

November 10, 1988

Reference No. 2227

Mr. Craig Smith
Superfund Section
USEPA
Region VII
726 Minnesota Avenue
Kansas City, Kansas
U.S.A. 66101

Site:	SHAW
ID #:	LAD980630560
Break:	10.9
Other:	

RECEIVED

NOV 15 1988

CMPL SECTION

Dear Mr. Smith:

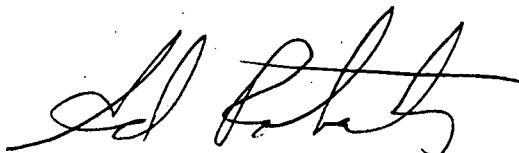
Re: Shaw Avenue Site, Charles City, Iowa
Docket No. CERCLA 88-F-0007
Monthly Progress Report

Please find enclosed, as per the Administrative Order on Consent (Consent Order), Item 31, the sixth monthly progress report, for the Shaw Avenue Site RI/FS. This monthly progress report covers the period between October 1, 1988 and October 31, 1988.

Should you have any questions, do not hesitate to contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES



Ed Roberts, P. Eng.

ER/jve/3
Encl.

c.c. Dan Barrett, City of Charles City (w/encl.)
Neil Leipzig, Salsbury Laboratories (w/encl.)

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Superfund

SHAW AVENUE SITE
 CHARLES CITY, IOWA
 DOCKETT NO. CERCLA 88-F-0007
 MONTHLY PROGRESS REPORT NO. 6
 OCTOBER, 1988

<u>Item</u>	<u>Activity/Description</u>	<u>Date Completed</u> <u>(mm/dd/yy)</u>
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1.	<u>Topographic Map</u> - A corrected copy of the topographic with and without the monitoring well and borehole locations is enclosed.	
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2.	<u>Monitoring Well Installation</u> - All monitoring wells and boreholes were completed - Stratigraphic and instrumentating logs are attached. - Well Installation/Borehole Completion Summary Table attached. - It should be noted that the well identification reported in the two previous monthly reports has been revised slightly. A cross-reference between the previous identification and the new identification is provided below:	09/26/88
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<u>Previous I.D.</u>	<u>New I.D.</u>
MW-1AS	MW-1B (shallow alluvium well)
MW-1AD	MW-1A (deep alluvium well)
MW-2A	MW-2A (alluvium well)
MW-2B	MW-2 (bedrock well)
MW-3A	MW-3A (alluvium well)
MW-3B	MW-3 (bedrock well)
MW-4AS	MW-4B (shallow alluvium well)
MW-4AD	MW-4A (deep alluvium well)
MW-4B	MW-4 (bedrock well)
MW-6A	MW-6A (alluvium well)

<u>Item</u>	<u>Activity/Description</u>		<u>Date Completed</u> <u>(mm/dd/yy)</u>
	<u>Previous I.D.</u>	<u>New I.D.</u>	
	MW-6B	MW-6 (bedrock well)	
	MW-7B	MW-7 (bedrock well)	
	MW-8A	MW-8A (alluvium well)	
	MW-8B	MW-8 (bedrock well)	
	MW-9B	MW-9 (bedrock well)	
	BH-5a	BH-5a (fill borehole)	
	BH-5b	BH-5b (alluvium borehole)	
	BH-5c	BH-5c (alluvium borehole)	

- All future reference to monitoring wells and boreholes will reflect the new I.D.

3. Monitoring Well Development

- Monitoring well development commenced during drilling and continued subsequent to drilling.
- All wells were developed using either a stainless steel bailer, peristaltic pump, bladder pump, or combination of these devices.
- Prior to development of the bedrock wells, the drilling contractor removed 1.5 times the volume of water lost during coring from as many wells as possible. This was accomplished at wells MW-2, MW-3, MW-4 and MW-6. Wells MW-7, MW-8 and MW-9 went dry before the necessary volumes were removed. The drilling water removed from the bedrock wells is summarized as follows:

10/09/88

<u>Item</u>	<u>Activity/Description</u>		<u>Date Completed</u> (mm/dd/yy)
<u>Drill Water Removed</u>			
	<u>Volume Lost</u>	<u>Volume Removed</u>	<u>Date Removed</u>
MW-2	35 gallons	55 gallons	9/28/88
MW-3	100 gallons	150 gallons	9/29-30/88
MW-4	90 gallons	135 gallons	9/28/88
MW-6	940 gallons	1555 gallons	9/28-30/88
MW-7	30 gallons	1 (dry)	9/28/88
MW-8	100 gallons	5 (dry)	9/30/88
MW-9	145 gallons	1.5 (dry)	9/30/88

- Wells MW-1A, MW-1B, MW-2A, MW-3A and MW-6A were developed during drilling activities (i.e. prior to September 27, 1988).
- Due to time and equipment constraints development of the remaining wells was performed in conjunction with the ground water sampling program. In these cases groundwater was removed until sediment free conditions were obtained. Periodic measurements of pH, conductivity and temperature were made and recorded during development.
- Once sediment free water was obtained purging continued for five additional well volumes before samples were collected for the Groundwater Sampling Program.
- Wells MW-7, MW-8 and MW-9 were each bailed dry at least twice for well development. These wells were then bailed dry one more time before sampling as described in the groundwater sampling protocols.
- Well development logs for all wells are attached.

<u>Item</u>	<u>Activity/Description</u>	<u>Date Completed (mm/dd/yy)</u>
4.	<p><u>Groundwater Sampling</u></p> <p>- The groundwater sampling program was conducted and completed in accordance with the Work Plan with the following exceptions:</p> <ul style="list-style-type: none">• Pg. B-8, Paragraph 1 <p>"In the event that a well is purged dry prior to achieving the required well volumes, groundwater will be permitted to recover to a level sufficient for sample collection and the first bailer volume discarded". Since bailers were dedicated to each dry well for development and sampling the first bailer volume at the time of sampling was not discarded.</p> <ul style="list-style-type: none">• Pg. B-9, Paragraph 3 <p>"Samples collected for Cyanide analysis will be field filtered..." Cyanide samples were not field filtered.</p> <p>- Sample collection data sheets are attached.</p>	10/09/88
5.	<p><u>Surface and Wastewater Sampling</u></p> <p>- surface water and wastewater sampling was completed on the same day, subsequent to ground water sampling</p> <p>- Two grab samples were collected from the Cedar River, one opposite station 11 and one opposite station 12. Sampling of the Cedar River for the LaBounty Site was also conducted on this day.</p>	10/11/88

<u>Item</u>	<u>Activity/Description</u>	<u>Date Completed</u> <u>(mm/dd/yy)</u>
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- Although the Work Plan specified that samples would be collected at "one-third water depth below surface" low water conditions (<1 foot of water) made it necessary to extend the sample depth as follows:
 - Station 11 - sampled full depth (0.25 feet)
 - Station 12 - sampled 0-0.5 feet depth (full water depth is 0.75 feet)
- Three WWTP samples (2-influent; 1 effluent) were collected. Due to the depth of the manhole from which one of the influent samples was obtained, collection directly into the sample containers was not possible. In this case a precleaned stainless steel bucket was lowered into the manhole and the water was poured into the sample glassware at the surface.
- It should be noted that the influent water samples were of such quality that field filtering of the cyanide sample (one liter) was not feasible. These samples were prefiltered but filtering using the micron filter would have taken approximately three hours per sample. The influent water samples appeared to contain fats or grease.
- The effluent water sample was handled according to the Work Plan.
- Sample Collection Data Sheets for surface and wastewater samples are attached.

<u>Item</u>	<u>Activity/Description</u>	<u>Date Completed</u> <u>(mm/dd/yy)</u>
6.	<u>Monitoring Well Hydraulic Testing</u> <ul style="list-style-type: none">- With the exception of well MW-8A, falling and rising head slug tests were performed on all overburden monitoring wells. During development and sampling of the "dry" wells, (MW-7, MW-8, MW-8A and MW-9) recovery data was also collected.- Bedrock wells MW-2, MW-3, MW-4 and MW-6 recovered instantaneously during development. Therefore, slug test were not performed on these wells.- Data obtained from the slug tests and recovery data is currently being utilized by CRA to calculate in-site hydraulic conductivity for each well. The data and results will be forwarded to the EPA when completed.	
7.	<u>Water Level Monitoring</u> <ul style="list-style-type: none">- water level monitoring data collected to date are attached.	
8.	<u>Private Well Survey</u> <ul style="list-style-type: none">- All private wells identified in the Fourth Monthly Progress Report are no-longer in use with the exception of the one well located outside the city limits.- Based on the water level data, this well is not downgradient of the Shaw Avenue Site, however, a water sample is still proposed to be collected during Round 2 sampling.	

TABLE 1

WELL INSTALLATION/BOREHOLE COMPLETION SUMMARY

WELL NO.	GROUND ELEVATION (FT. AMSL)	TOP OF CASING ELEVATION (FT. AMSL)	BOTTOM OF BOREHOLE (COREHOLE) ELEVATION (FT. AMSL)	SAND PACK INTERVAL ELEV. (FT. AMSL)	SCREEN/COREHOLE INTERVAL ELEV. (FT. AMSL)
MW-1A	990.5	993.44	943.2	943.8 - 962.3	943.9 - 958.9
MW-1B	990.7	993.49	958.7	958.7 - 978.2	958.7 - 975.7
MW-2A	983.5	986.32	953.5	953.5 - 978.0	954.0 - 974.0
MW-2	983.5	986.48	(932.3)	N/A	932.3 - 947.3
MW-3A	988.5	991.14	996.0	966.0 - 977.4	966.2 - 976.2
MW-3	988.3	990.78	(948.2)	N/A	948.2 - 963.2
MW-4A	989.5	992.43	938.5	938.5 - 958.3	939.0 - 956.0
MW-4B	989.2	992.21	955.2	955.2 - 974.7	955.7 - 972.7
MW-4	989.5	993.05	(922.0)	N/A	922.0 - 937.0
MW-6A	1001.6	1004.59	962.1	962.1 - 981.6	962.1 - 977.1
MW-6	1001.7	1004.62	(938.5)	N/A	938.5 - 961.5
MW-7	1002.9	1006.43	(981.1)	N/A	981.1 - 996.1
MW-8A	1010.6	1013.75	993.8	993.8 - 1000.6	993.8 - 998.8
MW-8	1010.5	1013.11	(977.8)	N/A	977.8 - 992.8
MW-9	995.8	998.01	972.7	N/A	972.7 - 987.7
BH-5a	1005.0	N/A	997.7	N/A	N/A
BH-5b	1003.3	N/A	996.3	N/A	N/A
BH-5c	1006.4	N/A	1002.1	N/A	N/A

NOTE:

N/A = Not Applicable

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TABLE 2

WATER LEVEL ELEVATIONS

WELL NO.	GROUND ELEV. (FT AMSL)	TOP OF CASING ELEV (FT. AMSL)	WATER LEVEL ELEVATION (FT AMSL)		
			SEPT. 28/88	OCT. 10/88 (2)	4-Nov-88
MW-1A	990.5	993.44	972.53	972.79	972.73
MW-1B	990.7	993.49	972.49	972.81	972.72
MW-2A	983.5	986.32	972.51	972.83	972.80
MW-2	983.5	986.48	972.77	973.15	973.06
MW-3A	988.5	991.14	972.57	972.82	972.71
MW-3	988.3	990.78	973.00	973.31	973.00
MW-4A	989.5	992.43	972.86	973.14	972.80
MW-4B	989.2	992.21	972.83	973.15	973.02
MW-4	989.5	993.05	973.03	973.34	973.22
MW-6A	1001.6	1004.59	973.20	973.38	973.26
MW-6	1001.7	1004.62	977.26	976.73	975.76
MW-7	1002.9	1006.43	983.35	982.47	DRY
MW-8A	1010.6	1013.75	994.65	994.90	994.90
MW-8	1010.5	1013.11	988.41	982.52	982.47
MW-9	995.8	998.01	976.73	976.62	975.18
CEDAR RIVER (1)			NM	972.75	972.79
GRAVEL PIT (WEST SIDE) (1)			NM	972.95	972.91
(EAST SIDE) (1)			NM	972.97	972.89

NOTES: (1) SURVEYED BY HOWARD R GREEN CO.

