1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-02

Sample wt/vol: 6.1 (g/mL) G Lab File ID: 1J430

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. 19 Date Analyzed: 05/21/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	benzene	2.0	U
108-88-3	toluene	2.0	U
100-41-4	ethylbenzene	2.0	U
1330-20-7	xylenes (total)	3.0	U

Client:	Science Applications International Corp. P.O. Box 2502 800 Oak Ridge Turnpike Oak Ridge, Tennessee 37831
Contact:	Ms. Leslie Barbour
Project Description:	Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: June 01, 1999

Sample ID	: AEP111
Lab ID	: 9905249-02
Matrix	: Soil
Date Collected	: 05/07/99
Date Received	: 05/08/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons		119 = F08	12.2	24.7	mg/kg	1.0	AAT	05/21/99	1500	149518	1
Evaporative Loss @ 105 C		19.0	1.00	1.00	wt%	1.0	LIB	05/17/99	1000	149277	2

M = Method	Method-Description
M 1	EPA 418.1 Modified
M 2	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

79

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP211

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-03

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 1J431

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. 22 Date Analyzed: 05/21/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	benzene	3.2	U
108-88-3	toluene	3.2	U
100-41-4	ethylbenzene	3.2	U
1330-20-7	xylenes (total)	4.9	U

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: June 01, 1999

Sample ID	: AEP211
Lab ID	: 9905249-03
Matrix	: Soil
Date Collected	: 05/07/99
Date Received	: 05/08/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons		59.5 ≤ FD8	12.7	25.6	mg/kg	1.0	AAT	05/21/99	1500	149518	1
Evaporative Loss @ 105 C		22.0	1.00	1.00	wt%	1.0	LIB	05/17/99	1000	149277	2

M = Method	Method-Description
M 1	EPA 418.1 Modified
M 2	EPA 3550

Notes:
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ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

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in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP311

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-04

Sample wt/vol: 6.0 (g/mL) G Lab File ID: 1J510

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. 18 Date Analyzed: 05/21/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	benzene	2.0	U
108-88-3	toluene	2.0	U
100-41-4	ethylbenzene	2.0	U
1330-20-7	xylenes (total)	3.0	U

U

Client:	Science Applications International Corp. P.O. Box 2502 800 Oak Ridge Turnpike Oak Ridge, Tennessee 37831
Contact:	Ms. Leslie Barbour
Project Description:	Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: June 01, 1999

Sample ID	: AEP311
Lab ID	: 9905249-04
Matrix	: Soil
Date Collected	: 05/07/99
Date Received	: 05/08/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons	U	1.61 U	12.1	24.4	mg/kg	1.0	AAT	05/21/99	1500	149518	1
Evaporative Loss @ 105 C		18.0	1.00	1.00	wt%	1.0	LIB	05/17/99	1000	149277	2

M = Method	Method-Description
M 1	EPA 418.1 Modified
M 2	EPA 3550

Notes:
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ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP411

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-05

Sample wt/vol: 5.9 (g/mL) G Lab File ID: 1J433

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. 21 Date Analyzed: 05/21/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	benzene	2.2	U
108-88-3	toluene	2.2	U
100-41-4	ethylbenzene	2.2	U
1330-20-7	xylenes (total)	3.2	U

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: June 01, 1999

Sample ID	: AEP411
Lab ID	: 9905249-05
Matrix	: Soil
Date Collected	: 05/07/99
Date Received	: 05/08/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons		66.1 = F03	12.5	25.3	mg/kg	1.0	AAT	05/21/99	1500	149518	1
Evaporative Loss @ 105 C		21.0	1.00	1.00	wt%	1.0	LIB	05/17/99	1000	149277	2

M = Method	Method-Description
M 1	EPA 418.1 Modified
M 2	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEPS11

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-07

Sample wt/vol: 3.9 (g/mL) G Lab File ID: 1J514

Level: (low/med) LOW Date Received: 05/09/99

% Moisture: not dec. 8 Date Analyzed: 05/21/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(ml) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	benzene	2.8	U
108-88-3	toluene	2.8	U
100-41-4	ethylbenzene	2.8	U
1330-20-7	xylenes (total)	1.2	U

Client:	Science Applications International Corp. P.O. Box 2502 800 Oak Ridge Turnpike Oak Ridge, Tennessee 37831
Contact:	Ms. Leslie Barbour
Project Description:	Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: June 01, 1999 Page 1 of 1

Sample ID	: AEP511
Lab ID	: 9905249-07
Matrix	: Soil
Date Collected	: 05/08/99
Date Received	: 05/09/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons		105 = F08	10.8	21.7	mg/kg	1.0	AAT	05/21/99	1500	149518	1
Evaporative Loss @ 105 C		8.00	1.00	1.00	wt%	1.0	GJ	05/17/99	1725	149340	2

M = Method	Method-Description
M 1	EPA 418.1 Modified
M 2	EPA 3550

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By Jack A. Gist

SAIC. An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: HP005

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556-8171

Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
AEJ111	5/4/99	1017	Soil										1			9905315-01
AEJ511	5/5/99	855	↓										1			02
AED711	5/5/99	1343	↓	1	1											Preserve · Do Not 03
AED811	5/5/99	1447	↓	1	1											Analyze 04
AEDD11	5/5/99	1650	↓	1	1										↓	05
AEDE11	5/5/99	1551	↓	1	1										↓	06

