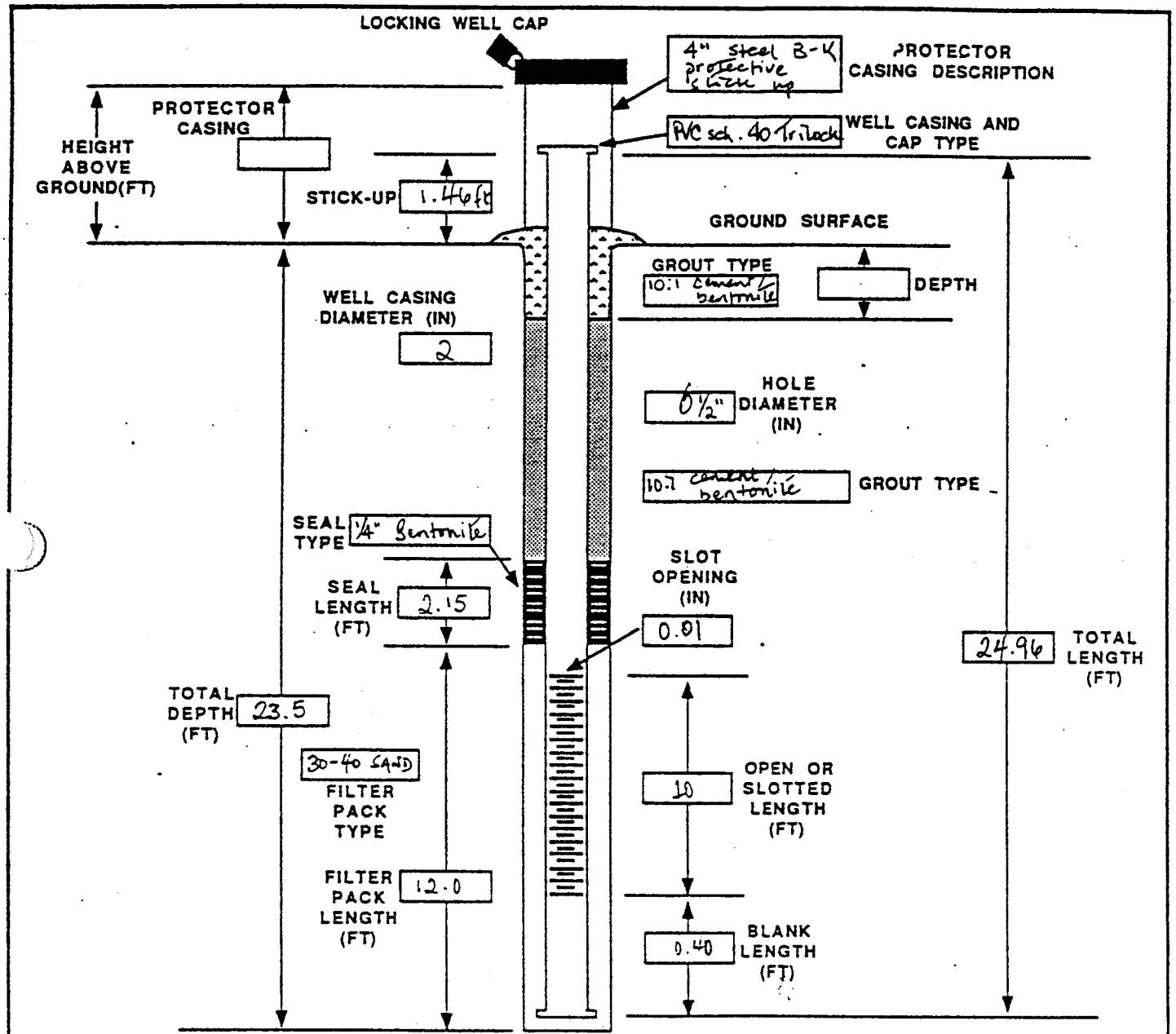


COMMENTS: Conductor hole was drilled with 11-1/4" drag bit using mud rotary. Casing was cemented using 1" Tremie pipe. Bottom section was also drilled using mud rotary. Well was developed using air.

Versar INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: TORRINGTON JOB NUMBER:
LOCATION: SYLVANIA, GA.
WELL NUMBER: N-17 ELEVATION: 156.0
DATE INSTALLED: 7-24-87 ☑ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



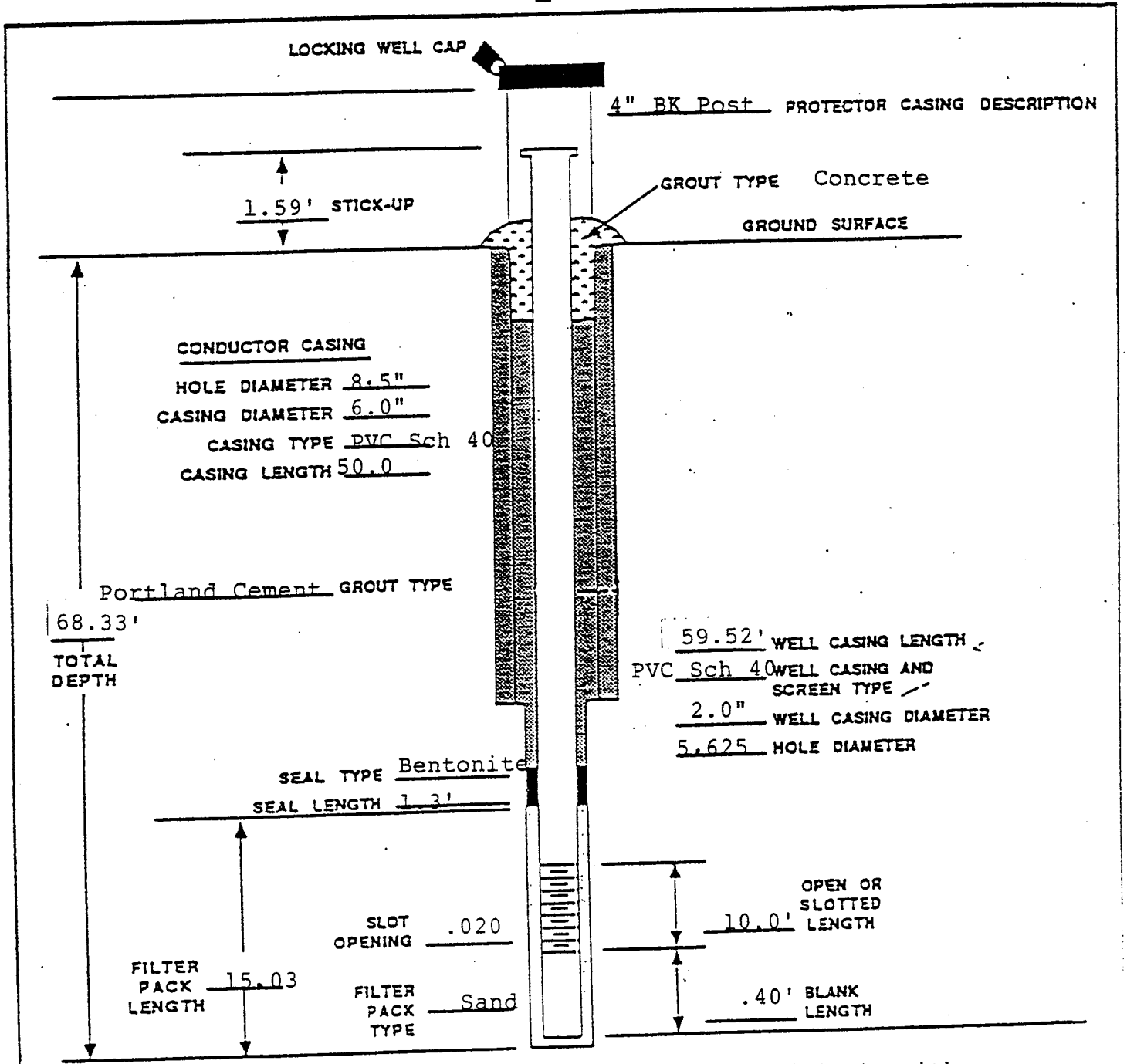
COMMENTS: per RCRA standards.

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington/Sylvania
LOCATION: Adjacent to W-17
WELL NUMBER: 17D
DATE INSTALLED: 3-2-89

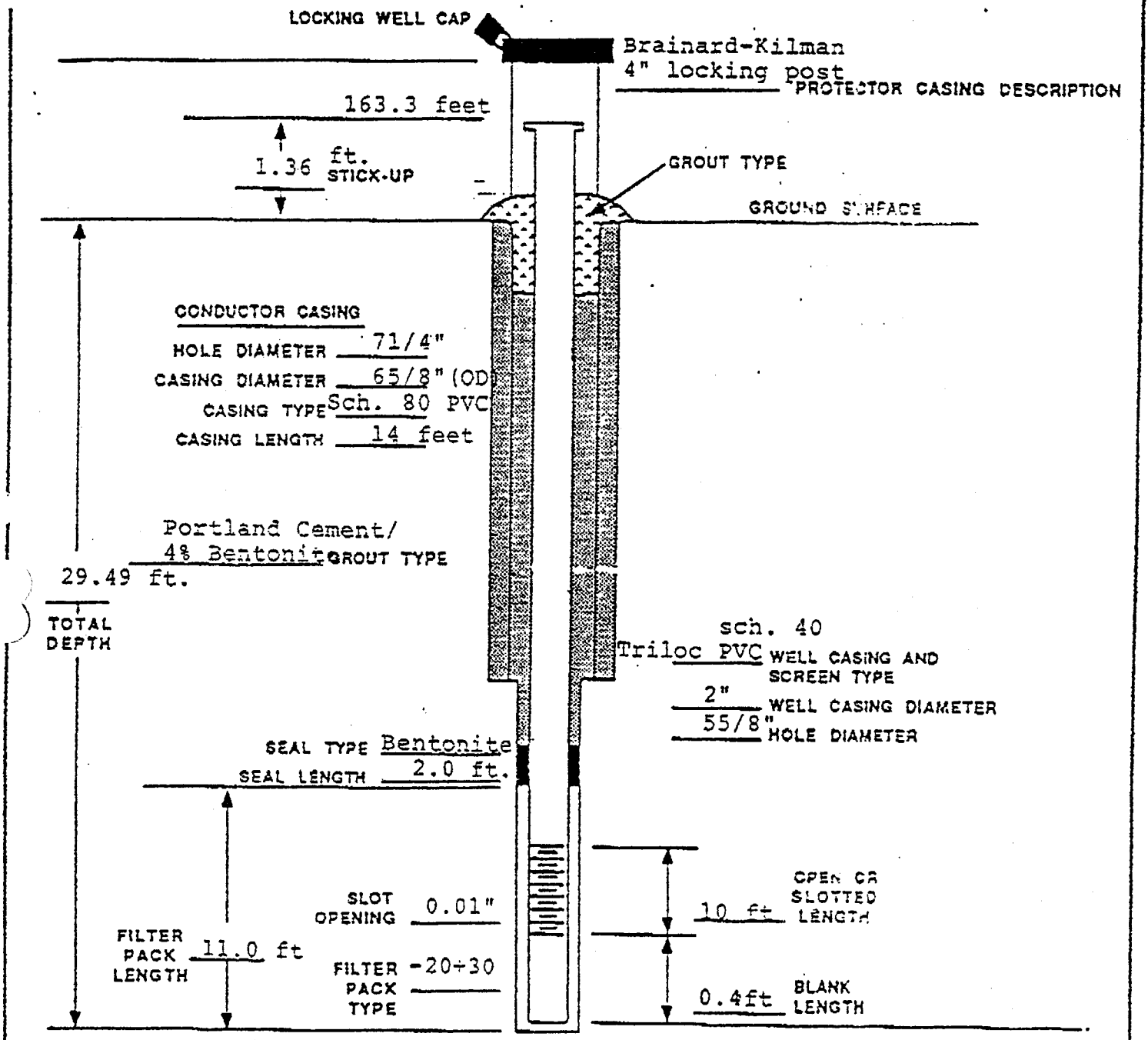
ELEVATION: _____
☐ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



COMMENTS: Conductor hole was mud rotary drilled using 5-5/8" bit with 8-1/2" reamer. 6" casing was cemented using 1" trimie pipe. Bottom section of well was also mud rotary drilled with 5-5/8" bit and casing was cemented using 1" Trimie pipe. Well was developed using B-K submersable hand pump.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington Co.
LOCATION: Sylvania, GA
WELL NUMBER: W-13
DATE INSTALLED: July 25-26, 1988
ELEVATION: 164.6[illegible] feet
☐ GROUND ☒ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL

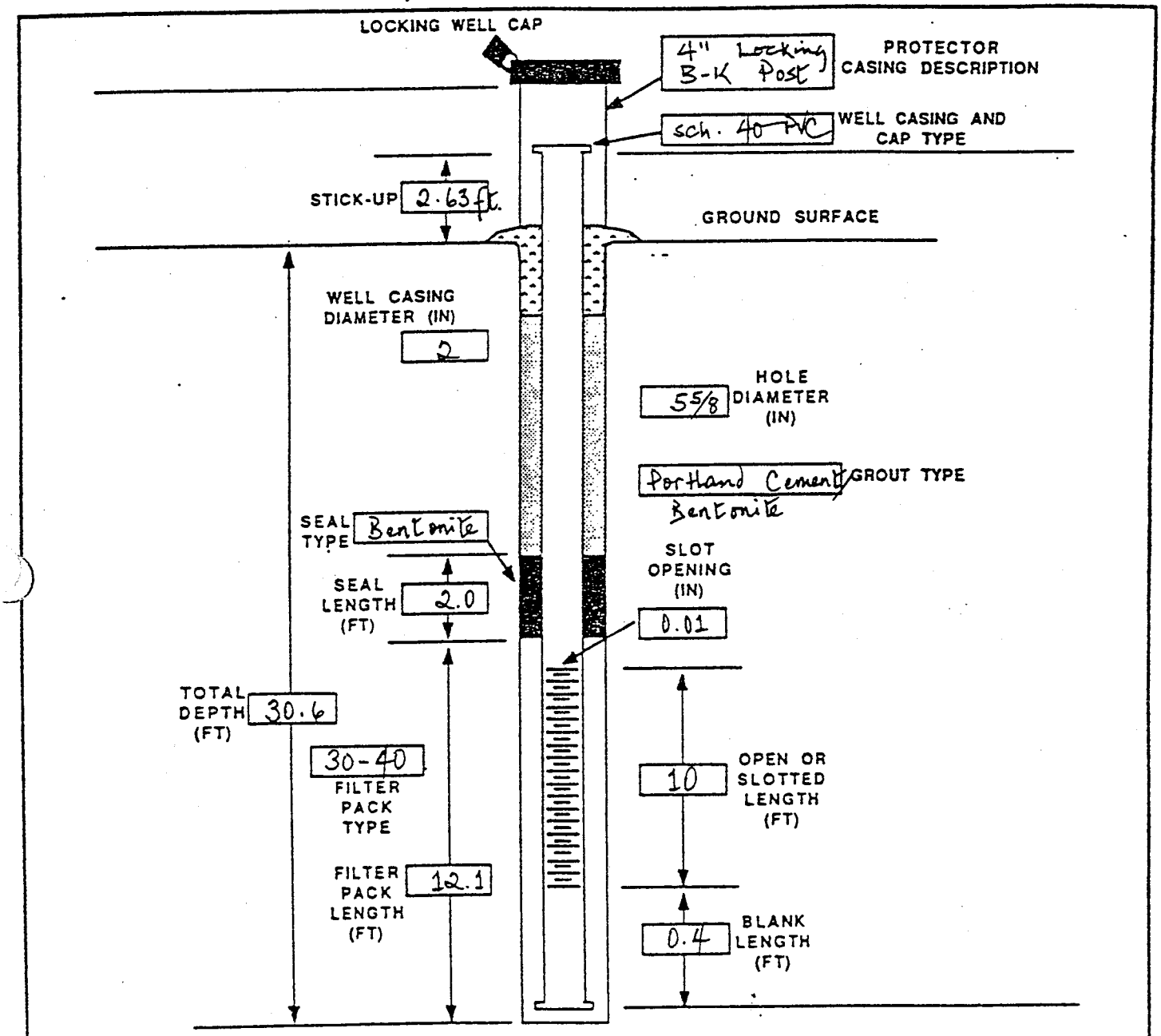


COMMENTS: An outer casing was set into the clay layer encountered at 13 feet. The outer casing was sealed and the well was drilled to total depth using mud rotary drilling with no mud added. The well was developed using a Brainard- Kilman submersible hand pump.

MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: TORRINGTON
LOCATION: SYLVANIA, GA.
WELL NUMBER: W-29 ELEVATION: 147.0 FT.
DATE INSTALLED: March 29- April 1, 1988
☒ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☒ ABOVE MEAN SEA LEVEL



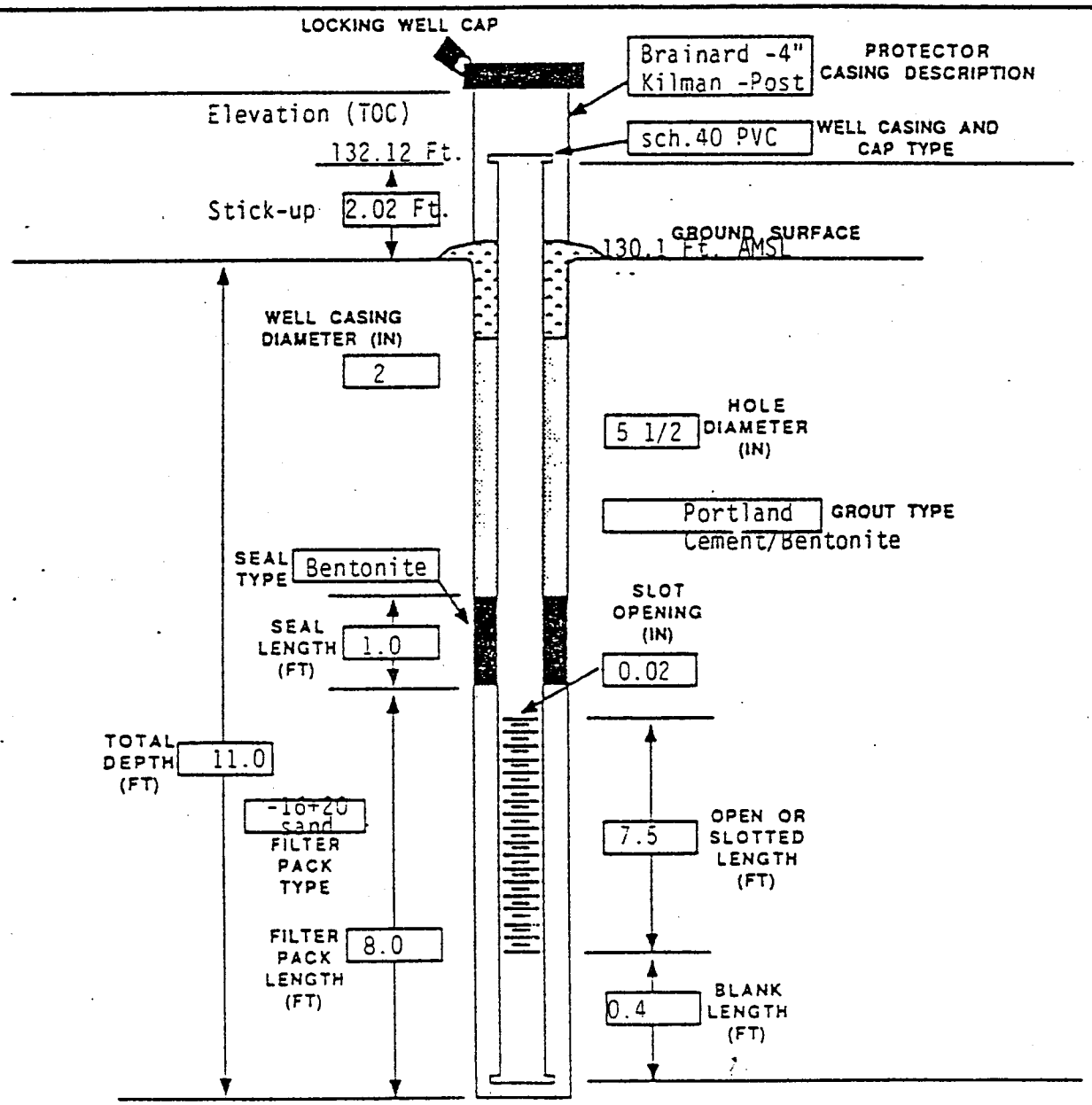
COMMENTS: The well was developed using a submersible Brainard-Kilman hand pump.

PAGE _____ OF _____

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington Co.
LOCATION: Sylvania, GA
WELL NUMBER: W-20S ELEVATION: 130.1 Ft. AMSL
DATE INSTALLED: March 26, 1988 ☒ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



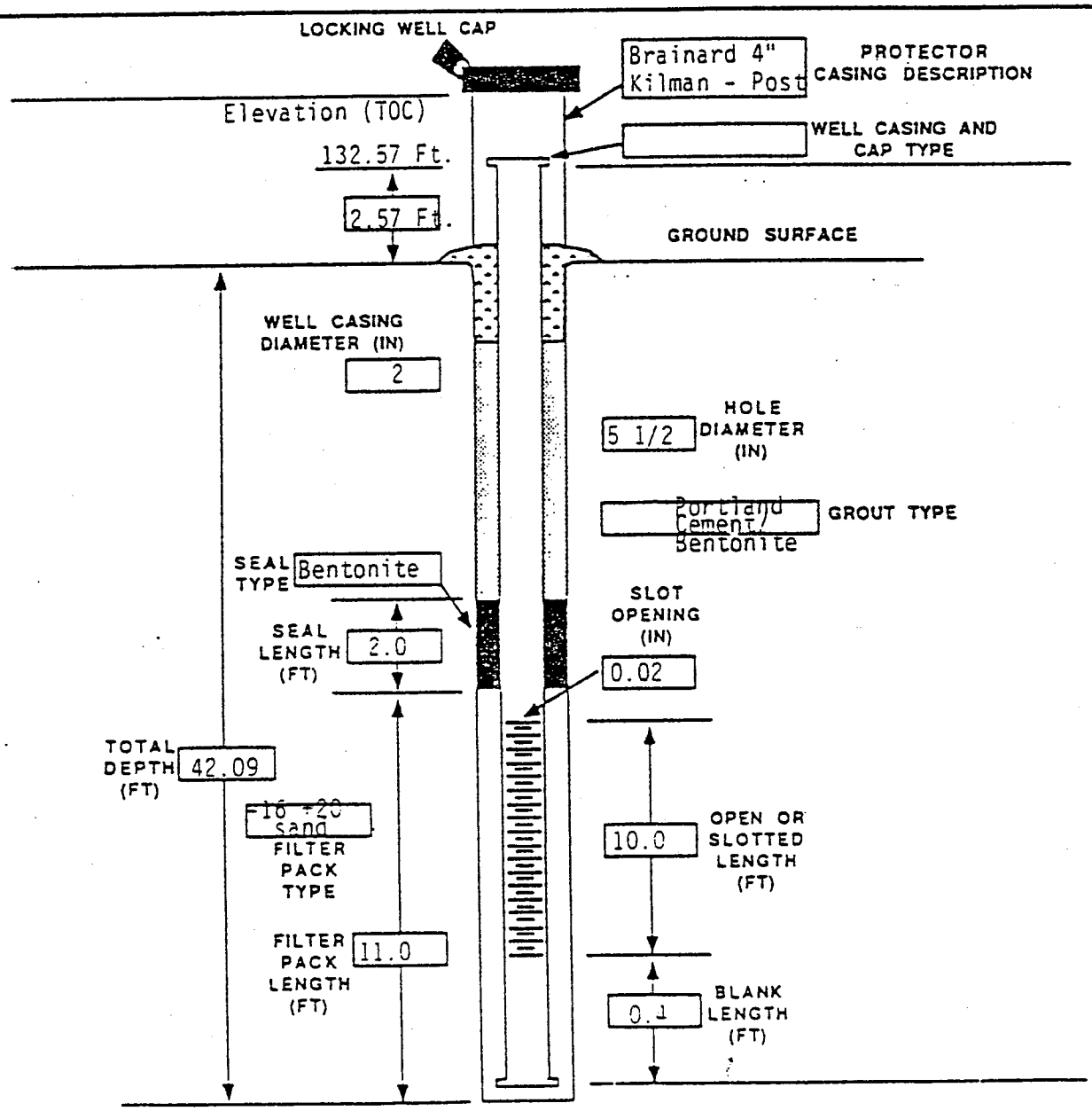
COMMENTS: Well was installed adjacent to W-20D using hollow stem augers. The well was seated into a low permeability unit (SC-CL). The well was developed by bailing until the water had cleared.

PAGE _____ OF _____

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington
LOCATION: Sylvania, GA
WELL NUMBER: W-200 ELEVATION: 130.0 Ft.
DATE INSTALLED: March 23-25, 1988 ☒ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



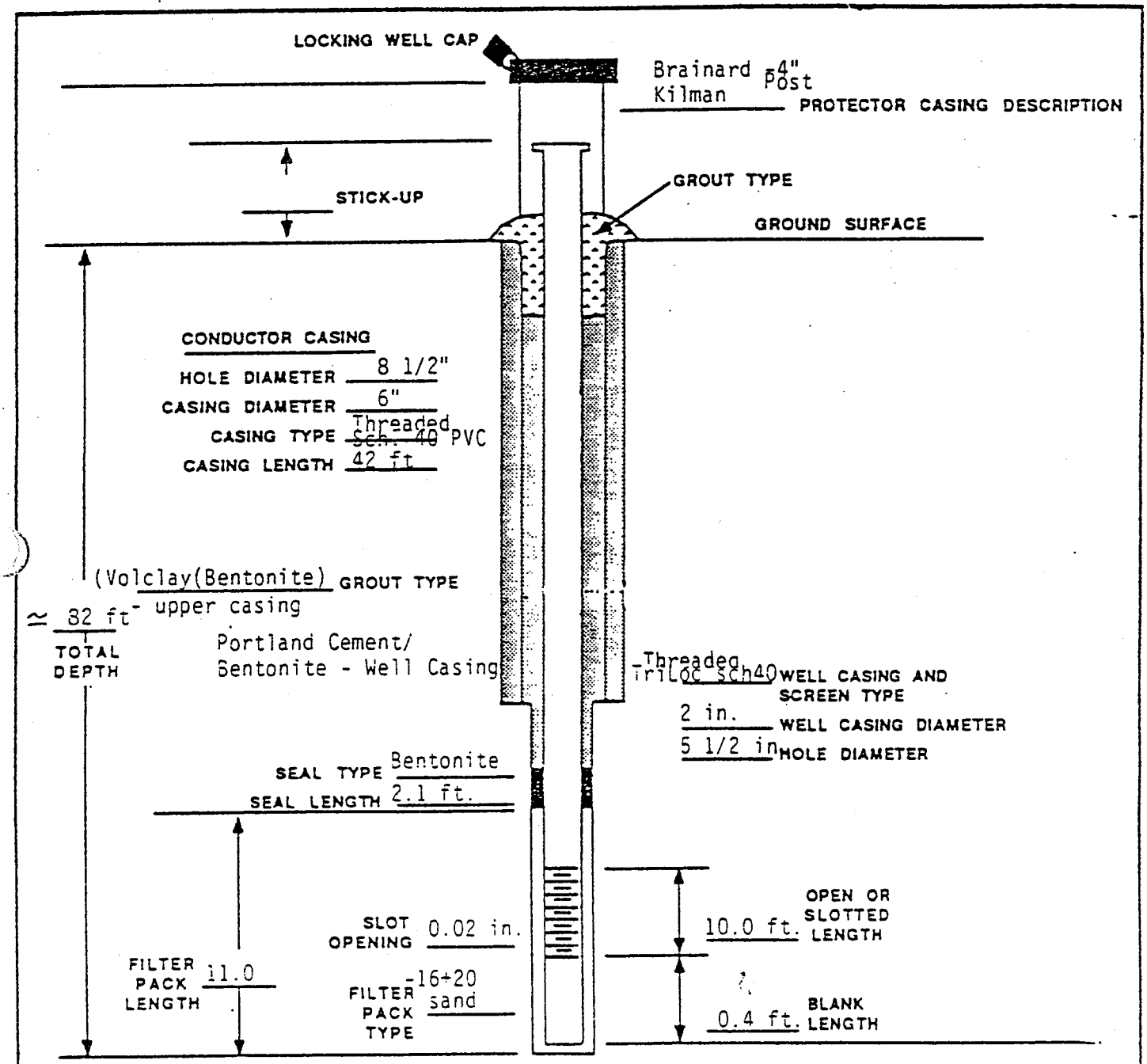
COMMENTS: The well was drilled using mud rotary drilling to a total depth of ≃ 45 feet and backfilled to 42.1 feet with sand. The well was installed and then developed using both bailing and a Brainard-Kilman submersible hand pump.

PAGE _____ OF _____

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington Co.
LOCATION: Sylvania, GA
WELL NUMBER: W-20DD ELEVATION: ≃ 130 ft. AMSL
DATE INSTALLED: April 29-May 1, 1988 ☒ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL

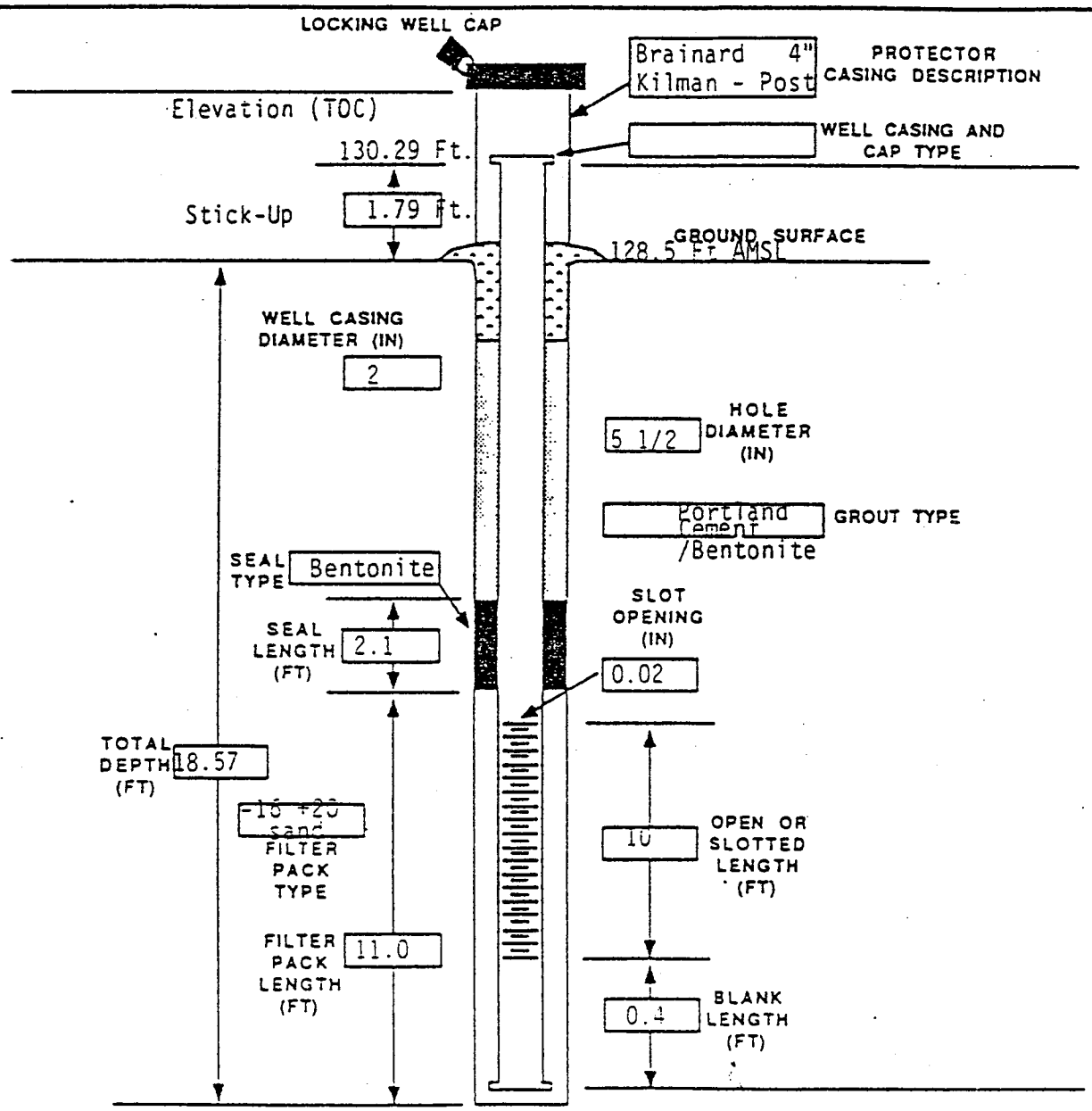


COMMENTS: The upper casing (6" sch. 40 PVC) was set to a depth of 42 feet below land surface. It was sealed in a volclay (bentonite) slurry and left over night. Drilling through the 6" casing continued until the total depth was reached (≃ 82 feet). The well was developed using a Brainard-Kilman submersible hand pump.