(2) CEDAR RIVER AND GRAVEL PIT ELEVATIONS SURVEYED ON OCT 11/88

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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: SOUTH-WEST OF REFUSE AREA ONSITE

HOLE DESIGNATION: MW-1A
 (PAGE 1 of 2)
 DATE COMPLETED: 08/24/88
 DRILLING METHOD: HSA-6 1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	993.44 990.5				
2.0	Brown SILT, some medium to fine sand, little coarse to fine gravel, trace roots and cement, dry, FILL same, except with some glass		<p style="font-size: small;">CEMENT/ BENTONITE GROUT</p> <p style="font-size: small;">10.0" BOREHOLE</p> <p style="font-size: small;">2" PVC PIPE</p> <p style="font-size: small;">BENTONITE SEAL</p>	1SS	X	PUSH
	same, except some cement, trace wood			2SS	X	3
4.0	same, except brown and black mottled, trace plastic, brick, moist			3SS	X	3
6.0	same, except brown, trace brick and cement, dry			4SS	X	7
8.0	same, except brown and black			5SS	X	15
	same, except brown, moist			6SS	X	12
10.0	same, except dark gray and brown mottled, trace brick, glass and plastic, moist			7SS	X	7
12.0	Dark brown SILT, some fine sand, trace clay, moist, NATIVE (ML)	978.5		8SS	X	5
14.0				9SS	X	8
16.0	Light brown medium to fine SAND, little silt, moist (SM)	974.5		10SS	X	7
	Gray fine SAND, some silt, wet	973.5		11SS	X	9
18.0	Light brown medium to fine SAND, little silt, wet	972.8 972.5		12SS	X	2
	Tan coarse to fine SAND, trace fine gravel, wet (SP)	971.9		13SS	X	7
20.0	same, except with trace silt			14SS	X	6
22.0	same, except with trace coarse gravel			15SS	X	9
24.0	same, except without coarse gravel			16SS	X	19
26.0	same, except with trace limestone fragments			17SS	X	34
				18SS	X	8

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS WATER FOUND STATIC WATER LEVEL

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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: SOUTH-WEST OF REFUSE AREA ONSITE

HOLE DESIGNATION: MW-1A
 (PAGE 2 of 2)
 DATE COMPLETED: 08/24/88
 DRILLING METHOD: HSA-6 1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
28.0	same, except with trace limestone fragments		<p>BENTONITE SEAL</p> <p>2" PVC PIPE</p> <p>SAND PACK</p> <p>WELL SCREEN</p>	19SS		9
30.0				20SS		15
32.0	same, except clayey SILT seam, 1/4" thick @ 32.8 ft			21SS		20
34.0	Tan to brown, medium to fine SAND, trace silt, wet, with interbedded coarse sand and fine gravel (SP)	957.7		22SS		23
36.0				23SS		48
38.0	Gray SILT, little clay, moist (ML)	953.5		24SS		60
40.0	Gray medium to fine SAND, some silt, trace fine gravel and clay, wet (SM)	951.7		25SS		13
42.0	Tan coarse to fine SAND, some coarse to fine gravel and limestone fragments, trace silt, wet (SP)	950.1		26SS		8
44.0	Tan LIMESTONE fragments, some coarse to fine sand, trace fine gravel, wet	948.7		27SS		24
46.0	same, except with trace clay			28SS		48
48.0	Gray LIMESTONE fragments, wet	943.2		29SS		58
50.0	END OF HOLE @ 47.3 FT. BGS NOTES: 1. Bedrock encountered at 47.3 ft BGS. 2. At completion two overburden wells were installed (MW-1A and MW-1B).			30SS		46
52.0				31SS		69
				32SS		39/3

SCREEN DETAILS:
 Screened interval:
 958.9 to 943.9 AMSL
 Length -15'
 Diameter -2"
 Slot # 010
 Material - Stainless Steel
 Sand pack interval:
 962.3 to 943.8 AMSL
 Sand pack material:
 No. 12-30 Quartzite

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

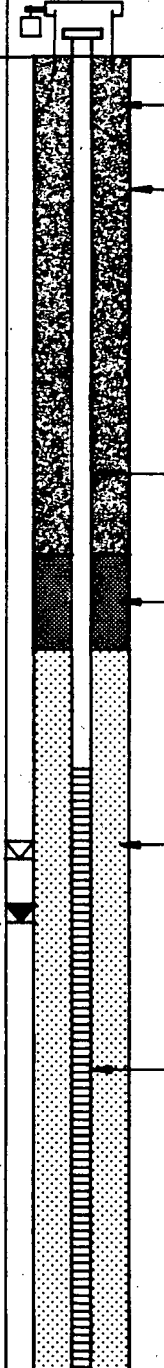
CHEMICAL ANALYSIS ○ WATER FOUND ▽ STATIC WATER LEVEL ▼

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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: SOUTH-WEST OF REFUSE AREA ONSITE

HOLE DESIGNATION: MW-1B
 (PAGE 1 of 2)
 DATE COMPLETED: AUGUST 25, 1988
 DRILLING METHOD: HSA-6 1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	993.49 990.7				
2.0	Brown SILT, some medium to fine sand, little coarse to fine gravel, trace roots and cement, dry, FILL same, except with some glass					
4.0	same, except some cement, trace wood same, except brown and black mottled, trace plastic, brick, moist					
6.0	same, except brown, trace brick and cement, dry					
8.0	same, except brown and black same, except brown, moist					
10.0	same, except dark gray and brown mottled, trace brick, glass and plastic, moist					
12.0	Dark brown SILT, some fine sand, trace clay, moist, NATIVE (ML)	978.7				
14.0						
16.0	Light brown medium to fine SAND, little silt, moist (SM)	974.7				
18.0	Gray fine SAND, some silt, wet Light brown medium to fine SAND, little silt wet	973.7 973.0 972.7 972.5				
20.0	Tan coarse to fine SAND, trace fine gravel, wet (SP) same, except with trace silt					
22.0	same, except with trace coarse gravel					
24.0	same, except without coarse gravel					
26.0	same, except with trace limestone fragments					

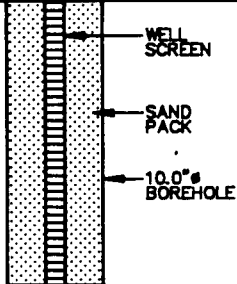
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS ○ WATER FOUND ∇ STATIC WATER LEVEL ▼

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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: SOUTH-WEST OF REFUSE AREA ONSITE

HOLE DESIGNATION: MW-1B
 (PAGE 2 of 2)
 DATE COMPLETED: AUGUST 25, 1988
 DRILLING METHOD: HSA-6 1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
28.0 30.0 32.0 34.0 36.0 38.0 40.0 42.0 44.0 46.0 48.0 50.0 52.0	<p>same, except with trace limestone fragments</p> <hr/> <p>END OF HOLE ● 32 FT. BGS</p> <p>NOTES: 1. Stratigraphy taken from adjacent well MW-1A.</p>	958.7	 <p style="font-size: 8px; margin: 0;">WELL SCREEN</p> <p style="font-size: 8px; margin: 0;">SAND PACK</p> <p style="font-size: 8px; margin: 0;">10.0" BOREHOLE</p>			
<p>SCREEN DETAILS: Screened interval: 975.7 to 958.7 AMSL Length -17' Diameter -2" Slot # 010 Material - Stainless Steel Sand pack interval: 978.2 to 958.7 AMSL Sand pack material: No. 12-30 Quartzite</p>						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ○ WATER FOUND ∇ STATIC WATER LEVEL ▼

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: SOUTHWEST OF SITE, ADJACENT TO CEDAR RIVER

HOLE DESIGNATION: MW-2
 (PAGE 1 of 4)
 DATE COMPLETED: SEPTEMBER 20, 1988
 DRILLING METHOD: HSA 6 1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	986.48 983.5				
2.0	Brown SILT, some fine sand, trace roots and wood, moist, FILL			1SS		PUSH
4.0	Brown fine SAND, some silt and wood, moist same, except black, with trace wire	980.5	10.0" BOREHOLE	2SS		6
6.0	same, except light brown, without wire, wood same, except light gray			3SS		6
8.0	same, except black, with some wood			4SS		7
10.0	same, except light gray, without wood			5SS		7
12.0	Dark brown SILT, some fine sand, trace clay, roots, wire, moist	974.5	4" PVC PIPE	6SS		7
14.0	Gray medium to fine SAND, some silt, wet, NATIVE (SM)	973.0 972.8		7SS		5
16.0	Brown coarse to fine SAND, some coarse to fine gravel, trace, silt, wet (SP)	971.5		8SS		13
18.0	same, except without coarse gravel			9SS		14
20.0	Gray LIMESTONE fragments, trace fine sand and silt, wet	964.2 964.0		10SS		12
22.0	Brown coarse to fine SAND, trace silt and fine gravel, wet (SP)			11SS		20
24.0	same, except with trace coarse gravel			12SS		24
26.0	Brown medium to fine SAND, some silt, trace fine gravel, wet (SM)	961.0	CEMENT/BENTONITE GROUT	13SS		19
	Brown SILT, some medium to fine sand, trace clay and fine gravel, wet (SM)	959.9 959.5		14SS		12
	Gray medium to fine SAND, some SILT and limestone fragments, trace clay, wet (SM)			15SS		20
				16SS		11
				17SS		24
				18SS		28

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS WATER FOUND STATIC WATER LEVEL

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STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE

HOLE DESIGNATION: MW-2
(PAGE 2 of 4)

PROJECT NO.: 2227

DATE COMPLETED: SEPTEMBER 20, 1988

CLIENT: CHARLES CITY AND SALSBURY LABS

DRILLING METHOD: HSA 6 1/4 ID

LOCATION: SOUTHWEST OF SITE, ADJACENT TO CEDAR RIVER

CRA SUPERVISOR: P. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
28.0	Gray and brown mottled SILT and CLAY, some weathered bedrock, moist (CL)	955.0		19SS	X	21
30.0				20SS	X	18
32.0				21SS	X	23
34.0	Tan weathered bedrock, some silt and clay, wet	951.0		22SS	X	50/5
36.0	Bedrock encountered @ 35.7 ft. BGS	947.8		23SS	X	50/4
38.0	END OF OVERBURDEN HOLE @ 36.2 ft. BGS	947.3				
40.0	NOTES: 1. Bedrock encountered at 35.7 ft. BGS 2. Roller bit advanced to 36.2 ft. BGS for casing notch. 3. Bedrock was NX cored to 51.2 ft. BGS 4. Bottom of casing at 36.2 ft. BGS					
42.0						
44.0						
46.0						
48.0						
50.0						
52.0						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ○

WATER FOUND ▽

STATIC WATER LEVEL ▼

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: SHAW AVENUE	HOLE DESIGNATION: MW-2 (Page 3 of 4)
PROJECT NO.: 2227	DATE COMPLETED: SEPTEMBER 20, 1988
CLIENT: CHARLES CITY AND SALSBURY LABS	DRILLING METHOD: WIRELINE-NX
LOCATION: SOUTHWEST OF SITE, ADJACENT TO CEDAR RIVER	CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BIENT RECORD CV KAL	RUN NUMBER	CORRECTION	ROD	WATER
ft BG	REFERENCE POINT (Top Of Casing) GROUND SURFACE	ft. AMSL 986.48 983.5				%	%	%
	Overburden							
36.0	Top of bedrock @ 35.7 ft.							
	Limestone breccia, gray, clasts to 3 cm. Mud seam (36.3)							
37.0	Limestone, argillaceous, light gray, fine grained, thin to medium bedded, some vertical fractures some calcite filled veins Mud seam (37.2)	946.2			1	100	63	100
38.0	Limestone, dolomitic, light gray, aphanitic, medium bedded High angle fracture (37.5)	945.3						
39.0	Dolomite, light brown, argillaceous, soft, weathered, very porous, with calcite filled voids	944.4						
40.0	Limestone, dark gray to brown, fine grained, thin bedded, some stylolites, some calcite filled veins Mud seam (40.3)	942.8						
41.0	Dolomite, weathered, argillaceous, light brown, soft, some calcite filled veins	940.6						
42.0		939.4						
43.0	Limestone, dolomitic, medium to light gray, fine grained, thin to medium bedded, occasional calcite filled voids							
44.0		937.3						
45.0	High angle fracture (45.3 to 45.7)							
46.0	Mud seams (45.9 and 46.1)							
	Limestone, light gray, thin to medium bedded Mud seams (46.6 and 46.9)	937.3		3	100	53	80	
47.0	Calcite filled vugs (47.2 to 48.3)							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

WATER FOUND
 STATIC WATER LEVEL
 NM - NOT MEASURED

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: SHAW AVENUE

HOLE DESIGNATION: MW-2

PROJECT NO.: 2227

DATE COMPLETED: (Page 4 of 4)
SEPTEMBER 20, 1988

CLIENT: CHARLES CITY AND SALSBUARY LABS

DRILLING METHOD: WIRELINE-NX

LOCATION: SOUTHWEST OF SITE, ADJACENT TO CEDAR RIVER

CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BIENT RECORD	CORRECTION	ROD	WATER RETURN
ft BG	REFERENCE POINT (Top Of Casing) GROUND SURFACE	ft. AMSL 986.48 983.5			%	%	%
48.0	Mud seam Calcite filled vugs (47.2 to 48.3)	932.3	<div style="border: 1px solid black; width: 20px; height: 100px; margin: 0 auto;"></div> <p style="margin: 0; text-align: center;">3" NX BOREHOLE</p>				
49.0	Calcite filled vugs (5 cm dia) and occasional calcite filled veins (48.8 to 51.2)			3	100	53	80
50.0				4	100	88	80
51.0	Mud seam (50.5)						
	END OF HOLE ● 51.2 FT. BGS						
52.0							
53.0							
54.0							
55.0							
56.0							
57.0							
58.0							
59.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



