



# MUESER RUTLEDGE CONSULTING ENGINEERS

<b>PROJECT</b> <u>ALLIED-SIGNAL INC. BALTIMORE WORKS</u>	<b>BORING NO.</b> <u>MR-239</u>
<b>LOCATION</b> <u>BALTIMORE, MARYLAND</u>	<b>SHEET</b> <u>2</u> <b>OF</b> <u>2</u>
<b>BORING LOCATION</b> <u>OFFSHORE, NORTH BULKHEAD, WEST END</u>	<b>FILE NO.</b> <u>6909</u>
	<b>MUDLINE ELEV.</b> <u>-11.5</u>
	<b>DATUM</b> <u>BC&amp;CMD</u>

**BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE**

TYPE OF BORING RIG	TYPE OF FEED DURING DRILLING	CASING USED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
TRUCK <u>MD-B-61</u>	MECHANICAL _____	DIA., IN. <u>2.5</u> DEPTH, FT. FROM <u>0.0</u> TO <u>11.0</u>
SKID _____	HYDRAULIC <u>X</u>	DIA., IN. _____ DEPTH, FT. FROM _____ TO _____
BARGE <u>X</u>	OTHER _____	DIA., IN. _____ DEPTH, FT. FROM _____ TO _____
OTHER _____		

TYPE AND SIZE OF:	DRILLING MUD USED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
D-SAMPLER <u>2" O.D. SPLIT SPOON</u>	DIAMETER OF ROTARY BIT, IN. <u>2</u>
U-SAMPLER _____	TYPE OF DRILLING MUD <u>WATER</u>
S-SAMPLER _____	AUGER USED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
CORE BARREL _____	TYPE AND DIAMETER, IN. _____
CORE BIT _____	CASING HAMMER, LBS. <u>140</u> AVERAGE FALL, IN. <u>30</u>
DRILL RODS <u>A W</u>	SAMPLER HAMMER, LBS. <u>140</u> AVERAGE FALL, IN. <u>30</u>

**WATER LEVEL OBSERVATIONS IN BOREHOLE**

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION

**PIEZOMETER INSTALLED**  YES  NO **SKETCH SHOWN ON** \_\_\_\_\_

STANDPIPE:	TYPE _____	ID, IN. _____	LENGTH, FT. _____	TOP ELEV. _____
INTAKE ELEMENT:	TYPE _____	OD, IN. _____	LENGTH, FT. _____	TIP ELEV. _____
FILTER:	MATERIAL _____	OD, IN. _____	LENGTH, FT. _____	BOT. ELEV. _____

**PAY QUANTITIES**

2.5" DIA. DRY SAMPLE BORING	LIN. FT. <u>13.0</u>	NO. OF 3" SHELBY TUBE SAMPLES _____	_____
3.5" DIA. U-SAMPLE BORING	LIN. FT. _____	NO. OF 3" UNDISTURBED SAMPLES _____	_____
CORE DRILLING IN ROCK	LIN. FT. _____	OTHER _____	LOWERED CASING 12.0' .
			1 EXTRA SPOON

**BORING CONTRACTOR** HARDIN HUBER INC.

**DRILLER** DON WILLEY **HELPERS** TERRY MISE

**REMARKS** GROUTED UPON COMPLETION.

**RESIDENT ENGINEER** BEN BENBASSET **DATE** 1-5-90

**MUESER RUTLEDGE CONSULTING ENGINEERS**  
**BORING LOG**

BORING NO. MR-240  
SHEET 1 OF 2  
FILE NO. 6909  
MUDLINE ELEV. -1.5  
RES. ENGR. BEN BENBASSET

PROJECT ALLIED-SIGNAL INC. BALTIMORE WORKS  
LOCATION BALTIMORE, MARYLAND

DAILY PROGRESS	SAMPLE			SAMPLE DESCRIPTION	STRATA	DEPTH	CASING BLOWS	REMARKS			
	NO.	DEPTH	BLOWS/6"								
1300 Tuesday 1-16-90 Partly Cloudy 45°F	1D	0.0	WR/24"	Black organic fine sandy silt, tr wood (OL)  Soft orange-brown organic clayey silt, tr fine sand (OH) Soft gray-brown organic clayey silt, sm fine sand, tr wood (OH)  Soft gray-brown organic clayey silt, tr dec veg, fine sand (OH) Stiff yel-brn clayey silt, sm silt seams, tr organic clay pkcts (Fill) (ML) Black coarse to fine sandy gravel, sm silt (GM)  Brown coarse to fine sandy gravel, tr silt (GP-GM)  Hard white clayey silt, tr fine sand (ML)  Hard white clayey silt, tr fine sand (ML)  Do 9D, mottled white and pink (ML)  White coarse to fine sand, sm gravel, tr silt, clay pockets (SP-SM)  Top 12": Pink silty gravel, sm coarse to fine sand (GM) Bot 9": Hard compact mottled orange and white clayey silt, sm fine to coarse sand (Decomposed Rock) (ML)							
			2.0					WCC	Lowered casing 3.0'.		
								Washed	Tide @ +1.5'.		
		2D	4.0		WR/24"		5.0	Ahead	1D: DPC-N		
			6.0						Attempte dtube at 4' - sample fell out while pulling rods.		
		3D	6.5		WR/24"				2D: DPC-Violet		
			8.5						Attempted tube at 6.5'. No recovery.		
		4D	9.0		WR/24"		10.0		3D: DPC-Violet		
			11.0						Attempted tube at 9' - No recovery		
		5S	11.5		Push=24" Rec=24"				4D: DPC-Violet		
			13.5				14.0	✓	Attempted tube at 14' - couldn't push-tube crushed		
		6D	14.0		17-56		15.0	Drove	6D: DPC-N Organic odor some cementation of sand.		
			16.0		34-32			Casing	Drill chatter 14' to 23' (inside casing)		
	1630								7D: DPC-N		
0750 Wednesday 1-17-90 Sunny 50°F	7D	19.0	4-8				Pink wash at 23' (inside casing)				
		21.0	23-28		20.0		8D: DPC-N				
					23.0		9D: DPC-N				
		8D	24.0	11-18		25.0	Drilled	10D: DPC-N			
			26.0	21-26			Ahead	Drill chatter at 38.5'.			
								11D DPC: Delayed-Pink.			
		9D	29.0	13-19		30.0		12D DPC: Top -N			
			31.0	28-34				Bot Delayed-Pink.			
		10D	34.0	14-27		35.0		Drilled down to 49' for next sample but hole collapsed while removing rods.			
		35.8	57-100/4"				Tried to drive casing but refused.				
							End of boring at 49.0'.				
	11D	39.0	37-76		38.5	✓	Grouted upon completion.				
		40.9	100/5"		40.0	Open Hole					
	12D	44.0	15-17		45.0						
		45.8	29-100/3"								
1130					49.0						
					50.0						