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington Co.
LOCATION: Sylvania, GA
WELL NUMBER: W-21S ELEVATION: 128.5 Ft. AMSL
DATE INSTALLED: March 17-19 1988 ☒ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



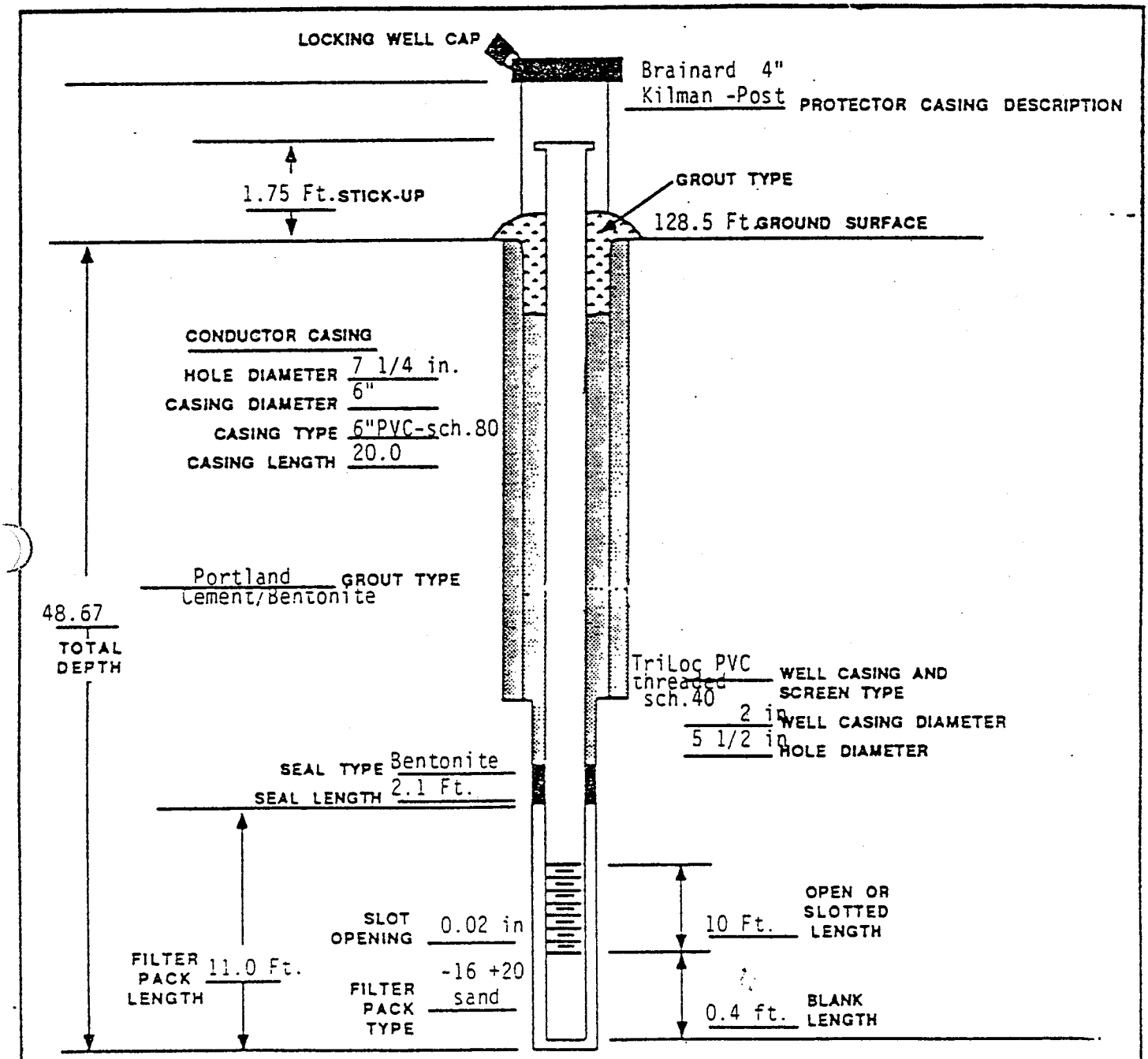
COMMENTS: The hole was drilled using hollow stem auger. The well was installed and subsequently developed using a 2" bailer.

PAGE _____ OF _____

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington Co.
LOCATION: Sylvania, GA
WELL NUMBER: W-21D
ELEVATION: 128.5 Ft. AMSL
DATE INSTALLED: March 20-22, 1988
☒ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL

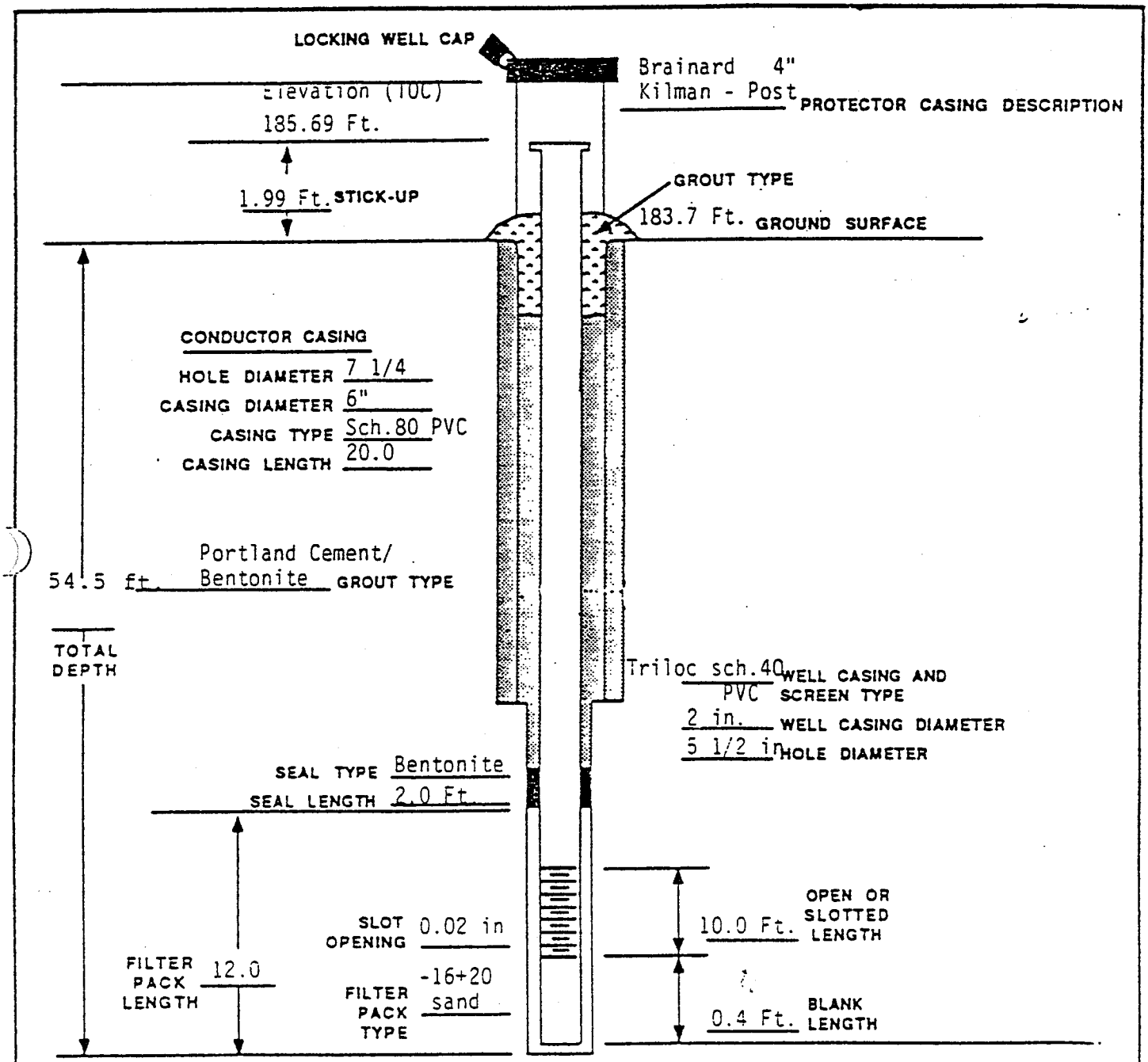


COMMENTS: An upper casing was set into the CH to cut off the shallow water table. The well was installed to depth and developed using a Brainard-Kilman submersible hand pump.

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington
LOCATION: Sylvania, GA
WELL NUMBER: W-27D
ELEVATION: 183.7 Ft.
DATE INSTALLED: April 13-14, 1988
☒ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☒ ABOVE MEAN SEA LEVEL

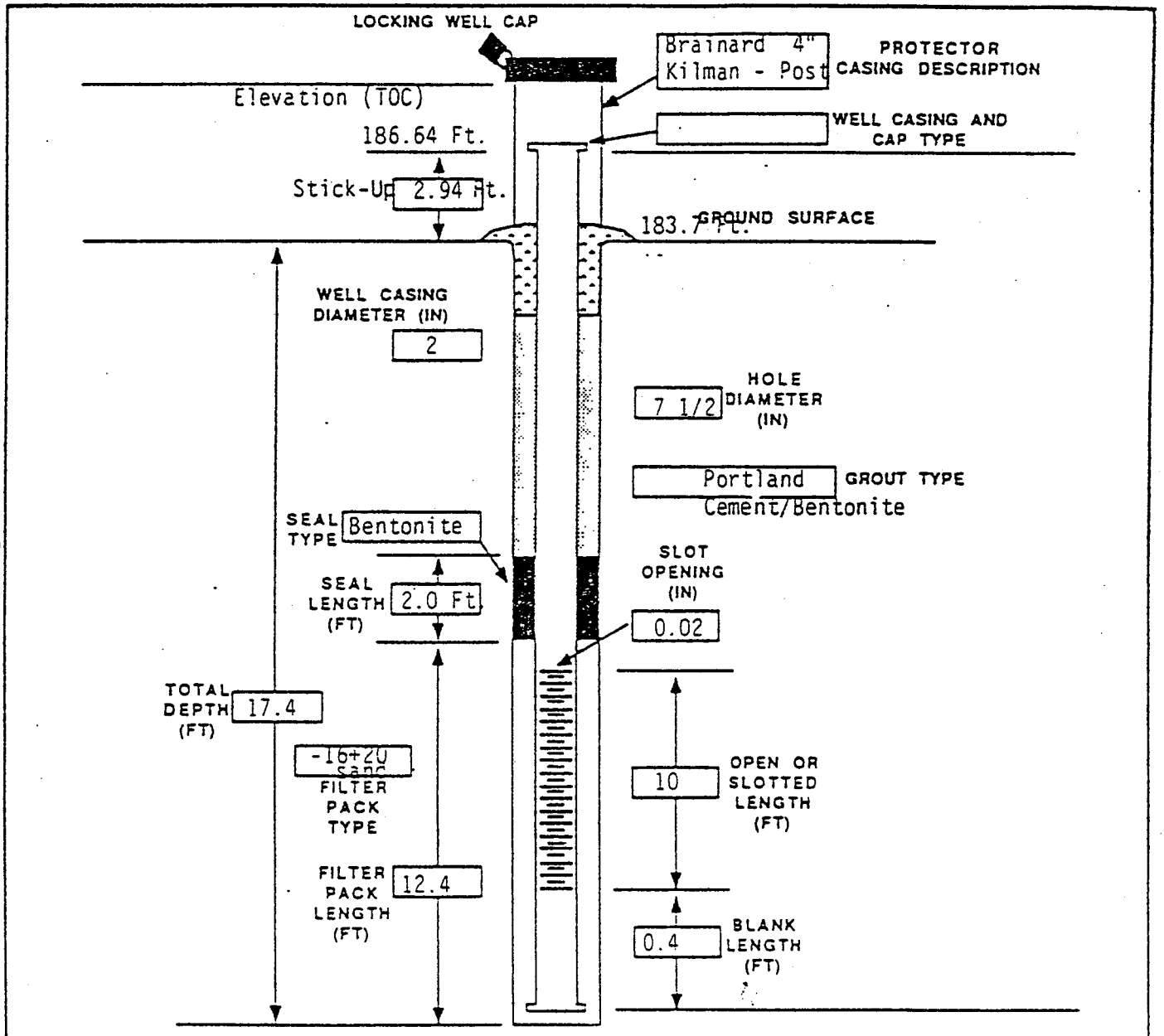


COMMENTS: Hollow stem augers were used to set the upper casing. Mud rotary drilling was used to total depth. The well was installed then developed using a Brainard-Kilman submersible hand pump.

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington Co.
LOCATION: Sylvania, GA
WELL NUMBER: W-27S ELEVATION: 183.7 Ft.
DATE INSTALLED: April 15, 1988 ☒ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☒ ABOVE MEAN SEA LEVEL



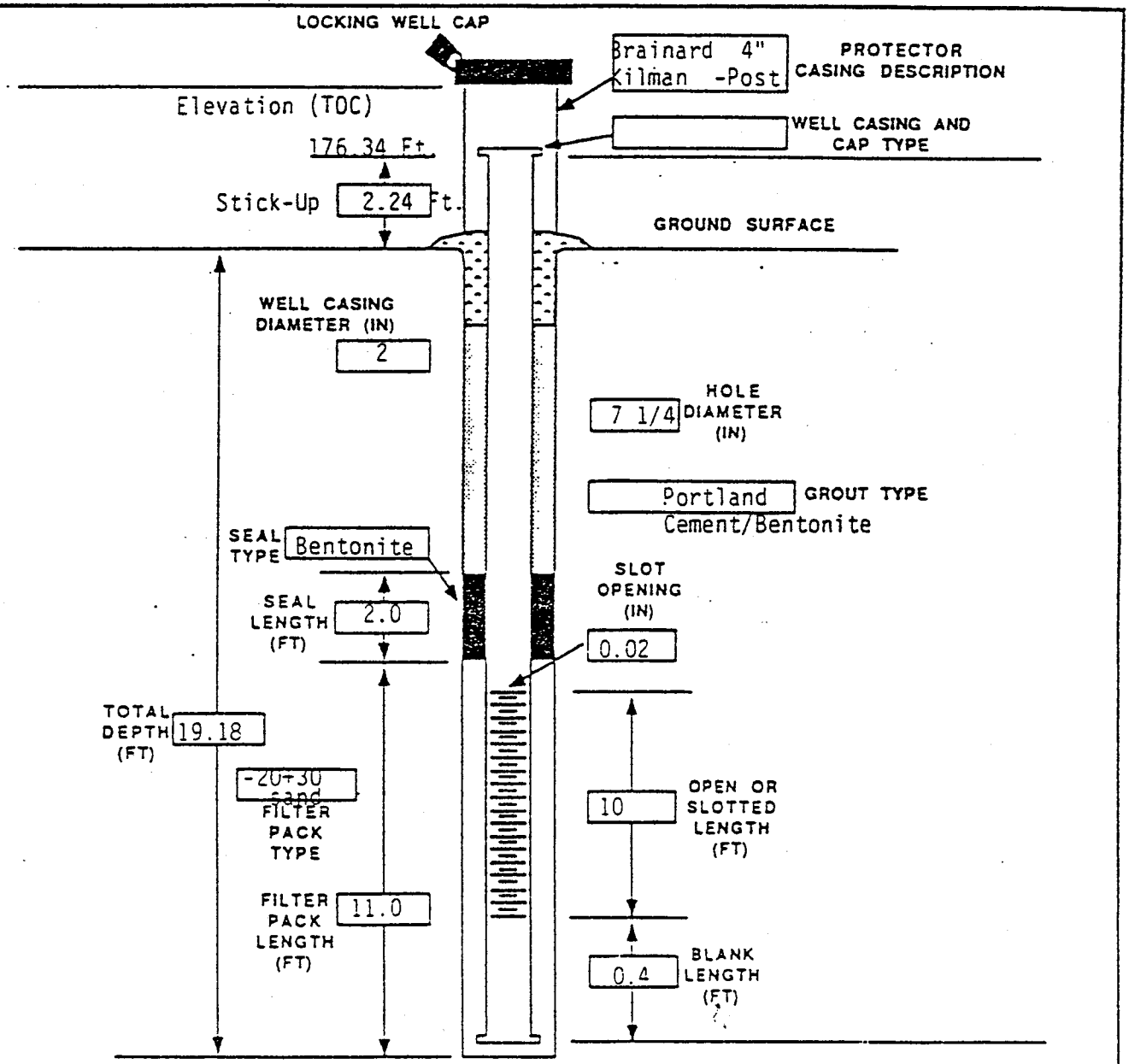
COMMENTS: The well was drilled using a hollow stem auger.
It was developed using a bailer.

PAGE _____ OF _____

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington Co.
LOCATION: Sylvania, GA
WELL NUMBER: W-28S ELEVATION: 174.1 Ft.
DATE INSTALLED: April 6, 1988 ☒ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☒ ABOVE MEAN SEA LEVEL



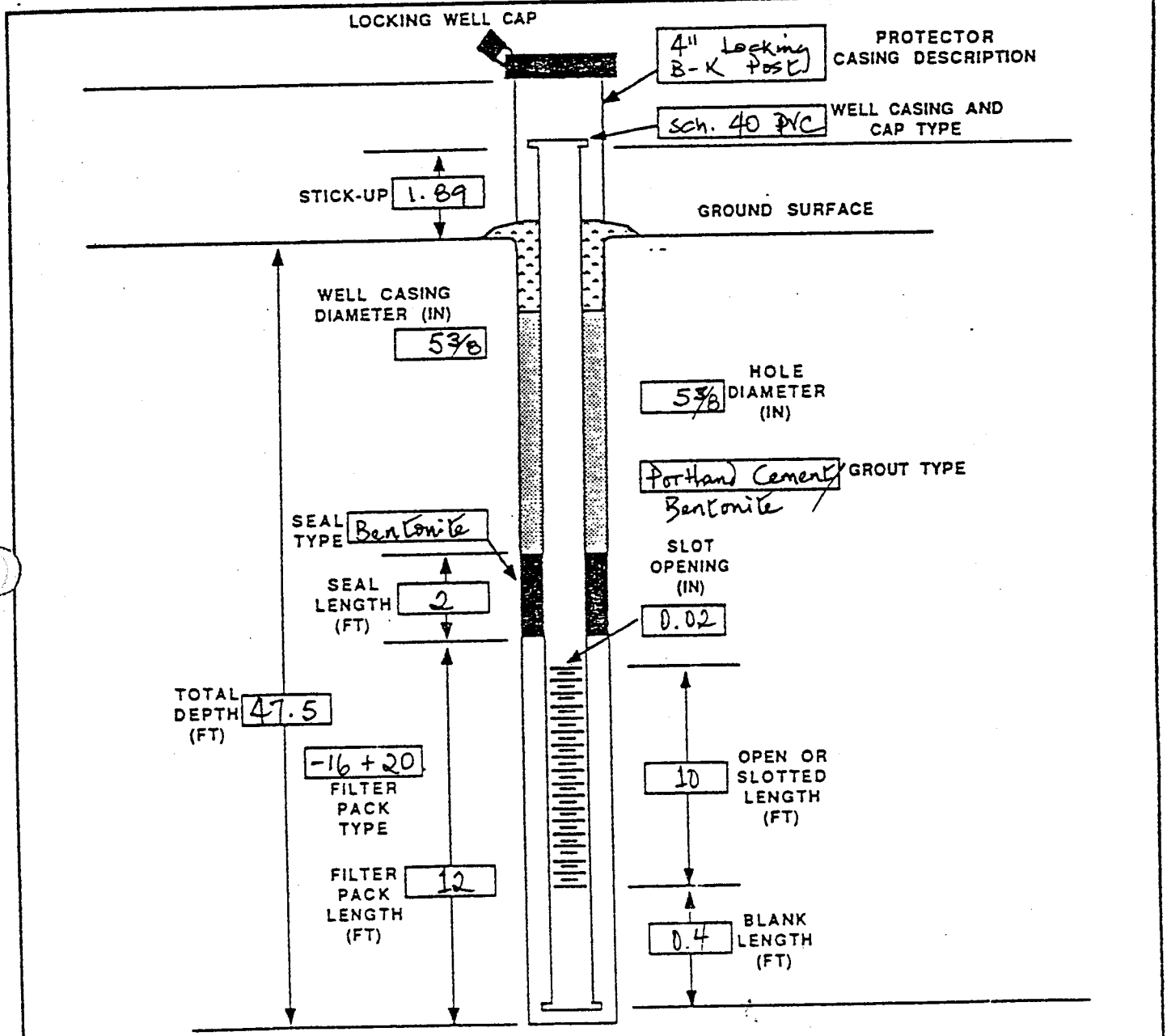
COMMENTS: The well was drilled using a hollow stem auger.
It was developed using a bailer.

PAGE _____ OF _____

ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: TORRINGTON
LOCATION: SYLVANIA, GA.
WELL NUMBER: W-29
DATE INSTALLED: April 20-21, 1988
ELEVATION: 134.6 FT.
☐ GROUND ☐ CASING ☐ PROTECTOR CASING
☒ ABOVE GROUND LEVEL ☒ ABOVE MEAN SEA LEVEL



COMMENTS:

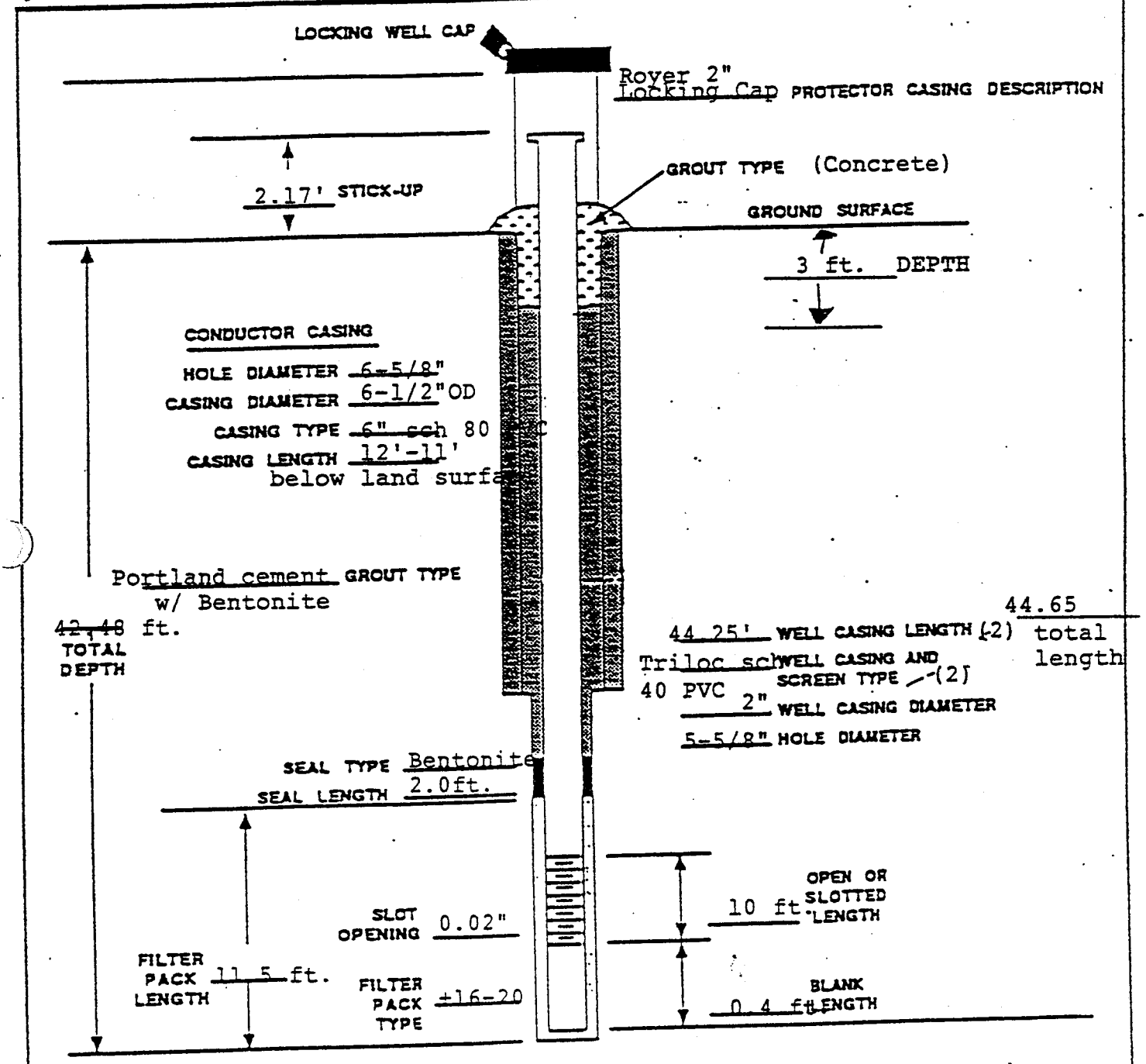
PAGE _____ OF _____

ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington Company
LOCATION: Sylvania, Georgia
WELL NUMBER: W-30
DATE INSTALLED: September 13, 1988

ELEVATION:
☐ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL

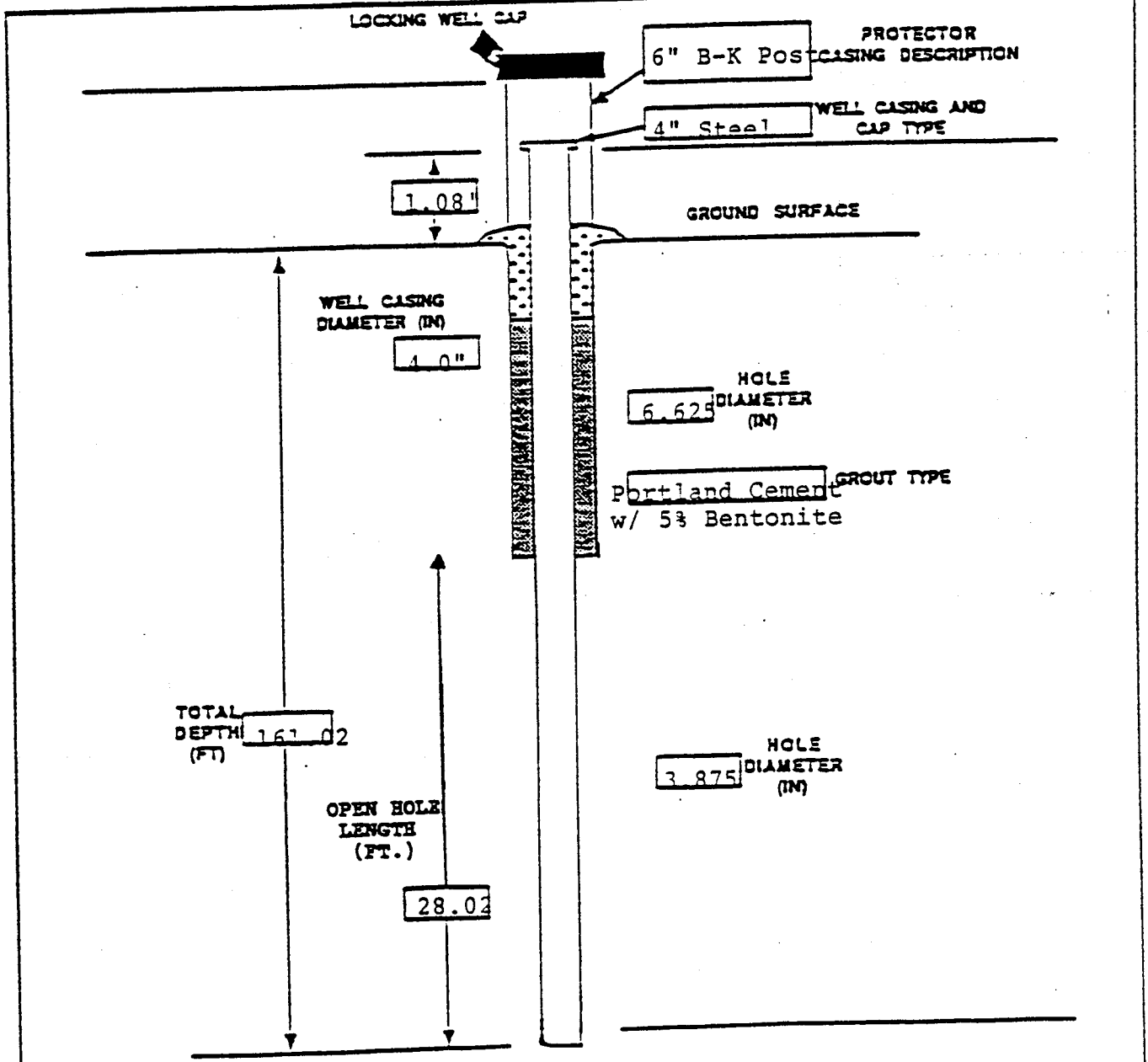


COMMENTS: Well was drilled using hollow stem augers down to the confining clay layer. Mud rotary rilling was used to total depth. The well was developed by bailing. See lithlogic log for wells W-8 and W-9.

ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington/Sylvania
LOCATION: Well 15 Area
WELL NUMBER: LS-2
DATE INSTALLED: 5/31/99
ELEVATION: ≈ 152.32
☐ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



COMMENTS: Drilled to 112.0ft and lost returns. Ran 4" steel casing and drove casing to 133.0 ft. Drilled out with 2-7/8" bit to TD. Well was developed using an air compressor.

PAGE _____ OF _____

ATLANTA ENVIRONMENTAL MANAGEMENT, INC.

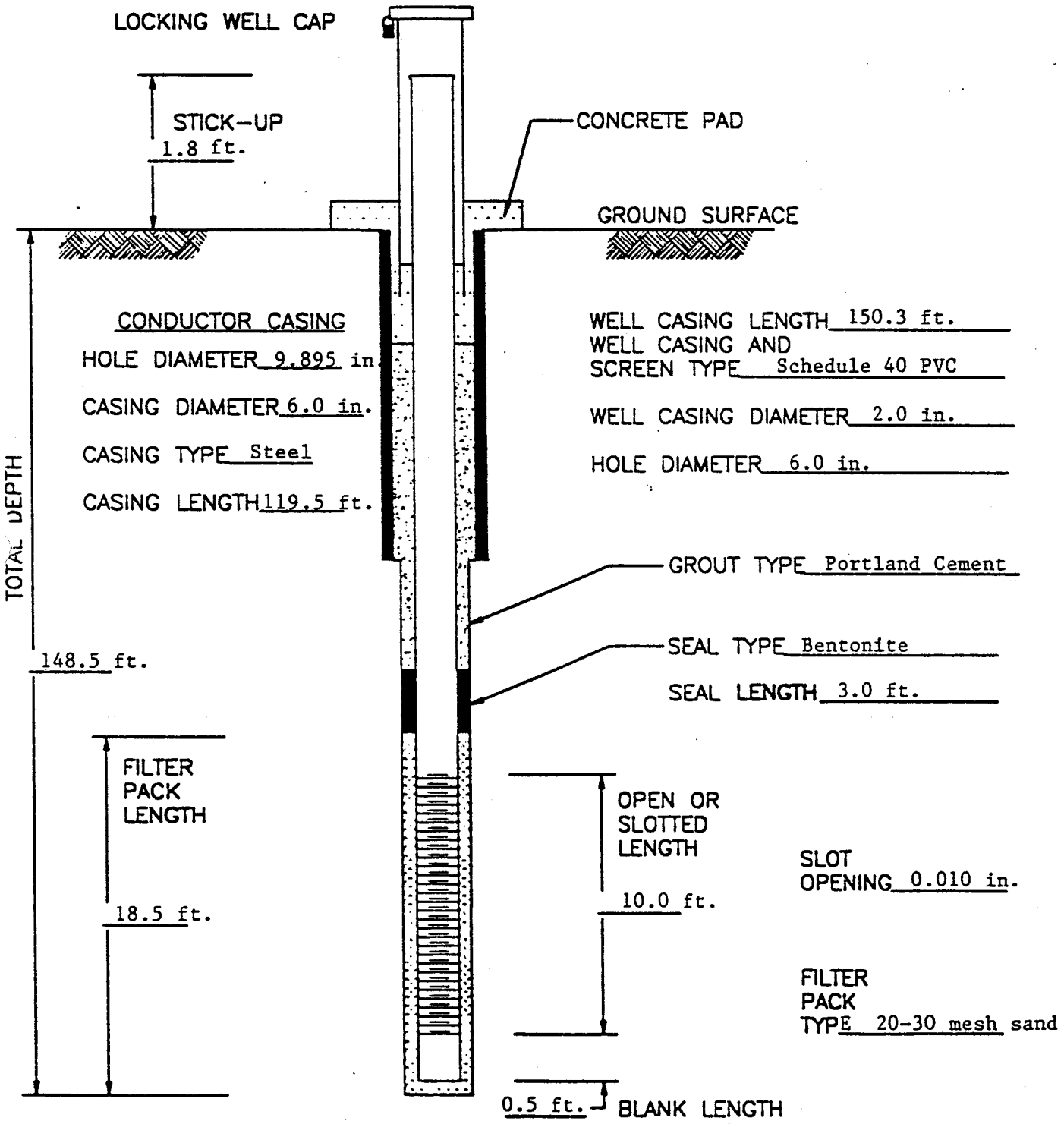
WELL CONSTRUCTION DIAGRAM

PROJECT: The Torrington Company

LOCATION: Sylvania, Georgia

WELL NUMBER: LS-3 GROUND ELEVATION (AMSL): _____

DATE INSTALLED: 5/4/94 CASING ELEVATION (AMSL): _____



COMMENTS: A temporary 10-inch PVC casing was set to 19 feet prior to drilling borehole for conductor casing. Well was developed using a surge block and submersible pump.

SITE: Sylvania, Georgia

PROJECT NAME: Monitoring Wells — W-2

DEPTH ELEVATION	SAMPLE NO	TYPE SAMPLE	SAMPLE DIST	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT.³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % / STANDARD "N" PENETRATION (BLOWS/FT.) (10 20 30 40 50)
					SURFACE ELEVATION → LS - 174.61 TOC - 176.48		
	1	SS			Light brown fine sand, trace silt - medium dense - dry - (SP)		14
5.0	2	SS			Light brown fine clayey sand - medium dense - moist - (SC)		11
	3	SS					13
10.0	4	SS					10
15.0	5	SS			Multi-colored silty clay - stiff - moist - (CL)		9
20.0	6	SS			Note: Some lenses and seams of sand		19
25.0	7	SS					43
30.0	8	SS					62
					End of boring at 30.5 feet.		