WATER FOUND



STATIC WATER LEVEL

NM - NOT MEASURED

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE	HOLE DESIGNATION: MW-2A (PAGE 1 of 2)
PROJECT NO.: 2227	DATE COMPLETED: SEPTEMBER 9, 1988
CLIENT: CHARLES CITY AND SALSBURY LABS	DRILLING METHOD: HSA 6 1/4 ID
LOCATION: SOUTHWEST OF SITE, ADJACENT TO CEDAR RIVER	CRA SUPERVISOR: P. SMITH

DEPTH ft. BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	VALUE	
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	986.32 983.5					
2.0	Brown SILT, some fine sand, trace roots and wood, moist, FILL						
4.0	Brown fine SAND, some silt and wood, moist same, except black, with trace wire	980.5		(1SS)	X	11	
6.0	same, except light brown, without wire, wood same, except light gray						
8.0	same, except black, with some wood same, except light gray, without wood						
10.0	Dark brown SILT, some fine sand, trace clay roots, wire, moist	974.5					
12.0	Gray medium to fine SAND, some silt, wet, NATIVE (SM)	973.0 972.5		▽			
14.0	Brown coarse to fine SAND, some coarse to fine gravel, trace, silt, wet (SP) same, except without coarse gravel	971.5			(2SS)	X	15
16.0				SAND PACK			
18.0							
20.0	Gray LIMESTONE fragments, trace fine sand and silt, wet	964.2 964.0					
22.0	Brown coarse to fine SAND, trace silt and fine gravel, wet (SP) same, except with trace coarse gravel		WELL SCREEN				
24.0	Brown medium to fine SAND, some silt, trace fine gravel, wet (SM)	961.0					
26.0	Brown SILT, some medium to fine sand, trace clay and fine gravel, wet (SM) Gray medium to fine SAND, some SILT and limestone fragments, trace clay, wet (SM)	959.9 959.5					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

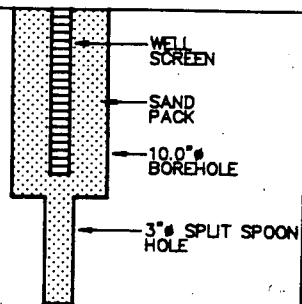
CHEMICAL ANALYSIS
 WATER FOUND
 STATIC WATER LEVEL

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: SOUTHWEST OF SITE, ADJACENT TO

HOLE DESIGNATION: MW-2A
 (PAGE 2 of 2)
 DATE COMPLETED: SEPTEMBER 9, 1988
 DRILLING METHOD: HSA 6 1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
28.0	Gray and brown mottled SILT and CLAY, some weathered bedrock, moist (CL)	955.0		<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;">JSS</div>	<div style="border: 1px solid black; width: 15px; height: 15px; margin: 0 auto;"></div>	82
30.0		953.5				
32.0	END OF HOLE @ 30.0 ft. BGS NOTES: 1. Stratigraphy taken from adjacent well MW-2. 2. Samples for chemical analyses collected from 3.0 to 5.0, 13.0 to 15.0 and 30.0 to 32.0 ft. BGS.					
34.0						
36.0						
38.0						
40.0						
42.0						
44.0						
46.0						
48.0						
50.0						
52.0						

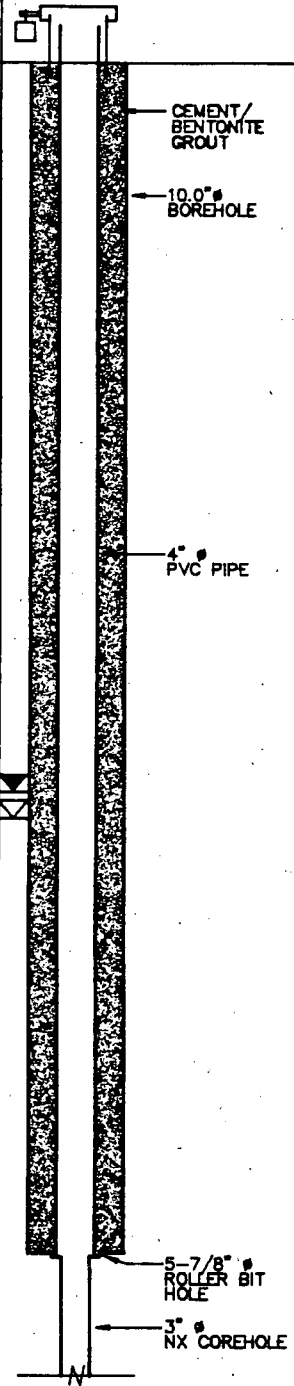

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS WATER FOUND STATIC WATER LEVEL

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: SOUTHEAST OF REFUSE AREA

HOLE DESIGNATION: MW-3
 (Page 1 of 3)
 DATE COMPLETED: SEPTEMBER 20, 1988
 DRILLING METHOD: HSA 6 1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	990.78 988.3				
2.0	Brown SILT, little coarse to fine sand, trace fine gravel, brick and roots, dry FILL		CEMENT/ BENTONITE GROUT	1SS	X	PUSH
	same, except with trace wire		10.0" Ø BOREHOLE	2SS	X	3
4.0	No recovery (4.5'–6.0')			3SS	X	13
6.0				4SS	X	13
8.0				5SS	X	10
10.0	Brown medium to fine SAND, some silt, moist, NATIVE (SM)	978.6		6SS	X	6
	Brown and tan coarse to fine SAND, trace silt, moist (SP)	977.8	4" PVC PIPE	7SS	X	9
12.0	Brown medium to fine SAND, some silt, moist (SM)	976.3		8SS	X	12
14.0	Brown and tan coarse to fine SAND, little coarse to fine gravel, trace silt, moist (SP) No recovery	974.8		9SS	X	10
16.0		972.9		10SS	X	18
	Tan coarse to fine SAND, trace silt and fine gravel, wet (SP)	971.8		11SS	X	11
18.0	Tan medium to fine SAND, little silt, wet (SM)	970.3		12SS	X	WH
20.0	Tan and brown coarse to fine SAND, little silt, trace fine gravel (SM)	968.8		13SS	X	2
	Gray coarse to fine SAND and fractured limestone, wet	967.3		14SS	X	2
22.0				15SS	X	98/3
24.0						
26.0	END OF OVERBURDEN HOLE @ 25.1 FT. BGS NOTES: 1. Bedrock encountered at 21.8 ft. BGS. 2. Augers advanced to 25.0 ft. BGS. 3. Roller bit advanced to 25.1 ft. BGS for casing notch. 4. Bottom of casing at 24.9 ft. BGS.	963.2	5-7/8" Ø ROLLER BIT HOLE 3" Ø _{NX} COREHOLE			

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



WATER FOUND



STATIC WATER LEVEL



DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: SHAW AVENUE	HOLE DESIGNATION: MW-3 (Page 2 of 3)
PROJECT NO.: 2227	DATE COMPLETED: AUGUST 25, 1988
CLIENT: CHARLES CITY AND SALSBURY LABS	DRILLING METHOD: WIRELINE-NX
LOCATION: SOUTHWEST OF SITE, ADJACENT TO CEDAR RIVER	CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BIEN DT RE OR CV KAL	RN UN MB ER	CR OE RE CO V E R Y	R O D	WR AT T E R N
ft BG	REFERENCE POINT (Top Of Casing) GROUND SURFACE	ft. AMSL 990.78 988.3				%	%	%
	Overburden							
25.0	Top of bedrock @ 21.8 ft.	963.2						
26.0	Limestone, argillaceous, light brown to light gray, very weathered, some vugs, bioturbated							
27.0								
28.0					1	40	0	100
29.0								
30.0	Limestone, dolomitic, light brown	958.4						
31.0	Clay, light brown	957.8						
32.0	Limestone breccia, dark gray, fine to medium grained	956.3 956.1			2	60	0	75
33.0	Clay and severely weathered limestone, light brown to light gray							
34.0								
35.0		953.9						
36.0					3	48	0	75

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

▽ WATER FOUND
▽ STATIC WATER LEVEL
NM - NOT MEASURED

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: SHAW AVENUE PROJECT NO.: 2227 CLIENT: CHARLES CITY AND SALSBURY LABS LOCATION: SOUTHWEST OF SITE, ADJACENT TO CEDAR RIVER	HOLE DESIGNATION: MW-3 (Page 3 of 3) DATE COMPLETED: AUGUST 25, 1988 DRILLING METHOD: WIRELINE-NX CRA SUPERVISOR: P. SMITH
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DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BI EN DT RE OR CV KA L	RN UN NB ER	CR CO ER VE RY	R Q D	WR AT TE RN
ft BG	REFERENCE POINT (Top Of Casing) GROUND SURFACE	ft. AMSL 990.78 488.3				%	%	%
37.0	Limesne, argillaceous, soft, light brown to light gray, occasional black laminations, slightly pitted, slightly weathered, trace calcite filled vugs Mechanical fracture zone (37.7 to 37.9)	951.2	3" Ø NX BOREHOLE		3	48	0	75
38.0		950.1			4	80	10	50
39.0	Limestone, light gray, very fine grained, thin to medium bedded							
40.0	END OF HOLE ⊙ 40.1 FT. BGS	448.2						
41.0								
42.0								
43.0								
44.0								
45.0								
46.0								
47.0								
48.0								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE





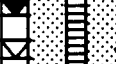

WATER FOUND
 STATIC WATER LEVEL
 NM - NOT MEASURED

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: SOUTH EAST OF REFUSE AREA

HOLE DESIGNATION: MW-3A
 DATE COMPLETED: AUGUST 19, 1988
 DRILLING METHOD: HSA 6 1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	991.14 988.5				
2.0	Brown SILT, little coarse-fine sand, trace fine gravel, brick and roots, dry FILL					
	same, except with trace wire					
4.0	No recovery (4.5 to 6.0)					
6.0						
8.0						
10.0	Brown medium to fine SAND, some silt, moist, NATIVE (SM)	978.8				
	Brown and tan coarse to fine SAND, trace silt, moist (SP)	978.0				
12.0	Brown medium to fine SAND, some silt, moist (SM)	976.5				
14.0	Brown and tan coarse to fine SAND, little coarse to fine gravel, trace silt, moist (SP) No recovery (15.0 to 16.5)	975.0				
16.0		972.6				
	Tan coarse to fine SAND, trace silt and fine gravel, wet (SP)	972.0				
18.0	Tan medium to fine SAND, little silt, wet (SM)	970.5				
20.0	Tan and brown coarse to fine SAND, little silt, trace fine gravel (SM)	969.0				
22.0	Gray coarse to fine SAND and fractured limestone, wet	967.5				
	END OF HOLE ● 22.5 FT. BGS	966.0				
24.0	NOTES: 1. Stratigraphy taken from adjacent well MW-3.					
26.0						

SCREEN DETAILS:
 Screened interval:
 976.2 to 966.2 AMSL
 Length - 10'
 Diameter - 2"
 Slot # 010
 Material - Stainless Steel
 Sand pack interval:
 977.4 to 966.0 AMSL
 Material: No. 12-30 Quartzite

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS ○ WATER FOUND ▽ STATIC WATER LEVEL ▼

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-4
 (Page 1 of 4)
 DATE COMPLETED: SEPTEMBER 20, 1988
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	993.05 989.5				
2.0	Brown fine sand, some silt, trace roots, dry, FILL same, except with trace wood		CEMENT/ BENTONITE GROUT	1SS	X	PUSH
	same, except without wood		10.0" BOREHOLE	2SS	X	12
4.0	same, except with trace brick, cement and clay			3SS	X	14
6.0	Brown SILT, some fine sand, trace clay, plastic, cement, dry	983.5		4SS	X	12
8.0	same, except without plastic, cement			5SS	X	12
	Brown to light brown fine SAND, some silt, dry	980.5		5SS	X	11
10.0	Brown SILT, some fine sand, trace clay, dry	979.0		7SS	X	12
	Tan and gray medium to fine SAND, trace silt with occasional clayey silt seams, moist, NATIVE (SM)	978.4	4" PVC PIPE	8	X	13
12.0	same, except with trace coarse gravel			9SS	X	17
14.0	Light brown coarse to fine SAND, some fine gravel, trace silt, moist (SP)	974.5		10SS	X	17
16.0	Gray brown coarse to fine SAND, some fractured limestone and coarse to fine gravel, trace silt, wet (SP)	973.0		11SS	X	18
18.0	same, except with trace clay			12SS	X	45
20.0	same, except without limestone fragments			13SS	X	38
22.0	same, except with limestone fragments			14SS	X	24
24.0	No recovery (25.5 to 27.0)			15SS	X	32
26.0	same, except without limestone fragments			16SS	X	32
				17SS	X	57
				18SS	X	19

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS WATER FOUND STATIC WATER LEVEL

**STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)**

DRAFT

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-4
 (Page 2 of 4)
 DATE COMPLETED: SEPTEMBER 20, 1988
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				N NUMBER	S TATE	V VALUE
28.0	same, except without limestone fragments			19SS	X	18
30.0	same, except without trace clay			20SS	X	15
32.0				21SS	X	14
34.0	same, except without coarse gravel			22SS	X	12
36.0	same, except with coarse gravel			23SS	X	13
38.0	same, except without coarse to medium gravel			24SS	X	12
40.0				25SS	X	26
42.0	same, except with coarse to medium gravel			26SS	X	19
44.0	same, except without coarse to medium gravel			27SS	X	19
46.0	Tan fractured limestone and coarse to fine gravel, some coarse to fine sand, trace silt and clay, wet (SP)	944.0		28SS	X	
48.0	same, except gray			29SS	X	29
50.0	same, except trace coarse to fine sand (augered from 46.8 to 48.5 ft.)			30SS	X	77
	same, except some coarse to fine sand			31SS	X	85
52.0	Top of bedrock	938.3		32SS	X	50/4
	Augers advanced to 51.5 ft BGS.	938.0		33SS	X	83
	Roller bit advanced to 52.5 ft. BGS for casing notch.	937.0		34SS	X	95/7
	END OF OVERBURDEN HOLE @ 52.5 FT. BGS			35SS	X	100/0

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ○ WATER FOUND ▽ STATIC WATER LEVEL ▼

**STRATIGRAPHIC AND INSTRUMENTATION LOG
(BEDROCK)**

DRAFT

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-4
 (Page 3 of 4)
 DATE COMPLETED: SEPTEMBER 20, 1988
 DRILLING METHOD: WIRELINE-NX
 CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BIENTREORCVKAL	RNUNUMBER	CRRECOVERY	RQD	WRATTERRN
ft BG	REFERENCE POINT (Top Of Casing) GROUND SURFACE	ft. AMSL 993.05 989.5				%	%	%
	Overburden							
52.0	Top of bedrock ⊕ 51.2 ft. Bottom of casing ⊕ 51.8 ft.	937.0			1	86.7	53	100
53.0	Dolomite, medium gray to brown, slightly weathered, trace stylolites, pitted, some calcite filled vugs Calcite filled vein, 1/2" thick (53.1) Extremely fractured (53.2 to 54.9)							
54.0								
55.0		932.7			2	98.3	82	60
57.0	Limestone, dolomitic, argillaceous, light to medium gray, fine grained, thin to medium bedded, some mud seams, trace calcite filled veins and vugs, fossiliferous							
58.0	Mud seam (57.8)							
59.0	Mud seam (58.8) Mud seam, brown (59.1)							
60.0		932.7			3	100	67	60
62.0	Mud seam, brown to black (61.8)							
63.0	Pyrite nodule (62.5) Brachiopod molds, saccarhoidal (62.9) Calcite lined vugs (63.5)							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

☒ WATER FOUND

☒ STATIC WATER LEVEL

NM - NOT MEASURED

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-4
 (Page 4 of 4)
 DATE COMPLETED: SEPTEMBER 20, 1988
 DRILLING METHOD: WIRELINE-NX
 CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BI EN DT RE OR CV KA L	RN UN UM BER	CR OE CO VE RY	RO OD	WR AT TE UR N
ft BG		ft AMSL				%	%	%
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	993.05 989.5						
64.0	Brachiopod molds, saccarhoidal (62.9) Calcite lined vugs (63.5)		← 3" Ø NX BOREHOLE					
65.0	Slightly weathered and pitted, some brachiopod molds and worm burrows (65.0 to 66.0)				3	100	67	60
66.0	Fractured zone (65.8 to 66.2)							
67.0	Mud seam (66.6) Stylolites (66.9 to 67.2)							
68.0	END OF HOLE ● 67.5 FT. BGS	922.0						
69.0								
70.0								
71.0								
72.0								
73.0								
74.0								
75.0								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

☒ WATER FOUND

▼ STATIC WATER LEVEL

NM - NOT MEASURED

**STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)**

DRAFT

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-4A
 (Page 1 of 3)
 DATE COMPLETED: SEPTEMBER 15, 1988
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	992.43 989.5				
2.0	Brown fine sand, some silt, trace roots, dry, FILL same, except with trace wood					
4.0	same, except without wood					
6.0	same, except with trace brick, cement and clay	983.5				
8.0	Brown SILT, some fine sand, trace clay, plastic, cement, dry same, except without plastic, cement				1SS	19
10.0	Brown to light brown fine SAND, some silt, dry	980.5				
12.0	Brown SILT, some fine sand, trace clay, dry	979.0 978.4				
14.0	Tan and gray medium to fine SAND, trace silt, with occasional clayey silt seams, moist, NATIVE (SM) same, except with trace coarse gravel					
16.0	Light brown coarse to fine SAND, some fine gravel, trace silt, moist (SP)	974.5				
18.0	Gray brown coarse to fine SAND, some fractured limestone and coarse to fine gravel, trace silt, wet (SP) same, except with trace clay	973.0 972.9				
20.0						
22.0	same, except without limestone fragments					
24.0	same, except with limestone fragments					
26.0	No recovery (25.5 to 27.0) same, except without limestone fragments				2SS	35

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS WATER FOUND STATIC WATER LEVEL

**STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)**

DRAFT

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-4A
 (Page 2 of 3)
 DATE COMPLETED: SEPTEMBER 15, 1988
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
28.0	same, except without limestone fragments					
30.0	same, except without trace clay					
32.0						
34.0	same, except without coarse gravel					
36.0	same, except with coarse gravel					
38.0	same, except without coarse to medium gravel					
40.0						
42.0	same, except with coarse to medium gravel					
44.0	same, except without coarse to medium gravel					
46.0	Tan fractured limestone and coarse to fine gravel, some coarse to fine sand, trace silt and clay, wet (SP)	944.5				
48.0	same, except gray					
50.0	same, except trace coarse to fine sand					
52.0	same, except some coarse to fine sand					
52.0	END OF HOLE ● 51.0 FT. BGS	938.5				

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS ○ WATER FOUND ▽ STATIC WATER LEVEL ▼

DRAFT

**STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)**

PROJECT NAME: SHAW AVENUE	HOLE DESIGNATION: MW-4A (Page 3 of 3)
PROJECT NO.: 2227	DATE COMPLETED: SEPTEMBER 15, 1988
CLIENT: CHARLES CITY AND SALSBURY LABS	DRILLING METHOD: HSA 6-1/4 ID
LOCATION: WEST OF SITE	CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
54 56 58 60 62 64 66 68 70 72 74 76 78	<p>NOTES: 1. Stratigraphy taken from adjacent well MW-4. 2. Samples for chemical analyses collected from 7.0 to 9.0 and 24.0 to 26.0 ft. BGS.</p>		<p>SCREEN DETAILS: Screened Interval: 956.0 to 939.0 AMSL Length -17' Diameter -2" Slot # 010 Material- Stainless Steel Sand pack Interval: 958.3 to 938.5 AMSL Sand pack material: No. 12-30 Quartzite</p>			

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE


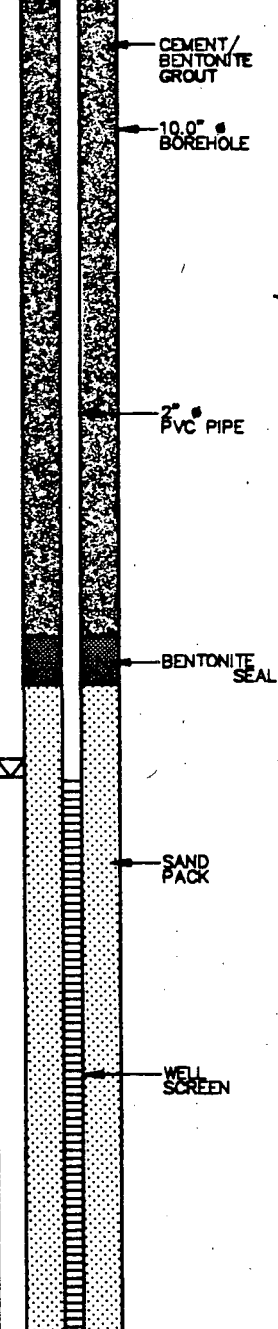
CHEMICAL ANALYSIS WATER FOUND STATIC WATER LEVEL

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-4B
 (Page 1 of 2)
 DATE COMPLETED: SEPTEMBER 16, 1988
 DRILLING METHOD: HSA 6 1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	992.21 989.2				
2.0	Brown fine sand, some silt, trace roots, dry, FILL same, except with trace wood					
4.0	same, except without wood					
6.0	same, except with trace brick, cement and clay	983.2				
8.0	Brown SILT, some fine sand, trace clay, plastic, cement, dry same, except without plastic, cement					
10.0	Brown to light brown fine SAND, some silt, dry	980.2				
12.0	Brown SILT, some fine sand, trace clay, dry Tan and gray medium to fine SAND, trace silt, with occasional clayey silt seams, moist, NATIVE (SM)	978.7 978.1				
14.0	same, except with trace coarse gravel					
16.0	Light brown coarse to fine SAND, some fine gravel, trace silt, moist (SP)	974.2				
18.0	Gray brown coarse to fine SAND, some fractured limestone and coarse to fine gravel, trace silt, wet (SP) same, except with trace clay	972.9 972.7				
20.0						
22.0	same, except without limestone fragments					
24.0	same, except with limestone fragments					
26.0	No recovery same, except without limestone fragments					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS ○ WATER FOUND ▽ STATIC WATER LEVEL ▼

DRAFT

**STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)**

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-4B
 (Page 2 of 2)
 DATE COMPLETED: SEPTEMBER 16, 1988
 DRILLING METHOD: HSA 6 1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
28.0	same, except without limestone fragments					
30.0	same, except without trace clay					
32.0						
34.0	same, except without coarse gravel					
34.0	END OF HOLE ● 34.0 FT. BGS	955.2				
36.0	NOTES: 1. Stratigraphy taken from adjacent well MW-4.					
38.0						
40.0						
42.0						
44.0						
46.0						
48.0						
50.0						
52.0						

SCREEN DETAILS:
 Screened interval:
 972.7 to 955.7 AMSL
 Length -17.0'
 Diameter -2"
 Slot # 010
 Material- Stainless Steel
 Sand pack interval:
 974.7 to 955.2 AMSL
 Sand pack material:
 No. 12-30 Quartzite.

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS ○ WATER FOUND ∇ STATIC WATER LEVEL ▼

DRAFT

**STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)**

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: ON REFUSE AREA

HOLE DESIGNATION: BH-5A
 DATE COMPLETED: SEPTEMBER 23, 1988
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUM BER	STA TE	VA LUE
	GROUND SURFACE	1006.0				
2.0	Brown SILT, some fine sand, trace asphalt and roots, dry, FILL same, except with iron stains, some medium to fine sand, trace glass, brick and roots, moist	1003.0		1SS	X	PUSH
4.0	Brown SILT, some brick, glass, plastic, wood, charcoal and cement, trace white paste, moist same, except with trace metal fragments			2SS	X	2
6.0	Gray crushed stone, trace metal fragments and wire, dry	999.5		3SS	X	12
8.0	Gray fractured limestone, dry Augers advanced to refusal	998.0 997.7		4SS	X	7
10.0	END OF HOLE ● 8.3 ft. BGS			5SS	X	57
12.0	NOTES: 1. At completion borehole was grouted to ground surface. 2. Samples for chemical analysis were collected from 3.0 to 5.0 ft. BGS. 3. Samples collected for chemical analysis were split with EPA.			6SS	X	150/3
14.0						
16.0						
18.0						
20.0						
22.0						
24.0						
26.0						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE


CHEMICAL ANALYSIS ○ WATER FOUND ▽ STATIC WATER LEVEL ▼

**STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)**

DRAFT

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: ON REFUSE AREA

HOLE DESIGNATION: BH-5B
 DATE COMPLETED: SEPTEMBER 26, 1988
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	GROUND SURFACE	1003.3				
2.0	Dark brown SILT, some fine sand, little clay trace roots, dry, NATIVE (ML) Brown medium to fine sand, some silt, dry (SM)	1002.6	 <p>8.0" BOREHOLE CEMENT/BENTONITE GROUT</p>	1SS	X	PUSH
				2SS	X	1
4.0	Gray limestone, dry	999.8		3SS	X	100/2
6.0	Augers advanced to refusal					
8.0	END OF HOLE ● 7.0 ft. BGS NOTES: 1. At completion borehole was grouted to ground surface. 2. Samples for chemical analysis were collected and composited from 1.5 to 3.7 ft. BGS.	996.3				
10.0						
12.0						
14.0						
16.0						
18.0						
20.0						
22.0						
24.0						
26.0						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS ○ WATER FOUND ▽ STATIC WATER LEVEL ▼