5/6/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature:
Laura Lumley / COMPANY NAME: SAIC	5/6/99 1145	P. Moner / COMPANY NAME: GEL	5/7/99 15:20	Cooler ID: #67	FEDEX NUMBER:
RECEIVED BY: [signature] / COMPANY NAME: GEL	5/6/99 1145	RELINQUISHED BY: / COMPANY NAME:		Samples AED711, AED811, AEDD11, AEDE11 → Preserve & Hold	
RELINQUISHED BY: [signature] / COMPANY NAME: GEL	5/6/99 1535	RECEIVED BY: / COMPANY NAME:			

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99052369 1 of 2

CHAIN OF CUSTODY RECORD

COC NO.: HPØØ16

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll 99052369

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

	Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	TPH-GRO	SVOC TPH-DRO	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
01	AED315	5/6/99	1359	water	Z	Z											4		40ml .1
02	HPØØØ3	5/6/99	745	water	Z												Z		.2
03	AEV111	5/6/99	1634	Soil	1										1	1	3		.3
04	AED611	5/6/99	440		1	1											2		Preserve & .4
05	AEDC11	5/6/99	1150		1	1											2		Hold
06	AED513	5/6/99	1525		1	1											2		
07	AEDA11	5/6/99	910		1	1				/							2		
08	AED411	5/6/99	906		1	1			/								2		
09	AEDB11	5/6/99	~~1160~~ 955		1	1		/									2		
10	AED L11	5/6/99	1105		1	1											2		
11	AED511	5/6/99	1525		1	1											2		
12	AED911	5/6/99	1011		1	1											2		
13	AEDG11	5/6/99	1070	✓	1	1											2		✓

V-52

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature:
Laura Lumley	5/7/99 1130	P. Nauer	5/7/99 15:20	Cooler ID: #772	FEDEX NUMBER:
COMPANY NAME: SAIC		COMPANY NAME: GEL			
RECEIVED BY: [illegible]	Date/Time 5/7/99 1130	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			
RELINQUISHED BY: [illegible]	Date/Time 5/7/99 1520	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			

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800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

9905235? 2 of 2

CHAIN OF CUSTODY RECORD

COC NO.: HP006

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

	Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
1	AED311	5/6/99	1425	Soil	1	1									2		Preserve &
2	AED211	5/6/99	1345		1	1									2		Hold
3	AED111	5/6/99	1450		1	1									2		
4	AED J11	5/6/99	1514		1	1									2		
5	AEDM11	5/6/99	1406		1	1									2		
6	AEDH11	5/6/99	1310		1	1									2		
7	AED J13	5/6/99	1514		1	1									2		
8	AEDK11	5/6/99	1319		1	1									2		
9	AEDF11	5/6/99	1114		1	1									2		
5215	AE JC11	5/6/99	935											1	1		Analyze
15	AE JD11	5/6/99	1100											1	1		

401 .4

400

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 49	Cooler Temperature:
Laura Lumley	5/7/99 1130	P. Power	5/7/99 15:20	Cooler ID: # 772	FEDEX NUMBER:
COMPANY NAME: SAIC		COMPANY NAME: GEL			
RECEIVED BY:	Date/Time 5/7/99 1130	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			
RELINQUISHED BY:	Date/Time 5/7/99 1520	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			

V-53

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800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: HP012

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	SVOC TPH - DRO	TPH-GRO	VOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
AEV211	5/7/99	1024	Soil											1		1	3	4	97.5x99%
AEP111	5/7/99	1600		1	1										1		2	"	
AEP211	5/7/99	1650		1	1										1		2	"	
AEP311	5/7/99	1405		1	1										1		2	"	
AEP411	5/7/99	1715		1	1										1		2	4	

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/8/99 1010	P. Power	5/8/99 15:00
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	5/9/99 1040	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: GEL	5/8/99 1500	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 11

Cooler ID: #612

Cooler Temperature: 3°C

FEDEX NUMBER:

B

SAIC. An Employee-Owned Company
Science Applications International Corporation

800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

99052520 524990

CHAIN OF CUSTODY RECORD

COC NO.: HP016

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature) [signature] (Printed Name) Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

	Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	SVOC	Alkalinity	VOC	SVOC TPH-DRO TOC	TPH-GRO						No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS	
1	AEVW12	5/8/99	1615	water											2		2								4		99052520	4012 .1
1/3	AEP512	5/8/99	1440	↓	2	2	1	1	1	1	1	2	1			1									13			.2
7	HP0007	5/8/99	1200	↓													2								2			.3
5249 -06	AEVW11	5/8/99	1540	Soil													1	1	1						3			4012 .3
-07	AEP511	5/8/99	1500	Soil	1	1																			2			.2