WATER LEVEL OBSERVATIONS

WL	Dry to EOB	
WL	B.C.R.	A.C.R.
WL		

STS CONSULTANTS, LTD.
2401 ANNAPOLIS LANE
MINNEAPOLIS, MINN. 55441

BORING STARTED			8/25/81
BORING COMPLETED			8/25/81
RIG	CME-45	FOREMAN	
DRAWN	RJH	APPROVED	RJK
JOB #	926R4	SHEET	

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

SITE: Sylvania, Georgia

PROJECT NAME: Monitoring Wells W-3

SURFACE ELEVATION: LS - 172.57 TOC - 179.35

DEPTH / ELEVATION	SAMPLE NO	TYPE SAMPLE	SAMPLE DIST.	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS./FT.³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT² (1 2 3 4 5) / PLASTIC LIMIT % / WATER CONTENT % / LIQUID LIMIT % / STANDARD N PENETRATION (BLOWS/FT) (10 20 30 40 50)
	1	SS			Light brown fine sand, trace silt - medium dense - moist - (SP)		15
5.0	2	SS			White fine clayey sand, trace silt - medium dense - moist - (SC)		14
	3	SS			Multi-colored silty clay - stiff - moist -(CL)		9, 11
10.0	4	SS					
	5	SS					12
20.0	6	SS					18
25.0	7	SS					17
30.0	8	SS			Gray and brown fine sand, clay seams - medium dense - moist - (SP-SC)		9
35.0					White and gray fine to very fine sand - loose to medium dense - moist to wet - (SP)		11, 23, 27
45.0							
46.0					End of boring at 46.0 feet.		

WATER LEVEL OBSERVATIONS

W.L. Dry to EOB B.C.R. A.C.R.

W.L.

W.L.

STS CONSULTANTS, LTD.
2400 ANNAPOLIS LANE
MINNEAPOLIS, MINN. 55441

BORING STARTED			8/25/81
BORING COMPLETED			8/25/81
RIG	CME-45	FOREMAN	
DRAWN	RJH	APPROVED	RJK
JOB #	92684	SHEET	

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

Atlanta Environmental Management Inc.

Monitoring Well Lithologic Log

Date: April 21-27, 1988

Owner: Torrington Co.
Well No: W-3D
Location: Adjacent to monitoring Well W-3
Driller: Bob Stansfield
Geologist: Mark Potts
Drilling Method: Mud Rotary - 5 1/2"

Depth (feet) From	To	Lithology	Remarks
0	50	See Lithologic Log from wells W-8 and W-9 which are adjacent to this well.	
	60	Sandy clay - clayey sand (SC-CL)	Based on cuttings & drilling progress.
60	62.5	Clay Content decreasing (SC)	
62.5		Grayish white fine grained silty sand -well sorted, clay blebs up to 1/4" with iron staining (SM)	62.5-64 sample #1. 3-5-8
	97.5	Grayish white fine grained silty sand -well sorted with occasional clay blebs up to 1/8" in size (SM)	82.5-84. sample #2. 6-4-16
97.5	103	Top 3" gray fat clay. Middle 8" tan, fine grained poorly sorted silty sand. Bottom 6" fat gray clay. Rust stains. (SM-CH)	97.5 - 99. sample #3
103	113	Interbedded fine grained poorly sorted dark green silty sand within a fat gray clay unit 50% clay (CH). (CH)	
113		Tan, fine grained fossiliferous limestone with shell fragments.	
		TOTAL DEPTH: 113.5 FEET Bottom of hole 0.5 feet into limestone. Sealed on the bottom with bentonite pellets to a depth of 105 feet -- sand above.	
		See the attached well construction diagram for well completion details.	

CONSULTANT IN GEOLOGY

MW 8

DRILLING LOG	COMPANY Torrington	INSTALLATION Sylvania, Ga.	SHEET 1 OF 1 SHEETS
LOCATION (Coordinates or Station) north corner of lagoon		SIZE AND TYPE OF BIT 4" hand auger, 7¼" & 4 5/8" tri-cone	
DRILLING AGENCY Geothermics		TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 2 splitspoon	
THICKNESS OF OVERBURDEN NA		DATE HOLE STARTED 18 June 85	COMPLETED 19 June 85
DEPTH DRILLED INTO ROCK NA		ELEVATION TOP OF HOLE 171.47 msl	
TOTAL DEPTH OF HOLE 40.5'		ELEVATION GROUND WATER	
NAME OF DRILLER Paul N. Clawson		SIGNATURE OF INSPECTOR OR GEOLOGIST Carl F. Titcomb	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			SM brown silty sand turns yellow-orange 1.5'			0 to 8.0' hand augered with 4" auger, 16 June.
WL 4.75 16 June	5		SC orange-yellow clayey sand. Becomes mottled gray orange 4.5' very clayey 7.0'..			
	10		CH maroon & gray plastic clay, some orange silt & sand	9	1	Drilled to 9.0' with 7¼" bit, set 11.2' sch 80, 6" casing. Drove 0.7' into clay with 140 lb. hammer
	15					Drilled to 40.5' with 4 5/8" bit.
	20		more orange silty clay			
	25		becomes sandy			
	30		gradational contact			
			SC gray to tan fine clayey sand			
	35		zone coarse sand	35	2	
	40		Hole completed 40.5'			

NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.

DRILLING LOG	COMPANY Torrington Industries	INSTALLATION Sylvania	SHEET 1 OF 1 SHEETS
LOCATION (Coordinates or Station) SE corner of lagoon		SIZE AND TYPE OF BIT 4" Hand Auger, 7¼" & 4⅝" Fishtail	
DRILLING AGENCY Geothermics		TOTAL NO. OF OVERBURDEN SAMPLES TAKEN 2 splitspoon	
THICKNESS OF OVERBURDEN NA		DATE HOLE STARTED 15 June 85	COMPLETED 18 June 85
DEPTH DRILLED INTO ROCK NA		ELEVATION TOP OF HOLE 172.17 msl	
TOTAL DEPTH OF HOLE 44.0'		ELEVATION GROUND WATER	
NAME OF DRILLER Paul Clawson		SIGNATURE OF INSPECTOR OR GEOLOGIST Carl F. Titcomb	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	SPT	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			SM tan silty sand			0 to 12.0' hand augered adjacent to MW9
	5		SC orange clayey sand			
WL 7.1 15 June						
	10		CL orange and gray sandy clay			Hole reamed to 11.5' with 7¼" reamer.
			CH maroon & gray plastic clay	-15	1	Placed 12.6' of 6" Sch 80 casing. Drove into clay with 140lb hammer approx. half foot
	15		pale olive green			
	20					Reamed hole with 4⅝" bit to 44.0'
	25					
			gradational contact			
	30		SC yellow-tan clayey sand fine to med. grained Much clay, occasional fine quartz gravel	-20	2	
	35					
	40		Hole completed to 44.0'			

NOTE: Soils field classified in accordance with the Unified Soil Classification Systems.

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: July 26-27, 1987

Owner: TORRINGTON CO.
Well No: W-15
Location: Northernmost Property Boundary Well.
Driller: Paul Clawson, Geotherm
Geologist: M. Potts
Drilling Method: HSA to ~15'
5¼" Drag Bit - Mud Rotary to Total Depth

Screened From: _____ ft. to _____ ft.
Gravel Pack: _____ mesh to _____ ft.
Bentonite Seal: _____ ft. to _____ ft.
Concrete Seal from _____ ft. to surface
Water Level: _____ ft. below well top.
Well top elevation: _____ ft.

Depth (feet) From	To	Lithology	Remarks
0		yellowish brown silty fine grained, mod. well sorted sand (SM)	4-5½ ft. sample #1 2-2-4
	9½	SAME (SM)	8½-10 ft. sample #2. 6-6-9
9½	13	Grayish white clayey fine sand ~30% clay. Yellow & Red mottling (SC)	
13		Light olive gray fat clay with purple and yellow mottling (CH)	13.5-15 ft. sample #3 3-5-8
		Gray fat clay with thin laminations (<½-2 mm) of SC (CH-CL)	18.5-20 ft. sample #4. 6-11-15
	27.5	SAME. less sand (CH)	23.5-25 ft. sample #5. 6-9-7
27.5		Change in drilling. silty fine sand. mod. well sorted. (SM)	28.5-30 ft. sample #6 3-5-7
		Grayish white fine grained well sorted quartz sand, minor silt. thin vertical laminations of clay (SM) within sands 1-2 mm.	40.5-42 ft. sample #7 5-15-21
		Total depth 42 feet. Below confining clay; total depth reached.	

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: 3/21/89

Owner: Torrington/Sylvania
Well No: W-15D
Location: Adjacent to W-31 and W-15
Driller: Middle Georgia
Geologist: Ron Yarborough
Drilling Method: Mud Rotary

Screened From: 105.3 ft. to 115.3 ft.
Gravel Pack: 30-40 mesh to 103.0 ft.
Bentonite Seal: 101.0 ft. to 103.0 ft.
Concrete Seal from 101.0 to surface
Water Level: 26.0 ft. below well top.
Well top elevation: _____ ft.

Depth (feet) From	To	Lithology	Remarks
65.0	66.5	SC - Tan, Orange, very fine to fine grained, loosely to unconsolidated, sub rounded-rounded, moderately sorted.	Drilled to 76' Set 6" casing - Had to wash casing down
	81.5		
81.5	81.5	CL - Light green, light gray, soft, very sandy with streaks of light orange sand.	5-5/8" Well Bore
	89.0		
89.0	91.5	SC - Light green, tan, orange, very fine grained, loosely consolidated, well sorted. Abundant clay Matrix	
	101.5	SC - Light orange, light gray, tan, very fine grained, loosely consolidated, sub rounded - rounded with abundant clay Matrix	
	116.0		
116.0	117.0	CL - Dark red, dark gray, white soft to moderately firm, trace sand	Set 2" PVC Sch 40
117.0	117.5	LS - Buff, tan, soft, fossiliferous limestone	At 115.7
		Well was terminated when limestone was reached. Sufficient depth for characterization. Lost circulation and was unable to get 2" casing in hole. Had to wash down 4" steel casing and run 2" PVC through 4" and pull 4" casing out of hole.	

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: _____

Owner: TORRINGTON CO.
Well No: SYLVANIA, GA
Location: W-16
Driller: P. Clawson (Geothermics)
Geologist: M. Potts
Drilling Method: HSA - 7¼" OD

Screened From: _____ ft. to _____ ft.
Gravel Pack: _____ mesh to _____ ft.
Bentonite Seal: _____ ft. to _____ ft.
Concrete Seal from _____ ft. to surface
Water Level: _____ ft. below well top.
Well top elevation: _____ ft.

Depth (feet) From	To	Lithology	Remarks
0	9	Grayish white clayey fine sand poorly ~~sorted~~ mottled (SC)	
9	11	≈ 50-50 clay-sand @ 9ft (SC-CL)	
11		Orangish-brown clayey fine sand. Less clay @ 14 ft. ≈ 25% ~~sand~~ clay (SC)	water table ≈ 12 ft. ~~notes on augers~~ - mud balling
		same as above at 19 ft. (SC)	
		Total Depth: 24 feet below land surface. ≈ 10-15' below water table. No clay unit encountered.	

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: 3-30-89

Owner: Torrington/Sylvania
Well No: W-16DD
Location: Adjacent to W-16 and W-16D
Driller: Middle Georgia
Geologist: Ron Yarborough
Drilling Method: Mud Rotary

Screened From: 72.63 ft. to 82.63 ft.
Gravel Pack: 30-40 mesh to 70.0 ft.
Bentonite Seal: 68.0 ft. to 70.0 ft.
Concrete Seal from 68.0 ft. to surface
Water Level 28.42 ft. below well top.
Well top elevation: _____ ft.

Depth (feet) From	To	Lithology	Remarks
65.0	66.5	SC - Tan, orange, very fine grained, with abundant clay Matrix	11.25" Wellbore
75.0	76.5 Matrix	SC - Tan, orange, very fine grained with abundant clay	Set 6" Casing at 70.0 ft.
85.0	86.0	Light orange, gray, clay soft, very sandy - CL	5-5/8" Wellbore
86.0	86.5	LS - Limestone, tan, white, light gray fossiliferous	2" PVC (Sch 40) Set at 82.64'
		Well was terminated when limestone was reached. Sufficient depth for characterization	

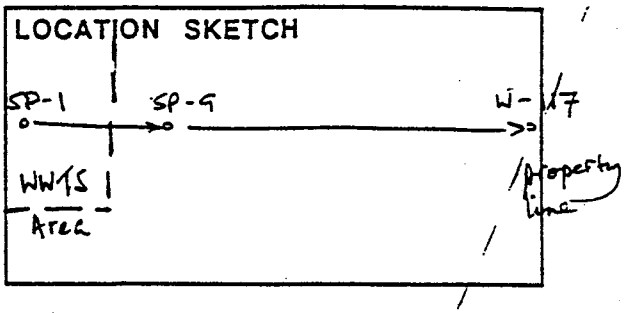
Versar INC.

BOREHOLE LOG

PROJECT: TORRINGTON
LOCATION: SYLVANIA GA
BOREHOLE NUMBER: W-17
DATE DRILLED: 7.24.87
FIELD REPRESENTATIVE: MARK POTTS
DRILLING CONTRACTOR: Geothermics
DRILLER: Paul Clawson
DRILLING METHOD: Hollow Stem auger
HOLE DIAMETER: 6½"
GROUND ELEVATION: 156.0 ft.
CONDITION OF GROUND SURFACE:

JOB NUMBER:

LOCATION SKETCH



COMMENTS:

DEPTH	SAMPLE NUMBER	SAMPLE INTERVAL AND TYPE	SAMPLE ADVANCED/ RECOVERED	SAMPLE BLOW COUNTS PER 6 INCHES	WATER TABLE	SAMPLE DESCRIPTION (SOIL OR ROCK TYPE, COLOR, GRAIN SIZE, SORTING, ROUNDNESS, PLASTICITY, MOISTURE CONTENT, TRACE MATERIALS, ODOR, STAINING, TRACE GAS READINGS, FORMATION TOPS)
0						
5	1					Yellowish brown fine grained clayey sand. moderately well sorted.
10	2			3 4 7		Yellowish brown fine grained clayey sand moderately poorly sorted. ~ 50/50 SC-CL sands / silts or clays
15	3			3 5 8		Orange brown clayey fine grained sand, less clay & silts than at 9', ~25% fines Soil balling up on the augers. - Easier drilling at 16'.
20	4					Orange brown clayey fine grained sand, similar to above moderately well sorted.
25	5					TD 23.5 ft.

Mark A. Potts
GEOLOGIST'S SIGNATURE

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: 3-2-89

Owner: Torrington/Sylvania
Well No: 17D
Location: Adjacent to W-17 on property boundary
Driller: Paul Clawson
Geologist: Ron Yarborough
Drilling Method: Mud Rotary

Screened From: 56.34 ft. to 66.34 ft.
Gravel Pack: 30-40 mesh to 53.3 ft.
Bentonite Seal: 52.0 ft. to 53.3 ft.
Concrete Seal from 52.0 ft. to surface
Water Level: 29.65 ft. below well top.
Well top elevation: _____ ft.

Depth (feet) From	To	Lithology	Remarks
0	10.0'	SC - Sandy clay, drillers notes	
10.0'	17.0	CL - Tough clay, drillers notes	8-1/2" Wellbore
17.0	40.0	SC - Clayey sand, drillers notes	
	41.5	SC - Sand light gray, clear, very fine to fine grained unconsolid-	Sample #1 40.0 - 41.5
		ed to loosely consolidated sand with clayey Matrix sub angular -	
		Angular	
	46.5	SC - Sand light gray, clear, very fine grained, loosely consolidated	Set 6" casing at 50'
		to unconsolidated. Angular to sub angular quartz	
	51.5	SC - Sand light gray, clear, very fine grained, grading to silt	5-5/8" Wellbore
		well Sorted	
	56.5	SC - Clayey sand, light gray, clear, very fine grained, well	
		sorted with clay Matrix	
	61.5	SC - Clayey sand, clear, light gray, light green, very fine	
		grained, well sorted with clay Matrix	
65.0	66.5	CL - Sandy clay, light gray, orange, laminated clay and sand	Set 2" PVC Sch 40 at 68.33'
70.0	71.5	CL - As above	

Well terminated at 70'-Sufficient depth for intermediate investigation.

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: July 25-26, 1988

Owner: Torrington Co.
Well No: W-18
Location: Sylvania, GA-Downgradient of the clubhouse at property boundary.
Driller: P. Clawson
Geologist: Mark Potts
Drilling Method: HSA- 14 feet; Mud Rotary to total depth.

Depth (feet) From	To	Lithology	Remarks
0	3	Yellowish-brown fine-grained silty fine sand, moderately well sorted	(SM)
3	12	Grayish-white clayey fine-grained sand, mod. well sorted at 12 feet depth, 50% sand/clay (SC-CL)	(SC)
13	17	Greenish gray stiff lean clay, several % sand	(CL)
17		Yellowish-brown clayey fine-grained sand, up to 25% fines	SC)
		SAME AS ABOVE	SC)
		TOTAL DEPTH: 30.5 feet. The hole was completed to a total depth of 30.5 feet since it was at least 10 feet below the water table.	

Atlanta Environmental Management Inc.

Monitoring Well Lithologic Log

Date: March 29-April 1, 1988

Owner: Torrington Co.
Well No: W-19
Location: Offsite. NE of softball field
Driller: Bob Stansfield
Geologist: Mark Potts
Drilling Method: Mud Rotary - 5 1/2"

Depth (feet) From	To	Lithology	Remarks
0		Grayish white poorly sorted fine to med. grained clayey sand, up to 40% clay. Reddish brown mottling. (SC)	5-6.5 ft.Sample #1. 6-12-17
		Grayish white poorly sorted fine to med. grained clayey sand, up to 40% clay. Reddish brown mottling. (SC)	8.5-10 ft.Sample #2. 4-8-12
	17	Orange brown poorly sorted fine grained clayey sand. Up to 20% fines Gradational contact. (SC)	13.5-15 ft.Sample #3 6-9-12
17		Yellowish-brown silty fine sand, well sorted w/up to 30% fines. (SM)	18.5-20 ft.Sample#4. 5-6-9
		Yellowish-brown silty fine sand, well sorted w/up to 30% fines. (SM)	23.5-25 ft.Sample#5. 3-5-7
	33	Yellowish brown silty fine sand, well sorted w/up to 30% fines. (SM)	28.5-30 ft.Sample #6. 2-3-5
33		Yellowish brown clayey fine sand. 20-30% fines. (SC)	33.5-35 ft.Sample #7. 2-3-5
	47	Yellowish brown clayey fine sand. <3% black staining - manganese (?) (SC)	38.5-40 ft.Sample #8. 2-4-7
47		Yellowish brown silty fine sand, 20-30% fines, rust staining (10%) (SM)	48.5-50 ft.Sample #9. 2-4-6
		Alternating bands of gray silty sand with greenish gray fat clay (up to 1" thick). (SM-CH)	58.5-60 ft.Sample #10. 2-4-7
		Gray silty fine sand, up to 20% silt, manganese staining, several %, and some rust staining (5%) (SM)	68.5-70 ft.Sample #11. 6-17-14
		Yellowish brown silty fine sand with clay blebs up to 1-2" intermixed. 10% rust staining on bedding.30%clay overall(SM-CH)	78.5-80 ft.Sample #12, 3-12-14
		Hole terminated at 80 feet due to sufficient characterization at this location.	

Monitoring Well Lithologic Log

Date: March-April, 1988

Owner: Torrington Co.
Well No: W-20
Location: Sylvania, GA

Driller: Bob Stansfield
Geologist: Mark Potts
Drilling Method: Mud Rotary

Depth (feet) From	To	Lithology	Remarks
0	11.5	Yellowish brown silty fine sand. (SM)	Water level ≃ 3 feet below land surface
11.5	18	Whitish gray clayey fine sand. Poorly sorted. (SC)	
18	40	Mod. well sorted whitish gray silty fine sand. (SM)	
40	48	Whitish gray poorly sorted clayey fine sand - lean clay (SC-CL)	Low permeability unit.
48	82	Whitish gray poorly sorted silty fine sand. Variable % silt. (SM)	- up to 20% silt.
		Total Depth of well 82.5 feet - sufficient for a deep well on bottom.	

Atlanta Environmental Management Inc.

Monitoring Well Lithologic Log

Date: March 20-22, 1988

Owner: Torrington Co.
Well No: W-21
Location: offsite

Driller: Bob Stansfield
Geologist: Mark Potts
Drilling Method: Mud Rotary

Depth (feet) From	To	Lithology	Remarks
0		Grayish white silty fine sand. Poorly sorted. (SM)	Sample #1. 3.5-5.0 ft. 3-9-14
		Grayish white clayey fine sand. Poorly sorted. (SC)	Sample #2. 10-11.5 ft. 3-4-9
	18	Grayish white poorly sorted clayey fine sand with goethite (iron) staining. (SC)	Sample #3. 15-16.5 ft. 3-9-13
18	21	Stiff greenish gray fat clay - <2% silt. (CH)	Sample #4. 20-21.5 ft. 2-4-9
21	25.5	Yellowish brown poorly sorted clayey sand. (SC)	H_2O producer. Sample #5. 25-26.5 ft. 2-2-2
25.5	31	Stiff light greenish gray fat clay. (CH)	
31		Yellowish brown silty fine to medium grain sand. Poorly sorted. (SM)	Caving @ 35' - No Sample.
		Whitish gray silty fine to medium sand. (SM)	36-36.5 No blow count
		Drilling same.	No Sample. 40-41.5 ft.
	45	Drilling same. (SC-SM)	
45		50' Increase in clay content - SC . ≃20% clay. (SC)	50'
		60' Whitish gray poorly sorted clayey fine sand. (SC)	60' Sample off bottom of auger.
		70' Whitish gray poorly sorted clayey fine to medium sand. (SC)	70' Cuttings examined.
		80' Same as above. (SC)	80' Cuttings.
		86' Increase in clay content to ≃ 30% clay. (SC)	
		Total Depth 86'. Sufficient characterization.	

Atlanta Environmental Management Inc.

Monitoring Well Lithologic Log

Date: April 13-14, 1988

Owner: Torrington
Well No: W-27
Location: Sylvania, GA

Driller: P.Clawson, J.McClain
Geologist: Mark Potts
Drilling Method: Mud Rotary

Depth (feet) From	To	Lithology	Remarks
0		Tan, gray, red, poorly sorted, med. to coarse grained, sandy clay. (CL)	4-5.5 ft. Sample #1. 6-8-9
		Same above w/coarser grained sand. (CL)	9-10.5 ft. Sample #2. 5-9-10
16.1		Tough, grayish purple clay with less than 15% med. to coarse grained sand (MH)	15-16.5 ft.Sample #3. 5-10-8
	39.5	Same above w/increase of coarse grained sand. (CL)	35-36.5 ft.Sample #4. 8-11-12
39.5	51.3	Coarse grained sand w/up to 10-20% gray clay. (SM)	40-41.5 ft.Sample #5 2-3-4
51.3	60 T.D.	Tough, gray sandy clay interbeds w/clayey sand beds up to 10" thick. (CS-CL)	55-56.5 ft.Sample #6 10-14-18

Atlanta Environmental Management Inc.

Monitoring Well Lithologic Log

Date: 26-28 March, 1988

Owner: Torrington Co.
Well No: W-28
Location: SW of softball field, near parking area
Driller: Paul Clawson (Geothermics, Inc)
Geologist: Mark Potts
Drilling Method: Mud Rotary - 5 1/2"

Depth (feet) From	To	Lithology	Remarks
0	5 1/2	Orangish brown clayey medium to fine sand, 20-30% fines. 4-6 feet - clean coarse sand, well sorted. (SC)	4-5 1/2. Sample #1. 11-20-24
5 1/2	9	Orange and yellowish brown sandy clay - clayey sand (CL-SC)	Very slow drilling 5 1/2-9'
9		Grayish white clayey medium to coarse sand (10-20% clay) with red and orange mottling. (SC)	9-10 1/2.Sample #2. 4-6-6
	15 1/2	Grayish white clayey medium to coarse sand (10-20% clay) with red and orange mottling. (SC)	14-15 1/2.Sample #3. 4-5-6
15 1/2	19	Reddish to orange brown sandy clay. Sand very fine to medium. (CL)	
19	21 1/2	Greenish gray, clayey fine to medium sand. Very poorly sorted with some coarse sand.Set 6"casing to 19.3 ft (SC)	19-20 1/2.Sample #4. 3-7-10
21 1/2	22 1/2	Clean medium to coarse sand (SW)	
22 1/4	28.1	Very tough, gray sandy clay with up to 15-20% sand as clayey sand lenses (CL)	25-26.5.Sample #5. 7-17-26
28.1	29.4	Very hard, iron-cemented fine grained sandstone	Drilling cuttings examined.
29.4		Very hard, greenish gray clayey sand-sandy clay. Dry, very poorly sorted medium to fine grained sand (SC-CL)	30-31.5.Sample #6. 20-27-42
	36.7	Gray, very hard, dry clayey fine to medium sand. (SC)	35-36.5.Sample #7. 6-13-30
36.7	37.8	Very hard, cemented fine sandstone.	Drilling cuttings examined.
37.8		Gray clayey fine to medium sand. Very poorly sorted w/20% fines (SC)	40-41.5.Sample #8. 3-9-13
		Gray clayey fine to medium sand. Very poorly sorted w/20% fines(SC)	45-46.5.Sample #9. 4-8-10

Atlanta Environmental Management Inc.

Monitoring Well Lithologic Log

Date: 26-28 March, 1988

Owner: Torrington Co.
Well No: W-28 (continued)
Location: SW of softball field, near parking area

Depth (feet) From	To	Lithology	Remarks
		Gray clayey fine to medium sand. very poorly sorted. w/20% fines (SC)	50-51.5 Sample #10. 6-9-12
		Same as above with increased clay content to 30%. Almost dry. Very poorly sorted, up to V. coarse sand. (SC)	55-56-5 Sample #11. 6-12-16
	61	60-61 ft. Interbedded (2 1/2") fine to medium clayey sand with grayish green sandy clay. Finely laminated.	60-61.5 Sample #12. 9-12-13
61		Stiff greenish gray fat clay.	
		TOTAL DEPTH - 61.5 feet (C4)	
		Due to the low permeability of the clay, the boring was finished at 61.5 ft.	

Atlanta Environmental Management Inc.

Monitoring Well Lithologic Log

Date: April 20-21, 1988

Owner: Torrington Co.
Well No: W-29
Location: Offsite

Driller: Paul Clawson
(Geothermics, Inc)
Geologist: Mark Potts
Drilling Method: Mud Rotary - 5 1/2"

Depth (feet) From	To	Lithology	Remarks
0	8	Yellowish brown fine to medium sand. (SW)	4-5 1/2. Sample 1. 2-6-11
8		Reddish brown clayey fine sand w/ 15-30% clay (SC)	9-10 1/2. Sample 2. 8-19-16
		Reddish brown medium grain clayey sand. 15-30% clay (SC)	14-15 1/2. Sample 3. 21-42-
	22	Reddish brown medium grain clayey sand. 15-30% clay (SC)	14-15 1/2. Sample 4. 18-27
22	24.7	Coarse sand with a trace to several % clay (SW)	24-25.5. Sample 5. Cuttings examined
24.7		Yellowish brown clayey fine to medium sand w/20% clay (SC)	29-30.5. Sample 6. 13-14-15
		Yellowish brown clayey fine to medium sand w/20% clay (SC)	34-35.5. Sample 7. 8-12-12
	49.5	Yellowish brown clayey fine to medium sand w/20% clay (SC)	39-35.5. Sample 7. 8-12-14
49.5	53	Tan clayey fine to medium grained sand (40-50% clay) (SC)	49-50.5. Sample 9. 6-5-6
53		Yellowish brown clayey fine to medium sand, poorly sorted w/20% clay (SC)	59-60.5. Sample 10. 10-14-13
	70.5	Yellowish brown clayey fine to medium grained sand. Poorly sorted w/20% (SC)	69-70.5. Sample 11. 9-17-15
		Hole was terminated since a sufficient depth had been reached for characterization purposes at 70.5 feet.	

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: 5/3-/89

Owner: Torrington/Sylvania
Well No: LS-2
Location: W-15 Area-Along property boundary
Driller: Charles Hill
Geologist: Ron Yarborough
Drilling Method: Mud Rotary

Screened From: NA ft. to NA ft.
Gravel Pack: NA mesh to NA ft.
Bentonite Seal: NA ft. to ft.
Concrete Seal from 133.0 ft. to surface
Water Level: 43.8 ft. below well top.
Well top elevation: ± 150.32 ft.

Depth (feet) From	To	Lithology	Remarks
0.0	117.5	See Well log for W-15D	
117.5		LS-Buff-tan, trace light	Lost drilling mud
	135.0	Medium gray, hard, very weathered	returns at 112.0
		fossiliferous	only sporadic returns
140.0		Light gray, buff-hard fossili-	Sample #1 135.0-140.0'
		ferous with trace licht gray	
		hard dense	
	145.0	Micro crystalline limestone	Sample #2 140.0-145.0'
	150.0	LS-Tan, buff, hard	Sample #3 145.0-150.0'
	155.0	Fossiliferous with a trace of	Sample #4 150.0-155.0'
	160.0	light gray dense, hard,	Sample #5 155.0-160.0'
	162.0	micro crystalline limestone	Sample #6 160.0-165.0'

ATLANTA ENVIRONMENTAL MANAGEMENT, INC.
MONITORING WELL LOG

Date: 5/3/94

Owner: The Torrington Company
Well No.: LS-3
Location: Sylvania, Georgia

Driller: Lee and Simms
Geologist: Ron Yarborough
Drilling Method: Mud/Rotary

Screened From: 148.0 ft. to 138.0 ft.
Gravel Pack: 20-30 mesh to 130.0 ft.
Bentonite Seal: 128.0 ft. to 130.0 ft.
Concrete Seal from 128.0 ft. to surface
Water Level: _____ ft. below well top
Well Top Elevation: _____ ft.

Depth (feet) From	To	Lithology	Remarks
0.0	115.0	See Well Log for W-3D	Samples collected from drill cuttings
119.5	120.0	As above	
120.0	130.0	LS - Tan, buff, hard, fossiliferous limestone	
	140.0	LS - As above	
	148.5	LS - As above	
		Boring terminated at 148.5 feet - sufficient depth for limestone monitoring well	

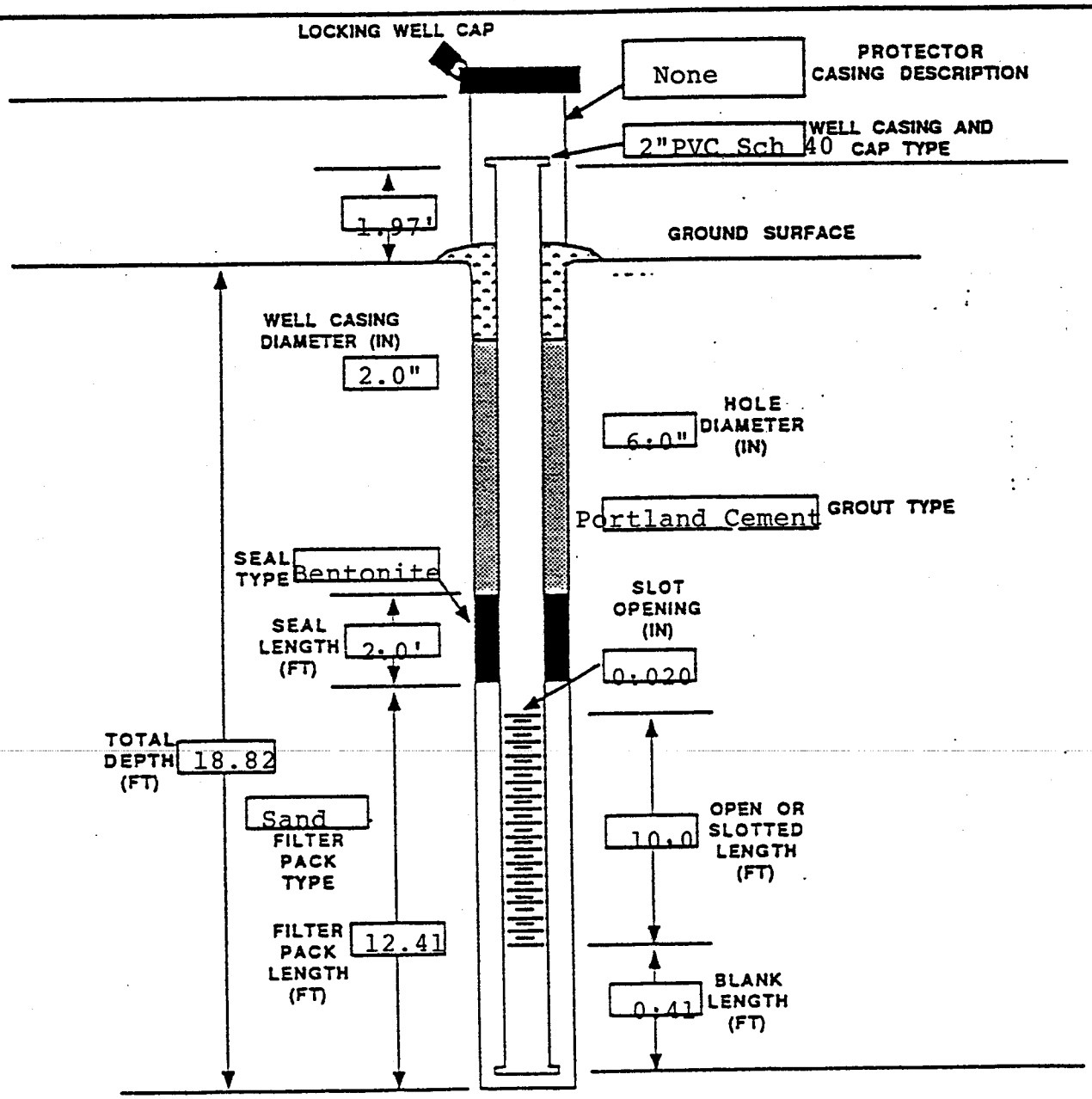
Remarks:

UST AREA

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington/Sylvania
LOCATION: Offset adjacent to fence
WELL NUMBER: W-B3
ELEVATION:
DATE INSTALLED: 3/3/89
☐ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



COMMENTS: Hole was drilled using 6" augers. Well was developed using hand bailer

PAGE _____ OF _____

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: 3/3/89

Owner: Torrington/Sylvania
Well No: W-B3
Location: Offset to W-B2
Adjacent to Fence
Driller: Paul Clawson
Geologist: Ron Yarborough
Drilling Method: Mud Rotary

Screened From: 8.38 ft. to 18.38 ft.
Gravel Pack: 30-40 mesh to 6.38 ft.
Bentonite Seal: 4.38 ft. to 6.38 ft.
Concrete Seal from 4.38 ft. to surface
Water Level: 11.35 ft. below well top.
Well top elevation: _____ ft.