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE

HOLE DESIGNATION: BH-5C

PROJECT NO.: 2227

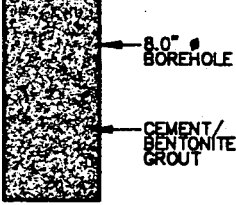
DATE COMPLETED: SEPTEMBER 26, 1988

CLIENT: CHARLES CITY AND SALSBURY LABS

DRILLING METHOD: HSA 6-1/4 ID

LOCATION: ON REFUSE AREA

CRA SUPERVISOR: P. SMITH

DEPTH ft BG	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	GROUND SURFACE	1006.4				
2.0	Brown SILT, some medium to fine sand, little clay, trace roots, dry, NATIVE (ML) Brown medium to fine SAND, some silt, dry (SM) same, except moist	1005.7	 <p>8.0" Ø BOREHOLE</p> <p>CEMENT/BENTONITE GROUT</p>	1SS	X	PUSH
4.0	Gray limestone, dry	1002.4 1002.1		2SS	X	2
6.0	END OF HOLE ● 4.3 ft. BGS NOTES: 1. At completion borehole was grouted to ground surface. 2. Samples for chemical analysis were collected from 3.0 to 4.3 ft. BGS.			3SS	X	123/ 10
8.0						
10.0						
12.0						
14.0						
16.0						
18.0						
20.0						
22.0						
24.0						
26.0						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ○

WATER FOUND/ ▽

STATIC WATER LEVEL ▼

**STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)**

DRAFT

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-6
 (Page 1 of 4)
 DATE COMPLETED: SEPTEMBER 20, 1988
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	1004.62 1001.7				
2.0	Brown SILT, some fine sand, trace clay, fine gravel, roots and brick, dry, FILL			1SS	X	PUSH
				2SS	X	20
4.0	Brown medium to fine SAND, some silt, trace fine gravel, dry	998.2		3SS	X	13
	Brown coarse to fine SAND, little silt, trace fine gravel, dry, NATIVE (SM)	997.2		4SS	X	12
6.0				5SS	X	12
8.0				6SS	X	8
10.0				7SS	X	7
	Brown medium to fine SAND, little silt, moist (SM)	991.2		8SS	X	9
12.0	same, except tan			9SS	X	22
14.0				10SS	X	18
16.0				11SS	X	15
18.0	same, except with trace coarse to fine gravel			12SS	X	11
				13SS	X	16
20.0	Brown coarse to fine SAND, little silt, trace coarse to fine gravel, moist (SM)	982.2 981.2		14SS	X	19
	Brown medium to fine SAND, little silt, moist (SM)	979.9		15SS	X	18
22.0	Tan coarse to fine SAND, little silt, trace coarse to fine gravel, moist to wet (SM)	979.2		16SS	X	25
24.0	Brown and tan mottled coarse to fine SAND, some coarse to fine gravel and limestone fragments, little silt, moist (SP)			17SS	X	23
26.0		977.2		18SS	X	37

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS WATER FOUND STATIC WATER LEVEL

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-6
 (Page 2 of 4)
 DATE COMPLETED: SEPTEMBER 20, 1988
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
28.0	Brown and tan mottled coarse to fine SAND, coarse to fine gravel and limestone fragments little silt, moist (SP)	973.6		19SS	X	33
	Tan SILT, some fine sand, trace clay, dry (ML)	973.2		20SS	X	17
30.0	Brown medium to fine SAND, some silt, trace coarse to fine gravel, wet (SM)			21SS	X	32
		970.5		22SS	X	15
32.0	Brown coarse to fine SAND, some silt, trace fine gravel, wet (SM)	969.7		23SS	X	18
	Brown fine SAND, some silt, wet (SM)			24SS	X	22
34.0	same, except gray			28SS	X	28
	same, except gray brown			26SS	X	48
36.0	Brown mottled coarse to fine SAND, some silt, little coarse to fine gravel (SM)	966.0		27SS	X	100/4
	Gray coarse to fine SAND, some coarse to fine gravel and limestone fragments, trace silt and clay, wet (SP)	965.7				
40.0	END OF OVERBURDEN HOLE @ 40.2 FT. BGS	961.5				
42.0	NOTES: 1. Bedrock encountered at 39.5 ft BGS. 2. Roller bit advanced to 40.2 ft BGS for casing notch.					
44.0	3. Bedrock was NX cored to 63.2 ft. BGS. 4. Bottom of casing at 40.1 ft. BGS.					
46.0						
48.0						
50.0						
52.0						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



WATER FOUND



STATIC WATER LEVEL



DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-6
 (Page 3 of 4)
 DATE COMPLETED: SEPTEMBER 22, 1988
 DRILLING METHOD: WIRELINE-NX
 CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BI ENT RE OR CV KAL	RN UN NUMBER	CR RE CO VE RY	R Q D	WR AT T UR N
ft BG	REFERENCE POINT (Top Of Casing) GROUND SURFACE	ft. AMSL 1004.62 1001.7				%	%	%
	Overburden							
40.0	Top of bedrock @ 39.5 ft.	961.5						
41.0	Limestone, dolomitic, dark gray, some intraclasts	961.0						
42.0	Limestone, severely weathered, broken pieces up to 2" in length, some mud and fine sand seams Driller reports soft drilling (40.7 to 42.7); drill return water contains very fine sand							
43.0	Driller reports alternating hard and soft drilling (42.7 to 45.2)			3" NX BOREHOLE	1	43	0	100
44.0								
45.0	Limestone, light gray, fine grained, some pieces of limestone breccia included	956.5						
46.0								
47.0								
48.0					2	23	0	50
49.0	Water return intermittent (49.1)							
50.0	Water lost - does not return (50.2)	951.5						
51.0				3	20	0	0	

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE



WATER FOUND



STATIC WATER LEVEL

NM - NOT MEASURED

DRAFT

**STRATIGRAPHIC AND INSTRUMENTATION LOG
(BEDROCK)**

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-6
 (Page 4 of 4)
 DATE COMPLETED: SEPTEMBER 22, 1988
 DRILLING METHOD: WIRELINE-NX
 CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BIENT RECORD	CORRECTION	RECOVERY	ROD	WATER RETURN
ft BG		ft. AMSL				%	%	%
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	1004.62 1001.7						
52.0		949.5	<div style="border-left: 1px solid black; border-right: 1px solid black; height: 100%; position: relative;"> <div style="position: absolute; top: 10%; left: 10%; font-size: 10pt;">3" NX BOREHOLE</div> </div>					
	Dolomite, weathered, dark brown, heavily pitted, some calcite filled vugs	949.2		3	20	0	0	
53.0	Limestone, intraclastic, light brown to gray, soft	948.5						
54.0	Limestone, light gray, fine grained Driller reports hard drilling (53.2 to 53.8):			4	37	25	0	
55.0		946.5						
56.0	Limestone, argillaceous, severely weathered, numerous mud seams, dark gray to brown fine grained: Driller reports alternating hard and soft drilling			5	94	11	0	
57.0								
58.0		943.5						
59.0	Mud seam	942.6						
60.0	Limestone, dolomitic, medium to dark gray, fine grained, some calcite filled vugs, slightly weathered, some stylolites Mechanical fracture zone (60.0) Vertical fracture (60.1 to 60.4)			6	83	71	0	
61.0								
62.0								
63.0	Calcite filled void, large crystals (62.7)							
	END OF HOLE ● 63.2 FT. BGS	938.5						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

∇ WATER FOUND

∇ STATIC WATER LEVEL

NM - NOT MEASURED

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE

PROJECT NO.: 2227

CLIENT: CHARLES CITY AND SALSBURY LABS

LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-6A

(Page 1 of 2)

DATE COMPLETED: SEPTEMBER 22, 1988

DRILLING METHOD: HSA 6-1/4 ID

CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	1004.59 1001.6				
2.0	Brown SILT, some fine sand, trace clay, fine gravel, roots and brick, dry, FILL					
4.0	Brown medium to fine SAND, some silt, trace fine gravel, dry	998.1		(1SS)	X	14
6.0	Brown coarse to fine SAND, little silt, trace fine gravel, dry, NATIVE (SM)	997.1				
10.0	Brown medium to fine SAND, little silt, moist (SM)	991.1				
12.0	same, except tan					
18.0	same, except with trace coarse to fine gravel			(2SS)	X	28
20.0	Brown coarse to fine SAND, little silt, trace coarse to fine gravel, moist (SM)	981.6 981.1				
22.0	Brown medium to fine SAND, little silt, moist (SM)	979.8				
24.0	Tan coarse to fine SAND, little silt, trace coarse to fine gravel, moist to wet (SM)	979.1				
26.0	Brown and tan mottled coarse to fine SAND, some coarse to fine gravel and limestone fragments, little silt, moist (SP)					

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ○

WATER FOUND ▽

STATIC WATER LEVEL ▼

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: WEST OF SITE

HOLE DESIGNATION: MW-6A
 (Page 2 of 2)
 DATE COMPLETED: SEPTEMBER 22, 1988
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	VALUE	
28.0	Brown and tan mottled coarse to fine SAND, coarse to fine gravel and limestone fragments little silt, moist (SP)	973.2 973.5 973.1	<p style="font-size: small;">10.0" Ø BOREHOLE WELL SCREEN SAND PACK</p>				
	Tan SILT, some fine sand, trace clay, dry (ML)						
30.0	Brown medium to fine SAND, some silt, trace coarse to fine gravel, wet (SM)						
32.0	Brown coarse to fine SAND, some silt, trace fine gravel, wet (SM)	970.4 969.6					
34.0	Brown fine SAND, some silt, wet (SM) same, except gray						
	same, except gray brown						
36.0	Brown mottled coarse to fine SAND, some silt, little coarse to fine gravel (SM)	965.9 965.6					
38.0	Gray coarse to fine SAND, some coarse to fine gravel and limestone fragments, trace silt and clay, wet (SP)						
40.0	Advanced augers to refusal - top of rock	962.1					
42.0	END OF HOLE ⊕ 39.5 FT. BGS NOTES: 1. Stratigraphy taken from adjacent well MW-6. 2. Native sands "running" up inside of augers prevented placement of a continuous quartzite sand pack. 3. Samples for chemical analyses collected from 2.5 to 4.5 and 18.0 to 20.0 ft. BGS.			<p>SCREEN DETAILS: Screened Interval: 977.1 to 962.1 AMSL Length -15' Diameter -2" Slot # 010 Material- Stainless Steel Sand pack Interval: 981.6 to 962.1 AMSL Sand pack material: No. 12-30 Quartzite and native sands</p>			
44.0							
46.0							
48.0							
50.0							
52.0							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ○ WATER FOUND ▽ STATIC WATER LEVEL ▼

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: EAST OF SITE

HOLE DESIGNATION: MW-7
 (Page 1 of 3)
 DATE COMPLETED: AUGUST 29, 1988
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	1006.43 1002.9	<p style="font-size: small;"> CEMENT/BENTONITE GROUT 10.0" BOREHOLE 4" PVC PIPE 5-7/8" ROLLER BIT 3" COREHOLE </p>			
2.0	Dark brown SILT, some medium to fine sand, trace roots, dry, NATIVE (SM) same, except dark grading to light brown same, except light brown			1SS	X	PUSH
				2SS	X	10
4.0	Light brown coarse to fine SAND, some silt, trace fine gravel, dry (SM)	998.9		3SS	X	8
6.0	Bedrock encountered - augers advanced to refusal @ 6.2' BGS.	996.9 996.7		4SS	X	45
6.0				5SS	X	25/0
8.0	END OF OVERBURDEN HOLE @ 6.8' BGS.					
10.0	NOTES: 1. Bedrock encountered at 6.0 ft. BGS. 2. Roller bit advanced to 6.8 ft. BGS for casing notch. 3. Bottom of casing at 6.5 ft. BGS. 4. Bedrock was NX cored to 21.8 ft. BGS.					
12.0						
14.0						
16.0						
18.0						
20.0						
22.0						
24.0						
26.0						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS ○ WATER FOUND ▽ STATIC WATER LEVEL ▼

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: SHAW AVENUE	HOLE DESIGNATION: MW-7 (Page 2 of 3)
PROJECT NO.: 2227	DATE COMPLETED: AUGUST 29, 1988
CLIENT: CHARLES CITY AND SALSBURY LABS	DRILLING METHOD: WIRELINE-NX
LOCATION: EAST OF SITE	CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BENTONITE OR CAL	RUN NUMBER	CORRECTION	ROD	WEATHER
ft BG	REFERENCE POINT (Top Of Casing) GROUND SURFACE	ft. AMSL 1006.43 1002.9				%	%	%
6.0	Overburden							
7.0	Top of bedrock @ 6.0 ft.	996.1						
8.0	Limestone, argillaceous, light gray to light brown, numerous mud seams, moderately weathered Severely fractured (7.3 to 7.8)				1	80	0	90
9.0	Severely fractured (8.5 to 8.8) Mud seam (9.1)							
10.0	Severely fractured (10.1 to 10.4)			2	100	0	90	
11.0	Outlines of shell fragments (10.9)	991.9						
12.0	Limestone, dolomitic, dark gray	991.7						
13.0	Limestone, light gray, light brown weathering, fine grained, thin to medium bedded, fossiliferous			3	98	55	100	
14.0	Bedding plane with slickensides							
15.0								
16.0	Weathered zone (15.7 to 16.0)	986.9						
17.0				4	100	75	100	