[signature] 5/9/99

RELINQUISHED BY: [signature]	Date/Time 5/9/99 1030	RECEIVED BY: P. Mauer	Date/Time 5/9/99 13:00	TOTAL NUMBER OF CONTAINERS: 24	Cooler Temperature: 3°C
COMPANY NAME: SAIC		COMPANY NAME: GEL		Cooler ID: # 376	FEDEX NUMBER:
RECEIVED BY: [signature]	Date/Time 5/9/99 1030	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL		COMPANY NAME:			
RELINQUISHED BY: [signature]	Date/Time 5/9/99 1330	RECEIVED BY:	Date/Time		
COMPANY NAME: [illegible]		COMPANY NAME:			

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SOIL ANALYTICAL RESULTS
VAPOR TEST WELLS

MAY 1999

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS002S

Matrix: (soil/water) SOIL Lab Sample ID: 9905236-03

Sample wt/vol: 5.8 (g/mL) G Lab File ID: 2J315

Level: (low/med) LOW Date Received: 05/07/99

% Moisture: not dec. 13 Date Analyzed: 05/19/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(ml) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
71-43-2	benzene	5.2	
108-88-3	toluene	4.6	
100-41-4	ethylbenzene	~~72.2~~ 520	~~B~~
1330-20-7	xylenes (total)	157	B

J G01

, F08

DO NOT USE

USE

6/18/99

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV11

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS002S

Matrix: (soil/water) SOIL Lab Sample ID: 9905236-03

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 8T219

Level: (low/med) LOW DATA VALIDATION Date Received: 05/07/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 05/10/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/12/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	phenol	383	U
111-44-4	bis(2-chloroethyl)ether	383	U
95-57-8	2-chlorophenol	383	U
541-73-1	1,3-dichlorobenzene	383	U
106-46-7	1,4-dichlorobenzene	383	U
95-50-1	1,2-dichlorobenzene	383	U
108-60-1	2,2'-Oxybis(1-chloropropane)	383	U
95-48-7	2-methylphenol	383	U
621-64-7	N-nitroso-di-n-propylamine	383	U
106-44-5	m,p-cresol	383	U
67-72-1	hexachloroethane	383	U
98-95-3	nitrobenzene	383	U
78-59-1	isophorone	383	U
88-75-5	2-nitrophenol	383	U
105-67-9	2,4-dimethylphenol	383	U
111-91-1	bis(2-chloroethoxy)methane	383	U
120-83-2	2,4-dichlorophenol	383	U
120-82-1	1,2,4-trichlorobenzene	383	U
91-20-3	naphthalene	383	U
106-47-8	4-chloroaniline	383	U
87-68-3	hexachlorobutadiene	383	U
59-50-7	4-chloro-3-methylphenol	383	U
91-57-6	2-methylnaphthalene	383	U
77-47-4	hexachlorocyclopentadiene	383	U
88-06-2	2,4,6-trichlorophenol	383	U
95-95-4	2,4,5-trichlorophenol	958	U
91-58-7	2-chloronaphthalene	383	U
99-09-2	3-nitroaniline	958	U
88-74-4	2-nitroaniline	958	U
131-11-3	dimethylphthalate	383	U
606-20-2	2,6-dinitrotoluene	383	U
208-96-8	acenaphthylene	383	U
83-32-9	acenaphthene	383	U

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FORM I SV-1 OLM03.0

152

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV11 | 43

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS002S

Matrix: (soil/water) SOIL Lab Sample ID: 9905236-03

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 8T219

Level: (low/med) LOW Date Received: 05/07/99

% Moisture: 13 decanted: (Y/N) N Date Extracted: 05/10/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/12/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-dinitrophenol	958	U
132-64-9	dibenzofuran	383	U
121-14-2	2,4-dinitrotoluene	383	U
84-66-2	diethylphthalate	383	U
100-02-7	4-nitrophenol	958	U
86-73-7	fluorene	383	U
7005-72-3	4-chlorophenylphenylether	383	U
534-52-1	4,6-dinitro-2-methylphenol	958	U
100-01-6	4-nitroaniline	383	U
101-55-3	4-bromophenylphenylether	383	U
118-74-1	hexachlorobenzene	383	U
87-86-5	pentachlorophenol	958	U
85-01-8	phenanthrene	383	U
120-12-7	anthracene	383	U
84-74-2	di-n-butylphthalate	383	U
206-44-0	fluoranthene	383	U
129-00-0	pyrene	383	U
85-68-7	butylbenzylphthalate	383	U
56-55-3	benzo(a)anthracene	383	U
91-94-1	3,3'-dichlorobenzidine	383	U
218-01-9	chrysene	383	U
117-81-7	bis(2-ethylhexyl)phthalate	383	U
117-84-0	di-n-octylphthalate	383	U
205-99-2	benzo(b)fluoranthene	89.4	J
207-08-9	benzo(k)fluoranthene	383	U
50-32-8	benzo(a)pyrene	383	U
193-39-5	indeno(1,2,3-cd)pyrene	383	U
53-70-3	dibenz(a,h)anthracene	383	U
191-24-2	benzo(g,h,i)perylene	383	U
122-39-4	diphenylamine	383	U
86-74-8	Carbazole	383	U

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U J U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