Depth (feet) From	To	Lithology	Remarks
0.0	14.0	SC - Tan, orange, very fine, medium grained with clay Matrix	
14.0	16.0	CL - Maroon, light gray, tough claw with trace sand	
16.0	18.0	CL - Light gray, orange, tan, sandy clay	
		Well was terminated at 18' Sufficient depth for characterization.	

RECORD OF SOIL EXPLORATION

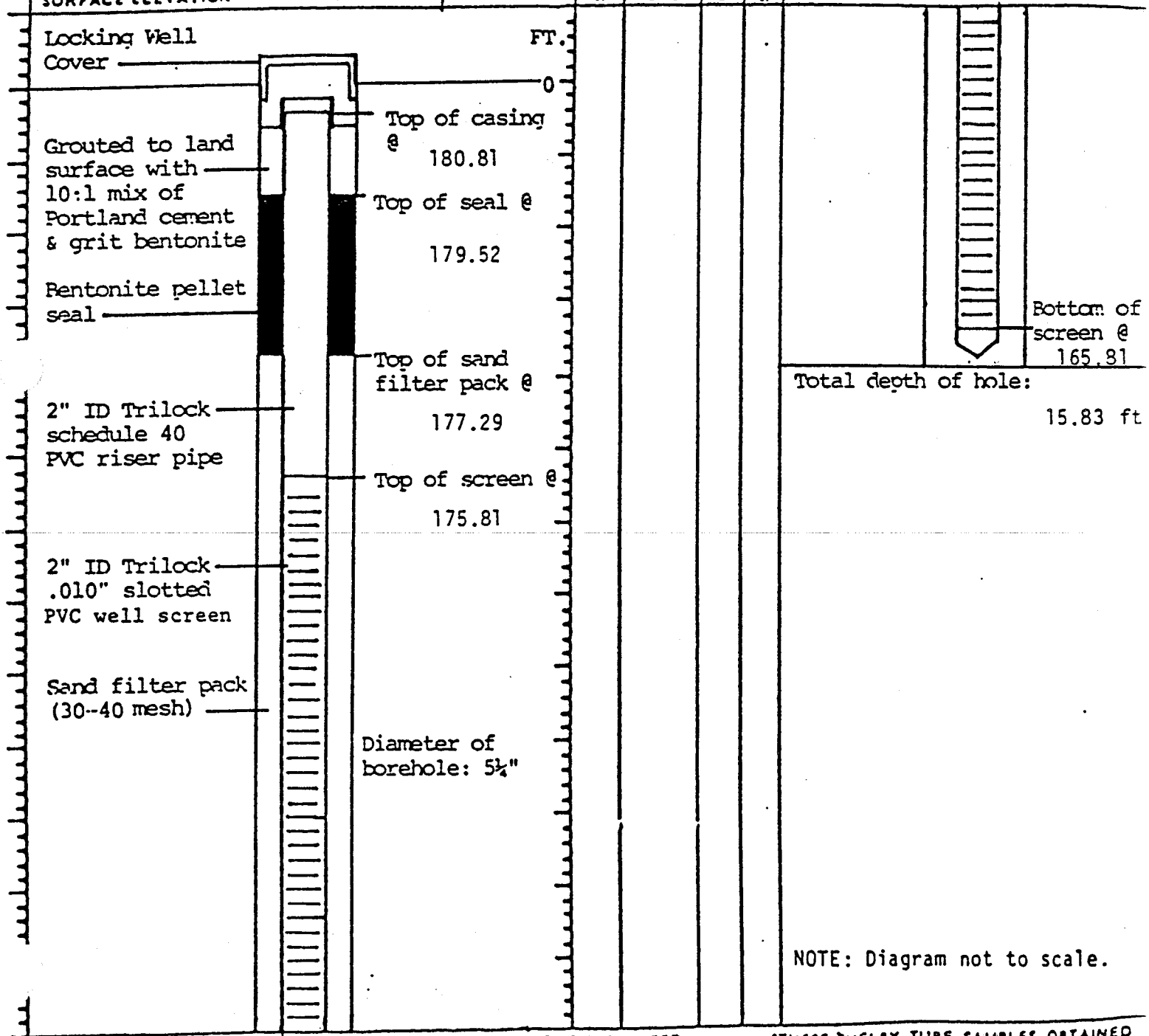
CLIENT The Torrington Company
BORING NO. DSA-1
PROJECT NAME Phase I Groundwater Assesment
JOB NO. _____ DATE 3/22/8
PROJECT LOCATION Sylvania, GA.
STATION Drum Storage Area
BORING METHOD 5" I.D. Hand Auger (Stainless)
FOREMAN Earl Titcomb
INSPECTOR Mark Potts
ROCK CORE DIA. _____ in.
SHELBY TUBE O.D. _____ in.

SOIL CLASSIFICATION
SURFACE ELEVATION- 181.19

DEPTH (FT.)

SPT **
Sample No. | Blows/6 in. 3-6 in. Increments | Recovery, % | Shelby Tube No.

BORING & SAMPLING NOTES



Total depth of hole: 15.83 ft

NOTE: Diagram not to scale.

BORING METHOD
HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGER
OC - DRIVEN CASING

GROUND WATER
NOTED ON RODS _____ FT.
AT COMPLETION _____ FT.

**THESE SHELBY TUBE SAMPLES OBTAINED
BORING _____ DRILLED A F
FEET FROM BORING _____

SOIL EXPLORATION

The Torrington Company — BORING NO. DSA-1

PROJECT NAME Phase I Groundwater Assesment — JOB NO. _____ DATE 3/21/87

PROJECT LOCATION Sylvania, GA. — STATION Drum storage area

BORING METHOD 5" I.D. Hand Auger (Stainless) — FOREMAN Tom Bragg and W. Harley

ROCK CORE DIA. _____ in. — INSPECTOR Michael Sheehan

SHELBY TUBE O.D. _____ in.

SURFACE ELEVATION- 181.19

SOIL CLASSIFICATION	DEPTH	SPT ** Sample No.	SPT ** Blows/6 in. 3-6 in. Increments	SPT ** Recovery, in.	Shelby Tube No.	BORING & SAMPLING NOTES
	FT.					
	0					12
(0-2.0) Orange-brown, moderately sorted, fine to medium gr., quartz sand. Possibly fill material.						Same as above except for gradual increase in yellow-brown color. Increase in purple color.
	2					14
(2.0-3.0) Light gray-brown, well sorted, fine gr., quartz sand.						Distinct purple-gray color banding.
(3.0-6.0) Orange-brown, moderately sorted, fine to medium gr., quartz sand. Silt content increases with depth.		3				(15.0-16.0) Orange-brown, well sorted, medium gr., quartz sand. Little clay. 16
	4					(16.0-17.0) Same as above with gray-purple lenses of clay.
						(17.0-17.5) Dark purple, competent, fat clay.
	6					18
(6.0-15.0) Gray-purple mottled, moderately sorted, medium gr., clayey, quartz sand. Approx. 40% clay.						
	8					Rational for discontinuing hole: CH horizon intersected.
	10					
	12					Total Depth: 17.5 ft.

BORING METHOD
HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
MD - MUD DRILLING
RC - ROCK CORING

GROUND WATER
NOTED ON RODS _____ FT.
AT COMPLETION _____ FT.
AFTER _____ HRS. _____ FT.

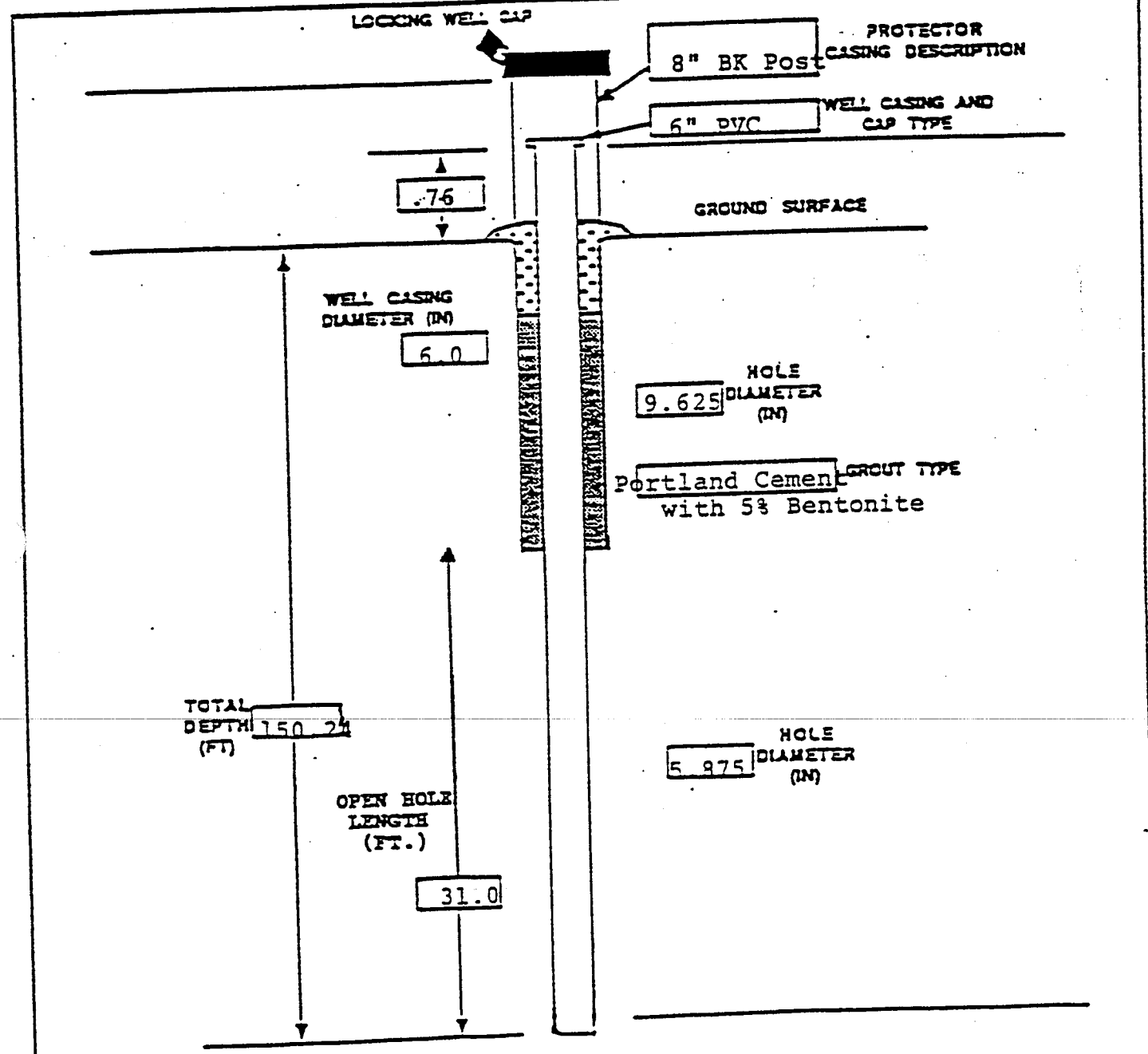
*THESE SHELBY TUBE SAMPLES OBTAINED IN BORING _____ DRILLED A FEW FEET FROM BORING _____

**STANDARD PENETRATION TEST

ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington/Sylvania
LOCATION: Underground Storage Area
WELL NUMBER: LS-1
DATE INSTALLED: 6-2-89
ELEVATION: Approx - 15.37
☐ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



COMMENTS: Drilled 6-5/8" pilot hole to 120.5 ft. then open hole to 9-5/8". Ran 6" ID PVC casing to 119.0 ft. cemented using Tremie pipe. Drilled out with 5-7/8" bit to TD of 150.0 ft. Developed well using an air compressor.

PAGE _____ OF _____

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: 6-1-89

Owner: Torrington/Sylvania
Well No: LS-1
Location: Underground Storage Tank Area
Driller: Chalres Hill
Geologist: Ron Yarborough
Drilling Method: Mud Rotary

Screened From: N/A ft. to _____ ft.
Gravel Pack: N/A mesh to _____ ft.
Bentonite Seal: N/A ft. to _____ ft.
Concrete Seal from 119 ft. to surface
Water Level: 77.0 ft. below well top.
Well top elevation: Not surveyed ft.
≈ 150.32

Depth (feet) From	To	Lithology	Remarks
0.0	92.0	See well logs for UST-ID and UST-IDD	All Samples collect from drilling mud
92.0	98.0	CH-60% light gray, light green, soft-medium firm, very sandy	Sample #1 93.0-98.0
		LS-40% Buff-white hard fossiliferous limestone	
	103.0	50% clay 50% limestone as above	Sample #2 98.0-103.0
	108.0	60% Clay 40% limestone as above	Sample #3 103.0-108.0
	113.0	LS-60% Buff white, hard fossiliferous limestone with abundant shell fragments	Sample #4 108.0-113.0
		CH-40% light gray, light green, soft, very sandy	
	116.0	LS-80% CH 20% as above	Sample #5 113.0-118.0
116.0	120.5	LS-dark gray, dark green, dense, micro crystalline with trace	Sample #6 118.0-120.5

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: 6-1-89

Owner: Torrington/Sylvania
Well No: LS-1
Location: Underground Storage Tank Area
Driller: Charles Hill
Geologist: Ron Yarborough
Drilling Method: Mud Rotary

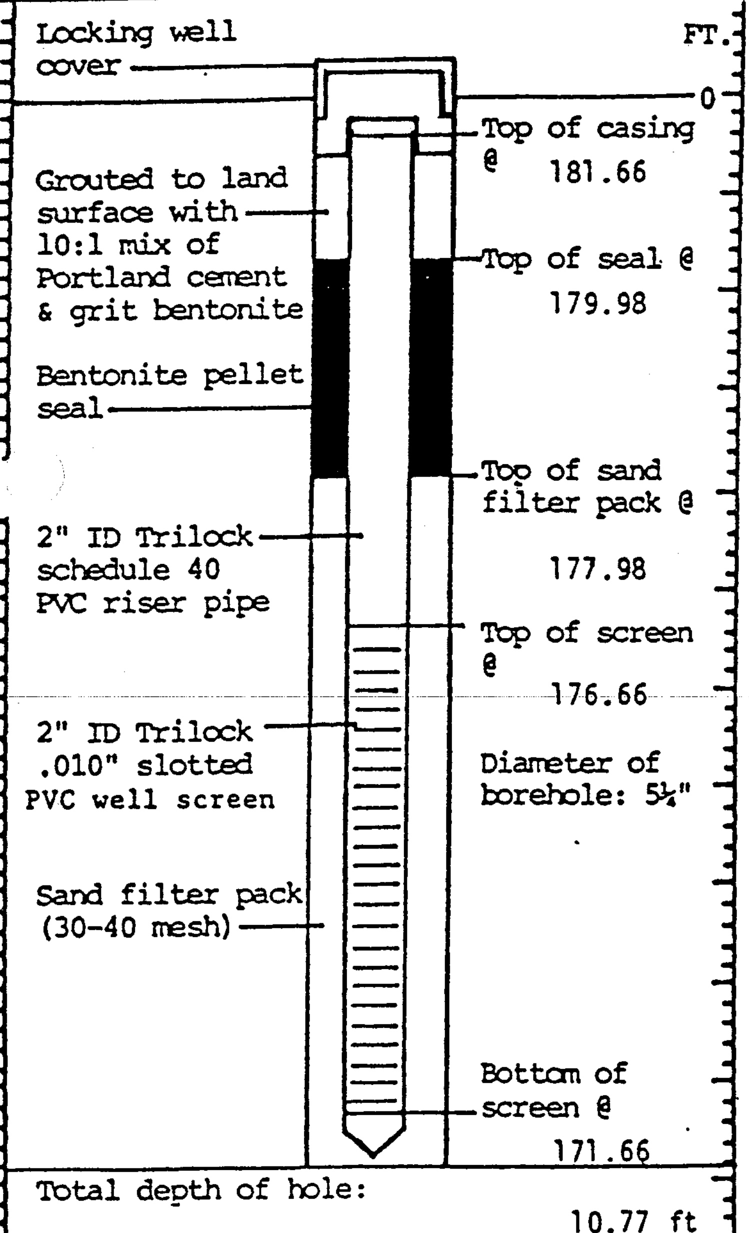
Screened From: N/A ft. to ____ ft.
Gravel Pack: N/A mesh to ____ ft.
Bentonite Seal: N/A ft. to ____ ft.
Concrete Seal from 110 ft. to surface
Water Level: -- 0 ft. below well top.
Well top elevation: Not surveyed ft.

Depth (feet) From	To	Lithology	Remarks
		white buff hard fossiliferous limestone with shell fragments	
120.5	125.0	LS-Tan, white, hard, fossiliferous limestone	Sample #7 120.5-125.0
	130.0	LS-As above	Sample #8 125.0-130.0
	135.0	LS-As above	Sample #9 130.0-135.0
	138.0	Lost returns	
	145.0	LS-Tan, white, hard, fossiliferous, limestone	Sample #10 from plugged bit at 145.0
		Drilled from 138.0 ft. to 150.0 without returns. No samples recovered.	

RECORD OF SOIL EXPLORATION

CLIENT: The Torrington Company
BORING NO.: UST-1
PROJECT NAME: Phase I Groundwater Assesment
JOB NO.:
DATE: 3/22/87
PROJECT LOCATION: Sylvania, GA.
STATION: Underground Storage Tank Area
BORING METHOD: 5" I.D. Hand Auger (Stainless)
FOREMAN: Earl Titcomb
ROCK CORE DIA.: in.
INSPECTOR: Mark Potts
SHELBY TUBE O.D.: in.

SOIL CLASSIFICATION	DEPTH	SPT ** Sample No.	SPT ** Blows/6 in. (6-in. increments)	SPT ** Recovery, %	Shelby Tube No.	BORING & SAMPLING NOTES
SURFACE ELEVATION – 181.98	FT.					NOTE: Diagram not to scale



BORING METHOD
HSA – HOLLOW STEM AUGER
CFA – CONTINUOUS FLIGHT AUGER
DC – DRIVEN CASING
MD – MUD DRILLING

GROUND WATER
▽ NOTED ON RODS ____ FT.
▽ AT COMPLETION ____ FT.
▽ AFTER ____ HRS. ____ FT.

*THESE SHELBY TUBE SAMPLES OBTAINED IN BORING ____ DRILLED A FEW FEET FROM BORING ____

SOIL EXPLORATION

CLIENT The Torrington Company
PROJECT NAME Phase I Groundwater Assesment
PROJECT LOCATION Sylvania, GA.
BORING METHOD 5" I.D. Hand Auger (Stainless)
ROCK CORE DIA. ____ in.
SHELBY TUBE O.D. ____ in.

BORING NO. UST-1
JOB NO. ____ DATE 3/21/87
STATION Underground storage tank area
FOREMAN Tom Bragg
INSPECTOR Michael Sheehan

SURFACE ELEVATION- 181.98

SOIL CLASSIFICATION	DEPTH	SPT ** Sample No.	SPT ** Blows/6 in. 2nd-6 in. Increments	SPT ** Recovery, %	Shelby Tube No.	BORING & SAMPLING NOTES
	FT. 0					
(0-1.0) Light gray, well sorted, fine gr., quartz sand.	1					
(1.0-5.0) Light orange-brown, moderately sorted, fine to medium gr., quartz sand with minor silt.	2					
	4					
(5.0-9.5) Light orange-brown, moderately sorted, fine to medium gr., quartz sand with approx. 20-30% silt. Gray and purple mottling and small (2 cm long) reddish clay lenses.	5					
	6					
	8					Rational for discontinuing hole: CH horizon intersected.
(9.5-10.0) Dark purple, yellow brown, and gray, competent, fat clay.	9.5					
	10					
	12					Total Depth: 10.0 ft.

BORING METHOD
HSA – HOLLOW STEM AUGER
CFA – CONTINUOUS FLIGHT AUGER
OC – DRIVEN CASING
MD – MUD DRILLING
RC – ROCK CORING

GROUND WATER
▽ NOTED ON RODS ____ FT.
▽ AT COMPLETION ____ FT.
▼ AFTER ____ HRS. ____ FT.

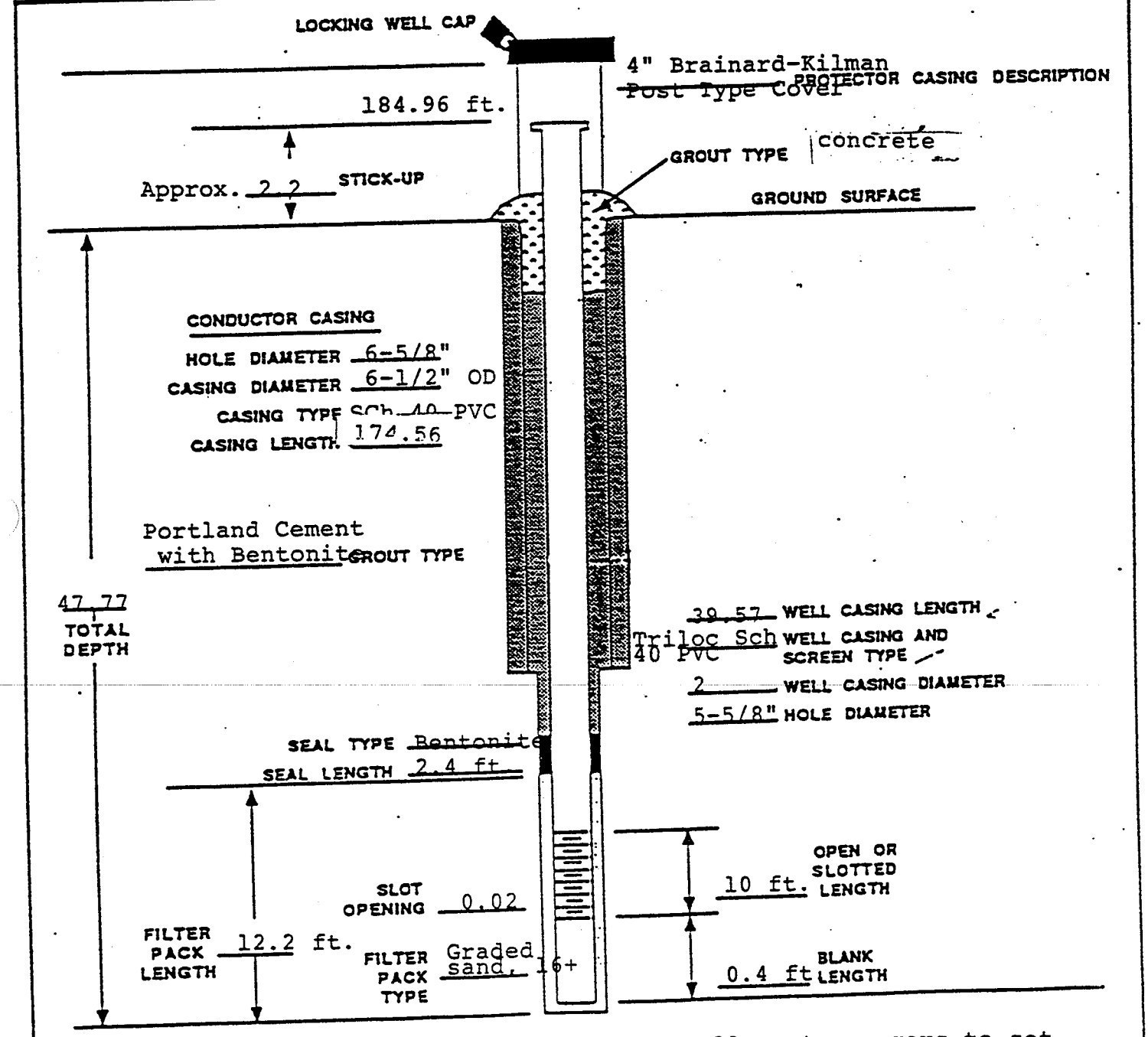
*THESE SHELBY TUBE SAMPLES OBTAINED IN BORING ____ DRILLED A FEW FEET FROM BORING ____
**STANDARD PENETRATION TEST

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington Company
LOCATION: Sylvania, Georgia
WELL NUMBER: UST-1D
DATE INSTALLED: November 6-7, 1988

ELEVATION: 184.96 FT (TOC) AMSL
☐ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



COMMENTS: The well was installed using hollow-stem augers to set an upper casing into the confining clay layer. Water was bailed from the hole. Mud drilling proceded through the clay layer to total depth.

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: November 7-8, 1988

Owner: Torrington Company
Well No: UST-1D
Location: Sylvania, GA
Driller: Paul Clawson
Geologist: M. Potts/E. Titcomb
Drilling Method: 6-3/4"OD HSA 5-5/8" Drag Bit

Screened From: _____ ft. to _____ ft.
Gravel Pack: _____ mesh to _____ ft.
Bentonite Seal: _____ ft. to _____ ft.
Concrete Seal from _____ ft. to surface
Water Level: _____ ft. below well top.
Well top elevation: 184.96 ft. _____ ft. (TOC)

Depth (feet) From	To	Lithology	Remarks
		See the well log for monitoring UST-1 down to the confining clay layer. The HSA augers bored to 14.0 ft. A piece of 6" Sch. 80 PVC was driven into the clay to a depth of 14.75 ft.	
0	14		
14		CL-Light greenish gray sandy clay, = 15% sand overall, but up to 50% in places, clay blebs intermixed. Poorly sorted	Sample #1 14-15.5 ft. SPT-8
		Light gray stiff fat clay with maroon blebs and thin 1/2" orange clayey sand layers, minor sand and silt (approx. 10%) (CH)	Sample #2 20.5-22.0-SPT-6
		Light greenish gray stiff, sandy (fine) to silty clay up to 20% sand (CL)	Sample #3 25.5-27.0ft.-SPT-4
		Same as above	Sample #4 30.5-32.0-SPT-14
		Light green stiff fat clay with up to 10% medium sand intermixed (CL-CH)	Sample #5 35.5-37.0-SPT-10
	38		
38	--	Light greenish gray silty fine to medium sand, poorly sorted up to 20% fines	Sample #6 40.5-42.0=SPT-3

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: _____

Owner: Torrington Co.
Well No: UST-1D
Location: ~~Sylvania, Georgia~~
Driller: Paul Clawson
Geologist: M. Potts/E. Titcomb
Drilling Method: 6-3/4" OD HSA 5-5/8"

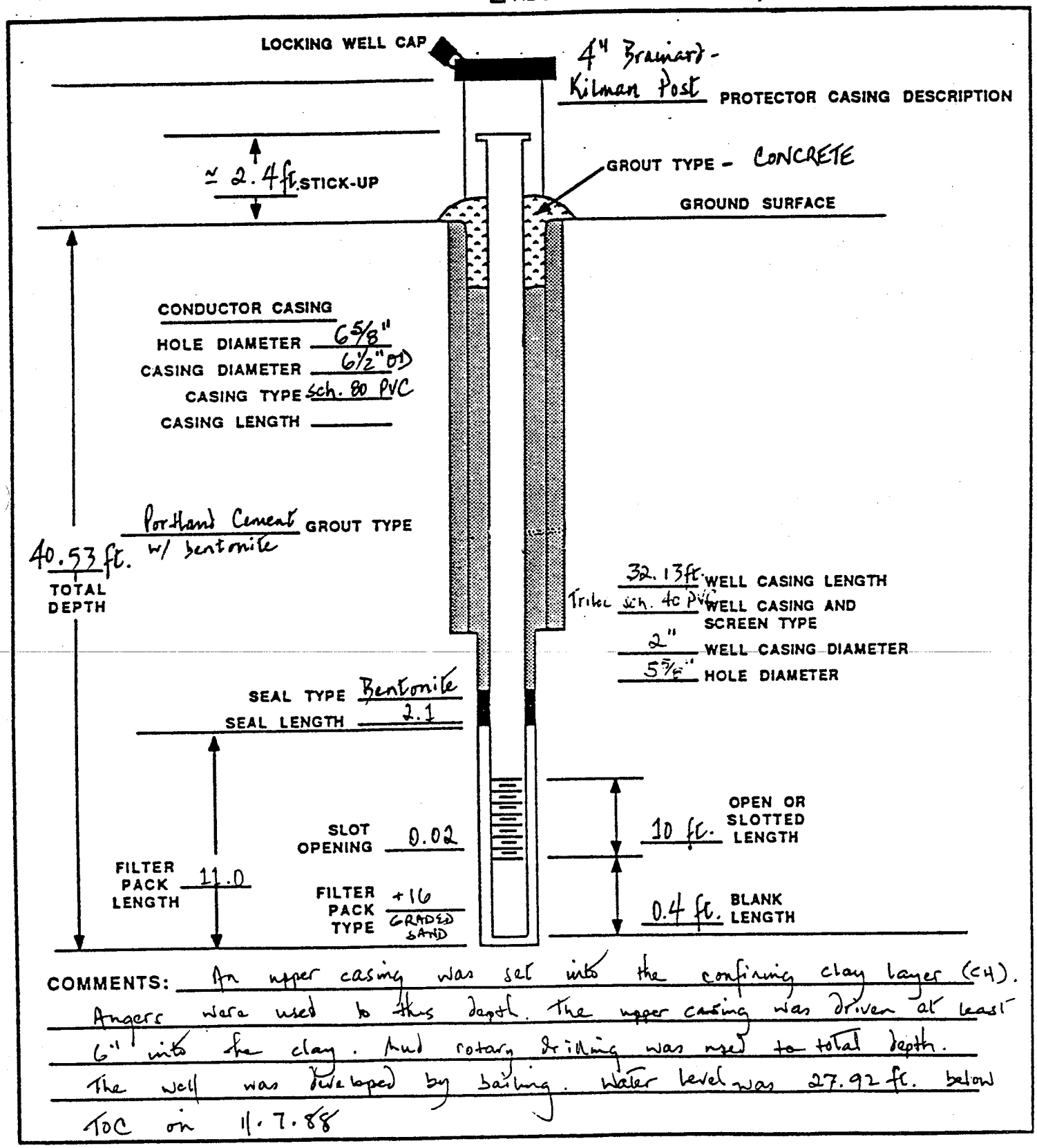
Screened From: _____ ft. to _____ ft.
Gravel Pack: _____ mesh to _____ ft.
Bentonite Seal: _____ ft. to _____ ft.
Concrete Seal from _____ ft. to surface
Water Level: _____ ft. below well top.
Well top elevation: _____ ft.

Depth (feet) From	To	Lithology	Remarks
		Light greenish gary well sorted, ~~very fine sand 1-2% black~~ mineral (SM) ~~Mn or PO4~~	~~Sample #6 45.5 - 47.0~~
			50.5 - 52.00
		Light gray very fine sand, up to 3% - 4% silt and clay	
		Total depth was achieved at 52 feet below land surface. This is approximately 15 feet into the uppermost aquifer.	