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

WATER FOUND
 STATIC WATER LEVEL
 NM - NOT MEASURED

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: EAST OF SITE

HOLE DESIGNATION: MW-7
 (Page 3 of 3)
 DATE COMPLETED: AUGUST 29, 1988
 DRILLING METHOD: WIRELINE-NX
 CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BENTONITE RECOVER CAL	RUN NUMBER	CR RECO VERY	R Q D	WR ATT EURN
ft BG		ft. AMSL				%	%	%
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	1006.43 1002.9						
18.0	Limestone, light gray, light brown weathering, fine grained, thin to medium bedded, fossiliferous		<div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; margin: 0 auto; width: 40px;"> <div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; text-align: center; font-size: 8px;">3" Ø NX BOREHOLE</div> </div>					
19.0	Shell fragments (19.1)							
20.0								
21.0	Limestone shaly, gray, thin bedded	981.9 981.8						
22.0	Mud seam, with shaly partings (21.2 to 21.4)	981.1						
	END OF HOLE ● 21.8 FT. BGS							
23.0								
24.0								
25.0								
26.0								
27.0								
28.0								
29.0								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

☒ WATER FOUND

☒ STATIC WATER LEVEL

NM - NOT MEASURED

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: NORTH OF SITE

HOLE DESIGNATION: MW-8
 (Page 1 of 3)
 DATE COMPLETED: SEPTEMBER 20, 1987
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	1013.11 1010.5				
2.0	Dark brown SILT, some medium to fine sand, trace roots, dry, NATIVE (SM)	1009.3		1SS	X	PUSH
	Light brown medium to fine SAND, some silt, trace roots, dry (SM)	1007.5		2SS	X	9
4.0	Dark brown medium to fine SAND, some silt, trace fine gravel, dry	1004.7		3SS	X	10
		1003.8		4SS	X	14
6.0	Dark brown SILT, some medium to fine sand, trace clay, moist (SM)	1003.8		5SS	X	13
	Brown medium to fine SAND, little silt, moist (SP)			6SS	X	11
8.0	same, except with trace of coarse to fine gravel			7SS	X	4
		1000.3		8SS	X	3
10.0	Brown SILT, some medium to fine sand, little clay, moist (SM)	999.1		9SS	X	8
	Gray brown mottled, SILT, some clay, moist No recovery (12.0 to 13.5)	997.0		10SS	X	9
12.0	Gray fractured LIMESTONE, some silt and sand, little clay, dry to moist	995.7		11SS	X	66/10
	Brown to tan mottled SILT, some clay, moist (ML)	995.5				
14.0	Tan weathered LIMESTONE, some sand and silt, wet					
	Augers advanced to refusal @ 17.2 ft. BGS.	993.5				
16.0	END OF OVERBURDEN HOLE @ 17.7 FT. BGS					
18.0	NOTES: 1. Bedrock encountered at 17.0 ft. BGS 2. Roller bit advanced to 17.7 ft. BGS for casing notch. 3. Bottom of casing at 17.5 ft. BGS. 4. Bedrock was NX cored to 32.7 ft. BGS.					
20.0						
22.0						
24.0						
26.0						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS ○ WATER FOUND ▽ STATIC WATER LEVEL ▼

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: SHAW AVENUE	HOLE DESIGNATION: MW-8 (Page 2 of 3)
PROJECT NO.: 2227	DATE COMPLETED: AUGUST 20, 1988
CLIENT: CHARLES CITY AND SALSBURY LABS	DRILLING METHOD: WIRELINE-NX
LOCATION: NORTH OF SITE	CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BENTONITE OR CV KAL	RUN NUMBER	CORRECTION	ROD	WATER RETURN
ft BG	REFERENCE POINT (Top Of Casing) GROUND SURFACE	ft. AMSL 1013.11 1010.5				%	%	%
17.0	Overburden Top of bedrock ⊕ 17.0 ft.							
18.0	Limestone, intraclastic, light gray, iron staining on exposed fractures, fine grained, thin to medium bedded, some calcite filled veins, fossiliferous	992.8						
19.0	Intraclasts, 1 cm dia (18.1) Shell fragments; fracture zone (18.3 to 18.5) Shaly partings (19.3, 19.6 and 19.8)				1	93	38	40
20.0								
21.0	Limestone, dolomitic, light to dark gray	989.8 989.6						
22.0	Limestone, light gray, fine grained, thin to medium bedded, shaly partings Mud seam with shaly partings (21.1 to 21.3)							
23.0		987.8 987.3						
24.0	Limestone, argillaceous, light gray, fine grained, iron staining on bedding planes Clay, buff to dark green, mottled	986.6			2	79	0	90
25.0		985.8						
26.0	Interbedded limestone and clay, light gray to green	984.8						
27.0					3	97	32	95
28.0	Limestone, dolomitic, dark gray Limestone, light gray to light brown, some shaly partings, fine grained, trace iron stains on bedding planes Shaly partings (28.6)	983.2 982.6						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

WATER FOUND
 STATIC WATER LEVEL
 NM - NOT MEASURED

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: SHAW AVENUE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: NORTH OF SITE

HOLE DESIGNATION: MW-8
 (Page 3 of 3)
 DATE COMPLETED: AUGUST 20, 1988
 DRILLING METHOD: WIRELINE-NX
 CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BIEN DT RE CV KAL	RN U N B E R	CR O O F E R Y	R O D	WR E T U R N
ft BG	REFERENCE POINT (Top Of Casing) GROUND SURFACE	ft. AMSL 1013.11 1010.5				%	%	%
29.0	Limestone, light gray to light brown, some shaly partings, fine grained, trace iron stains on bedding planes Shaly partings (28.6) Mud seam (29.0)	980.8	3" 4 NX BOREHOLE			79	0	90
30.0								
31.0						100	72	75
32.0								
33.0	END OF HOLE ● 32.7 FT. BGS	977.8						
34.0								
35.0								
36.0								
37.0								
38.0								
39.0								
40.0								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

☒ WATER FOUND

☒ STATIC WATER LEVEL

NM - NOT MEASURED

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: SHAW AVENUE SITE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: NORTH OF SITE

HOLE DESIGNATION: MW-8A
 DATE COMPLETED: AUGUST 31, 1988
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	1013.75 1010.6	<p style="font-size: 0.8em;"> CEMENT/BENTONITE GROUT 10.0" Ø BOREHOLE 2" Ø PVC PIPE BENTONITE SEAL SAND PACK WELL SCREEN </p>			
2.0	Dark brown SILT, some medium to fine sand, trace roots, dry, NATIVE (SM) Light brown medium to fine SAND, some silt, trace roots, dry	1009.4				
4.0	Dark brown medium to fine SAND, some silt, trace fine gravel, dry (SM)	1007.6				
6.0	Dark brown SILT, some medium to fine sand, trace clay, moist (SM)	1004.8				
8.0	Brown medium to fine SAND, little silt, moist (SP) same, except with trace coarse to fine gravel	1003.9				
10.0	Brown SILT, some medium to fine sand, little clay, moist (SM)	1000.4				
12.0	Gray brown mottled, SILT, some clay, moist No recovery	999.2				
14.0	Gray fractured LIMESTONE, some silt and sand, little clay, dry to moist	997.1				
16.0	Brown to tan mottled SILT, some clay, moist (ML) Tan weathered LIMESTONE, some sand and silt, wet	995.8 995.6				
18.0	END OF HOLE ● 16.8 FT. BGS	994.1 993.8				
20.0	NOTES: 1. Stratigraphy taken from adjacent Well MW-8.					
22.0						
24.0						
26.0						

SCREEN DETAILS:
 Screened Interval:
 998.8 to 993.8 AMSL
 Length - 5'
 Diameter - 2"
 Slot # 010
 Material - Stainless Steel
 Sand pack interval:
 1000.6 to 993.8 AMSL
 Sand pack material:
 No. 12-30 Quartzite

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
 CHEMICAL ANALYSIS ○ WATER FOUND ▽ STATIC WATER LEVEL ▼

**STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)**

DRAFT

PROJECT NAME: SHAW AVENUE SITE
 PROJECT NO.: 2227
 CLIENT: CHARLES CITY AND SALSBURY LABS
 LOCATION: EAST OF SITE

HOLE DESIGNATION: MW-9
 (Page 1 of 3)
 DATE COMPLETED: SEPTEMBER 6, 1988
 DRILLING METHOD: HSA 6-1/4 ID
 CRA SUPERVISOR: P. SMITH

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEVATION ft AMSL	MONITOR INSTALLATION	SAMPLE		
				NUMBER	STATE	'N' VALUE
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	998.01 995.8	<p>Diagram labels: - CEMENT/BENTONITE GROUT - 10.0" BOREHOLE - 4" PVC PIPE - 5-7/8" ROLLER BIT HOLE - 3" COREHOLE</p>			
	Brown SILT, some fine sand, trace roots, moist, NATIVE (topsoil) (SM)	994.7		1SS	X	10
2.0	Coarse to fine GRAVEL and fractured stone, some sand, dry (GW) Layer of cobbles @ 1.5 ft. BGS.	994.3		2SS	X	4
4.0	Black SILT, trace medium to fine sand and fine gravel, moist, native (SM) same, except with some coarse gravel, dry, native	991.8 991.3		3SS	X	65/9
6.0	Tan SILT, some fractured LIMESTONE, dry Gray fractured LIMESTONE, dry			4SS	X	50/3
8.0	Augers advanced to refusal @ 7.5 ft. BGS.	987.7				
	END OF OVERBURDEN HOLE @ 8.1 ft. BGS					
10.0	NOTES: 1. Bedrock encountered at 4.5 ft. BGS. 2. Roller bit advanced to 8.1 ft. BGS for casing notch. 3. Bedrock was NX cored to 23.1 ft. BGS. 4. Samples for chemical analysis were collected from 1.5 to 3.5 ft. BGS in borehole located 4 ft. North. 5. Bottom of casing at 7.9 ft. BGS.					
12.0						
14.0						
16.0						
18.0						
20.0						
22.0						
24.0						
26.0						

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ○ WATER FOUND ▽ STATIC WATER LEVEL ▼

DRAFT

STRATIGRAPHIC AND INSTRUMENTATION LOG (BEDROCK)

PROJECT NAME: SHAW AVENUE	HOLE DESIGNATION: MW-9 (Page 2 of 3)
PROJECT NO.: 2227	DATE COMPLETED: SEPTEMBER 7, 1988
CLIENT: CHARLES CITY AND SALSBURY LABS	DRILLING METHOD: WIRELINE-NX
LOCATION: EAST OF SITE	CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BIENTRE OR CV KAL	RN U NUMBER	CR RECOVERY	ROD	WEAT TERN
ft BG	REFERENCE POINT (Top Of Casing) GROUND SURFACE	ft. AMSL 998.01 995.8				%	%	%
4.0	Overburden							
5.0	Top of bedrock @ 4.5 ft. Weathered bedrock (4.8')							
8.0	Clay and limestone, severely weathered, light brown	987.7						
10.0	Limestone, dolomitic, brown to light gray, thin to medium bedded, fossiliferous	985.8			1	92	16	60
12.0	Limestone, argillaceous, soft, light brown, weathered	984.1 984.0						
13.0	High angle fracture (13.3 to 13.5) Mud seam (13.5)	982.2						
14.0	Limestone, dolomitic, brown, some calcite filled veins, trace shell fragments				2	100	65	65
15.0								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

WATER FOUND
 STATIC WATER LEVEL
 NM - NOT MEASURED

DRAFT

**STRATIGRAPHIC AND INSTRUMENTATION LOG
(BEDROCK)**

PROJECT NAME: SHAW AVENUE	HOLE DESIGNATION: MW-9 (Page 3 of 3)
PROJECT NO.: 2227	DATE COMPLETED: SEPTEMBER 7, 1988
CLIENT: CHARLES CITY AND SALSBURY LABS	DRILLING METHOD: WIRELINE-NX
LOCATION: EAST OF SITE	CRA SUPERVISOR: P. SMITH

DEPTH	DESCRIPTION OF STRATA	ELEVATION	MONITOR INSTALLATION	BIENTRE OR CV KAL	RN NUMBER	CR RECOVERY	RQD	WRATTER N
ft BG		ft. AMSL				%	%	%
	REFERENCE POINT (Top Of Casing) GROUND SURFACE	998.01 995.8						
16.0	Limestone, dolomitic, brown, some calcite filled veins, trace shell fragments		3" Ø NX BOREHOLE		2	100	65	65
	Limestone, gray, fine grained, argillaceous	979.5 979.2						
17.0	Limestone, shaly, dark gray, fine grained, thin bedded							
18.0	Weathered zone, mud and shaly rock fragments (17.7 to 18.2)							
19.0					3	95	60	75
	Clay layer (19.6 to 19.7)	976.1						
20.0	Limestone, argillaceous, light brown, fine grained	975.7						
	Limestone, shaly, greenish gray	975.2						
21.0	Shale, green							
	Shale, green with white laminations	974.1 973.9						
22.0	Limestone, argillaceous, light brown			4	95	0	90	
	Limestone, extremely argillaceous, weathered, light to dark gray	973.3 972.7						
23.0	END OF HOLE ● 23.1 FT. BGS							
24.0								
25.0								
26.0								
27.0								