AEV111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS002S

Matrix: (soil/water) SOIL Lab Sample ID: 9905236-03

Sample wt/vol: 30.5 (g/mL) G Lab File ID: 073F7301

Level: (low/med) LOW Date Received: 05/07/99

% Moisture: 13 decanted: (Y/N) N Date Extracted:05/14/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/21/99

Injection Volume: 1.0(uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q	
	----------Diesel Range Organics	184	B	= F08

FORM I SV

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV111

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS002S

Matrix: (soil/water) SOIL Lab Sample ID: 9905236-03

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1I5010

Level: (low/med) LOW Date Received: 05/07/99

% Moisture: not dec. 13 Date Analyzed: 05/14/99

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1000.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

DATA VALIDATION COPY

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	Gasoline Range Organics	331000		J GP1

FORM I VOA

243

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV211

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S1

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-01

Sample wt/vol: 5.9 (g/mL) G Lab File ID: 1J429

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. 10 Date Analyzed: 05/21/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
74-87-3	chloromethane	1.9	U	U
74-83-9	bromomethane	1.9	U	
75-01-4	vinyl chloride	1.9	U	
75-00-3	chloroethane	1.9	U	
75-09-2	methylene chloride	1.9	U	
67-64-1	acetone	89.6		J G01
75-15-0	carbon disulfide	1.6	J	J G01
75-35-4	1,1-dichloroethene	1.9	U	U
75-34-3	1,1-dichloroethane	1.2	J	J G01
67-66-3	chloroform	1.9	U	U
107-06-2	1,2-dichloroethane	1.9	U	U
78-93-3	2-butanone	4.7	U	R C01, C04
71-55-6	1,1,1-trichloroethane	1.9	U	U
56-23-5	carbon tetrachloride	1.9	U	
75-27-4	bromodichloromethane	1.9	U	
78-87-5	1,2-dichloropropane	1.9	U	
10061-01-5	cis-1,3-dichloropropene	1.9	U	
79-01-6	trichloroethene	1.9	U	
124-48-1	dibromochloromethane	1.9	U	
79-00-5	1,1,2-trichloroethane	1.9	U	
71-43-2	benzene	6.9		J G01
10061-02-6	trans-1,3-dichloropropene	1.9	U	U
75-25-2	bromoform	1.9	U	
108-10-1	4-methyl-2-pentanone	4.7	U	
591-78-6	2-hexanone	4.7	U	
127-18-4	tetrachloroethene	1.9	U	
79-34-5	1,1,2,2-tetrachloroethane	1.9	U	U K01
108-88-3	toluene	1.0	J	J G01
108-90-7	chlorobenzene	1.9	U	U
100-41-4	ethylbenzene	78.3		J G01
100-42-5	styrene	1.9	U	U
1330-20-7	xylenes (total)	148		J G01
540-59-0	1,2-dichloroethylene (total)	4.1		J G01

FORM I VOA OLM03.0

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV211

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S1

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-01

Sample wt/vol: 30.5 (g/mL) G Lab File ID: 4V215

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: 10 decanted: (Y/N) N Date Extracted: 05/21/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/25/99

Injection Volume: 1.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	phenol	1460	U
111-44-4	bis(2-chloroethyl)ether	1460	U
95-57-8	2-chlorophenol	1460	U
541-73-1	1,3-dichlorobenzene	1460	U
106-46-7	1,4-dichlorobenzene	1460	U
95-50-1	1,2-dichlorobenzene	1460	U
108-60-1	2,2'-Oxybis(1-chloropropane)	1460	U
95-48-7	2-methylphenol	1460	U
621-64-7	N-nitroso-di-n-propylamine	1460	U
106-44-5	3,4-methylphenol	1460	U
67-72-1	hexachloroethane	1460	U
98-95-3	nitrobenzene	1460	U
78-59-1	isophorone	1460	U
88-75-5	2-nitrophenol	1460	U
105-67-9	2,4-dimethylphenol	1460	U
111-91-1	bis(2-chloroethoxy)methane	1460	U
120-83-2	2,4-dichlorophenol	1460	U
120-82-1	1,2,4-trichlorobenzene	1460	U
91-20-3	naphthalene	183	J
106-47-8	4-chloroaniline	1460	U
87-68-3	hexachlorobutadiene	1460	U
59-50-7	4-chloro-3-methylphenol	1460	U
91-57-6	2-methylnaphthalene	846	J
77-47-4	hexachlorocyclopentadiene	1460	U
88-06-2	2,4,6-trichlorophenol	1460	U
95-95-4	2,4,5-trichlorophenol	1460	U
91-58-7	2-chloronaphthalene	1460	U
99-09-2	3-nitroaniline	3640	U
88-74-4	2-nitroaniline	3640	U
131-11-3	dimethylphthalate	1460	U
606-20-2	2,6-dinitrotoluene	1460	U
208-96-8	acenaphthylene	1460	U
83-32-9	acenaphthene	1460	U

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FORM I SV-1 OLM03.0

99

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV211

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S1

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-01

Sample wt/vol: 30.5 (g/mL) G Lab File ID: 4V215

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: 10 decanted: (Y/N) N Date Extracted: 05/21/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/25/99