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: TORRINGTON CO.
LOCATION: Sylvania, Georgia
WELL NUMBER: WST-7D
DATE INSTALLED: November 6-7, 1988.
ELEVATION: 180.96 ft. AMSL (TOC)
☐ GROUND ☒ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☒ ABOVE MEAN SEA LEVEL



COMMENTS: An upper casing was set into the confining clay layer (CH). Augers were used to this depth. The upper casing was driven at least 6" into the clay. Mud rotary drilling was used to total depth. The well was developed by bailing. Water level was 27.92 ft. below TOC on 11.7.88

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: November 5-6, 1988

Owner: TORRINGTON CO.
Well No: UST-7D
Location: Sylvania, GA

Driller: PAUL CLAWSON
Geologist: E. TURCOMB
Drilling Method: HSA 6 5/8" OD to CLAY
Mud Rotary 5 5/8" Drag Bit Below

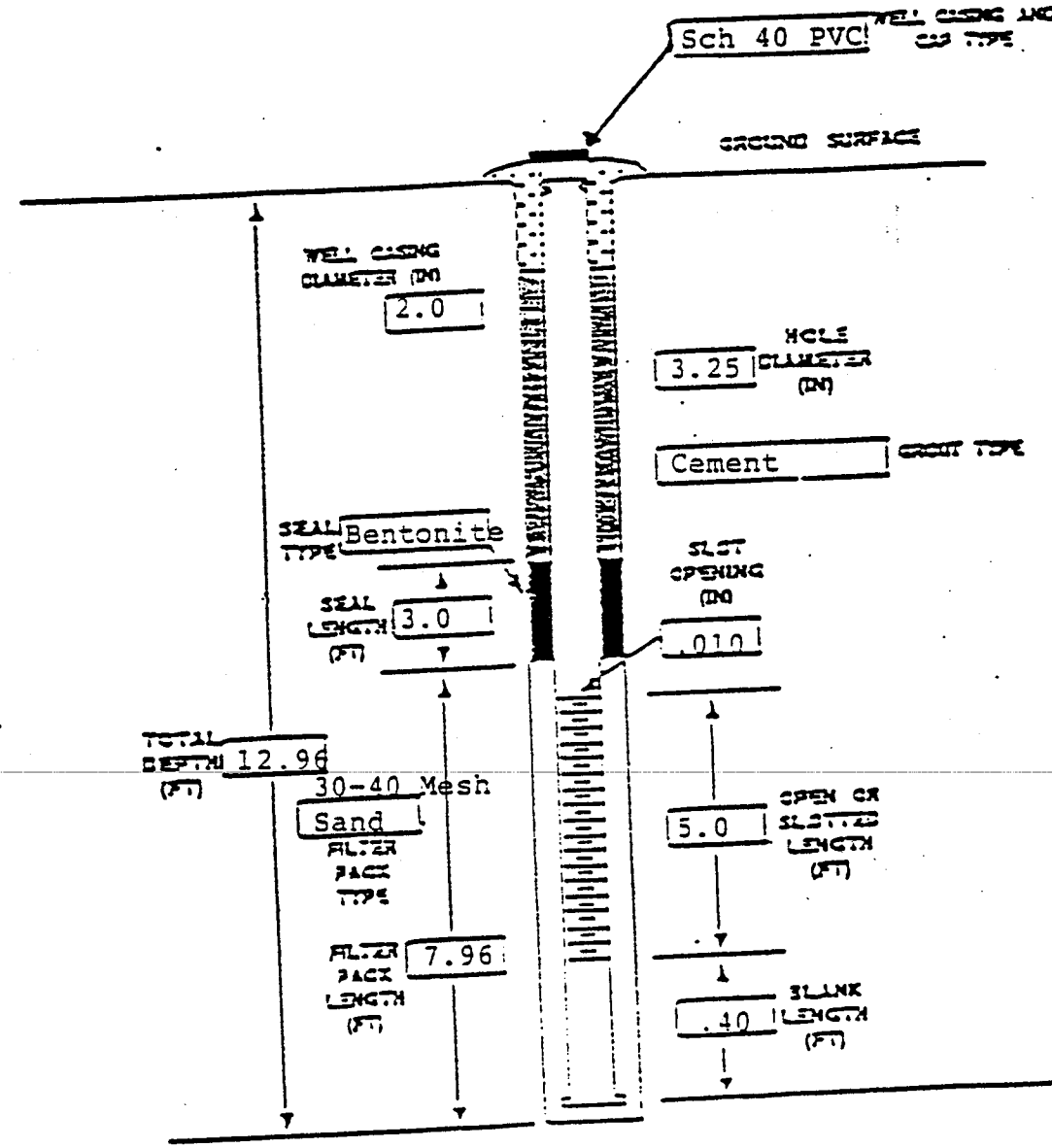
Water Level: 27.92 ft. below well top. (11.7.88)
Well top elevation: 180.96 AMSL ft. (TOC)

Depth (feet) From	To	Lithology	Remarks
		for log of 0 to 15.5 ft see the well log for UST-7S.	6" sch. 80 PVC was set to a depth of 15.9 ft BLS. It was driven the last 6 inches to seal off the shallow water table
11	20.5	Stiff pale olive green clay, some reddish mottling. (CH)	SAMPLE 4 20.5-22. SPT-13
20.5		Pale green gray sandy clay, 15% sandy interbeds. some orange silty zones	SAMPLE 5 25.5-27 SPT-17
	30.5	26.5-27 ft. high sand content (up to 10%) Thin sand layer at 30.9 ft.	
30.5	31.5	Pale green gray sandy clay - clayey sand ~30-50 (SC-CL)	SAMPLE 6 30.5-32 SPT-E
31.5	35.5	Orange medium to coarse sand - some small gravel with greenish gray clay layers (SP SC)	SAMPLE 7 35.5-37.0 SPT-
35.5		Greenish gray clayey medium to coarse sand (SC)	SAMPLE 8 40.5-42.0 SPT-
		Bottom of Hole - 42.0 feet. - At least 10 ft. below bottom of confining clay layer - into the uppermost aquifer.	

ENVIRONMENTAL MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington/Sylvania
LOCATION: Parking Lot at UST Area
WELL NUMBER: UST-14
DATE INSTALLED: September 29 1990
ELEVATION:
☒GROUND ☐CASING ☐PROTECTOR CASING
☐ABOVE GROUND LEVEL ☐ABOVE MEAN SEA LEVEL



COMMENTS: Well was installed using a hand auger and developed by surging with a PVC bailer.

Atlanta Environmental Management, Inc.

Monitoring Well Log

Date: September 29, 1989

Owner: Torrington Company
Well No: UST-14
Location: Parking Lot at UST Area

Driller: J. Waters
Geologist: R. Yarborough
Drilling Method: Hand Auger

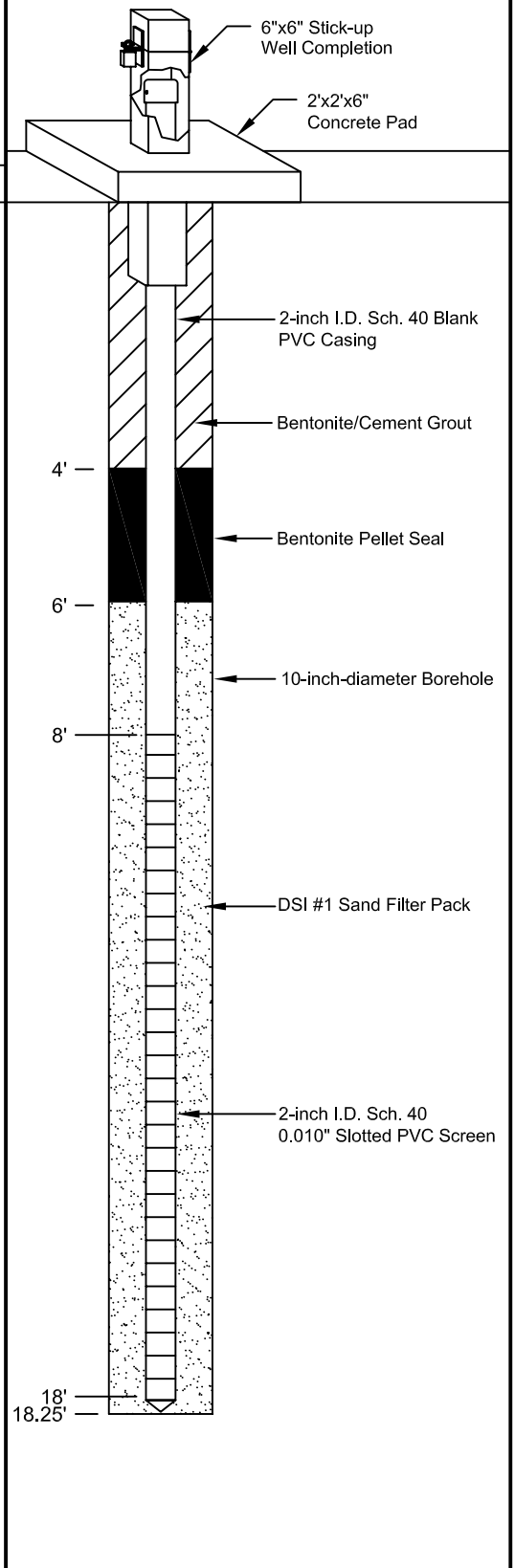
Screened From: 12.56 ft. to 7.56 ft.
Gravel Pack: 30-40 mesh to 5 ft.
Bentonite Seal: 5 ft. to 2 ft.
Concrete Seal from 1 ft. to surface
Water Level: ≅ 9 ft. below ~~weltcap~~ land
Well top elevation: _____ ft.s.l.
Well Materials: Triloc Sch. 40 PVC-2" (threaded) with a locking cap

Depth (feet) From	To	Lithology	Remarks
		See Log for Well UST-12	
		Total Depth: 13 feet BLS.	
		Several feet below the water table.	
		The well was developed by surging with	
		a PVC bailer.	

Monitoring Well B-3

Project: ***Ingersoll Rand - Sylvania***	Drill Rig: ***CME55 HSA Rig***	Top of Casing Elevation: ***NM***
Date: ***October 11, 2007***	Sampler: ***None***	Initial Groundwater Depth: ***NM***
Logged By: ***Ron Yarborough***	Hole Diameter: ***10-inch***	Final Groundwater Depth: ***NM***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
(Soil Lithology from 3-3-1989 Well Log) 0-14'; SC-Tan, orange, very fine, medium grained with clay matrix	SC		0 – 14		
14'-16': CL-Maroon, light gray, tough clay with trace sand.	CL		14 – 16		
16'-18': Light gray, orange, tan, sandy clay.	CL		16 – 18		
Terminate Boring			18 – 20		



AEM Atlanta Environmental Management, Inc.
Environmental Consulting, Engineering, Hydrogeologic Services
2580 Northeast Expressway • Atlanta Georgia 30345
Telephone: (404) 329-9006 • Fax: (404) 329-2057

Notes:
1. USCS = Unified Soil Classification System.
2. Groundwater measured from top of casing.

File name: G:\DWG\1162-0801\01\B-3 Well Log | Print Date: Print Date:

Project No. ***1162-0801-1***

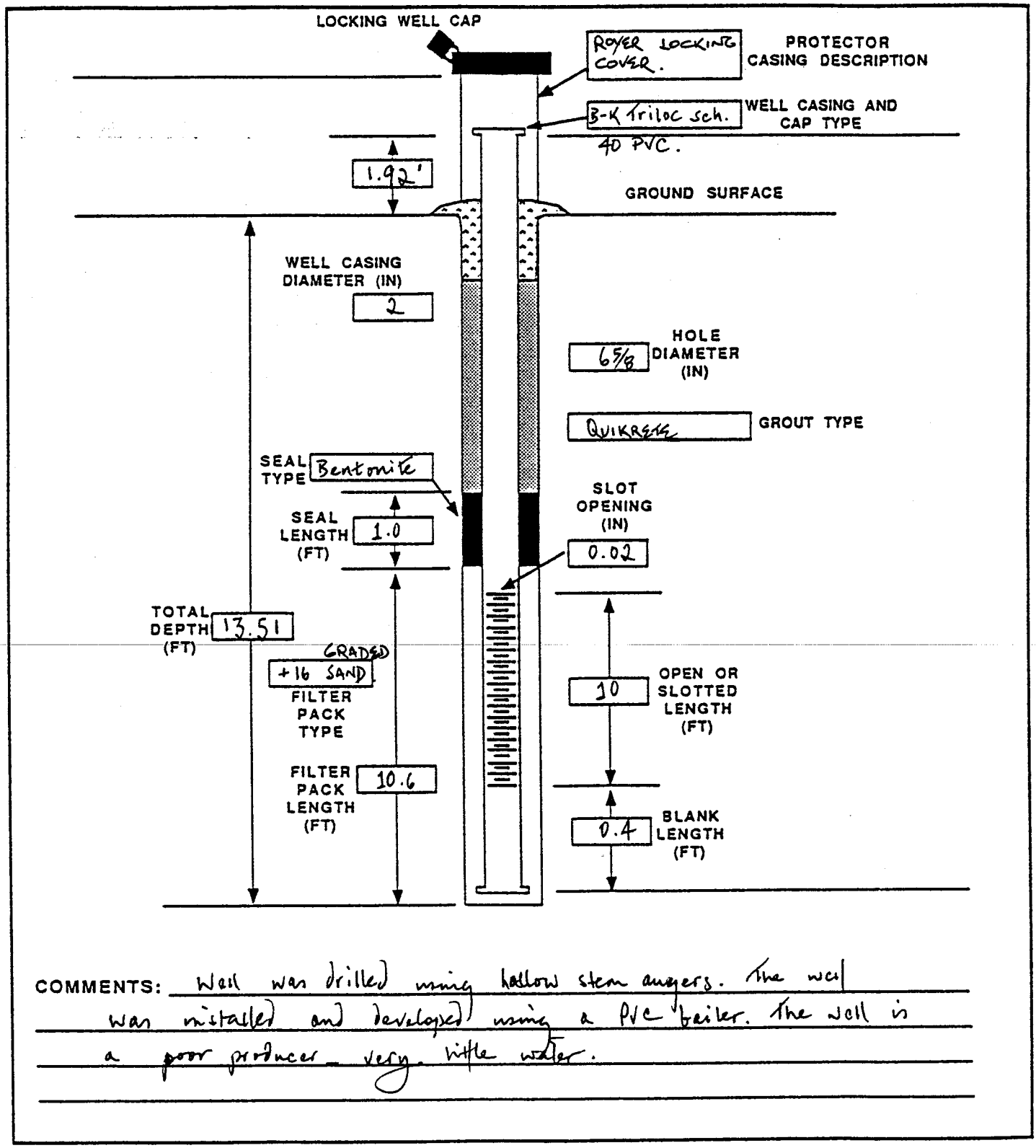
Page of

B-2 AREA

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: TORRINGTON CO.
LOCATION: SYLVANIA, GA.
WELL NUMBER: B-2 ELEVATION: 177.82 (TOC)
DATE INSTALLED: November 5, 1988 ☐ GROUND ☒ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



COMMENTS: Well was drilled using hollow stem augers. The well was installed and developed using a PVC bailer. The well is a poor producer - very little water.

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: NOVEMBER 5, 1988

Owner: TORRINGTON CO.
Well No: B-2
Location: SYLVANIA, GA
SE of DSA.
Driller: P. CLAWSON (Geothermics) Water Level: 13.46 ft. below well top. (12/14/88
Geologist: M. POTTS (AEM) Well top elevation: 177.82 ft.. ft.
Drilling Method: ~~Auger~~ HO

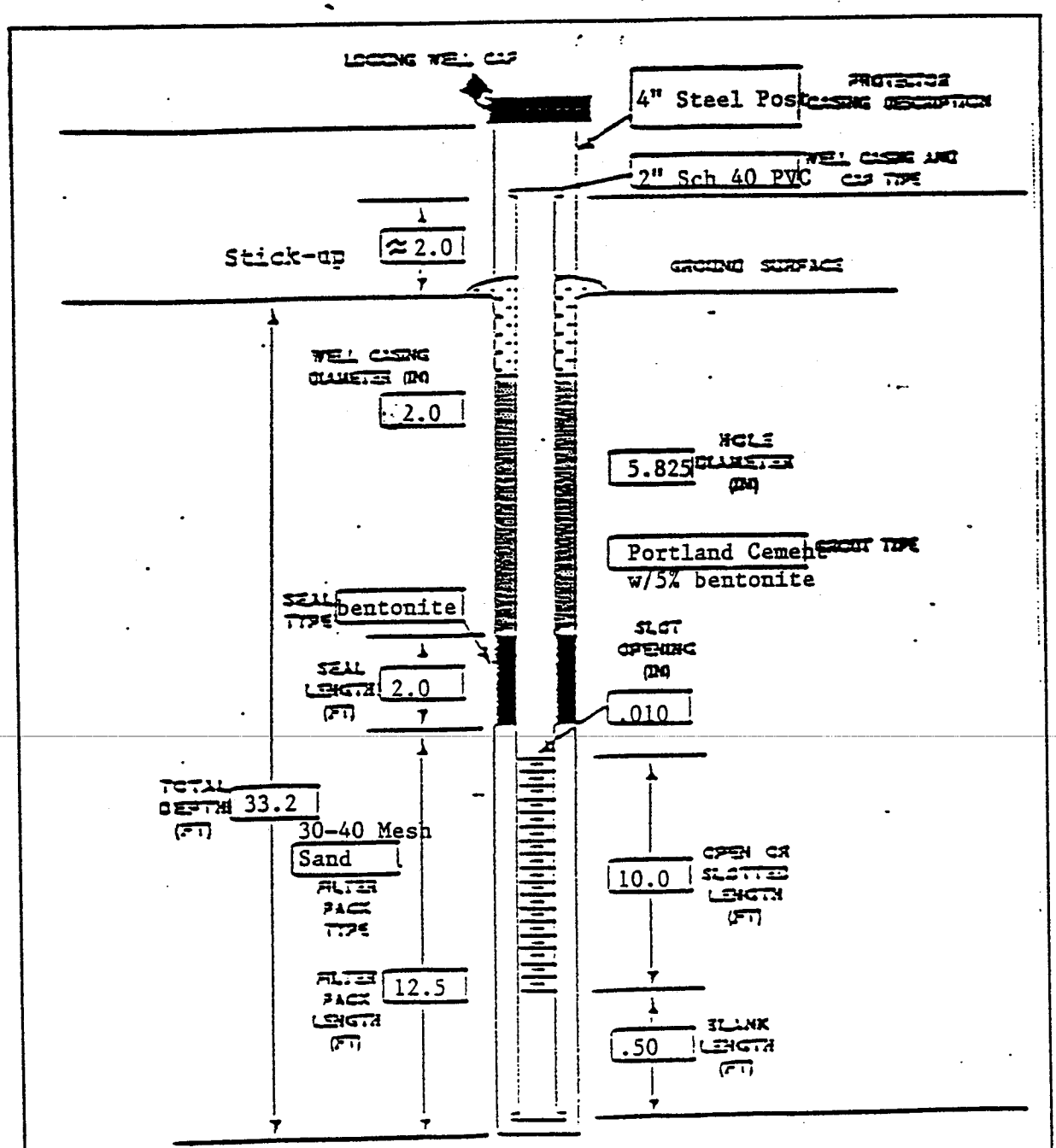
Depth (feet) From	To	Lithology	Remarks
0		Yellowish-brown clayey fine to medium sand, poorly ~~sorted~~. Mottled orange-yellow coloring on a light gray. ≈ 30% clay. (SC)	4-5½'. SAMPLE 1 6/9/14
	14		9-10½'. SAMPLE 2. 6/5/8
14		Stiff gray fat clay with ~~purple~~ mottling ≈ 30%.	14-15½' SAMPLE 3 5/8/9
		TD 15½'. Well was installed to monitor water quality in the perched water table. The well bottomed in the confining clay layer.	

ATLANTA ENVIRONMENTAL MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

Project: The Torrington Company
Location: Sylvania, Georgia
Well Number: B-2D
Date Installed: 7/1/90

Elevation:
☐ Ground ☒ Casing ☐ Protector Casing
☐ Above Ground Level ☒ Above Mean Sea Level



COMMENTS: Well was drilled using mud/rotary. After installation well was developed using PVC bailer.

Page _____ of _____

Atlanta Environmental Management, Inc.

Monitoring Well Log

Date: 7/11/90

Owner: The Torrington Company
Well No: B-2D
Location: Sylvania, Georgia
B-2 Area
Driller: Paul Clawson
Geologist: Ron Yarborough
Drilling Method: Mud/Rotary

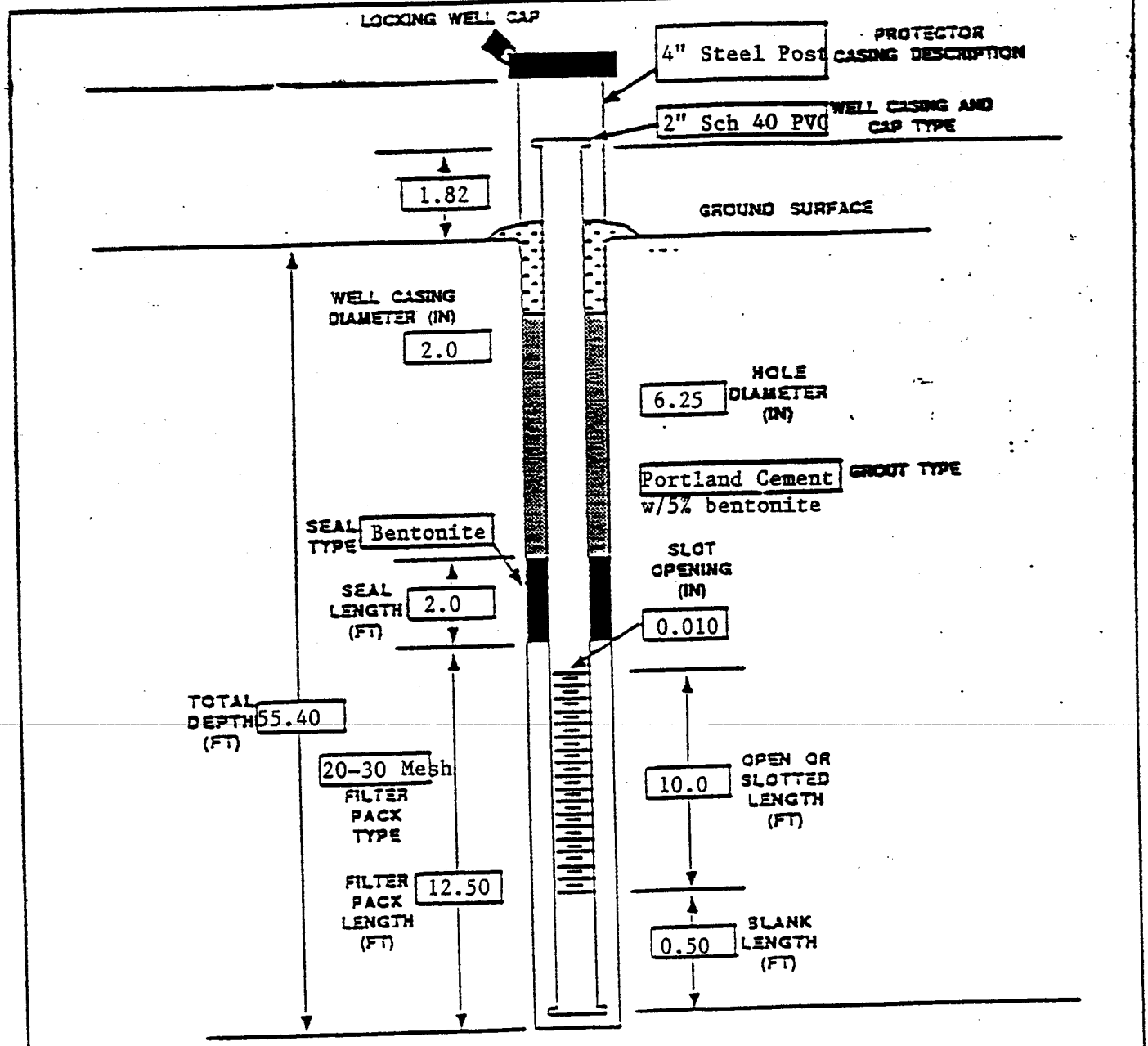
Screened From: 32.70 ft. to 22.70 ft.
Gravel Pack: 30-40 mesh to 20.7 ft.
Bentonite Seal: 20.7 ft. to 18.7 ft.
Concrete Seal from 18.7 ft. to surface
Water Level: 24.26 ft. below well top
Well top elevation: _____ ft.

Depth (feet) From	To	Lithology	Remarks
0.0	15.5	See well log for well B-2	
19.0	20.5	CL-light gray light green sandy clay	
		10-15% sand	Sample #1 19.0'-20.5
24.0	25.5	SC-orange, light gray, coarse grained	
		to fine grained sand with 10-15% clay	Sample #2 24.00'-25
	30.5	SC-orange, light gray coarse grained to	
		fine grained clayey sand with approximately	
		5% clay	Sample #3 29.0'-30.5
		Well was developed by using a PVC bailer	

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: The Torrington Company
LOCATION: Sylvania, Georgia
WELL NUMBER: B-2DD
DATE INSTALLED: 12/11/90
ELEVATION:
☐ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



COMMENTS: Well was installed using mud/rotary drilling. Drilling was terminated at 55.40' when rig was unable to penetrate formation. Well was developed using a dedicated bailer.

PAGE _____ OF _____

Atlanta Environmental Management, Inc.
Monitoring Well Log

Date: 12/11/90

Owner: The Torrington Company
Well No: B-2DD
Location: Sylvania, Georgia
B-2 Area
Driller: Paul Clawson
Geologist: Ron Yarborough
Drilling Method: Mud/Rotary

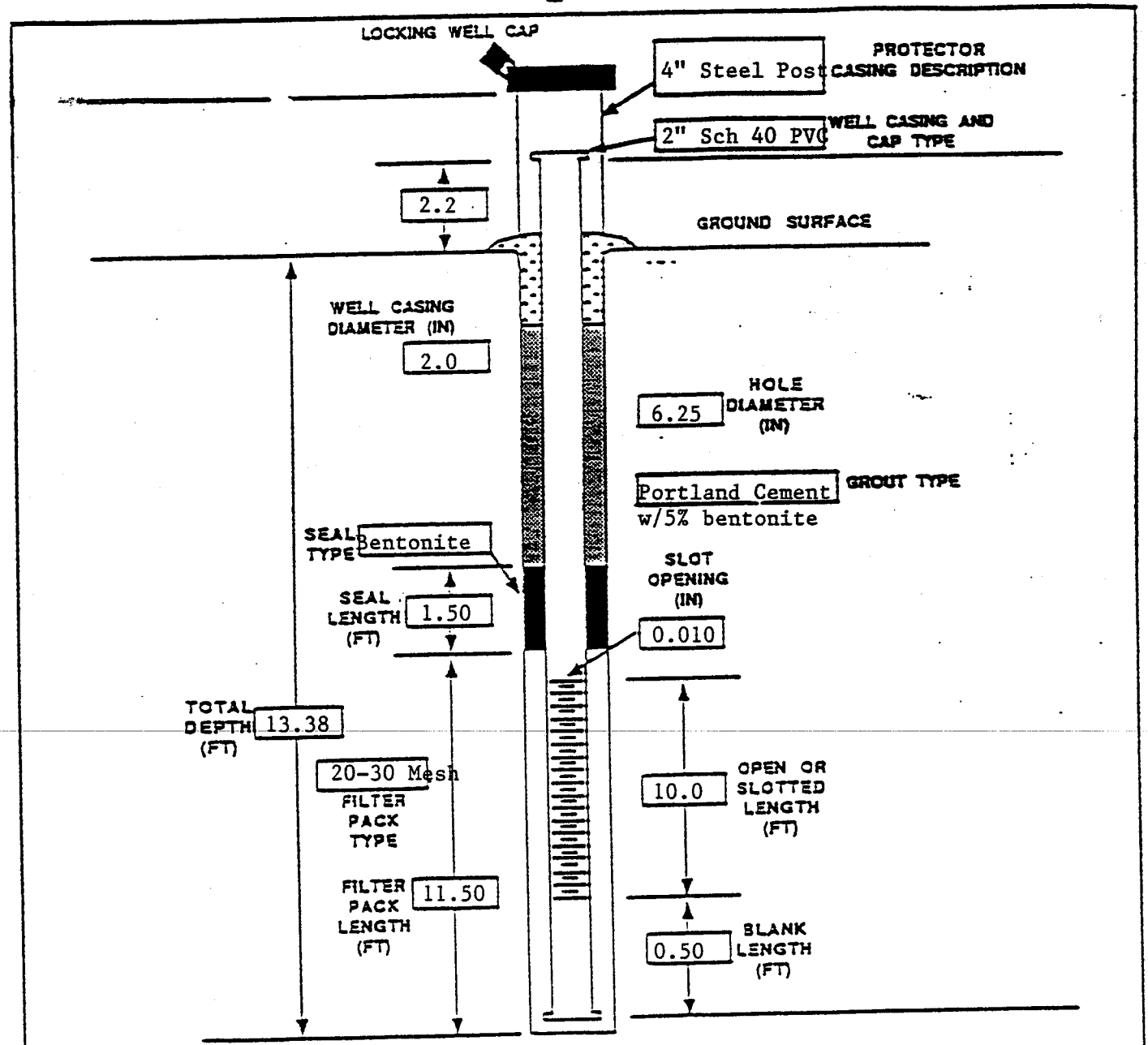
Screened From: 54.90 ft. to 44.90 ft.
Gravel Pack: 20-30 mesh to 42.90 ft.
Bentonite Seal: 42.90 ft. to 40.90 ft.
Concrete Seal from 40.90 ft. to surface
Water Level: _____ ft. below well top
Well top elevation: _____ ft.

Depth (feet) From	To	Lithology	Remarks
0.0	30.5	See well log for well B-2D	
30.5	33.0	SC-Tan, light gray, vfg-silt sand with less	
		than 5% clay	
33.0	48.0	SC/SP - light gray/white laminated layers of	
		unconsolidated sand and well cemented sand	
48.0	55.0	SP/LS-laminated layers of vfg well cemented sand/	
		unconsolidate vfg grading to silt unconsolidated	
		sand/thin beds of light gray/green micro-	
		crystalline limestone	

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: The Torrington Company
LOCATION: Sylvania, Georgia
WELL NUMBER: B-6
DATE INSTALLED: 12/11/90
ELEVATION:
☐ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



COMMENTS: Well was installed using 6.25" hollow-stem augers. After installation well was developed using a PVC bailer.

PAGE _____ OF _____

Atlanta Environmental Management, Inc.

Monitoring Well Log

Date: 7/18/90

Owner: The Torrington Company
Well No: Boring B-6
Location: Sylvania, Georgia
Approximately 125 ft.SW of B-2
Driller: Paul Clawson
Geologist: Ron yarborough
Drilling Method: 3 7/8" Augers

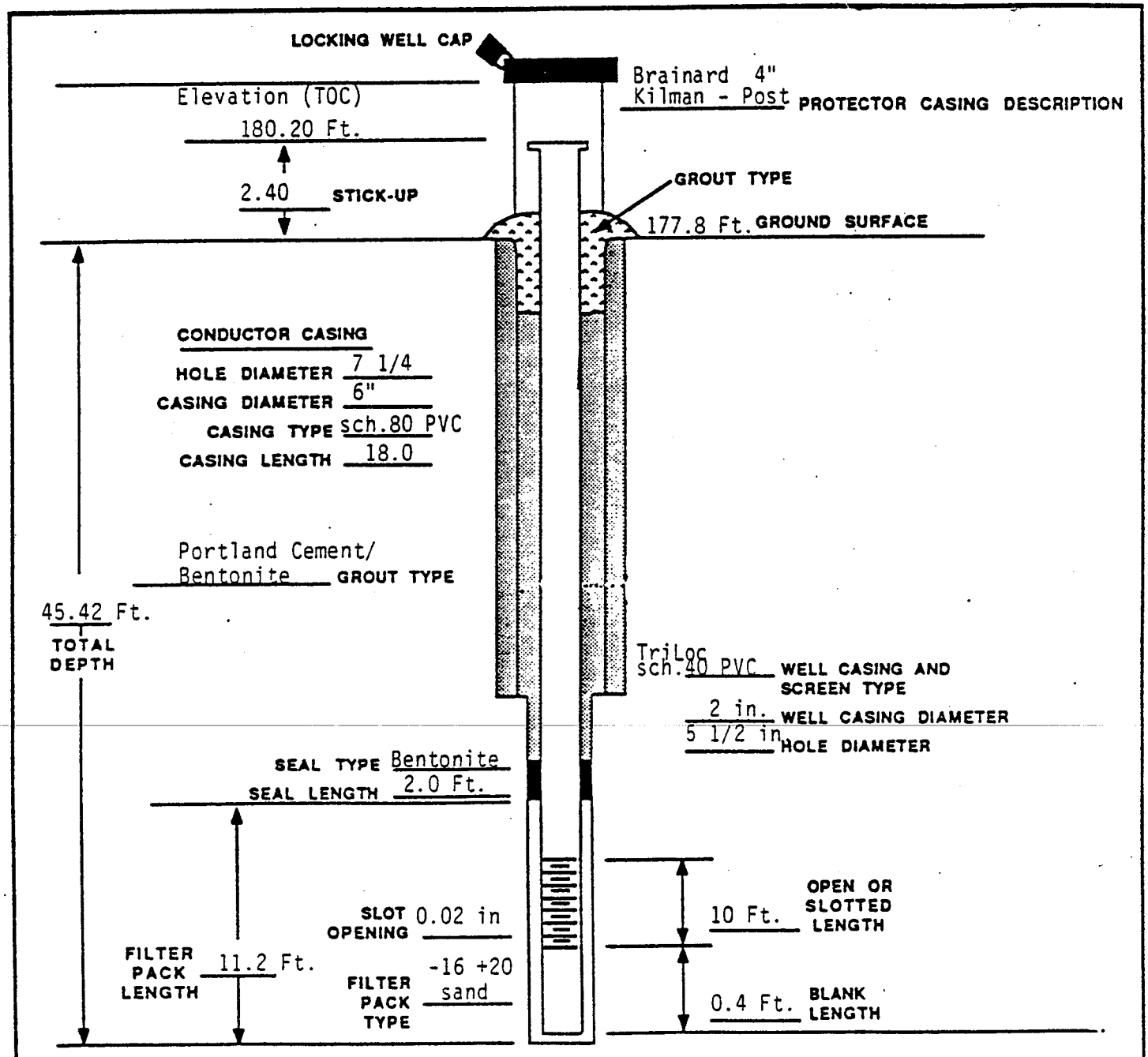
Screened From: 12.88 ft. to 2.88 ft.
Gravel Pack: 20-30 mesh to 1.88 ft.
Bentonite Seal: 1.88 ft. to 0.33 ft.
Concrete Seal from 0.33 ft. to surface
Water Level: _____ ft. below well top
Well top elevation: _____ ft.

Depth (feet) From	To	Lithology	Remarks
0.0	6.5	CH-Orange, Tan, light gray stiff clay	Sample #1 5.0'-6.5'
	11.5	CH-light gray, maroon, tan stiff clay	Sample #2 10.0'-11.5
	16.5	CL-light gray, light green sandy clay	
		with 15-20% sand	Sample #3 15.0'-16.5
	21.5	CL-light gray, light green sandy clay	
		with 15-20% sand.	Sample #4 20.0-21.5
		Boring was redrilled and a well was set 12/11/90	
		to a total depth of 13.38 feet.	

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington
LOCATION: Sylvania, GA
WELL NUMBER: W-23D
ELEVATION: 177.8 Ft. AMSL
DATE INSTALLED: March 22-23, 1988
☒ GROUND ☐ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



COMMENTS: Hollow stem augers were used to set the upper casing. Mud rotary drilling was used on the total depth. The well was installed and then developed using a Brainard-Kilman submersible hand pump.

Atlanta Environmental Management Inc.