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

∇ WATER FOUND

∇ STATIC WATER LEVEL

NM - NOT MEASURED

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME Salsbury-Shaw Avenue
 DATE OF WELL DEVELOPMENT 8/27/88
 DEVELOPMENT CREW MEMBERS P. Smith
 SUPERVISOR D. Millard
 PURGING METHOD Stainless Steel Bailer

WELL INFORMATION

WELL NUMBER MW-1A
 WELL TYPE Deep Alluvium
 T.O.C. ELEVATION 993.44
 WATER ELEVATION 972.6
 BOTTOM ELEVATION 943.9
 SCREENED INTERVAL 943.9-958.9
 WELL RADIUS 1-inch
 WELL VOLUME 4.5 gallons

DEVELOPMENT DATA

WELL VOLUMES

VOLUME PURGED
(gallons)

FIELD pH

FIELD TEMPERATURE
(Degree Centigrade)

FIELD CONDUCTIVITY

	1	2	3	4	5
VOLUME PURGED (gallons)	4.5	9.0	13.5	18.0	22.5
FIELD pH	7.79	7.33	7.76	7.23	7.49
FIELD TEMPERATURE (Degree Centigrade)	16.4	15.7	16.4	16.4	16.3
FIELD CONDUCTIVITY	1450	1450	1450	1750	1950

WATER QUALITY:

- Initial water quality gray-brown, opaque, loaded with fine suspended sediment, no odor.
- Water quality did not change during purging.

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME Salsbury-Shaw Avenue
 DATE OF WELL DEVELOPMENT 9/21/88 and 9/24/88
 DEVELOPMENT CREW MEMBERS P. Smith
 SUPERVISOR D. Millard
 PURGING METHOD Peristaltic Pump & Stainless Steel Bailer

WELL INFORMATION

WELL NUMBER MW-1B
 WELL TYPE Shallow Alluvium
 T.O.C. ELEVATION 993.49
 WATER ELEVATION 972.99
 BOTTOM ELEVATION 958.7
 SCREENED INTERVAL 958.7-975.7
 WELL RADIUS 1-inch
 WELL VOLUME 2.3 gallons

DEVELOPMENT DATA

WELL VOLUMES*

VOLUME PURGED
(Gallons)

FIELD pH

FIELD TEMPERATURE
(Degree Centigrade)

FIELD CONDUCTIVITY

	1 9/24/88	2 9/24/88	3 9/24/88	4 9/24/88	5 9/24/88
VOLUME PURGED (Gallons)	2.3	4.6	6.9	9.2	11.5
FIELD pH	6.62	5.88	5.47	6.1	5.23
FIELD TEMPERATURE (Degree Centigrade)	16.4	14.8	14.3	14.7	14.2
FIELD CONDUCTIVITY	1090	1100	1120	1110	1110

WATER QUALITY:

- Initial water quality not noted.
- Final water quality slightly cloudy, colorless, no odor.

*Six well volumes purged 9/21/88, no water quality parameters measured.

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME Salsbury-Shaw Avenue
 DATE OF WELL DEVELOPMENT 9/24/88
 DEVELOPMENT CREW MEMBERS P. Smith
 SUPERVISOR D. Millard
 PURGING METHOD Peristaltic Pump & Stainless Steel Bailer

WELL INFORMATION

WELL NUMBER MW-2A
 WELL TYPE Deep Alluvium
 T.O.C. ELEVATION 986.48
 WATER ELEVATION 973.4
 BOTTOM ELEVATION 954.0
 SCREENED INTERVAL 954.0-974.0
 WELL RADIUS 1-inch
 WELL VOLUME 2.9 gallons

DEVELOPMENT DATA

WELL VOLUMES

VOLUME PURGED
(Gallons)

FIELD pH

FIELD TEMPERATURE
(Degree Centigrade)

FIELD CONDUCTIVITY

	2	3	5	6	7
VOLUME PURGED (Gallons)	8	11	14	17	20
FIELD pH	--	--	--	--	--
FIELD TEMPERATURE (Degree Centigrade)	14.9	14.7	14.3	14.4	14.4
FIELD CONDUCTIVITY	640	650	560	540	510

WATER QUALITY:

- Initial water quality cloudy, brown, much sediment, no odor.
- Gradually clearing to slightly cloudy, brown, some sediment, no odor.

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME Salsbury-Shaw Avenue
 DATE OF WELL DEVELOPMENT 10/5/88
 DEVELOPMENT CREW MEMBERS C. Dunnigan
 SUPERVISOR E. Roberts
 PURGING METHOD Bladder Pump

WELL INFORMATION

WELL NUMBER MW-3
 WELL TYPE Bedrock
 T.O.C. ELEVATION 990.78
 WATER ELEVATION 973.45
 BOTTOM ELEVATION 951.5
 SCREENED INTERVAL - -
 WELL RADIUS 1.5/2 inches
 WELL VOLUME 10 gallons

DEVELOPMENT DATA

WELL VOLUMES	1	1.5	2		
VOLUME PURGED (Gallons)	12	17	27		
FIELD pH	- -	8.67	8.64		
FIELD TEMPERATURE (Degree Centigrade)	10.8	10.9	10.9		
FIELD CONDUCTIVITY	763	759	768		

WATER QUALITY:

- 150 gallons (1.5 x drill water lost) was removed prior to development.
- Initial water quality at time of development cloudy, white, much sediment, no odor, quickly clearing.
- Final water quality clear, colorless, no odor.

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME Salsbury-Shaw Avenue
 DATE OF WELL DEVELOPMENT 9/24/88
 DEVELOPMENT CREW MEMBERS P. Smith
 SUPERVISOR D. Millard
 PURGING METHOD Peristaltic Pump & Stainless Steel Bailer

WELL INFORMATION

WELL NUMBER MW-3A
 WELL TYPE Deep Alluvium
 T.O.C. ELEVATION 991.14
 WATER ELEVATION 973.06
 BOTTOM ELEVATION 966.2
 SCREENED INTERVAL 966.2-976.2
 WELL RADIUS 1-inch
 WELL VOLUME 1.5 gallons

DEVELOPMENT DATA

WELL VOLUMES

VOLUME PURGED
(Gallons)

FIELD pH

FIELD TEMPERATURE
(Degree Centigrade)

FIELD CONDUCTIVITY

	1	2	3	4	5
VOLUME PURGED (Gallons)	1.5	3.0	4.5	6.0	7.5
FIELD pH	5.01	5.03	3.76	4.54	3.92
FIELD TEMPERATURE (Degree Centigrade)	15.7	15.4	15.3	15.4	15.1
FIELD CONDUCTIVITY	1620	1370	1130	1010	1040

Continued...
(Page 1 of 2)

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME Salsbury-Shaw Avenue
 DATE OF WELL DEVELOPMENT 9/24/88
 DEVELOPMENT CREW MEMBERS P. Smith
 SUPERVISOR D. Millard
 PURGING METHOD Peristaltic Pump & Stainless Steel Bailer

WELL INFORMATION

WELL NUMBER MW-3A
 WELL TYPE Deep Alluvium
 T.O.C. ELEVATION 991.14
 WATER ELEVATION 973.06
 BOTTOM ELEVATION 966.2
 SCREENED INTERVAL 966.2-976.2
 WELL RADIUS 1-inch
 WELL VOLUME 1.5 gallons

DEVELOPMENT DATA - Continued

WELL VOLUMES

VOLUME PURGED
(Gallons)

FIELD pH

FIELD TEMPERATURE
(Degree Centigrade)

FIELD CONDUCTIVITY

13				
19.5				
5.78				
15.4				
1030				

WATER QUALITY:

- Initial water quality opaque, gray, much sediment, no odor.
- Gradually becoming clear and colorless, no odor.

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME Salsbury-Shaw Avenue
 DATE OF WELL DEVELOPMENT 10/7/88
 DEVELOPMENT CREW MEMBERS C. Dunnigan/P. Smith
 SUPERVISOR E. Roberts
 PURGING METHOD Bladder Pump

WELL INFORMATION

WELL NUMBER MW-4
 WELL TYPE Bedrock
 T.O.C. ELEVATION 993.05
 WATER ELEVATION 973.37
 BOTTOM ELEVATION 923.3
 SCREENED INTERVAL - -
 WELL RADIUS 1.5/2 inches
 WELL VOLUME 28.4 gallons

DEVELOPMENT DATA

WELL VOLUMES

VOLUME PURGED
(Gallons)

FIELD pH

FIELD TEMPERATURE
(Degree Centigrade)

FIELD CONDUCTIVITY

	1	2	3	4	5
VOLUME PURGED (Gallons)	30				
FIELD pH	7.00				
FIELD TEMPERATURE (Degree Centigrade)	10.7				
FIELD CONDUCTIVITY	575				

WATER QUALITY:

- 135 gallons (1.5 x drill water lost) was removed prior to development.
- Initial water quality at time of development opaque, white, some sediment, no odor, quickly clearing.
- Final water quality clear and colorless, no odor.

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT NAME	Salsbury-Shaw Avenue
DATE OF WELL DEVELOPMENT	9/27/88 & 10/06/88
DEVELOPMENT CREW MEMBERS	C. Dunnigan/P. Smith
SUPERVISOR	E. Roberts
PURGING METHOD	Stainless Steel Bailer, Bladder Pump

WELL INFORMATION

WELL NUMBER	MW-4A
WELL TYPE	Deep Alluvium
T.O.C. ELEVATION	992.43
WATER ELEVATION	973.18
BOTTOM ELEVATION	939.0
SCREENED INTERVAL	939.0-954.0
WELL RADIUS	1-inch
WELL VOLUME	5.5 gallons

DEVELOPMENT DATA

WELL VOLUMES

VOLUME PURGED
(Gallons)

FIELD pH

FIELD TEMPERATURE
(Degree Centigrade)

FIELD CONDUCTIVITY

	5 9/27/88	7 9/27/88	1 10/6/88	2 10/6/88	3 10/6/88
VOLUME PURGED (Gallons)	25	35	6	12	17
FIELD pH	7.82	7.88	7.19	7.52	7.70
FIELD TEMPERATURE (Degree Centigrade)	- -	- -	11.2	11.3	11.3
FIELD CONDUCTIVITY	450	380	700	690	675

WATER QUALITY:

- Initial water quality opaque, brown, no odor, loaded with sediment.
- Gradually clearing to slightly cloudy, colorless, no odor.

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME Salsbury-Shaw Avenue
 DATE OF WELL DEVELOPMENT 10/3/88
 DEVELOPMENT CREW MEMBERS C. Dunnigan
 SUPERVISOR E. Roberts
 PURGING METHOD ISCO Bladder Pump

WELL INFORMATION

WELL NUMBER MW-4B
 WELL TYPE Shallow Alluvium
 T.O.C. ELEVATION 992.21
 WATER ELEVATION 973.21
 BOTTOM ELEVATION 957.2
 SCREENED INTERVAL 957.2-974.2
 WELL RADIUS 1-inch
 WELL VOLUME 2.6 gallons

DEVELOPMENT DATA

WELL VOLUMES

VOLUME PURGED
(Gallons)

FIELD pH

FIELD TEMPERATURE
(Degree Centigrade)

FIELD CONDUCTIVITY

	2	3	5	6	
VOLUME PURGED (Gallons)	5	9	13	16	
FIELD pH	5.56	6.08	5.95	6.03	
FIELD TEMPERATURE (Degree Centigrade)	11.3	11.6	11.6	11.5	
FIELD CONDUCTIVITY	1000	756	730	725	

WATER QUALITY:

- Initial water quality opaque, brown, no odor, much brown sediment.
- Gradually clearing to slightly cloudy, colorless, no sediment, no odor.

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME Salsbury-Shaw Avenue
 DATE OF WELL DEVELOPMENT 10/6/88
 DEVELOPMENT CREW MEMBERS C. Dunnigan/P. Smith
 SUPERVISOR E. Roberts
 PURGING METHOD Bladder Pump

WELL INFORMATION

WELL NUMBER MW-6
 WELL TYPE Bedrock
 T.O.C. ELEVATION 1004.62
 WATER ELEVATION 977.09
 BOTTOM ELEVATION 947.4
 SCREENED INTERVAL - -
 WELL RADIUS 1.5/2 inches
 WELL VOLUME 15.1 gallons

DEVELOPMENT DATA

WELL VOLUMES

VOLUME PURGED
(Gallons)

FIELD pH

FIELD TEMPERATURE
(Degree Centigrade)

FIELD CONDUCTIVITY

1				
20				
7.13				
11.5				
874				

WATER QUALITY:

- 1500 gallons (1.5 x drill water lost) was removed prior to development.
- Initial water quality at time of development cloudy, light yellow, some suspended sediment, slight odor.
- Final water quality clear, light yellow, no odor.