Injection Volume: 1.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-dinitrophenol	2910	U
132-64-9	dibenzofuran	1460	U
121-14-2	2,4-dinitrotoluene	1460	U
84-66-2	diethylphthalate	1460	U
100-02-7	4-nitrophenol	1460	U
86-73-7	fluorene	304	J
7005-72-3	4-chlorophenylphenylether	1460	U
534-52-1	4,6-dinitro-2-methylphenol	2910	U
100-01-6	4-nitroaniline	1460	U
122-39-4	diphenylamine	1460	U
101-55-3	4-bromophenylphenylether	1460	U
118-74-1	hexachlorobenzene	1460	U
87-86-5	pentachlorophenol	2910	U
85-01-8	phenanthrene	1650	
120-12-7	anthracene	416	J
84-74-2	di-n-butylphthalate	1460	U
206-44-0	fluoranthene	1710	
129-00-0	pyrene	1570	
85-68-7	butylbenzylphthalate	1460	U
56-55-3	benzo(a)anthracene	657	J
91-94-1	3,3'-dichlorobenzidine	2910	U
218-01-9	chrysene	631	J
117-81-7	bis(2-ethylhexyl)phthalate	1460	U
117-84-0	di-n-octylphthalate	1460	U
205-99-2	benzo(b)fluoranthene	211	J
207-08-9	benzo(k)fluoranthene	1460	U
50-32-8	benzo(a)pyrene	367	J
193-39-5	indeno(1,2,3-cd)pyrene	384	J
53-70-3	dibenz(a,h)anthracene	1460	U
191-24-2	benzo(g,h,i)perylene	396	J
86-74-8	Carbazole	1460	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

AEV211

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S1

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-01

Sample wt/vol: 30.1 (g/mL) DATA VALIDATION Lab File ID: 028F2801

Level: (low/med) LOW COPY Date Received: 05/08/99

% Moisture: 10 decanted: (Y/N) N Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/22/99

Injection Volume: 1.0(uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	----------Diesel Range Organics_____	187	B

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV211

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S1

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-01

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1J305

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. 10 DATA VALIDATION COPY Date Analyzed: 05/19/99

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1000.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	349000		J GD1

FORM I VOA

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEVW11

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S1

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-06

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 1J513

Level: (low/med) LOW Date Received: 05/09/99

% Moisture: not dec. 9 Date Analyzed: 05/21/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(ml) Soil Aliquot Volume: 5.0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
74-87-3	chloromethane	2.0	U	U
74-83-9	bromomethane	2.0	U	
75-01-4	vinyl chloride	2.0	U	
75-00-3	chloroethane	2.0	U	
75-09-2	methylene chloride	2.0	U	
67-64-1	acetone	155		J G01
75-15-0	carbon disulfide	0.83	J	J G01
75-35-4	1,1-dichloroethene	2.0	U	U
75-34-3	1,1-dichloroethane	3.4		J G01
67-66-3	chloroform	2.0	U	U
107-06-2	1,2-dichloroethane	2.0	U	U
78-93-3	2-butanone	5.0	U	R C01, C04
71-55-6	1,1,1-trichloroethane	2.0	U	U
56-23-5	carbon tetrachloride	2.0	U	
75-27-4	bromodichloromethane	2.0	U	
78-87-5	1,2-dichloropropane	2.0	U	
10061-01-5	cis-1,3-dichloropropene	2.0	U	
79-01-6	trichloroethene	2.0	U	
124-48-1	dibromochloromethane	2.0	U	
79-00-5	1,1,2-trichloroethane	2.0	U	
71-43-2	benzene	21.9		J G01
10061-02-6	trans-1,3-dichloropropene	2.0	U	U
75-25-2	bromoform	2.0	U	
108-10-1	4-methyl-2-pentanone	5.0	U	
591-78-6	2-hexanone	5.0	U	
127-18-4	tetrachloroethene	2.0	U	
79-34-5	1,1,2,2-tetrachloroethane	2.0	U	U K01
108-88-3	toluene	2.0	U	U
108-90-7	chlorobenzene	2.0	U	U
100-41-4	ethylbenzene	721	~~226~~ E D	J A03
100-42-5	styrene	2.0	U	U
1330-20-7	xylenes (total)	1160	~~424~~ E D	J A03
540-59-0	1,2-dichloroethylene (total)	10.2		J G01

FORM I VOA

NMP 6/16/99

OLM03.0

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEVW11

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S1

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-06

Sample wt/vol: 30.5 (g/mL) G Lab File ID: 4V216

Level: (low/med) LOW Date Received: 05/09/99

% Moisture: 9 decanted: (Y/N) N Date Extracted: 05/21/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/25/99