Monitoring Well Lithologic Log

Date: March 22-23, 1988

Owner: Torrington Co.
Well No: W-23 D
Location: Midway between clubhouse & SE corner of property.
Driller: Paul Clawson
Geologist: Mark Potts
Drilling Method: HSA/Mud Rotary

Depth (feet) From	To	Lithology		Remarks
0		Yellowish brown silty fine sand. Very poorly sorted.	(SM)	Sample #1. 2.5-4 ft. 3-6-8
	9	Same as above.		Sample #2. 5-6.5 ft. 5-8-12
9	13	Purplish brown clayey (about 10-20%) fine to medium sand. Poorly sorted.	(SC)	more difficult drilling @ 9'. 10-11.5 ft. 7-12-12
13	18	Purplish green gray stiff clay.	(CH)	Sample #4. 15-16.5 ft.3-6-8
18		Light purplish gray silty fine sand (≈ 20% silt).	(SM)	Sample #5. 20-21.5 ft. No blow count
	27	Yellowish brown very poorly sorted clayey (≈10-20%) fine to med. sand.	(SC)	Sample #6. 25-26.5 ft. 3-6-8
27		Yellowish brown coarse to very coarse sand. Well sorted.	(SW)	Sample #7. 30-31.5 ft. 5-8-9
		Whitish gray well sorted coarse sand.	(SW)	Sample #8. 35-36.5 6-9-10
	43	Whitish gray silty (2-5%) coarse sand well sorted.	(SW)	Sample #9. 40-41.5 ft. 6-8-8
43		Stiff greenish gray fat clay.	(CH)	Sample #10. 45-46.5 ft. 6-14-43

LANDFILL AREA

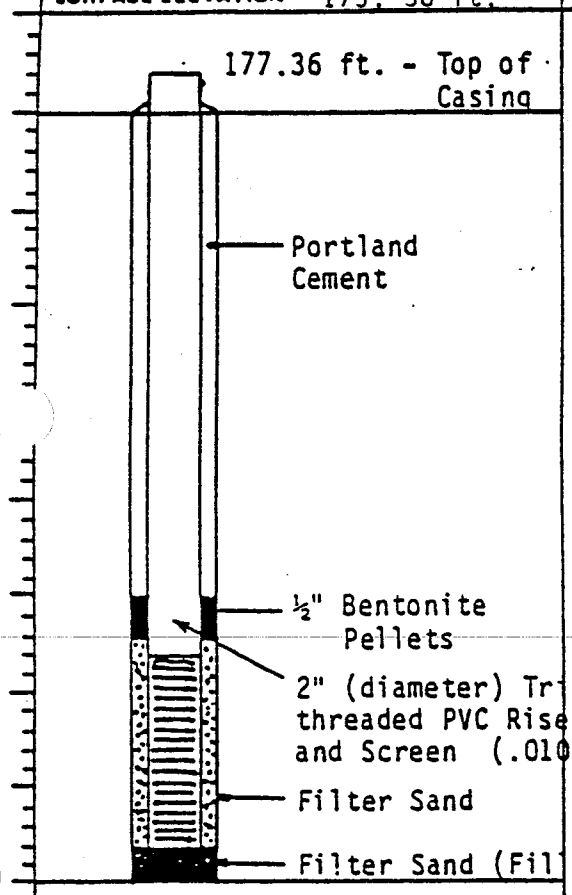
WELL CONSTRUCTION DIAGRAM

CLIENT The Torrington Company
BORING NO. L1
PROJECT NAME
JOB NO. DATE 6-24-86
PROJECT LOCATION Sylvania, GA
STATION
BORING METHOD
FOREMAN Bob Alexander (Sunrise/ATEC
ROCK CORE DIA. in.
INSPECTOR Mark A. Potts (SSA)
SHELBY TUBE O.D. in.

SOIL CLASSIFICATION
SURFACE ELEVATION- 175. 36 ft.

Stratum Depth, Ft.	Ground Water	Depth Scale, Ft.	SPT ** Sample No.	SPT ** Blows/6 in. 3—6 in. Increments	SPT ** Recovery, %	Shelby Tube No.

BORING & SAMPLING NOTES



Hole was drilled to a depth of 15 feet using a 6" (OD) hollow-stem auger. A 16 feet section of 6" schedule 80 PVC was lowered into the hole and driven with the 140 lb hammer until securely seated in the confining layer. Using a bentonite drilling mud, drilling continued using a 5 1/4" roller bit. Filter sand was laid down using tremie pipe. The well was developed using a hand pump. A locking cover was installed to secure the well.

BORING METHOD
HSA – HOLLOW STEM AUGER
CFA – CONTINUOUS FLIGHT AUGER
DC – DRIVEN CASING
✓MD – MUD DRILLING

GROUND WATER
NOTED ON RODS ____FT.
AT COMPLETION ____FT.
____FT.

*THESE SHELBY TUBE SAMPLES OBTAINED IN BORING ____ DRILLED A FEW FEET FROM BORING ____
**STANDARD PENETRATION TEST

RECORD OF SOIL EXPLORATION

CLIENT The Torrington Company
BORING NO. L1 (Landfill)
PROJECT NAME
JOB NO. DATE 6-24-86
PROJECT LOCATION Sylvania, GA
STATION
BORING METHOD Mud Rotary Drill, 5½" Roller Bit
FOREMAN Bob Alexander (Sunrise/Atec
ROCK CORE DIA. in.
INSPECTOR Mark A. Potts (SSA)
SHELBY TUBE O.D. in.

SURFACE ELEVATION- 175.36 ft.

SOIL CLASSIFICATION	Stratum Depth, Ft.	Ground Water	Depth Scale, Ft.	SPT ** Sample No.	SPT ** Blows/6 in. 3rd-4th in. Increments	Recovery, %	Shelby Tube No.	BORING & SAMPLING NOTES
			0					yellow-brown clayey medium SAND, very dense at surface (SC)
			5	1	12 10 8			medium compact mottled yellow-brown clayey medium to fine SAND (SC)
			10	2	6 7 8			medium compact mottled reddish-brown clayey medium to fine SAND (SC)
	14.2		15	3	7 6 9			stiff greenish gray CLAY w/ purple mottling, trace sand (CH)
			20	4	5 7 14			very stiff greenish gray CLAY with purple mottling, sandy layer at 18.5' (CH)
	27		25	5	7 9 12			very stiff greenish gray CLAY, sandy (CH)
			30	6	5 7 11			medium compact yellow-brown laminated fine SAND, clayey at top (SP)

BORING METHOD
HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
MD - MUD DRILLING
RC - ROCK CORING

GROUND WATER
▽ NOTED ON RODS ____FT.
▽ AT COMPLETION ____FT.
▼ AFTER ____HRS. ____FT.

*THESE SHELBY TUBE SAMPLES OBTAINED IN BORING ____ DRILLED A FEW FEET FROM BORING ____
**STANDARD PENETRATION TEST

RECORD OF SOIL EXPLORATION

CLIENT The Torrington Company
PROJECT NAME
PROJECT LOCATION Sylvania, GA
BORING METHOD Mud Rotary Drill, 5½" Roller Bi
ROCK CORE DIA. ____ in.
SHELBY TUBE O.D. ____ in.

BORING NO. L1 (Landfill)
JOB NO. ____ DATE 6-24-86
STATION
FOREMAN Bob Alexander (Sunrise/ATE
INSPECTOR Mark A. Potts (SSA)

SOIL CLASSIFICATION (SURFACE ELEVATION- 175.36 ft)	Stratum Depth, Ft.	Ground Water	Depth Scale, Ft.	SPT ** Sample No.	SPT ** Blows/6 in. 3-6 in. Increments	SPT ** Recovery, %	Shelby Tube No.	BORING & SAMPLING NOTES
			35	7	4 5 9			medium compact gray laminated medium to fine SAND, clayey. purple mottling, black blebs and thin lenses of CL noted. (SC)
			40	8	3 4 7			medium compact fine SAND, clayey. Thin lenses of CL noted. (SC)

BORING METHOD
HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
MD - MUD DRILLING
RC - ROCK CORING

GROUND WATER
▽ NOTED ON RODS ____ FT.
▼ AT COMPLETION ____ FT.
▼ AFTER ____ HRS. ____ FT.

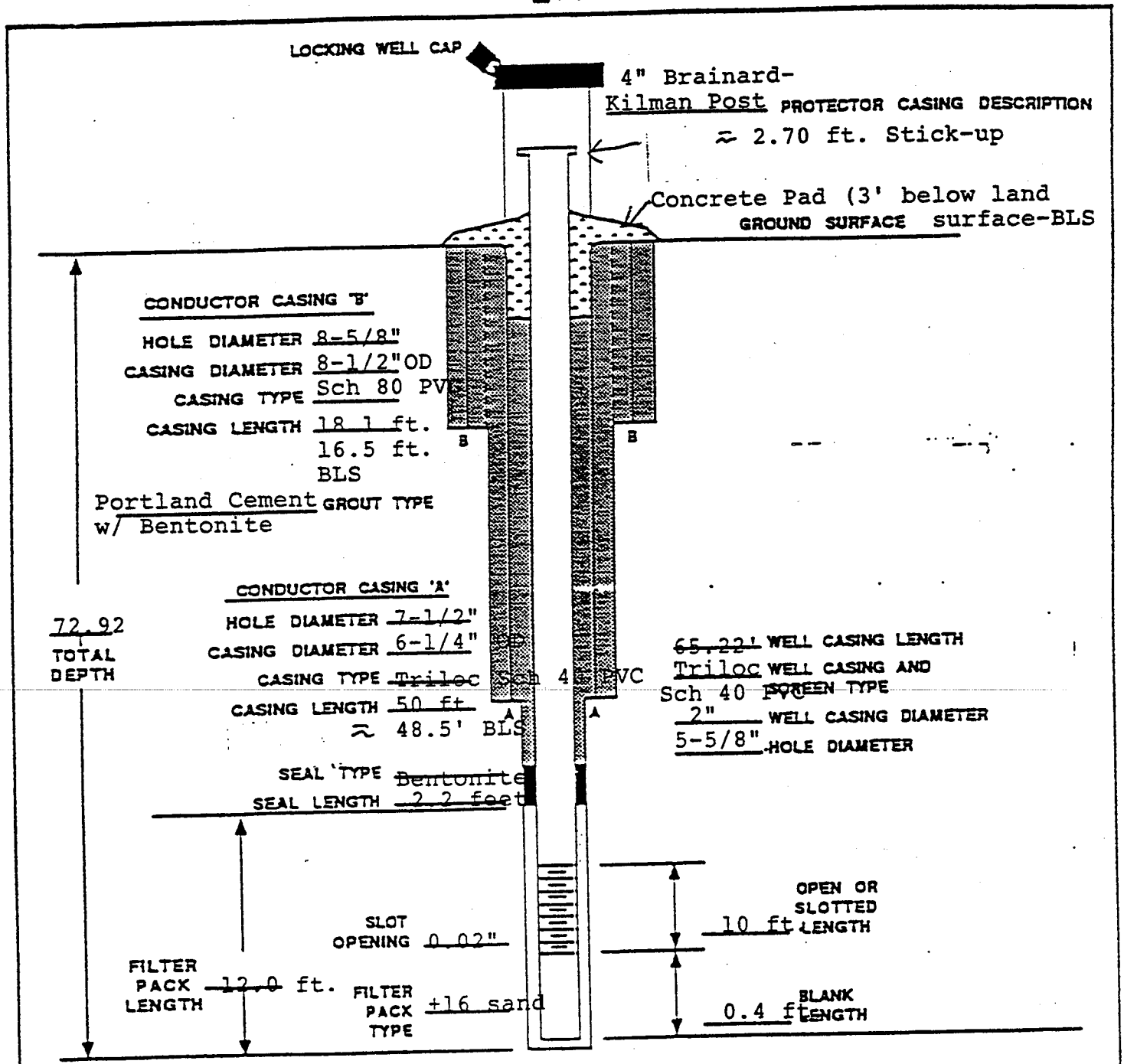
*THESE SHELBY TUBE SAMPLES OBTAINED IN BORING ____ DRILLED A FEW FEET FROM BORING ____
**STANDARD PENETRATION TEST

ATLANTA
ENVIRONMENTAL
MANAGEMENT INC.

WELL CONSTRUCTION DIAGRAM

PROJECT: Torrington Company
LOCATION: Sylvania, Georgia
WELL NUMBER: L-1D
DATE INSTALLED: November 9-11, 1988

ELEVATION: 178.65 ft. AMSL (TOC)
☐ GROUND ☒ CASING ☐ PROTECTOR CASING
☐ ABOVE GROUND LEVEL ☐ ABOVE MEAN SEA LEVEL



COMMENTS: The upper sand section was mud rotaried and set. The second casing was set to a depth of within 48.5 ft. below land surface. Twenty feet of bentonite grout (volclay) sealed the hole on the bottom. Well was drilled to total depth using hand drilling. All water and mud was excavated between steps of all equipment was decontaminated. Volclay was allowed to set at least 12 hrs. (Greater than 8 hrs. recommended.)

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: November 14-16, 1988

Owner: Torrington Co.
Well No: L-1D
Location: Sylvania, Ga Landfill
Driller: P. Clawson (Geothermics)
Geologist: M. Potts
Drilling Method: HSA/Mud Rotary

Screened From: _____ ft. to _____ ft.
Gravel Pack: _____ mesh to _____ ft.
Bentonite Seal: _____ ft. to _____ ft.
Concrete Seal from _____ ft. to surface
Water Level: 50.25 ft. below well top. (12/14/88)
Well top elevation: 178.65 AMSL ft. (TOC)

Depth (feet) From	To	Lithology	Remarks
0	30 ft.	See well log for monitoring well L-1 logging for this well began at 40 ft.	
		SM-Light yellowish gray silty fine to medium sand. Fines 5-10% Moderately well sorted (SM)	Sample #1 34-35.5
		Light greenish gray color silty fine to medium sand approx 1% mafic minerals (SM)	Sample #2 39-40.5
		Light greenish gray very poorly sorted clayey fine to medium sand approx 5-10% clay. 5-10% Very coarse sand - fine gravel (SC)	Sample #3 44-45.5
		Light gray silty fine sand, very well sorted approx 5% fines. (SM)	Sample #4 49-50.5
		Light greenish gray clayey poorly sorted, fine to medium sand approx. 10-15% clay. Very dry. Hard minor staining (SC)	Sample #5 54-54.5
	57	Green fat clay with interbeded fine clayey sand 80% C4	
57		20% SC Stiff Hard (CH)	Sample #6 59-60.5
	65	Greenish gray stiff fat clay with intermixed fine sand approx 10% dry. (CH)	Sample #7 64.5-65
65		Light greenish gray moderately well sorted fine to medium sand,	Sample #8 65-65.5

Atlanta Environmental Management Inc.

Monitoring Well Log

Date: November 14-16, 1988

Owner: Torrington Co.
Well No: L-1D
Location: Sylvania, Georgia Landfill
Driller: _____
Geologist: _____
Drilling Method: _____

Screened From: _____ ft. to _____ ft.
Gravel Pack: _____ mesh to _____ ft.
Bentonite Seal: _____ ft. to _____ ft.
Concrete Seal from _____ ft. to surface
Water Level: _____ ft. below well top.
Well top elevation: _____ ft.

Depth (feet) From	To	Lithology	Remarks
		less than fines (SW)	
		Lost sample, washed out	69-70.5
		Total depth 74.0 feet. Well screen	
		was set at least 25 feet from	
		bottom of screen in well L-1.	

RECORD OF SOIL EXPLORATION

CLIENT The Torrington Company
BORING NO. LF-3
PROJECT NAME Phase I Groundwater Assesment
JOB NO. DATE 3/21/8
PROJECT LOCATION Sylvania, GA.
STATION Landfill Area
BORING METHOD 5" I.D. Hand Auger (Stainless)
FOREMAN Mike Sheehan
INSPECTOR Mark Potts
ROCK CORE DIA. in.
SHELBY TUBE O.D. in.

SOIL CLASSIFICATION
SURFACE ELEVATION- 176.19

DEPTH FT.

SPT **
Sample No. | Blows/6 in. 3 of 6 in. Increments | Recovery, % | Shelby Tube No.

BORING & SAMPLING NOTES

Locking Well Cover — 0

Top of casing @ 175.94

Grouted to land surface with 10:1 mix of Portland cement & grit bentonite

Top of seal @ 174.44

Bentonite pellet seal

Top of sand filter pack @ 172.34

2" ID Trilock schedule 40 PVC riser pipe

Top of screen @ 170.94

2" ID Trilock .010" slotted PVC well screen

Sand filter pack (30-40 mesh)

Diameter of borehole: 5¼"

Bottom of screen @ 160.94

Total depth of hole: 15.70 ft

NOTE: Diagram not to scale.

BORING METHOD
HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
MD - MUD DRILLING

GROUND WATER
NOTED ON RODS ____FT.
AT COMPLETION ____FT.
AFTER ____HRS. ____FT.

**THESE SHELBY TUBE SAMPLES OBTAINED
BORING ____ DRILLED A F
FEET FROM BORING ____
...ETRATION TEST

The Torrington Company — BORING NO. LF-3

NAME Phase I Groundwater Assesment — JOB NO. — DATE 3/21/87

PROJECT LOCATION Sylvania, GA. — STATION Landfill area

BORING METHOD 5" I.D. Hand Auger (Stainless) — FOREMAN Wyman Harley

ROCK CORE DIA. ____ in. — INSPECTOR Michael Sheehan

SHELBY TUBE O.D. ____ in.

SURFACE ELEVATION- 176.19

SOIL CLASSIFICATION	DEPTH	SPT ** Sample No.	SPT ** Blows/6 in. (Last 12 in. Increments)	SPT ** Recovery, %	Shelby Tube No.	BORING & SAMPLING NOTES
	FT.					
	0					12
(0-1.0) Light gray-brown, well sorted, fine gr., quartz sand with minor silt. Minor organic matter. Possibly fill.						
(1.0-3.0) Light gray-brown, well sorted, fine gr., quartz sand, approx. 15% silt.	2					14
(3.0-8.0) Orange-brown, moderately sorted, fine to medium gr., quartz sand. Approx. 30% silt/clay.	4					(14.8-15.5) Compentent, dark maroon and gray, fat clay.
	6					16
						Note: At approx. 9.0 ft., bore hole walls began to collapse. Cased 0-10.0 ft. with 4" I.D. PVC pipe. Remainder of hole bored with 3.25" I.D. hand auger.
	8					
(8.0-14.4) Orange-brown, moderately sorted, fine to medium gr., quartz sand with maroon mottling. Approx. 30-50% silt/clay. Increasing clay content with depth.						Rational for discontinuing hole: CH horizon intersected.
	10					
	12					Total Depth: 15.5

BORING METHOD
HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
MD - MUD DRILLING
RC - ROCK CORING

GROUND WATER
NOTED ON RODS ____FT.
AT COMPLETION ____FT.
AFTER ____HRS. ____FT.

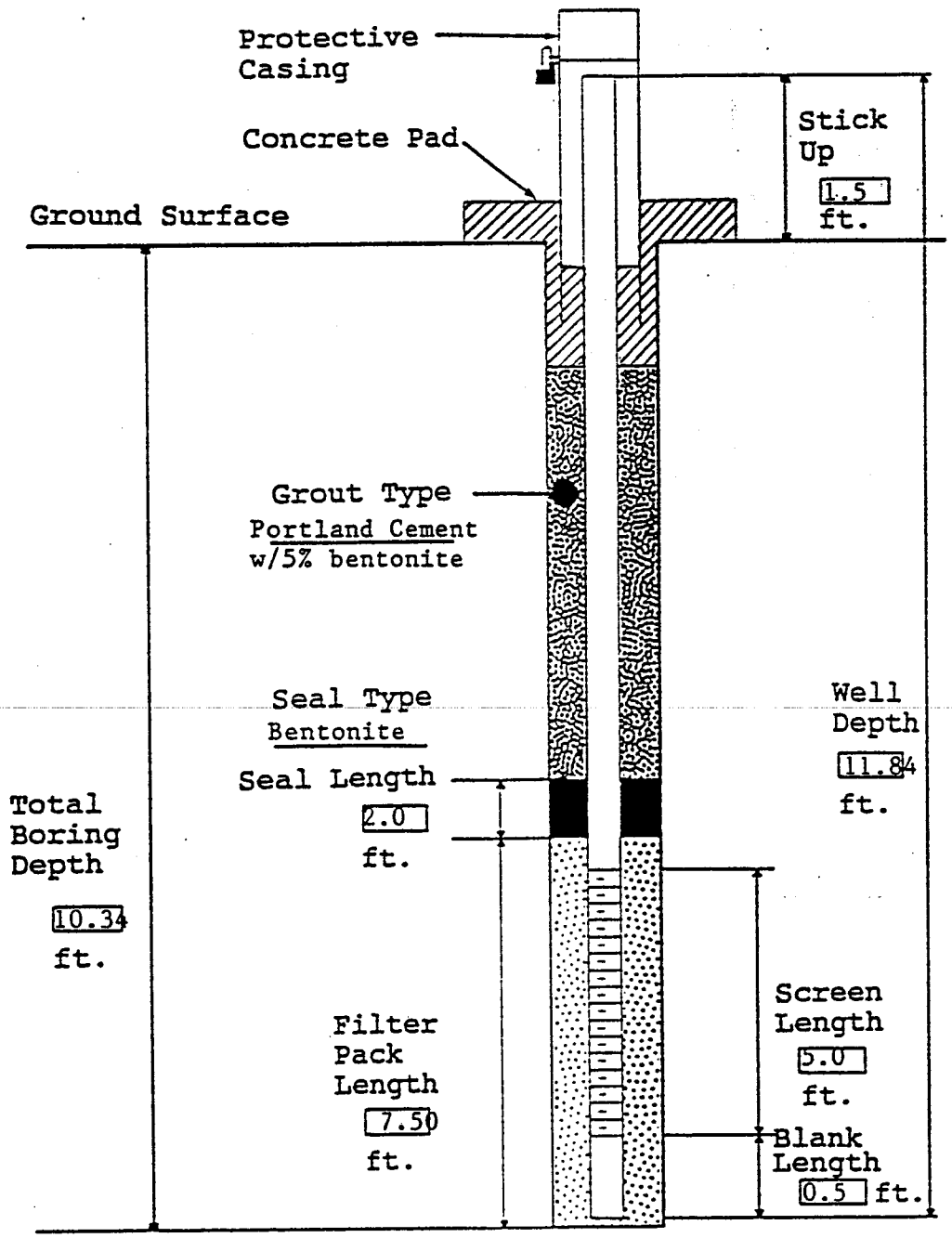
*THESE SHELBY TUBE SAMPLES OBTAINED IN BORING ____ DRILLED A FEW FEET FROM BORING ____

**STANDARD PENETRATION TEST

ATLANTA ENVIRONMENTAL MANAGEMENT, INC.

WELL CONSTRUCTION DIAGRAM

Project: Torrington Company
Location: Sylvania, GA
Well Number: LF-5 Ground Elevation(AMSL): 170.82
Date Installed: 12/3/91 Casing Elevation(AMSL): 172.32
Hole Diameter[in]: 8.25 Filter Pack Type: 20-30 mesh sand
Well Casing Diameter[in]: 2.0 Slot Opening[in]: 0.010



Comments: Boring was dry-a monitoring well was installed to monitor area down-gradient of proposed collection trench.
Well Development: Well was developed on 1/7/92 using a PVC bailer.

Atlanta Environmental Management, Inc.
Monitoring Well Log

Date: 12/3/91

Owner: Torrington Company
Well No: LF-5
Location: Sylvania, Georgia

Driller: Paul Clawson
Geologist: Ron Yarborough
Drilling Method: 4 1/4" ID HSA

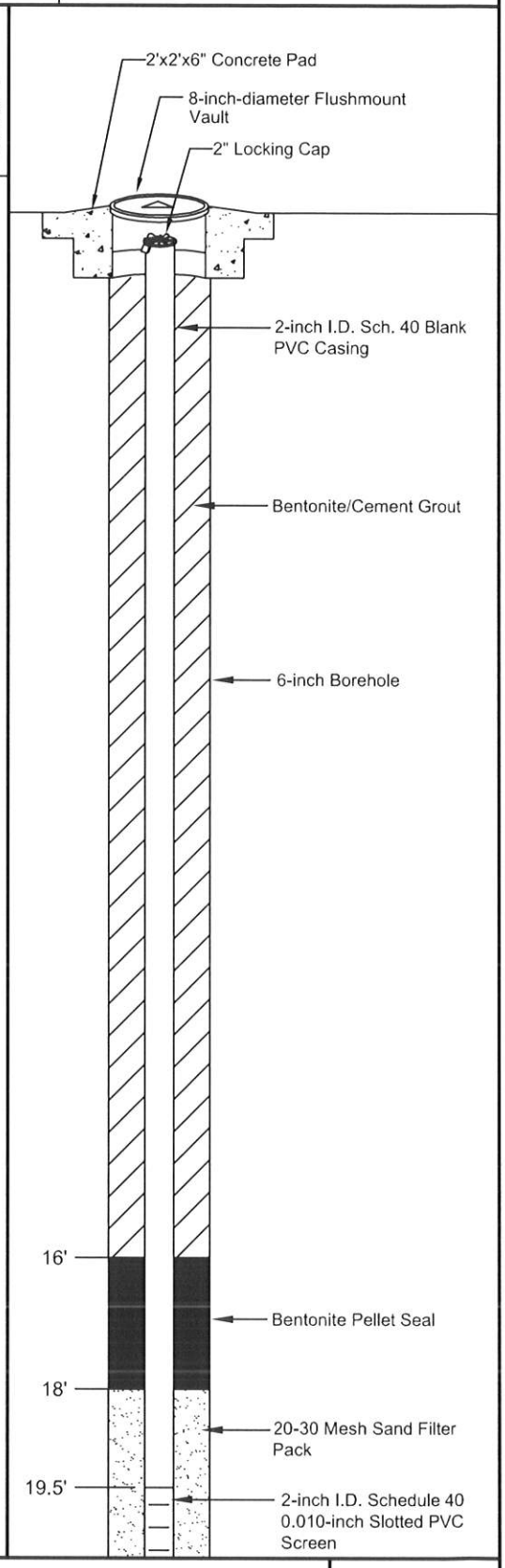
Screened From: 9.84 ft. to 4.84 ft.
Gravel Pack: 20-30 mesh to 2.84 ft.
Bentonite Seal: 2.84 ft. to 0.84 ft.
Concrete Seal from 2.84 ft. to surface
Water Level: 9.84 ft. below well top
Well top elevation: 172.32 ft.

Depth (feet) From	To	Lithology	Remarks
0.0	10.0	SM-Tan, brown, fine grained to very fine grained	Sample #1
		silty sand	4.0'-5.5'
10.0	11.0	CH-light gray, orange, maroon, stiff clay with	Sample #2
		less that 5% sand	9.0'-10.5'
		Boring was terminated at 10.0 ft. when stiff	
		clay was encountered	

Monitoring Well DGA-1

Project: ***IR-Timken Remediation***	Drill Rig: ***Geoprobe 8040 DT***	Top of Casing Elevation: ***185.86 ft. AMSL***
Installation Date: ***12/30/08***	Sampler: ***A & E Drilling LLC***	Initial Groundwater Depth: ***~27.05 ft. BLS***
Logged By: ***David Scruggs/Gerald Ingle***	Hole Diameter: ***6 - inch***	Final Groundwater Depth: ***28.78 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Dark brown, silty SAND, slightly moist, no plasticity, faint odor.	SM		0 to 3		
Light brown to red, clayey SAND, moist, low plasticity, no odor.	SC		5 to 10		
Light brown to red, SAND, trace silt, moist, low plasticity, no odor.	SM		10 to 15		



Atlanta Environmental Management, Inc.
Environmental Consulting, Engineering, Hydrogeologic Services
2580 Northeast Expressway • Atlanta Georgia 30345
Telephone: (404) 329-9006 • Fax: (404) 329-2057

Notes:
1. USCS = Unified Soil Classification System.
2. Groundwater measured from top of casing.

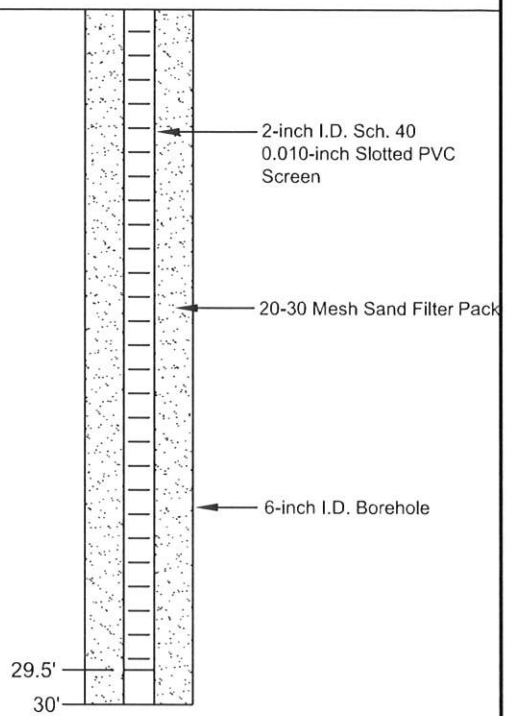
File name: G:\DWG\1162-0901 Sylvania\06\RFI Report\Well Logs | Print Date: 2009-06-19

Project No. ***1162-0901-6***

Monitoring Well DGA-1

Project: ***IR-Timken Remediation***	Drill Rig: ***Geoprobe 8040 DT***	Top of Casing Elevation: ***185.86 ft. AMSL***
Installation Date: ***12/30/08***	Sampler: ***A&E Drilling LLC***	Initial Groundwater Depth: ***~ 27.05 ft. BLS***
Logged By: ***David Scruggs/Gerald Ingle***	Hole Diameter: ***6-inch***	Final Groundwater Depth: ***28.78 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Light brown to red, SAND, trace silt, moist, low plasticity, no odor.	SM		20 – 25		
Brown and white, mottled CLAY, moist at 25'.	CH/ CL		25 – 29		
Sand stringer, wet.	SM		29		
Purple/gray, mottled CLAY, high plasticity, damp, no odor.	CH		29 – 30		
Terminated boring.			30 – 40		



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Notes:
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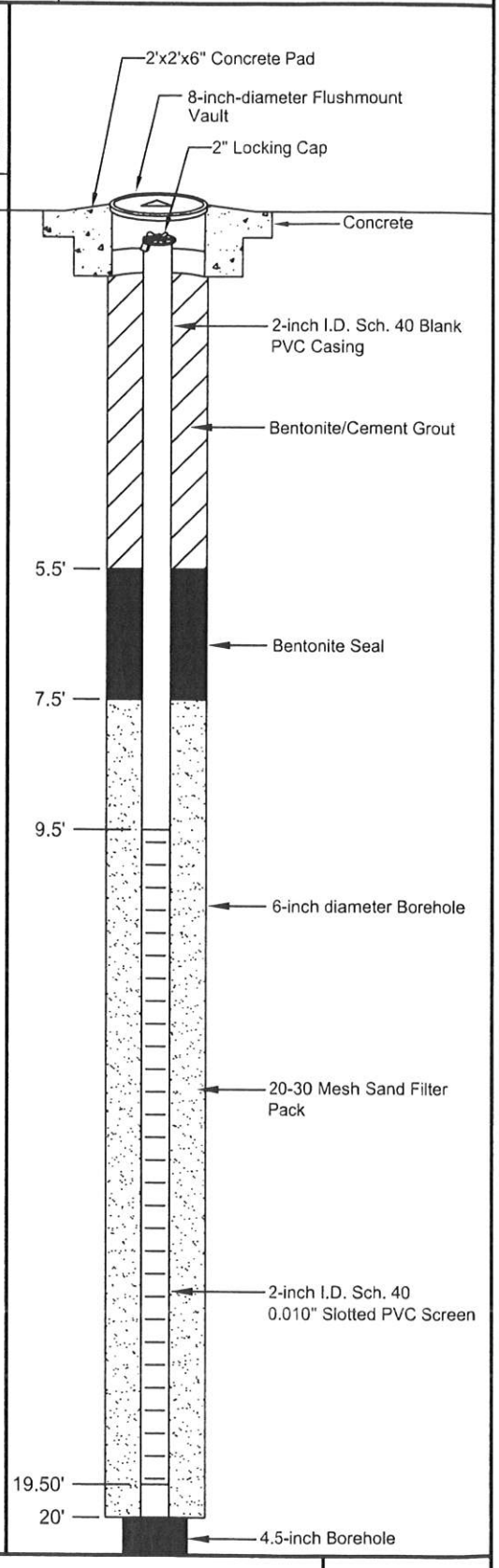
Project No. ***1162-0901-6***

Monitoring Well DGA-2

Project: ***IR-Timken Remediation***	Drill Rig: ***Geoprobe 8040 DT***	Top of Casing Elevation: ***184.91 ft. AMSL***
Installation Date: ***12/31/08***	Sampler: ***A & E Drilling LLC***	Initial Groundwater Depth: ***~17.5-18 ft. BLS***
Logged By: ***Gerald Ingle***	Hole Diameter: ***6 - inch***	Final Groundwater Depth: ***16.30 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Orange-brown, sandy SILT, trace clay, damp, no odor, rooted, very organic-rich.	ML		0 – 3		
Orange/tan, laminated, very fine sandy SILT, trace clay, damp, no odor.	ML		4 – 10		
Tan/gray, very fine to medium sandy SILT, trace clay, damp to moist, no odor.	ML		12 – 13		
Tan/orange, fine to medium SAND, trace to some silt, wet at 17.5'-18' bls, no odor.	SM		14 – 15		
Tan/red, clayey, medium to coarse SAND, wet, no odor.	SC		18		
Purple, stiff CLAY, no mottling, damp, very fat, high plasticity, no odor.	CL		19 – 20		



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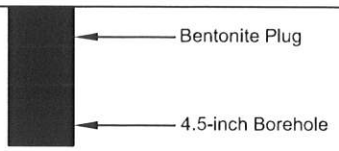
Project No. ***1162-0901-6***

Monitoring Well DGA-2

Project: ***IR-Timken Remediation***	Drill Rig: ***Geoprobe 8040 DT***	Top of Casing Elevation: ***184.91 ft. AMSL***
Installation Date: ***12/31/08***	Sampler: ***A & E Drilling LLC***	Initial Groundwater Depth: ***~17.5-18 ft. BLS***
Logged By: ***Gerald Ingle***	Hole Diameter: ***6 - inch***	Final Groundwater Depth: ***16.30 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
			20		
Orange/tan, fine to medium SAND, trace clay, dry to damp, no odor	SP		21		
Pink/tan, fine to medium SAND, dry, no odor.	SP		22		
Terminated boring.			23		
			24		
			25		
			26		
			27		
			28		
			29		
			30		
			31		
			32		
			33		
			34		
			35		
			36		
			37		
			38		
			39		
			40		