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME Salsbury-Shaw Avenue
 DATE OF WELL DEVELOPMENT 09/25/88 & 10/04/88
 DEVELOPMENT CREW MEMBERS C. Dunnigan
 SUPERVISOR E. Roberts
 PURGING METHOD Bailer/Peristaltic Pump & Bladder Pump

WELL INFORMATION

WELL NUMBER MW-6A
 WELL TYPE Alluvium
 T.O.C. ELEVATION 1004.59
 WATER ELEVATION 973.48
 BOTTOM ELEVATION 962.1
 SCREENED INTERVAL 962.1-979.1
 WELL RADIUS 1-inch
 WELL VOLUME 1.8 gallons

DEVELOPMENT DATA

WELL VOLUMES
 VOLUME PURGED
 (Gallons)
 FIELD pH
 FIELD TEMPERATURE
 (Degree Centigrade)
 FIELD CONDUCTIVITY

	1 9/25/88	1 10/4/88	2 10/4/88	4 10/4/88	
VOLUME PURGED (Gallons)	2	2	5.5	8	
FIELD pH	- -	7.59	10.08	9.87	
FIELD TEMPERATURE (Degree Centigrade)	15.9	13.7	11.0	12.2	
FIELD CONDUCTIVITY	- -	382	418	470	

WATER QUALITY:

- Initial water quality opaque, brown, loaded with sediment, no odor,
- Final water quality cloudy, brown, much sediment.
- Well dries quickly, recharges slowly.

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME Salsbury-Shaw Avenue
 DATE OF WELL DEVELOPMENT 9/28/88, 9/30/88-10/01/88
 DEVELOPMENT CREW MEMBERS C. Dunnigan
 SUPERVISOR E. Roberts
 PURGING METHOD Bailer

WELL INFORMATION

WELL NUMBER MW-7
 WELL TYPE Bedrock
 T.O.C. ELEVATION 1006.43
 WATER ELEVATION 22.68
 BOTTOM ELEVATION 981.23
 SCREENED INTERVAL - -
 WELL RADIUS 1.5-inches/2-inches
 WELL VOLUME 0.8 gallons

DEVELOPMENT DATA

WELL VOLUMES

VOLUME PURGED
(Gallons)

FIELD pH

FIELD TEMPERATURE
(Degree Centigrade)

FIELD CONDUCTIVITY

	1 9/28/88	2 9/30/88	3 10/1/88	4	5
VOLUME PURGED (Gallons)	<1 (dry)	0.5 (dry)	0.5 (dry)		
FIELD pH	- -	- -	- -		
FIELD TEMPERATURE (Degree Centigrade)	- -	- -	- -		
FIELD CONDUCTIVITY	- -	- -	- -		

WATER QUALITY:

- Initial water quality is opaque, light brown, loaded with sediment, no odor.
- Final water quality opaque, light gray, much sediment, no odor.
- Well dries quickly, recharges slowly.

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME	Salsbury-Shaw Avenue
DATE OF WELL DEVELOPMENT	9/28/88 & 9/30-10/01/88
DEVELOPMENT CREW MEMBERS	C. Dunnigan
SUPERVISOR	E. Roberts
PURGING METHOD	Bailer

WELL INFORMATION

WELL NUMBER	MW-8
WELL TYPE	Bedrock
T.O.C. ELEVATION	1013.11
WATER ELEVATION	988.81
BOTTOM ELEVATION	978.5
SCREENED INTERVAL	- -
WELL RADIUS	1.5-inches/2-inches
WELL VOLUME	3.8 gallons

DEVELOPMENT DATA

	1 9/28/88	2 9/30/88	3 10/1/88	4	5
WELL VOLUMES					
VOLUME PURGED (Gallons)	±5 (dry)	±5 (dry)	±1.5 (dry)		
FIELD pH	- -	- -	- -		
FIELD TEMPERATURE (Degree Centigrade)	- -	- -	- -		
FIELD CONDUCTIVITY	- -	- -	- -		

WATER QUALITY:

- Initial water quality is cloudy, yellow, loaded with very fine white sediment, no odor.
- Final water quality clear yellow, no odor.
- Well dries quickly, recharges slowly.

WELL DEVELOPMENT AND STABILIZATION FORM

DRAFT

PROJECT NAME Salsbury-Shaw Avenue
 DATE OF WELL DEVELOPMENT 9/30-10/01/88
 DEVELOPMENT CREW MEMBERS C. Dunnigan
 SUPERVISOR E. Roberts
 PURGING METHOD Bailer

WELL INFORMATION

WELL NUMBER MW-9
 WELL TYPE Bedrock
 T.O.C. ELEVATION 998.01
 WATER ELEVATION 978.00
 BOTTOM ELEVATION 976.3
 SCREENED INTERVAL - -
 WELL RADIUS 1.5-inches/2-inches
 WELL VOLUME _____

DEVELOPMENT DATA

WELL VOLUMES

VOLUME PURGED
(Gallons)

FIELD pH

FIELD TEMPERATURE
(Degree Centigrade)

FIELD CONDUCTIVITY

	1 9/30/88	2 10/1/88	3	4	5
VOLUME PURGED (Gallons)	±1.5	±1			
FIELD pH					
FIELD TEMPERATURE (Degree Centigrade)					
FIELD CONDUCTIVITY					

WATER QUALITY:

- Initial water quality is opaque, light gray, loaded with very fine sediment, no odor.
- Final water quality is opaque, light gray, loaded with very fine sediment, no odor.
- Well dries quickly recharges slowly.

SAMPLE COLLECTION DATA SHEET - GROUNDWATER SAMPLING PROGRAM

PROJECT NAME Salsbury-Shaw Avenue PROJECT NO. 2227
 SAMPLING CREW MEMBERS C. Dunnigan, P. Smith SUPERVISOR C. Dunnigan
 DATE OF SAMPLE COLLECTION 10/03/88-10/09/88

SAMPLE I.D. NUMBER	WELL NUMBER	T.O.C. ELEVATION	WELL DEPTH (ft. btoc)	WATER DEPTH (ft. btoc)	WATER ELEVATION (ft. AMSL)	WELL VOLUME (gallons)	VOLUME PURGED (gallons)	FIELD pH	FIELD TEMP.	FIELD COND.	TIME	SAMPLE DESCRIPTION & ANALYSIS
W-100388 CD-0001	MW-4B	992.21	35.0	19.00	973.21	2.6	17	7.10	11.3	658	1330	TAL/TCL Parameters and Nitrate
W-100388 CD-0002	MW-4B	992.21	35.0	19.00	973.21	2.6	17	7.10	11.3	658	1330	TAL/TCL Parameters and Nitrate
W-100388 CD-0003	Blank	-Prcleaned bailer used previously in well MW8A									1700	TAL/TCL Parameters and Nitrate
W-100488 CD-0004	MW-9	998.01	23.1	20.91	977.10	0.7	0.75 (10/3/88)	9.36	12.5	605	1130	Dissolved Metals
W-100488 CD-0005	MW-7	1006.43	24.5	23.15	983.28	0.7	.5 (10/3/88)	9.64	13.0	572	1430	Dissolved Metals, B/N
W-100488 CD-0006	Blank	-Prcleaned bailer previously used in well MW7									1600	TAL/TCL Parameters and Nitrate
W-100588 CD-0004	MW-9	998.01		20.79	977.22	--	--	--	--	--	0950	VOA, B/N Day 2 of Sampling
W-100588 CD-0005	MW-7	1006.43	24.5	23.25	983.18	--	--	--	--	--	1030	VOA, Acid Day 2 of Sampling
W-100588 CD-0007	MW-8	1013.11	34.6	30.56	982.55	1.5	1.5 (10/3/88)	5.94	12.5	648	1110	VOA, Metals, Acids, B/N - EPA Split

ADDITIONAL COMMENTS:

All preservatives in containers upon receipt, metals were field filtered, cyanide samples were not filtered.

DRAFT

SAMPLE COLLECTION DATA SHEET - GROUNDWATER SAMPLING PROGRAM

PROJECT NAME Salsbury-Shaw Avenue PROJECT NO. 2227
 SAMPLING CREW MEMBERS C. Dunnigan, P. Smith SUPERVISOR C. Dunnigan
 DATE OF SAMPLE COLLECTION 10/03/88-10/09/88 - Continued

SAMPLE I.D. NUMBER	WELL NUMBER	T.O.C. ELEVATION	WELL DEPTH (ft. btoc)	WATER DEPTH (ft. btoc)	WATER ELEVATION (ft. AMSL)	WELL VOLUME (gallons)	VOLUME PURGED (gallons)	FIELD pH	FIELD TEMP.	FIELD COND.	TIME	SAMPLE DESCRIPTION & ANALYSIS
W-100588 CD-0008	MW-3	990.78	39.3	17.33	973.45	10.0	55	8.52	11.3	672	1230	TAL/TCL Parameters and Nitrate - EPA Split
W-100588 CD-0009	MW-3A	991.14	24.9	18.24	972.90	1.1	20	8.27	14.0	944	1600	TAL/TCL Parameters and Nitrate
W-100588 CD-0010	Blank	-Precognized telfon Timco pump housing, not yet used at site										TAL/TCL Parameters and Nitrate
W-100688 CD-0004	MW-9	998.01	23.1	20.93	977.08	--	--	--	--	--	--	Acid, Pesticides -EPA Split Day 3 of Sampling
W-100688 CD-0005	MW-7	1006.43	24.5	23.40	983.03	--	--	--	--	--	1400	Pesticides, Cyanide, Day 3 of Sampling
W-100688 CD-0007	MW-8	1013.11	34.6	30.52	982.59	--	--	--	--	--	--	Pesticides, Cyanide, Nitrate - EPA Split Day 3 of Sampling
W-100688 CD-0011	Blank	-Precognized bailer previously used in well MW7										TAL/TCL Parameters and Nitrate
W-100688 CD-0012	MW-4A	992.43	53.4	19.25	973.18	5.5	30	7.23	12.0	627	1640	TAL/TCL Parameters and Nitrate -EPA Split
W-100688 CD-0013	MW-6	1004.92	57.5	27.53	977.09	15.1	80	7.06	11.1	668	1815	TAL/TCL Parameters and Nitrate -EPA Split

ADDITIONAL COMMENTS:

All preservatives in containers upon receipt, metals were field filtered, cyanide samples were not filtered.

DRAFT

SAMPLE COLLECTION DATA SHEET - GROUNDWATER SAMPLING PROGRAM

PROJECT NAME Salsbury-Shaw Avenue PROJECT NO. 2227
 SAMPLING CREW MEMBERS C. Dunnigan, P. Smith SUPERVISOR C. Dunnigan
 DATE OF SAMPLE COLLECTION 10/03/88-10/09/88 - Continued

SAMPLE I.D. NUMBER	WELL NUMBER	T.O.C. ELEVATION	WELL DEPTH (ft. btoc)	WATER DEPTH (ft. btoc)	WATER ELEVATION (ft. AMSL)	WELL VOLUME (gallons)	VOLUME PURGED (gallons)	FIELD pH	FIELD TEMP.	FIELD COND.	TIME	SAMPLE DESCRIPTION & ANALYSIS
W-100788 CD-0004	MW-9	998.01	23.1	21.04	976.97	--	--	--	--	--	1105	Cyanide, Nitrate Day 4 of Sampling -EPA Split Cyanide Only
W-100788 CD-0005	MW-7	1006.43	24.5	--	--	--	--	--	--	--	1126	Nitrate Day 4 of Sampling
W-100788 CD-0014	MW-6A	1004.59	42.5	31.19	973.40	1.8	+/- 2 (10/5/88)	7.24	13.4	472	0937	TAL/TCL Parameters and Nitrate
W-100788 CD-0015	Blank	-Prcleaned	bailer									TAL/TCL Parameters and Nitrate
W-100788 CD-0016	MW-1A	993.44	49.5	20.65	972.79	4.6	25	6.74	12.2	1008	1610	TAL/TCL Parameters and Nitrate
W-100788 CD-0017	MW-4	993.05	69.8	19.68	973.37	28.4	150	6.21	11.4	559	1730	TAL/TCL Parameters and Nitrate
W-100788 CD-0019	MW-1B	993.49	34.8	20.71	972.78	2.3	13	6.17	11.9	960	1000	TAL/TCL Parameters and Nitrate
W-100888 CD-0018	Blank	-Prcleaned	bailer previously used in MW-4A									TAL/TCL Parameters and Nitrate

ADDITIONAL COMMENTS:

All preservatives in containers upon receipt, metals were field filtered, cyanide samples were not filtered.

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