Injection Volume: 1.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	phenol	1440	U
111-44-4	bis(2-chloroethyl)ether	1440	U
95-57-8	2-chlorophenol	1440	U
541-73-1	1,3-dichlorobenzene	1440	U
106-46-7	1,4-dichlorobenzene	1440	U
95-50-1	1,2-dichlorobenzene	1440	U
108-60-1	2,2'-Oxybis(1-chloropropane)	1440	U
95-48-7	2-methylphenol	1440	U
621-64-7	N-nitroso-di-n-propylamine	1440	U
106-44-5	3,4-methylphenol	1440	U
67-72-1	hexachloroethane	1440	U
98-95-3	nitrobenzene	1440	U
78-59-1	isophorone	1440	U
88-75-5	2-nitrophenol	1440	U
105-67-9	2,4-dimethylphenol	1440	U
111-91-1	bis(2-chloroethoxy)methane	1440	U
120-83-2	2,4-dichlorophenol	1440	U
120-82-1	1,2,4-trichlorobenzene	1440	U
91-20-3	naphthalene	390	J
106-47-8	4-chloroaniline	1440	U
87-68-3	hexachlorobutadiene	1440	U
59-50-7	4-chloro-3-methylphenol	1440	U
91-57-6	2-methylnaphthalene	1110	J
77-47-4	hexachlorocyclopentadiene	1440	U
88-06-2	2,4,6-trichlorophenol	1440	U
95-95-4	2,4,5-trichlorophenol	1440	U
91-58-7	2-chloronaphthalene	1440	U
99-09-2	3-nitroaniline	3600	U
88-74-4	2-nitroaniline	3600	U
131-11-3	dimethylphthalate	1440	U
606-20-2	2,6-dinitrotoluene	1440	U
208-96-8	acenaphthylene	1440	U
83-32-9	acenaphthene	1440	U

FORM I SV-1 OLM03.0

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEVW11

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S1

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-06

Sample wt/vol: 30.5 (g/mL) G Lab File ID: 4V216

Level: (low/med) LOW Date Received: 05/09/99

% Moisture: 9 decanted: (Y/N) N Date Extracted: 05/21/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/25/99

Injection Volume: 1.0 (uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-dinitrophenol	2880	U
132-64-9	dibenzofuran	1440	U
121-14-2	2,4-dinitrotoluene	1440	U
84-66-2	diethylphthalate	1440	U
100-02-7	4-nitrophenol	1440	U
86-73-7	fluorene	256	J
7005-72-3	4-chlorophenylphenylether	1440	U
534-52-1	4,6-dinitro-2-methylphenol	2880	U
100-01-6	4-nitroaniline	1440	U
122-39-4	diphenylamine	1440	U
101-55-3	4-bromophenylphenylether	1440	U
118-74-1	hexachlorobenzene	1440	U
87-86-5	pentachlorophenol	2880	U
85-01-8	phenanthrene	982	J
120-12-7	anthracene	200	J
84-74-2	di-n-butylphthalate	1440	U
206-44-0	fluoranthene	666	J
129-00-0	pyrene	710	J
85-68-7	butylbenzylphthalate	1440	U
56-55-3	benzo(a)anthracene	1440	U
91-94-1	3,3'-dichlorobenzidine	2880	U
218-01-9	chrysene	218	J
117-81-7	bis(2-ethylhexyl)phthalate	1440	U
117-84-0	di-n-octylphthalate	1440	U
205-99-2	benzo(b)fluoranthene	1440	U
207-08-9	benzo(k)fluoranthene	1440	U
50-32-8	benzo(a)pyrene	104	J
193-39-5	indeno(1,2,3-cd)pyrene	1440	U
53-70-3	dibenz(a,h)anthracene	1440	U
191-24-2	benzo(g,h,i)perylene	1440	U
86-74-8	Carbazole	1440	U

FORM I SV-2 OLM03.0

FORM 1 Science Applications09-MAY-1999 SA
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

AEVW11

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S1

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-06

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 029F2901

Level: (low/med) LOW Date Received: 05/09/99

% Moisture: 9 decanted: (Y/N) N Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/22/99

Injection Volume: 1.0(uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) MG/KG	Q
	Diesel Range Organics	323	B

= F08

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEVW11

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS005S1

Matrix: (soil/water) SOIL Lab Sample ID: 9905249-06

Sample wt/vol: 10.0 (g/mL) G Lab File ID: 1J306

Level: (low/med) LOW Date Received: 05/09/99

% Moisture: not dec. 9 Date Analyzed: 05/19/99

DATA VALIDATION COPY

GC Column: J&W DB-624(FID) ID: 0.53 (mm) Dilution Factor: 1000.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
	----------Gasoline Range Organics	375000		J G01

FORM I VOA

DATA VALIDATION
COPY

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 21, 1999 Page 1 of 1

Sample ID : AEVW11
Lab ID : 9905249-06
Matrix : Soil
Date Collected : 05/08/99
Date Received : 05/09/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Evaporative Loss @ 105 C		9.00		1.00	1.00	wt%	1.0	LIB	05/17/99	1000	149277	1
TOTAL ORGANIC CARBON (TOC)		8940	=	43.1	100	mg/kg	1.0	LS	05/20/99	1632	149522	2

M = Method	Method-Description
M 1	EPA 3550
M 2	SW846 9060 modified

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Data reported in mass/mass units is reported as 'dry weight'.