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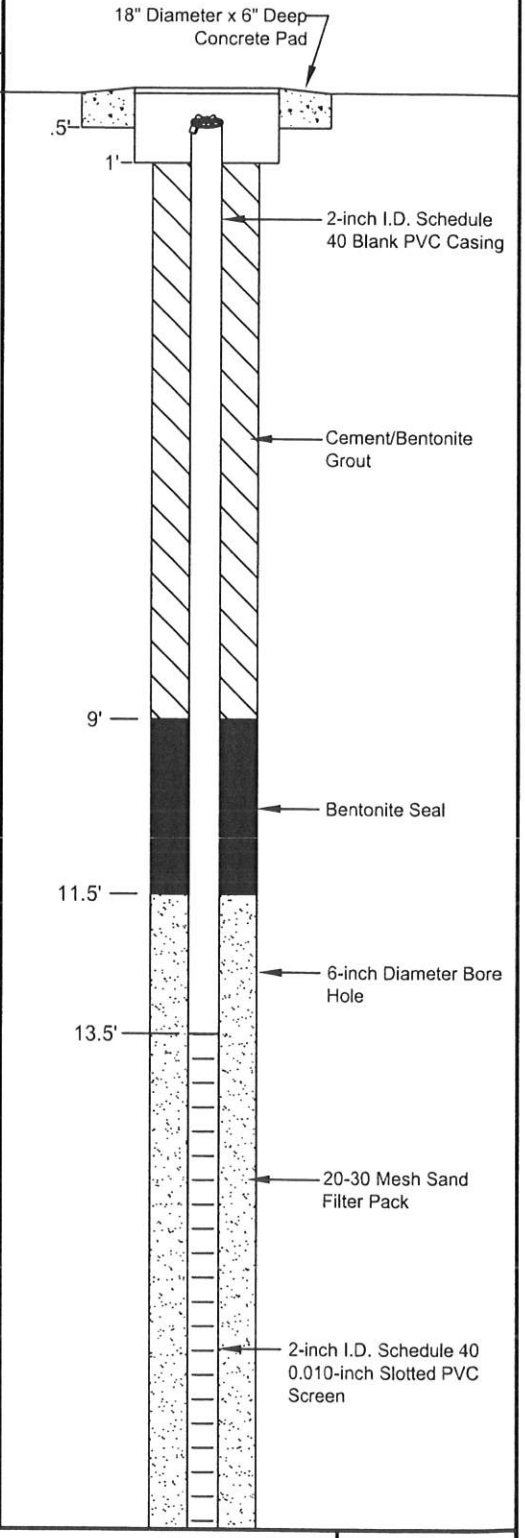
Project No. ***1162-0901-6***

Monitoring Well DGA-3

Project: ***IR-Timken Remediation***	Drill Rig: ***Geoprobe 8040 DT***	Top of Casing Elevation: ***186.51 ft. AMSL***
Installation Date: ***12/29/08***	Sampler: ***A & E Drilling LLC***	Initial Groundwater Depth: ***~22 ft. BLS***
Logged By: ***David Scruggs***	Hole Diameter: ***6 - inch***	Final Groundwater Depth: ***19.02 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Concrete.			0		
Light to medium brown, silty, sandy CLAY, dry, low plasticity, no odor, looks like fill.	CL		1		
			2		
			3		
Light to medium brown, silty, sandy CLAY, slightly moist, low plasticity, no odor, looks like native soil.	CL		4		
Light brown, silty SAND, slightly moist, no odor.	SM		5		
			6		
			7		
			8		
			9		
Light brown to gray, silty SAND, moist, no odor.	SM		10		
			11		
			12		
			13		
			14		
Light brown to dark red, mottled, silty CLAY, trace sand, damp, no odor.	CL		15		
			16		
			17		
			18		
			19		
			20		



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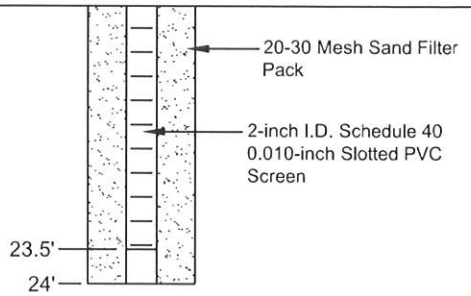
Project No. ***1162-0901-6***

Monitoring Well DGA-3

Project: ***IR-Timken Remediation***	Drill Rig: ***Geoprobe 8040 DT***	Top of Casing Elevation: ***186.51 ft. AMSL***
Installation Date: ***12/29/08***	Sampler: ***A & E Drilling LLC***	Initial Groundwater Depth: ***~22 ft. BLS***
Logged By: ***David Scruggs***	Hole Diameter: ***6 - inch***	Final Groundwater Depth: ***19.02 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Gray, clayey SILT, trace sand, low plasticity, 1-inch thick wet sand stringer at 22.5 feet, rest of interval damp.	CL/ SP		20 21 22 23 24		
Terminated Boring.			25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40		



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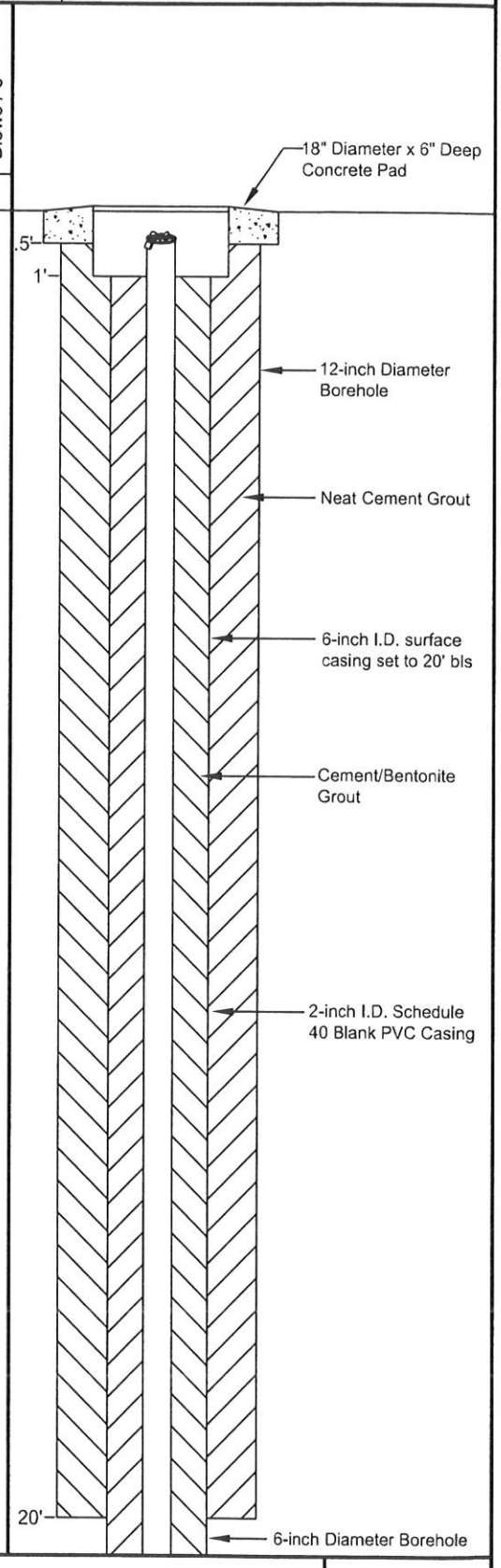
Project No. ***1162-0901-6***

Monitoring Well DGA-4D

Project: ***IR-Timken Remediation***	Drill Rig: ***Geoprobe 8040 DT***	Top of Casing Elevation: ***186.55 ft. AMSL***
Installation Date: ***12/22/08***	Sampler: ***A & E Drilling LLC***	Initial Groundwater Depth: ***~43 ft. BLS***
Logged By: ***David Scruggs***	Hole Diameter: ***12-inch/6 - inch***	Final Groundwater Depth: ***44.85 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Loose SILT and SAND, dry, no odor.	SM		0 - 5		
Light brown, silty SAND, no plasticity, dry, no odor.	SM		5 - 10		
Gray, silty CLAY.	CL		10 - 11		
Same as 5'-10.5'.	SM		11 - 15		
Light brown, silty SAND, slightly moist, low plasticity, old solvent odor.	SM		15 - 19		
Dark brown and gray, mottled CLAY, high plasticity, no odor.	CL		19 - 20		



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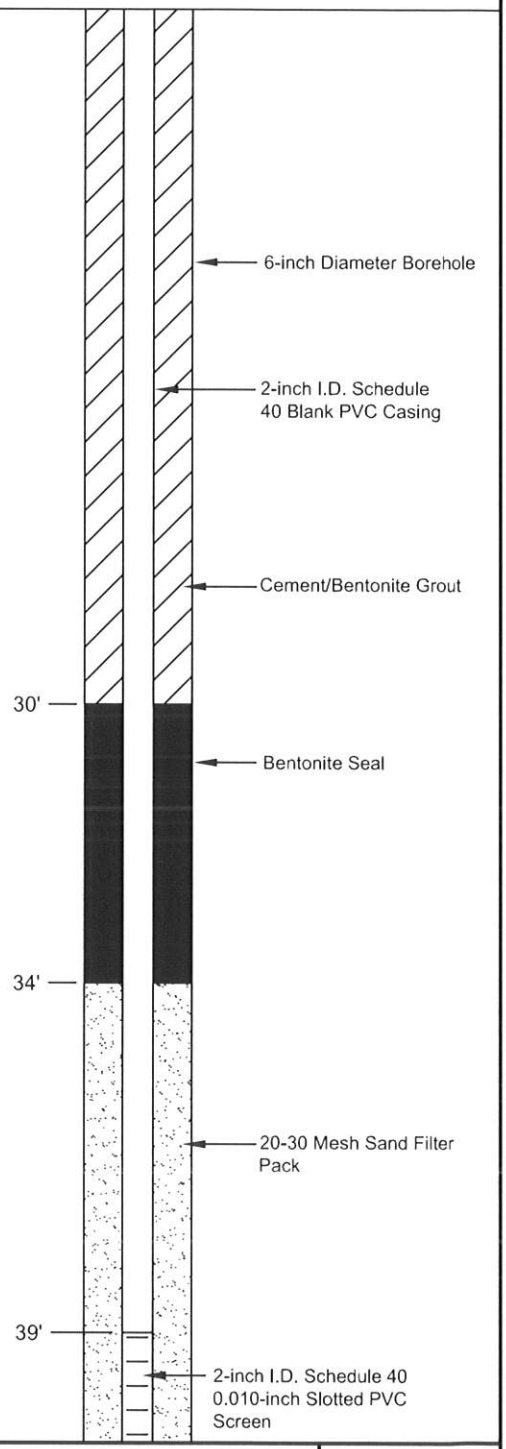
Project No. ***1162-0901-6***

Monitoring Well DGA-4D

Project: ***IR-Timken Remediation***	Drill Rig: ***Geoprobe 8040 DT***	Top of Casing Elevation: ***186.55 ft. AMSL***
Installation Date: ***12/22/08***	Sampler: ***A & E Drilling LLC***	Initial Groundwater Depth: ***~43 ft. BLS***
Logged By: ***David Scruggs***	Hole Diameter: ***12-inch/6 - inch***	Final Groundwater Depth: ***44.85 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
No recovery.			20–21		
Light brown, CLAY, high plasticity, slightly moist, no odor.	CL		22–24		
Dark brown/red, silty SAND, dry, no odor.	SM		25		
Dark brown/red CLAY, high plasticity, slightly moist.	CL		26–28		
Gray, silty CLAY, high plasticity, slightly moist, no odor.	CL		29–33		
Light gray, clayey, sandy SILT, high plasticity, slightly moist, no odor.	ML		34–37		
Light brown/green, silty, sandy CLAY, high plasticity, slightly moist, no odor.	CL		38–40		



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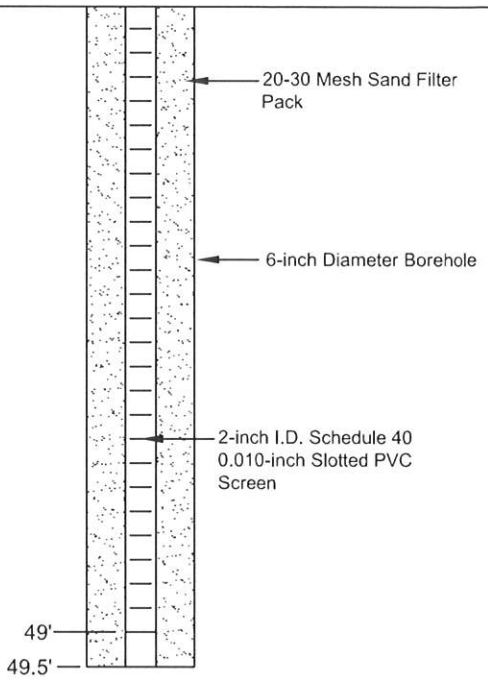
Project No. ***1162-0901-6***

Monitoring Well DGA-4D

Project: ***IR-Timken Remediation***	Drill Rig: ***Geoprobe 8040 DT***	Top of Casing Elevation: ***186.55 ft. AMSL***
Installation Date: ***12/22/08***	Sampler: ***A & E Drilling LLC***	Initial Groundwater Depth: ***~43 ft. BLS***
Logged By: ***David Scruggs***	Hole Diameter: ***12-inch/6 - inch***	Final Groundwater Depth: ***44.85 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Light brown/green, silty, sandy CLAY, high plasticity, slightly moist, no odor.	CL		40		
Medium brown to gray, SAND, no plasticity, slightly moist, no odor.	SP		41		
			42		
Light brown SAND, trace silt, no plasticity, wet at 43 feet, no odor.	SM		43		
			44		
			45		
			46		
			47		
			48		
			49		
No recovery.					
Terminated Boring.			50		
			51		
			52		
			53		
			54		
			55		
			56		
			57		
			58		
			59		
			60		



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Monitoring Well DGA-4D

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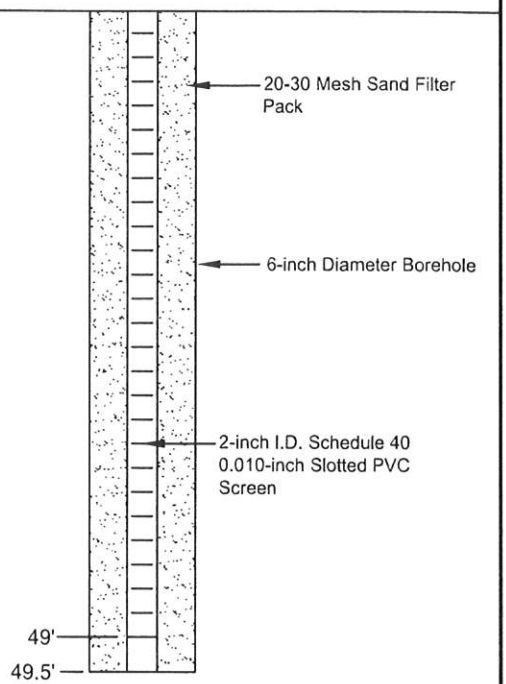
Installation Date: ***12/22/08***	Sampler: ***A & E Drilling LLC***	Initial Groundwater Depth: ***~43 ft. BLS***
Logged By: ***David Scruggs***	Hole Diameter: ***12-inch/6 - inch***	Final Groundwater Depth: ***44.85 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
			40		
Light brown/green, silty, sandy CLAY, high plasticity, slightly moist, no odor.	CL		41		
Medium brown to gray, SAND, no plasticity, slightly moist, no odor.	SP		42		
Light brown SAND, trace silt, no plasticity, wet at 43 feet, no odor.	SM		43		
			44		
			45		
			46		
			47		
			48		
			49		
No recovery.					
Terminated Boring.			50		
			51		
			52		
			53		
			54		
			55		
			56		
			57		
			58		
			59		
			60		



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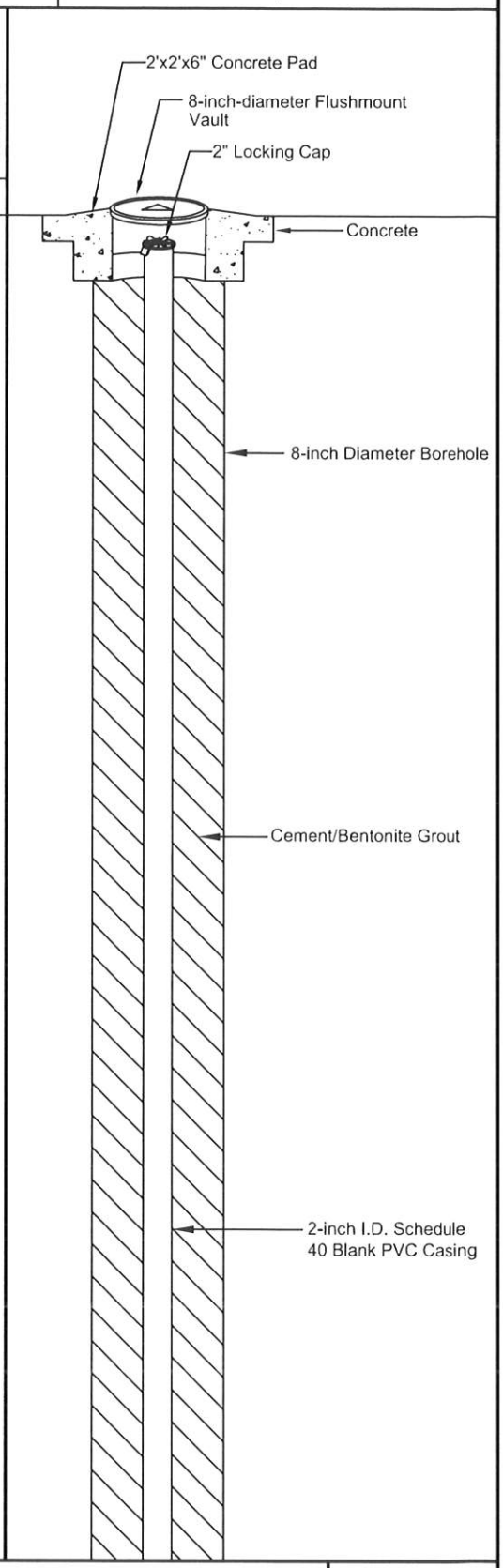
Monitoring Well DGA-5D

Project: ***IR-Timken Remediation***	Drill Rig: ***Rotosonic***	Top of Casing Elevation: ***183.12 ft. AMSL***
Installation Date: ***4/28/2009***	Sampler: ***5.25-inch O.D. Sampler (20 Feet)***	Initial Groundwater Depth: ***~52 ft. BLS***
Logged By: ***Gerald Ingle***	Hole Diameter: ***8 - inch / 6.5-inch***	Final Groundwater Depth: ***43.57 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Tan, SAND (fill).	SW		0		
Red/orange, silty CLAY, dry, medium plasticity, no odor (fill).	CL		1		
			2		
			3		
			4		
			5		
Tan/pink/orange, very fine sandy SILT, some clay, some mottling, low to medium plasticity, dry, no odor.	ML		6		
Tan/pink/orange, silty very fine SAND, trace clay, dry, no odor.	SM		7		
			8		
			9		
			10		
			11		
			12		
Orange/pink, silty very fine to medium SAND, no clay, dry to damp, no odor.	SM		13		
			14		
			15		
Tan, very fine to medium SAND, trace to some SILT, dry, no odor.	SW		16		
			17		
			18		
			19		
			20		



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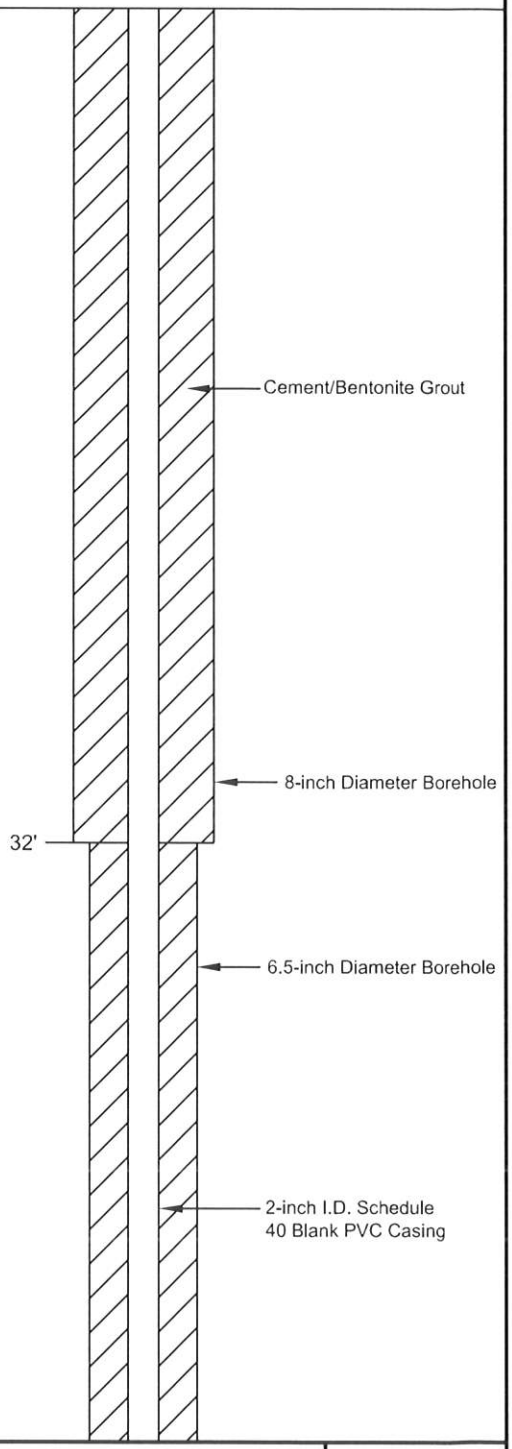
Project No. ***1162-0901-6***

Monitoring Well DGA-5D

Project: ***IR-Timken Remediation***	Drill Rig: ***Rotosonic***	Top of Casing Elevation: ***183.12 ft. AMSL***
Installation Date: ***4/28/2009***	Sampler: ***5.25-inch O.D. Sampler (20 Feet)***	Initial Groundwater Depth: ***~52 ft. BLS***
Logged By: ***Gerald Ingle***	Hole Diameter: ***8 - inch / 6.5-inch***	Final Groundwater Depth: ***43.57 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Tan, very fine to medium SAND, trace to some SILT, dry, no odor.	SW		20–23		
Purple/gray/brown, mottled, "fat" CLAY, high plasticity, damp, no odor.	CH		24–25		
Orange, silty very fine to fine SAND, dry, no odor.	SM		26–29		
Purple/red, "fat" CLAY, trace very fine sand, high plasticity, dry, no odor.	CH		30–34		
Purple/gray, mottled, clayey very fine SAND, non-plastic, damp, no odor.	SC		35–40		



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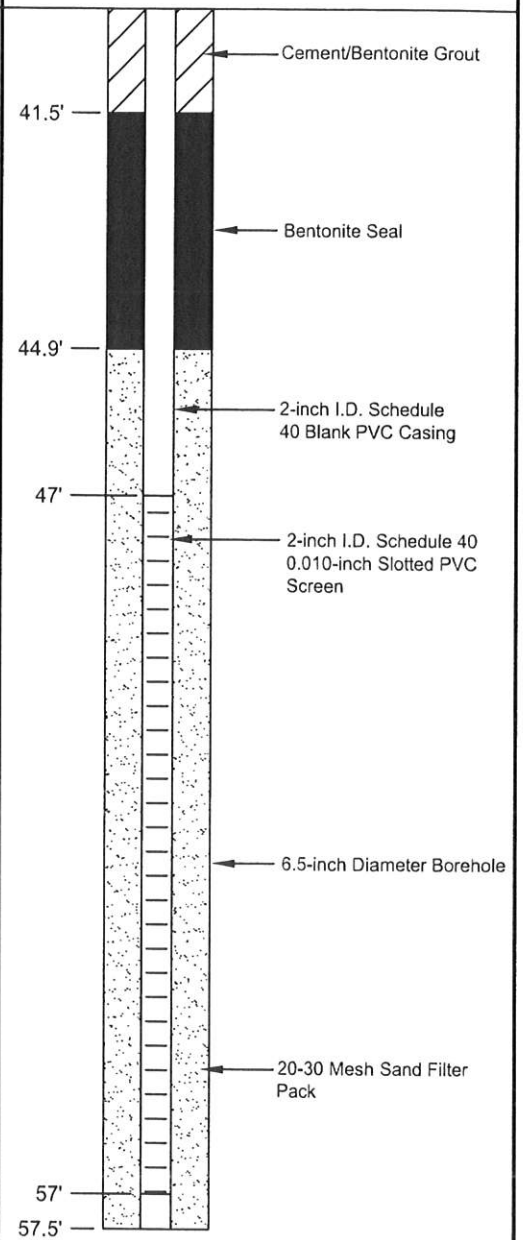
Monitoring Well DGA-5D

Project: ***IR-Timken Remediation***	Drill Rig: ***Rotosonic***	Top of Casing Elevation: ***183.12 ft. AMSL***
Installation Date: ***4/28/2009***	Sampler: ***5.25-inch O.D. Sampler (20 Feet)***	Initial Groundwater Depth: ***~52 ft. BLS***
Logged By: ***Gerald Ingle***	Hole Diameter: ***8 - inch / 6.5-inch***	Final Groundwater Depth: ***43.57 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
White/olive green, very hard, compacted, silty very fine SAND, dry, no odor.	SM		40 – 46		
White/light tan, very fine sandy CLAY, medium plasticity, wet, no odor.	SC		47 – 51		
Gray/tan, very fine to fine SAND, trace clay (mainly in thin seams), wet at 52', no odor.	SP		52 – 57		
Terminate Boring			58 – 60		



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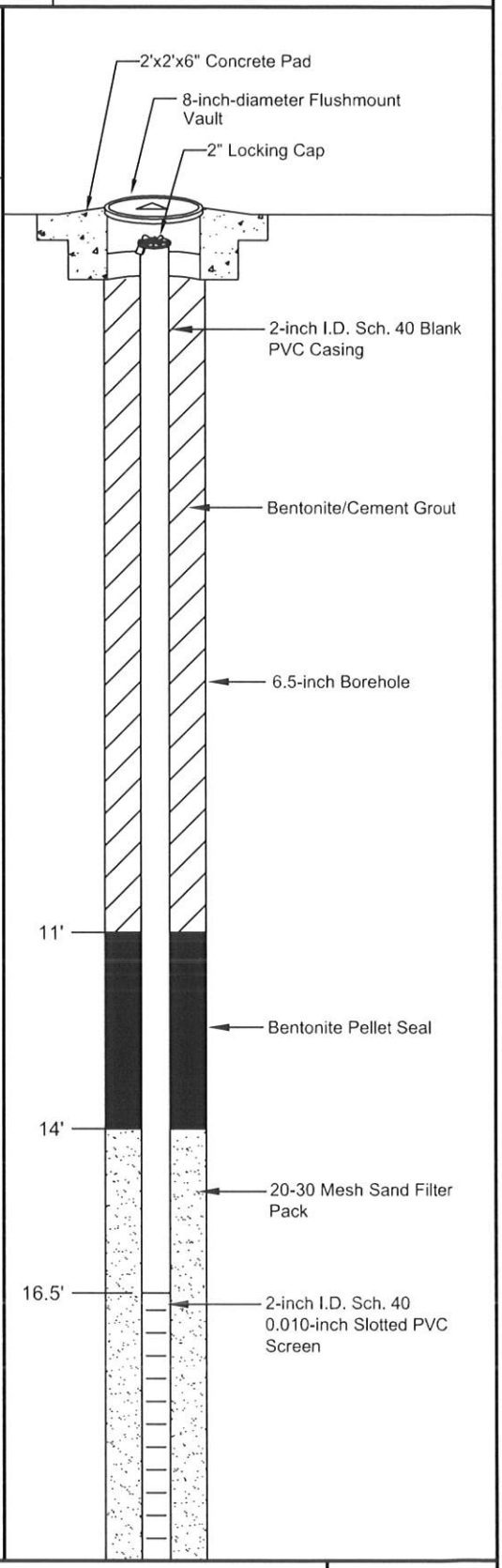
Project No. ***1162-0901-6***

Monitoring Well DGA-6

Project: ***IR-Timken Remediation***	Drill Rig: ***Rotosonic***	Top of Casing Elevation: ***180.34 ft. AMSL***
Installation Date: ***4/29/2009***	Sampler: ***5.25-inch O.D. Sampler (20-Feet)***	Initial Groundwater Depth: ***~24 ft. BLS***
Logged By: ***Gerald Ingle***	Hole Diameter: ***6.5 - inch***	Final Groundwater Depth: ***23.42 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Brown, silty very fine to fine SAND (fill).	SM		0 – 4		
Orange/red, very fine sandy SILT, dry, no odor.	SM		4 – 6		
Tan/pink/orange, silty, very fine SAND, trace clay, dry, no odor.	SM		6 – 12		
Orange/red, silty very fine SAND, damp, no odor.	SM		12 – 19		
Dark red/purple, "fat" clay, some white and gray laminating, high plasticity, damp, no odor.	CH		19 – 20		



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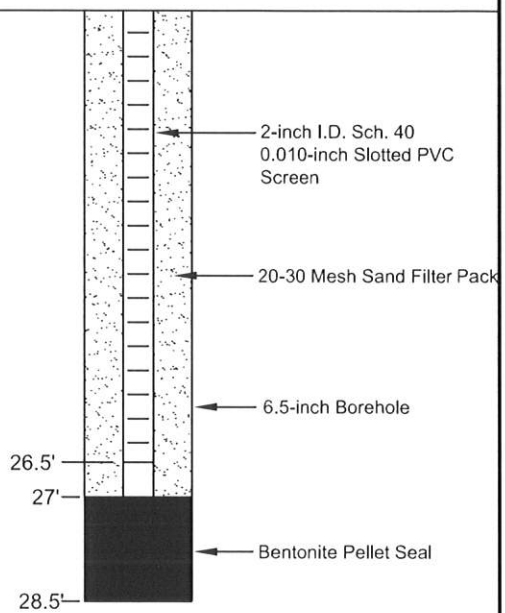
Project No. ***1162-0901-6***

Monitoring Well DGA-6

Project: ***IR-Timken Remediation***	Drill Rig: ***Rotosonic***	Top of Casing Elevation: ***180.34 ft. AMSL***
Installation Date: ***4/29/2009***	Sampler: ***5.25-inch O.D. Sampler (20-Feet)***	Initial Groundwater Depth: ***~24 ft. BLS***
Logged By: ***Gerald Ingle***	Hole Diameter: ***6.5 - inch***	Final Groundwater Depth: ***23.42 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Dark red/purple, "fat" clay, some white and gray laminating, high plasticity, damp, no odor.	CH		20–21		
Tan/pink/orange, fine to medium SAND, wet, no odor.	SP		22–24		
Red/purple/orange, laminated CLAY, some sand seams up to 1/2-inch thick, medium plasticity, wet, no odor.	CL		25		
Dark red/purple, "fat" CLAY, trace very fine sand, high plasticity, wet, no odor.	CH		26–27		
Brown/tan, mottled, clayey very fine SAND, trace to some silt, wet, no odor.	SC		28		
Terminate Boring			29–40		



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Project No. ***1162-0901-6***

SHA
ENGINEERS ■ SCIENTISTS

Project: Timken US Corp.
Location: Sylvania, Georgia
SHA Project No.: 2151.01 T041

Log of Monitoring Well SH-101

Ground Elevation: 184.47 feet
TOC Elevation: 184.56 feet
PVC Elevation: 184.28 feet
Datum: Mean Sea Level (MSL)

Drilling Method: Geoprobe® 6610DT w/ 4¼" I.D. HSA

Sampling Method: 5' MacroCore® Sampler

Drilling Company: Subsurface Environmental Investigations, LLC
Foreman: RJ Crater
Date Started: 02/27/07 Date Finished: 02/27/07
Logged By: M. Stein Checked By: B. Green

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Stab. Time
02/27/07	13:00	9.3'	Ground	20'	~1.5 hours
02/27/07	15:10	8.65'	Top of PVC	Well Installed	~2 hours
02/28/07	18:00	8.62'	Top of PVC	Well Installed	~1 day
03/03/07	09:02	8.44'	Top of PVC	Well Installed	~4 days

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen/ Rec (ft)	PID/FID Values (ppmv)	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
0	S-1A	0 - 0.1	5/5	2		0'			
	S-1B	0.1 - 5	---	ND		0.2'	S-1A: TOPSOIL. Dry.		8" Dia. Flushmounted Road Box with Locking J Plug Set in Concrete
							S-1B: Orangish tan, Clayey SILT, little fine to medium Sand grading to SILT and fine to medium Sand. Moist. FILL.		Filter Sand (0.6 to 2')
2									
									Bentonite Chip Seal (2 to 4')
4									2" Dia. Sch. 40 PVC Riser (0.2 to 5.9')
	S-2	5 - 10	5/4.5	ND		FILL	S-2: Orange, SILT, and fine to medium Sand grading to tan, fine to medium SAND, some Silt. Moist. FILL.		
6									
8									
10	S-3	10 - 15	5/5	ND		10'	S-3: Orangish tan to pink, fine to coarse SAND, little Silt. Moist to wet.		#2 Filter Sand (4 to 17.3')
									2" Dia. Sch. 40 PVC Well Screen (0.010" Slots) (5.9 to 15.9')
12									
14									
	S-4	15 - 20	5/5	13		SAND	S-4: Pink, fine to coarse SAND, some Silt. Wet.		
16									2" Dia. Sch. 40 PVC Silt Cap (15.9 to 16.1')
18									Formation Material (17.3 to 20')
20						20'	Boring terminated at 20 feet. No refusal encountered.		
22									
24									
26									
28									
30									

NOTES:

1. Soil samples were screened for volatile organic compounds (VOCs) using a Photovac MicroFID flame ionization detector (FID) calibrated to a 100 parts per million by volume (ppmv) methane-in-air standard using a response factor of 1.0. Results are presented in ppm; the typical detection limit is 1 ppm. "ND" indicates not detected. The FID measures relative levels of VOCs. Although FID screening can not be used directly to quantify VOC concentrations or identify individual compounds, the results serve as a relative indicator for the presence of VOCs.
2. No soil samples were submitted for laboratory analyses.