BORING NO. MR-240

# MUESER RUTLEDGE CONSULTING ENGINEERS

<b>PROJECT</b> <u>ALLIED-SIGNAL INC. BALTIMORE WORKS</u>	<b>BORING NO.</b> <u>MR-240</u>
<b>LOCATION</b> <u>BALTIMORE, MARYLAND</u>	<b>SHEET</b> <u>2</u> <b>OF</b> <u>2</u>
<b>BORING LOCATION</b> <u>BACK BASIN</u>	<b>FILE NO.</b> <u>6909</u>
	<b>MUDLINE ELEV.</b> <u>-1.5</u>
	<b>DATUM</b> <u>BC&amp;CMD</u>

**BORING EQUIPMENT AND METHODS OF STABILIZING BOREHOLE**

TYPE OF BORING RIG	TYPE OF FEED DURING DRILLING	CASING USED <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
TRUCK <u>MD-B-61</u>	MECHANICAL _____	DIA., IN. <u>4.0</u> DEPTH, FT. FROM <u>0.0</u> TO <u>14.0</u>
SKID _____	HYDRAULIC <u>X</u>	DIA., IN. <u>2.5</u> DEPTH, FT. FROM <u>0.0</u> TO <u>39.0</u>
BARGE <u>X</u>	OTHER _____	DIA., IN. _____ DEPTH, FT. FROM _____ TO _____
OTHER _____		

**TYPE AND SIZE OF:**

D-SAMPLER 2" O.D. SPLIT SPOON  
 U-SAMPLER \_\_\_\_\_  
 S-SAMPLER 3" DIAMETER SHELBY  
 CORE BARREL \_\_\_\_\_  
 CORE BIT \_\_\_\_\_  
 DRILL RODS A W

DRILLING MUD USED  YES  NO

DIAMETER OF ROTARY BIT, IN. 2, 3.5

TYPE OF DRILLING MUD WATER/SUPER MUD/ZEOGEL

AUGER USED  YES  NO

TYPE AND DIAMETER, IN. \_\_\_\_\_

CASING HAMMER, LBS	<u>140</u>	AVERAGE FALL, IN.	<u>30</u>
CASING HAMMER, LBS.	<u>300</u>	AVERAGE FALL, IN.	<u>30</u>
SAMPLER HAMMER, LBS.	<u>140</u>	AVERAGE FALL, IN.	<u>30</u>

**WATER LEVEL OBSERVATIONS IN BOREHOLE**

DATE	TIME	DEPTH OF HOLE	DEPTH OF CASING	DEPTH TO WATER	CONDITIONS OF OBSERVATION

**PIEZOMETER INSTALLED**

YES  NO

SKETCH SHOWN ON \_\_\_\_\_

STANDPIPE: TYPE _____	ID, IN. _____	LENGTH, FT. _____	TOP ELEV. _____
INTAKE ELEMENT: TYPE _____	OD, IN. _____	LENGTH, FT. _____	TIP ELEV. _____
FILTER: MATERIAL _____	OD, IN. _____	LENGTH, FT. _____	BOT. ELEV. _____

**PAY QUANTITIES**

2.5" DIA. DRY SAMPLE BORING	LIN. FT. <u>49.0</u>	NO. OF 3" SHELBY TUBE SAMPLES	<u>1 (5 ATTEMPTS)</u>
3.5" DIA. U-SAMPLE BORING	LIN. FT. _____	NO. OF 3" UNDISTURBED SAMPLES	_____
CORE DRILLING IN ROCK	LIN. FT. _____	OTHER	<u>LOWERED CASING 3.0'</u> <u>1 EXTRA SPLIT SPOON</u>

BORING CONTRACTOR HARDIN HUBER INC.

DRILLER DON WILLEY HELPERS JAY CORRON

REMARKS GROUTED UPON COMPLETION.

RESIDENT ENGINEER BEN BENBASSET DATE 1-17-90

**BORING NO. MR-240**