This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

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SAIC An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: HP012

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	SVOC TPH-DRO	TPH-GRO	VOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
AEV211	5/7/99	1024	Soil											1	1	1	3	4	9% 5% 9%
AEP111	5/7/99	1600		1	1										1		2	4	
AEP211	5/7/99	1650		1	1										1		2	4	
AEP311	5/7/99	1405		1	1										1		2	4	
AEP411	5/7/99	1715		1	1										1		2	4	

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 11	Cooler Temperature: 3°C
Laura Lumley	5/8/99 1040	P. Power	5/8/99 15:00	Cooler ID: #612	FEDEX NUMBER:
COMPANY NAME: SAIC		COMPANY NAME: GEL			
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time		
COMPANY NAME: GEL	5/8/99 1040	COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME: GEL	5/8/99 1500	COMPANY NAME:			

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Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

99052529 52499

CHAIN OF CUSTODY RECORD

COC NO.: HP016

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	SVOC	Alkalinity	VOC	SVOC TPH-DRO TCC	TPH-GRO				No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
AEVW12	5/8/99	1615	water											2		2						4		99052529
AEP512	5/8/99	1440	↓	2	2	1	1	1	1	1	2	1			1							13		
HP0007	5/8/99	1200	↓													2						2		
AEVW11	5/8/99	1540	Soil													1	1	1				3		
AEP511	5/8/99	1500	Soil	1	1																	2		

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/9/99	P. Power	5/9/99
COMPANY NAME: SAIC	1070	COMPANY NAME: GEL	13:00
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME:	5/9/99 1050	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:	5/9/99 1330	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 24

Cooler ID: #374

Cooler Temperature: 3°C

FEDEX NUMBER:

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Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

99052369 1 of 2

CHAIN OF CUSTODY RECORD

COC NO.: HPØØ16

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll 99052369

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS: BTEX, TPH, Nitrate, Sulfate, Sulfide, Total Iron, Dissolved Iron, Methane, CO2, TOC, TPH-GRO, SVOC TPH-DRO

	Sample ID	Date Collected	Time Collected	Matrix	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
01	AED315	5/6/99	1359	water	4		
02	APØØØ3	5/6/99	745	water	2		
03	AEV111	5/6/99	1635	Soil	3		
04	AED611	5/6/99	840		2		Preserve & Hold
05	AEDC11	5/6/99	1150		2		
06	AED513	5/6/99	1525		2		
07	AEDA11	5/6/99	910		2		
08	AED411	5/6/99	906		2		
09	AEDB11	5/6/99	~~940~~ 955		2		
10	AED L11	5/6/99	1105		2		
11	AED511	5/6/99	1525		2		
12	AED911	5/6/99	1011		2		
13	AEDG11	5/6/99	1020		2		

RELINQUISHED BY: Laura Lumley	Date/Time 5/7/99 1130	RECEIVED BY: P. Nauer	Date/Time 5/7/99 15:20	TOTAL NUMBER OF CONTAINERS:	Cooler Temperature:
COMPANY NAME: SAIC		COMPANY NAME: Gel		Cooler ID: #772	FEDEX NUMBER:
RECEIVED BY:	Date/Time 5/7/99 1130	RELINQUISHED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			
RELINQUISHED BY:	Date/Time 5/7/99 1520	RECEIVED BY:	Date/Time		
COMPANY NAME:		COMPANY NAME:			

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GEOTECHNICAL SOIL DATA

MAY 1999

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Summary Table of Results FOR HAAF Pilot-Study

SAMPLE NO.	MOISTURE CONTENT (%)	ATTERBERG LIMITS CLASSIFICATION				SIEVE ANALYSIS (% PASSING)											
		LL	PL	PI	Class	3"	2"	1 1/2"	3/4"	3/8"	#4	#10	#20	#40	#60	#140	#200
AF0331	23.4		NONPLASTIC			100	100	100	100	100	100.0	99.96	99	98.3	96.5	28.2	14.5
AF0531	19.2	23	18.2	4.8	CL-ML	100	100	100	100	100	100.0	100.0	99.5	98.3	95.8	45.4	38.9
AF1131	13.1		NONPLASTIC			100	100	100	100	100	100	100	98.0	94.4	89.5	29.6	22.4
AF1231	16.5		NONPLASTIC			100	100	100	100	100	99.73	98	92.0	79.5	68.3	22.1	15.0
AF1631	19.9		NONPLASTIC			100	100	100	100	100	99.8	99.0	96.3	91.5	85.7	22.9	14.3
AF1831	23.8	22.5	20.0	2.5	ML	100	100	100	100	100	100	100.0	99.3	98.3	96.5	36.4	24.3
AF1931	24.4		NONPLASTIC			100	100	100	100	100	100	100.0	99.4	97.8	94.6	34.9	22.4
AF2031	17.8		NONPLASTIC			100	100	100	100	99	98	97.8	96.5	94.0	90.5	30.7	23.2
AF2331	16.7		NONPLASTIC			100	100	100	100	100	99.3	98.0	95.3	90.6	85.6	22.1	12.4
AF2431	15.1		NONPLASTIC			100	100	100	100	100	99.45	98.2	94.4	85.9	76.7	22.9	16.5
AEJ531	15.5	19	18.7	0.3	ML	100	100	100	100	100	100.0	100.0	100.0	99.7	96.7	31.7	28.5
AEJC31	18.5	25.8	13.4	12.4	CL	100	100	100	100	100	100.0	100.0	100.0	99.4	96.6	40.9	38.2
AEVW31	12.0		NONPLASTIC			100	100	100	100	100	99.9	98.9	94.8	81.0	53.5	8.1	6.0
AEJD31	22.0		NONPLASTIC			100	100	100	100	100	100.0	100.0	100.0	99.8	97.4	9.5	7.7
AF0131	18.3		NONPLASTIC			100	100	100	100	100	100.0	100.0	99.6	98.6	95.7	25.0	15.5
AEJ331	19.0	37	26	11	ML	100	100	100	100	100	100.0	99.9	99.9	99.8	99.4	29.5	25.5