BORING LOG S:\CONDATA\21000\2152.01\TASK 041 - SYLVANIA, GA\LOGS\2152011041 SYLVANIA LOGS.GPJ 2007 FEB SHA.GLB 2007 FEB SHA.GDT 4/19/07

SHA
ENGINEERS ▪ SCIENTISTS

Project: Timken US Corp.
Location: Sylvania, Georgia
SHA Project No.: 2151.01 T041

Log of Monitoring Well SH-102

Ground Elevation: 186.91 feet
TOC Elevation: 186.90 feet
PVC Elevation: 186.60 feet
Datum: Mean Sea Level (MSL)

Drilling Method: Geoprobe® 6610DT w/ 3¼" O.D. Casing

Sampling Method: 5' MacroCore® Sampler

Drilling Company: Subsurface Environmental Investigations, LLC
Foreman: RJ Crater
Date Started: 02/28/07 Date Finished: 02/28/07
Logged By: M. Stein Checked By: B. Green

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Stab. Time

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen/ Rec (ft)	PID/FID Values (ppmv)	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
0	---	0 - 0.4	---	---		-----0'-----			
							0-0.4': Concrete slab.		6" Dia. Flushmounted Road Box with Locking J Plug Set in Concrete
	S-1A	0.4 - 3.2	4.6/ 4.6	ND		-----0.4'-----	S-1A: Orangish brown to reddish brown, SILT & CLAY, little fine to medium Sand. Moist. FILL.		Filter Sand (0.6 to 2')
2									
	S-1B	3.2 - 5	---	ND			S-1B: Brown to orangish tan, fine SAND, little Silt. Moist. FILL.		2" Dia. Sch. 40 PVC Riser (0.3 to 6.7')
4									Hydrated Granular Bentonite Seal (2 to 5')
	S-2	5 - 10	5/4.5	ND		FILL	S-2: Orangish brown to tan, fine SAND, little Silt. Moist. FILL.		
6									
8									
10	S-3	10 - 15	5/4.4	ND		-----10'-----	S-3: Tan to orangish tan, Clayey SILT, some fine to medium Sand. Moist to wet.		
12									#2 Filter Sand (5 to 17.5')
						Clayey SILT			2" Dia. Sch. 40 PVC Well Screen (0.010" Slots) (6.7 to 16.7')
14									
	S-4A	15 - 15.9	5/5	ND			S-4A: Tan to orangish tan, Clayey SILT, some fine to medium Sand. Moist to wet.		
16	S-4B	15.9 - 20	---	ND		-----15.9'-----	S-4B: Gray to purple, Silty CLAY. Mottled. Moist.		
									2" Dia. Sch. 40 PVC Silt Cap (16.7 to 16.9')
18						Silty CLAY			
									Hydrated Granular Bentonite Seal (17.5 to 20')
20						-----20'-----	Boring terminated at 20 feet. No refusal encountered.		
22									
24									
26									
28									
30									

NOTES:

1. Soil samples were screened for volatile organic compounds (VOCs) using a Photovac MicroFID flame ionization detector (FID) calibrated to a 100 parts per million by volume (ppmv) methane-in-air standard using a response factor of 1.0. Results are presented in ppm; the typical detection limit is 1 ppm. "ND" indicates not detected. The FID measures relative levels of VOCs. Although FID screening can not be used directly to quantify VOC concentrations or identify individual compounds, the results serve as a relative indicator for the presence of VOCs.
2. Soil sample S-1A (1-3.2' interval) was submitted for laboratory analyses.
3. On 2/28/2007 at 1510 hours, on 3/1/2007 at 0755 hours, and on 3/3/2007 at 0942 hours, the monitoring well was dry.

BORING LOG S:\CONDATA\2100\2152.01\TASK 041 - SYLVANIA, GA\LOGS\2152201T041 SYLVANIA LOGS.GPJ 2007 FEB SHA.GLB 2007 FEB SHA.GDT 4/19/07

SHA
ENGINEERS ▪ SCIENTISTS

Project: Timken US Corp.
Location: Sylvania, Georgia
SHA Project No.: 2151.01 T041

Log of Monitoring Well SH-103

Ground Elevation: 187.07 feet
TOC Elevation: 187.07 feet
PVC Elevation: 186.83 feet
Datum: Mean Sea Level (MSL)

Drilling Method: Geoprobe® 6610DT w/ 3¼" O.D. Casing

Sampling Method: 5' MacroCore® Sampler

Drilling Company: Subsurface Environmental Investigations, LLC
Foreman: RJ Crater
Date Started: 03/01/07 Date Finished: 03/01/07
Logged By: M. Stein Checked By: B. Green

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Stab. Time
03/01/07	08:57	21.4'	Ground	25'	<15 minutes

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen/Rec (ft)	PID/FID Values (ppmv)	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
0	---	0 - 0.4	---	---		-----0'-----			
	S-1A	0.4 - 3.2	4.6/4.6	3		-----0.4'-----	0-0.4': Concrete slab.		6" Dia. Flushmounted Road Box with Locking J Plug Set in Concrete
2						FILL	S-1A: Brown to reddish brown, SILT to Clayey SILT, and fine Sand. Moist. FILL.		Filter Sand (0.3 to 2')
	S-1B	3.2 - 5	---	22			S-1B: Brown to light brown, fine SAND, little Silt. Moist. FILL.		
4									Hydrated Granular Bentonite Seal (2 to 7')
	S-2	5 - 10	5/4.6	30		-----5'-----	S-2: Orangish brown, Clayey SILT, some fine Sand. Moist.		2" Dia. Sch. 40 PVC Riser (0.2 to 9.2')
6									
						Clayey SILT			
8									9.2
10	S-3	10 - 15	5/5	48		-----10'-----	S-3: Orangish brown to orangish tan, fine to medium SAND and SILT. Moist.		
12									
						SAND & SILT			Filter Sand (7 to 19.2')
14									2" Dia. Sch. 40 PVC Well Screen (0.010" Slots) (9.2 to 19.2')
	S-4A	15 - 17.9	5/5	19			S-4A: Orangish brown to orangish tan, fine to medium SAND and SILT. Moist.		
16									
18	S-4B	17.9 - 20	---	7		-----17.9'-----	S-4B: Gray to purple to orange, Silty CLAY, trace fine Sand. Mottled. Moist.		
								19.2	2" Dia. Sch. 40 PVC Silt Cap (19.2 to 19.4')
20	S-5	20 - 24	4/4	ND			S-5: Gray to purple to orange, Silty CLAY, little fine Sand. Mottled. Moist.		
						Silty CLAY			
22									Bentonite Chip Seal (19.5 to 24')
24						-----24'-----	Boring terminated at 24 feet. No refusal encountered.		
26									
28									
30									
32									
34									

NOTES:

1. Soil samples were screened for volatile organic compounds (VOCs) using a Photovac MicroFID flame ionization detector (FID) calibrated to a 100 parts per million by volume (ppmv) methane-in-air standard using a response factor of 1.0. Results are presented in ppm; the typical detection limit is 1 ppm. "ND" indicates not detected. The FID measures relative levels of VOCs. Although FID screening can not be used directly to quantify VOC concentrations or identify individual compounds, the results serve as a relative indicator for the presence of VOCs.
2. Soil sample S-3 (10-12' interval) was submitted for laboratory analyses.
3. On 3/1/2007 at 1000 hours and on 3/3/2007 at 0955 hours, the monitoring well was dry.

BORING LOG S:\CONDATA\2100\2152.01\TASK 041 - SYLVANIA, GA\LOGS\2152O1T041 SYLVANIA LOGS.GPJ 2007 FEB SHA.GLB 2007 FEB SHA.GDT 4/19/07

SHA
ENGINEERS ■ SCIENTISTS

Project: Timken US Corp.
Location: Sylvania, Georgia
SHA Project No.: 2151.01 T041

Log of Monitoring Well SH-104

Ground Elevation: 187.12 feet
TOC Elevation: 187.12 feet
PVC Elevation: 186.80 feet
Datum: Mean Sea Level (MSL)

Drilling Method: Geoprobe® 6610DT w/ 3¼" O.D. Casing

Sampling Method: 5' MacroCore® Sampler

Drilling Company: Subsurface Environmental Investigations, LLC
Foreman: RJ Crater
Date Started: 03/01/07 Date Finished: 03/01/07
Logged By: M. Stein Checked By: B. Green

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Stab. Time

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen/ Rec (ft)	PID/FID Values (ppmv)	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
0	---	0 - 0.4	---	---		-----0'-----			
						-----0.4'-----	0-0.4': Concrete slab.		6" Dia. Flushmounted Road Box with Locking J Plug Set in Concrete
	S-1A	0.4 - 1.2	4.6/	ND			S-1A: Reddish brown, SILT & CLAY, little fine Sand. Moist. FILL.		
	S-1B	1.2 - 1.7	3.3	ND			S-1B: Brown, fine SAND, little Silt. Moist. FILL.		
2	S-1C	1.7 - 5	---	2			S-1C: Reddish brown, SILT & CLAY, little fine Sand. Moist. FILL.		Filter Sand (0.5 to 2')

4									
	S-2	5 - 10	5/5	1			S-2: Orangish brown to orangish tan, Clayey SILT, little fine to medium Sand. Moist. FILL.		
6						FILL			Hydrated Granular Bentonite Seal (2 to 10')
8									2" Dia. Sch. 40 PVC Riser (0.3 to 11.9')
10	S-3	10 - 15	5/3.8	1			S-3: Orangish tan to tan, Clayey SILT to SILT, and fine to medium Sand Moist. FILL.		
12						-----11.8'-----			
14						Clayey SILT to SILT			
	S-4A	15 - 15.6	5/4.2	ND					
16	S-4B	15.6 - 17.4	---	ND		-----15.6'-----	S-4A: Orangish tan to tan, Clayey SILT to interlayered SILT and fine to medium Sand. Moist.		
						CLAY & SILT	S-4B: Gray to tan, CLAY & SILT, little fine to medium Sand. Moist.		
18	S-4C	17.4 - 20	---	ND		-----17.4'-----	S-4C: Orangish tan, fine to medium SAND and SILT. Moist.		
						SAND & SILT			#2 Filter Sand (10 to 26.9')
20	S-5A	20 - 21	---	ND			S-5A: Orangish tan, fine to medium SAND and SILT. Moist.		2" Dia. Sch. 40 PVC Well Screen (0.010" Slots) (11.9 to 26.9')
	S-5B	21 - 23	---	ND		-----21'-----	S-5B: Purple to gray to orange, Silty CLAY, with partings of fine Sand. Moist.		
22						Silty CLAY			
	S-5C	23 - 24	---	ND		-----23'-----			
						SAND & SILT	S-5C: Orangish tan, fine SAND and SILT. Color and mineral stratifications. Moist.		
24	S-6A	24 - 25.5	---	ND		-----24'-----			
						SAND	S-6A: Light purple to orange, fine to medium SAND, little Silt. Moist to wet.		
	S-6B	25.5 - 29	---	ND		-----25.5'-----			
26							S-6B: Purple to gray, Silty CLAY and Clay, trace fine Sand. Moist.		
						Silty CLAY to CLAY			
28									2" Dia. Sch. 40 PVC Silt Cap (26.9 to 27.1')
									Formation Material (27.1 to 27.5')
						-----29'-----			
30							Boring terminated at 29 feet. No refusal encountered.		Bentonite Chip Seal (27.5 to 29')
32									
34									
36									
38									
40									

NOTES:

1. Soil samples were screened for volatile organic compounds (VOCs) using a Photovac MicroFID flame ionization detector (FID) calibrated to a 100 parts per million by volume (ppmv) methane-in-air standard using a response factor of 1.0. Results are presented in ppm; the typical detection limit is 1 ppm. "ND" indicates not detected. The FID measures relative levels of VOCs. Although FID screening can not be used directly to quantify VOC concentrations or identify individual compounds, the results serve as a relative indicator for the presence of VOCs.
2. Soil sample S-3 (13-15' interval) was submitted for laboratory analyses.
3. On 3/1/2007 at 1215 hours and on 3/3/2007 at 1003 hours, the monitoring well was dry.

BORING LOG S:\CONDATA\2100\2152.01\TASK 041 - SYLVANIA, GA\LOGS\2152011T041 SYLVANIA LOGS.GPJ 2007 FEB SHA.GLB 2007 FEB SHA.GDT 4/19/07

SHA
ENGINEERS ▪ SCIENTISTS

Project: Timken US Corp.
Location: Sylvania, Georgia
SHA Project No.: 2151.01 T041

Log of Monitoring Well SH-105

Ground Elevation: 187.09 feet
TOC Elevation: 187.10 feet
PVC Elevation: 186.81 feet
Datum: Mean Sea Level (MSL)

Drilling Method: Geoprobe® 6610DT w/ 3¼" O.D. Casing

Sampling Method: 5' MacroCore® Sampler

Drilling Company: Subsurface Environmental Investigations, LLC
Foreman: RJ Crater
Date Started: 03/01/07 Date Finished: 03/01/07
Logged By: M. Stein Checked By: B. Green

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Stab. Time
03/01/07	16:00	29.4'	Ground	29.5'	<5 minutes

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen/ Rec (ft)	PID/FID Values (ppmv)	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
0	---	0 - 0.5	---	---		-----0'-----			
							0-0.5': Concrete slab.		6" Dia. Flushmounted Road Box with Locking J Plug Set in Concrete
	S-1A	0.5 - 3.5	4.5/ 4.5	ND		-----0.5'-----	S-1A: Orangish brown to reddish brown, SILT, and fine Sand grading to Clayey SILT, little fine Sand, trace Gravel. Moist. FILL.		Filter Sand (0.5 to 2')
2						FILL			
4	S-1B	3.5 - 5	---	ND			S-1B: Brown, fine SAND, little Silt, grading to Clayey SILT, little fine Sand. Moist. FILL.		
	S-2A	5 - 5.2	5/5	ND		-----5.2'-----	S-2A: Light brown, Clayey SILT, little fine Sand. Moist. FILL.		Hydrated Granular Bentonite Seal (2 to 8')
6	S-2B	5.2 - 10	---	ND			S-2B: Orangish brown to orangish tan, SILT and fine Sand. Moist.		2" Dia. Sch. 40 PVC Riser (0.3 to 10.2')
8						SILT			
10	S-3	10 - 15	5/5	ND		-----10'-----	S-3: Orangish brown to orangish tan, SILT and fine Sand. grading to fine SAND, some Silt. Moist.		
12									
14									
	S-4	15 - 20	5/5	ND			S-4: Orangish tan, fine to medium SAND, some Silt. Moist.		
16						SAND			Filter Sand (8 to 25.4')
18									2" Dia. Sch. 40 PVC Well Screen (0.010" Slots) (10.2 to 25.2')
20	S-5A	20 - 23.8	5/5	ND			S-5A: Orangish tan to tan, fine to medium SAND, some Silt. Moist to wet.		
22									
24	S-5B	23.8 - 25	---	ND		-----23.8'-----	S-5B: Purple to gray, Silty CLAY and Clay. Moist.		
	S-6	25 - 29.5	4.5/ 4.5	ND			S-6: Purple to gray, Silty CLAY to CLAY.		2" Dia. Sch. 40 PVC Silt Cap (25.2 to 25.4')
26						Silty CLAY to CLAY	Few seams of saturated orangish tan, fine to medium Sand, little Silt. Moist.		Formation Material (25.4 to 26')
28									Bentonite Chip Seal (26 to 29.5')
30						-----29.5'-----	Boring terminated at 29.5 feet. No refusal encountered.		
32									
34									
36									
38									
40									

NOTES:

1. Soil samples were screened for volatile organic compounds (VOCs) using a Photovac MicroFID flame ionization detector (FID) calibrated to a 100 parts per million by volume (ppmv) methane-in-air standard using a response factor of 1.0. Results are presented in ppm; the typical detection limit is 1 ppm. "ND" indicates not detected. The FID measures relative levels of VOCs. Although FID screening can not be used directly to quantify VOC concentrations or identify individual compounds, the results serve as a relative indicator for the presence of VOCs.
2. Soil sample S-1A (0.5-3.5' interval) was submitted for laboratory analyses.
3. On 3/3/2007 at 1010 hours, the monitoring well was dry.

BORING LOG S:\CONDATA\2100\2152.01\TASK 041 - SYLVANIA, GA\LOGS\2152011T041 SYLVANIA LOGS.GPJ 2007 FEB SHA.GLB 2007 FEB SHA.GDT 4/19/07

SHA ENGINEERS ■ SCIENTISTS

Project: Timken US Corp.
Location: Sylvania, Georgia
SHA Project No.: 2151.01 T041

Log of Monitoring Well SH-106

Ground Elevation: 187.05 feet
TOC Elevation: 187.05 feet
PVC Elevation: 186.78 feet
Datum: Mean Sea Level (MSL)

Drilling Method: Geoprobe® 6610DT w/ 3¼" O.D. Casing

Sampling Method: 5' MacroCore® Sampler

Drilling Company: Subsurface Environmental Investigations, LLC
Foreman: RJ Crater
Date Started: 03/02/07 Date Finished: 03/02/07
Logged By: M. Stein Checked By: B. Green

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Stab. Time

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen/ Rec (ft)	PID/FID Values (ppmv)	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
0	---	0 - 0.5	---	---		-----0'-----			
							0-0.5': Concrete slab.		6" Dia. Flushmounted Road Box with Locking J Plug Set in Concrete
	S-1	0.5 - 5	4.5/4	76		-----0.5'-----	S-1: Reddish brown to light brown, SILT & CLAY to Clayey SILT, little fine Sand. Layers approximately 0.3 to 0.4' thick of brown, fine Sand, little Silt.. Moist. FILL.		Filter Sand (0.5 to 2')
2									
4									
	S-2	5 - 10	5/4.5	139		FILL	S-2: Light brown, Clayey SILT, grading to orangish tan to tan, fine SAND, some Silt, trace Gravel. Moist. FILL.		Hydrated Granular Bentonite Seal (2 to 7.5')
6									2" Dia. Sch. 40 PVC Riser (0.3 to 9.4')
8									
10	S-3A	10 - 11.2	5/3.9	20			S-3A: Light brown, Clayey SILT, grading to orangish tan to tan, fine SAND, some Silt, trace Gravel. Moist. FILL.		
	S-3B	11.2 - 15	---	82		-----11.2'-----	S-3B: Pink to orangish tan to tan, Clayey SILT, some fine to medium Sand. Moist.		
12									
14									Filter Sand (7.5 to 20')
						Clayey SILT to SILT			2" Dia. Sch. 40 PVC Well Screen (0.010" Slots) (9.4 to 19.4')
	S-4A	15 - 18.4	5/5	112			S-4A: Tan, Clayey SILT to SILT, and fine to medium Sand. Moist to wet.		
16									
18									
	S-4B	18.4 - 20	---	28		-----18.4'-----	S-4B: Purple to gray, Silty CLAY. Mottled. Moist.		
20	S-5	20 - 25	5/5	29			S-5: Tan, Silty CLAY. Mottled. Moist.		2" Dia. Sch. 40 PVC Silt Cap (19.4 to 19.6')
						Silty CLAY			
22									Bentonite Chip Seal (20 to 25')
24									
						-----25'-----	Boring terminated at 25 feet. No refusal encountered.		
26									
28							NOTES:		
30							1. Soil samples were screened for volatile organic compounds (VOCs) using a Photovac MicroFID flame ionization detector (FID) calibrated to a 100 parts per million by volume (ppmv) methane-in-air standard using a response factor of 1.0. Results are presented in ppm; the typical detection limit is 1 ppm. "ND" indicates not detected. The FID measures relative levels of VOCs. Although FID screening can not be used directly to quantify VOC concentrations or identify individual compounds, the results serve as a relative indicator for the presence of VOCs.		
32							2. Soil samples S-2 (5-10' interval) and S-3B (11.2-15' interval) were submitted for laboratory analyses.		
							3. All SH-106 soils had a low to moderate solvent- and/or petroleum-like odor.		
34							4. On 3/2/2007 at 1015 hours and 3/3/2007 at 1029 hours, the monitoring well was dry.		

BORING LOG S:\CONDATA\2100\2152.01\TASK 041 - SYLVANIA, GA\LOGS\2152017041 SYLVANIA LOGS.GPJ 2007 FEB SHA.GLB 2007 FEB SHA.GDT 4/19/07

SHA
ENGINEERS ■ SCIENTISTS

Project: Timken US Corp.
Location: Sylvania, Georgia
SHA Project No.: 2151.01 T041

Log of Monitoring Well SH-107

Ground Elevation: 187.03 feet
TOC Elevation: 187.03 feet
PVC Elevation: 186.76 feet
Datum: Mean Sea Level (MSL)

Drilling Method: Geoprobe® 6610DT w/ 3¼" O.D. Casing

Sampling Method: 5' MacroCore® Sampler

Drilling Company: Subsurface Environmental Investigations, LLC
Foreman: RJ Crater
Date Started: 03/02/07 Date Finished: 03/02/07
Logged By: M. Stein Checked By: B. Green

Groundwater Readings

Date	Time	Depth to Water	Ref. Pt.	Depth of Casing	Stab. Time
03/03/07	10:25	21.73'	Top of PVC	Well Installed	~1 day

Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen/ Rec (ft)	PID/FID Values (ppmv)	Stratum: Log	Description	Geologic Description	Well Diagram	Well Description
0	---	0 - 0.6	---	---		-----0'-----	0-0.6': Concrete slab.		6" Dia. Flushmounted Road Box with Locking J Plug Set in Concrete
	S-1A	0.6 - 2.9	4.4/ 3.8	ND		-----0.6'-----	S-1A: Reddish brown, SILT & CLAY, little fine to medium Sand. Moist. FILL.		Filter Sand (0.3 to 2')
2									
	S-1B	2.9 - 5	---	ND		FILL	S-1B: Brown to light brown, fine SAND, little Silt, grading to SILT and fine Sand. Moist. FILL.		
4									
	S-2	5 - 10	5/4.2	ND		-----5'-----	S-2: Light brown to orangish tan to tan, SILT and fine Sand. Moist.		
6									Hydrated Granular Bentonite Seal (2 to 10')
									2" Dia. Sch. 40 PVC Riser (0.3 to 12.1')
8						SILT			
10	S-3A	10 - 11.6	5/4.5	ND			S-3A: Light brown to orangish tan to tan, SILT and fine Sand. Moist.		
12	S-3B	11.6 - 15	---	ND		-----11.6'-----	S-3B: Tan, Clayey SILT to SILT, and fine to medium Sand. Moist.		
						Clayey SILT to SILT			
14									
	S-4	15 - 20	5/5	ND		-----15'-----	S-4: Reddish brown to tan to brown, fine to medium SAND and SILT. Moist to wet.		
16									Filter Sand (10 to 22.5')
									2" Dia. Sch. 40 PVC Well Screen (0.010" Slots) (12.1 to 22.1')
18						SAND & SILT			
20	S-5A	20 - 21	5/4.8	ND		-----20'-----	S-5A: Tan to brown, Clayey SILT, some fine to medium Sand. Moist to wet.		
						Clayey SILT			
	S-5B	21 - 25	---	ND		-----21'-----	S-5B: Purple to gray to orange, Silty CLAY, trace fine Sand. Mottled. Moist.		
22									2" Dia. Sch 40 PVC Silt Cap (22.1 to 22.3')
						Silty CLAY			
24									Formation Material (22.4 to 25')
						-----25'-----	Boring terminated at 25 feet. No refusal encountered.		
26									
28									
30									
32									
34									

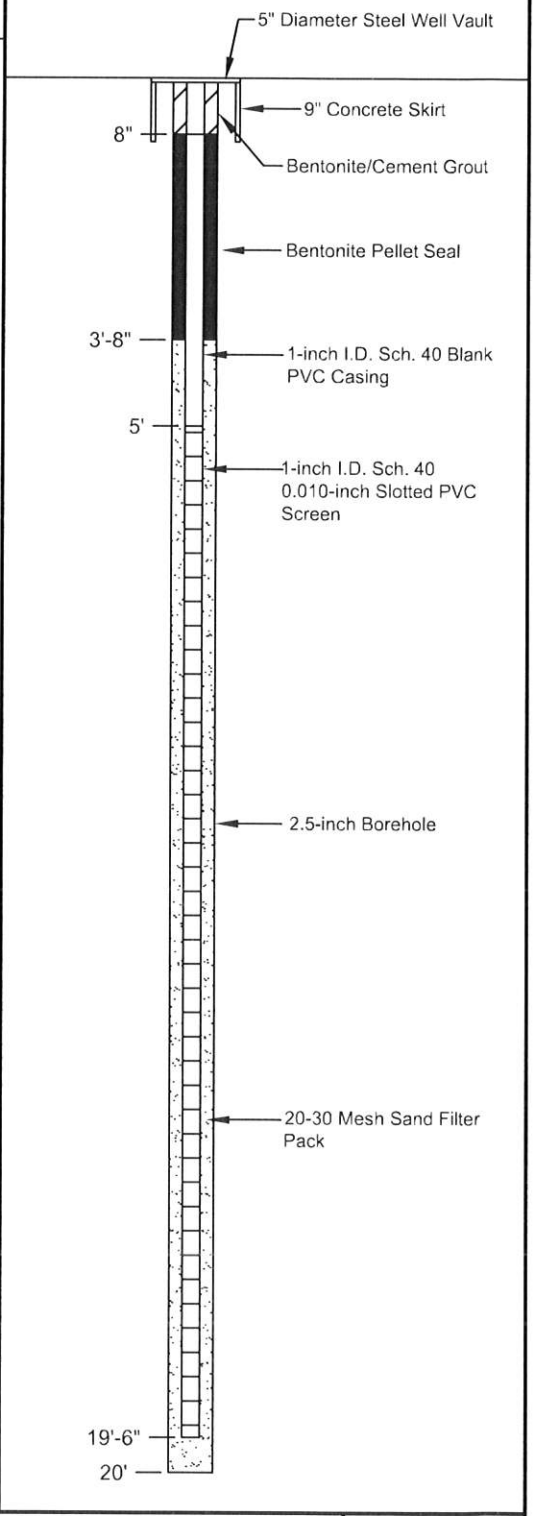
NOTES:

1. Soil samples were screened for volatile organic compounds (VOCs) using a Photovac MicroFID flame ionization detector (FID) calibrated to a 100 parts per million by volume (ppmv) methane-in-air standard using a response factor of 1.0. Results are presented in ppm; the typical detection limit is 1 ppm. "ND" indicates not detected. The FID measures relative levels of VOCs. Although FID screening can not be used directly to quantify VOC concentrations or identify individual compounds, the results serve as a relative indicator for the presence of VOCs.
2. Soil sample S-1B (2.9-5' interval) was submitted for laboratory analyses.
3. On 3/2/2007 at 1130 hours, the monitoring well was dry.

Pilot Test Boring PTB-01

Project: ***IR-Sylvania***	Drill Rig: ***Geoprobe 6610DT***	Top of Casing Elevation: ***186.80 ft. AMSL***
Installation Date: ***December 21, 2009***	Sampler: ***N/A***	Initial Groundwater Depth: ***N/A***
Logged By: ***Gerald Ingle***	Hole Diameter: ***2.5 - inch***	Final Groundwater Depth: ***16.01 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Refer to Lithology for MW-C1			0 – 20		



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Notes:
1. USCS = Unified Soil Classification System.
2. Groundwater measured from top of casing.

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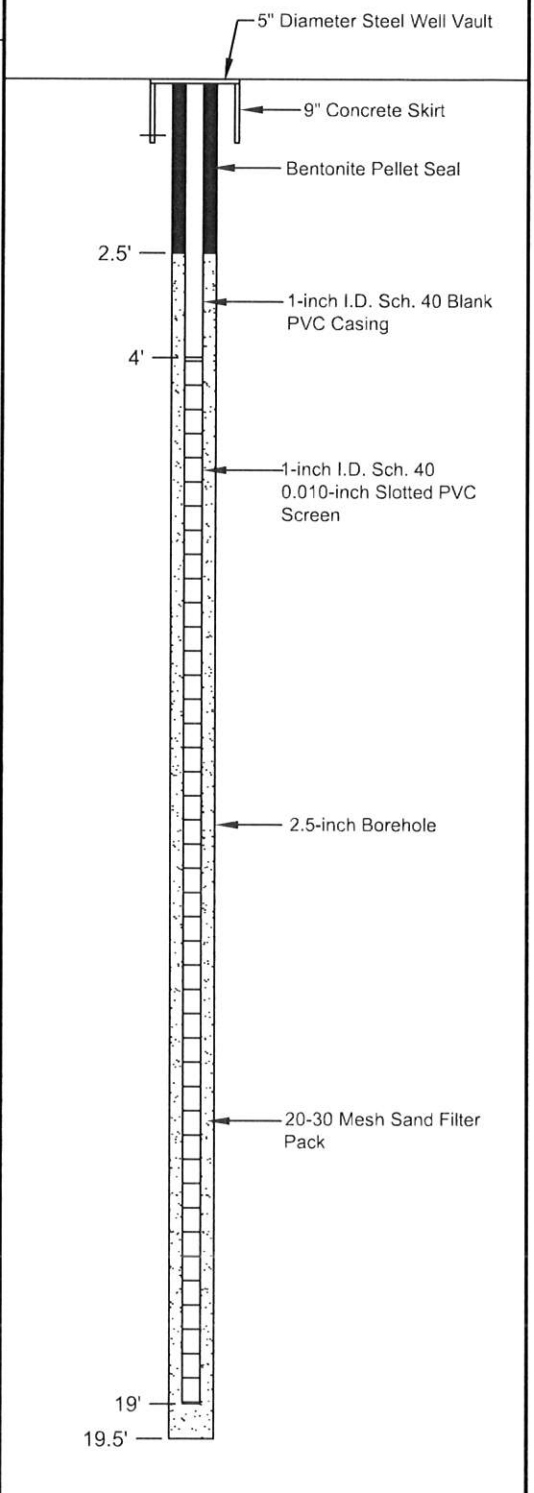
Project No. ***1162-1001-5***

Pilot Test Boring PTB-02

Project: ***IR-Sylvania***	Drill Rig: ***Geoprobe 6610DT***	Top of Casing Elevation: ***186.80 ft. AMSL***
Installation Date: ***December 21, 2009***	Sampler: ***N/A***	Initial Groundwater Depth: ***N/A***
Logged By: ***Gerald Ingle***	Hole Diameter: ***2.5 - inch***	Final Groundwater Depth: ***16.11 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Refer to Lithology for MW-C1			0 – 20		



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Notes:
1. USCS = Unified Soil Classification System.
2. Groundwater measured from top of casing.

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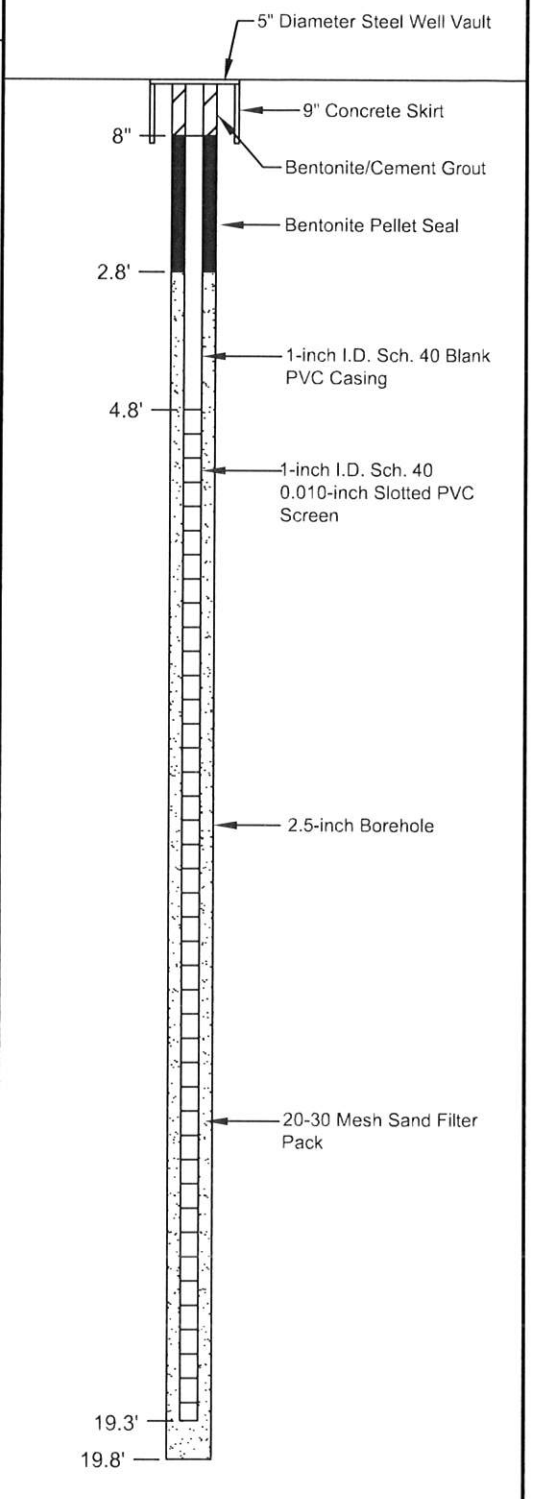
Project No. ***1162-1001-5***

Pilot Test Boring PTB-04

Project: ***IR-Sylvania***	Drill Rig: ***Geoprobe 6610DT***	Top of Casing Elevation: ***186.89 ft. AMSL***
Installation Date: ***December 21, 2009***	Sampler: ***N/A***	Initial Groundwater Depth: ***N/A***
Logged By: ***Gerald Ingle***	Hole Diameter: ***2.5 - inch***	Final Groundwater Depth: ***15.92 ft. BTOC***

Description	USCS Class	Graphic Log	Depth	Sample Interval	Blows / 6"
Refer to Lithology for MW-C1			0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		



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Notes:
1. USCS = Unified Soil Classification System.
2. Groundwater measured from top of casing.

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Project No. ***1162-1001-5***