Sample #	Permeability k (cm/sec)	Specific Gravity	Porosity	Bulk Density (pcf)
AEJ531	2.00E-04	2.65	0.36	106.38
AEVW31	2.61E-05	2.65	0.33	111.57
AF0131	1.41E-04	2.65	0.47	88.25
AEJ331	5.54E-07	2.65	0.34	109.32
AEJD31	1.16E-05	2.65	0.38	120.54
AEJC31	1.77E-05	2.65	0.36	105.59

John Jones, P.E.
Laboratory Manager

CATLIN Engineers and Scientists
Geotechnical Laboratories

PERMEABILITY TEST ANALYSIS (ASTM D5084)

Project : SAIC

Location of Project : HAAF

Description of Soil : Gray Tan Clay

Job # : 99095Y
Date of Testing: 5/22-5/28
Tested by: FB/CA
Boring # :
Sample # : AEJ331
Sample Depth : 4-6'

Sample Type (**Undisturbed** or Remolded)
Standard Proctor:
Maximim Dry Density: _____ *pcf*
Optimum Moisture Content: _____ %

% Sample Compaction: _____ %
Sample Dry Density: _____ *pcf*
Sample Moisture Content: _____ %
Sample Wet Density: _____ *pcf*

Sample Permeation:

De-Aired Water
% Saturation: 100 %
Cell Pressure: 76.5 *psi*
Lower Pressure: 71.5 *psi*
Upper Pressure: 70 *psi*
Gradient: 13.36

Sample Dimensions		
	Before	After
Length (cm)	7.90	7.80
Diameter (cm)	4.80	4.65
Water Content (%)	18.5	23.5
Weight (g)	268.8	266.9

Constant Head Calculation:

$$K = [V(t_1,t_2)\ LR_T]/[P_BAt]\ (cm/sec)$$

$V(t_1,t_2)$ = Volume of flow from t_1 to t_2 (cm^2)
L = Length of Sample = 7.90 cm
A = Area of Sample = 18.1 cm^2
t = $t_2 - t_1$ (sec)
P_B = Bias Pressure = 1.5 psi x 70.37 cm/psi $_{(cm - H2O)}$ 105.56 cm
R_T = Temperature correction = 0.931

t_2 (min)	t_1 (min)	$(t_2 - t_1)*60$ (sec)	V (cm^3)	$[LR_T]/[P_BA]$ (cm^3)	K (cm/sec)
85	65	1200	0.15	3.85E-03	4.81E-07
105	85	1200	0.2	3.85E-03	6.42E-07
155	105	3000	0.35	3.85E-03	4.49E-07
175	155	1200	0.2	3.85E-03	6.42E-07

K_{avg} = 5.54E-07 cm/sec

CATLIN Engineers and Scientists
Geotechnical Laboratories

PERMEABILITY TEST ANALYSIS (ASTM D5084)

Project : SAIC

Location of Project : HAAF

Description of Soil : Gray Clay

Job # : 99095Y
Date of Testing: 5/22-5/28
Tested by: FB/CA
Boring # :
Sample # : AEJ531
Sample Depth : 5'-7'

Sample Type (**Undisturbed** or Remolded)
Standard Proctor:
Maximim Dry Density: _____ *pcf*
Optimum Moisture Content: _____ %

% Sample Compaction: _____ %
Sample Dry Density: _____ *pcf*
Sample Moisture Content: _____ %
Sample Wet Density: _____ *pcf*

Sample Permeation:

De-Aired Water
% Saturation: 100 %
Cell Pressure: 46.5 *psi*
Lower Pressure: 41.5 *psi*
Upper Pressure: 40 *psi*
Gradient: 12.42

Sample Dimensions		
	Before	After
Length (cm)	8.50	4.70
Diameter (cm)	4.60	8.20
Water Content (%)	20.0	20.2
Weight (g)	290.3	291.4

Constant Head Calculation:

$$K = [V(t_1,t_2)\, LR_T]/[P_B A t] \text{ (cm/sec)}$$

$V(t_1,t_2)$ = Volume of flow from t_1 to t_2 (cm^2)
L = Length of Sample = 8.50 cm
A = Area of Sample = 16.62 cm^2
t = $t_2 - t_1$ (sec)
P_B = Bias Pressure = 1.5 psi x 70.37 cm/psi $_{(cm - H2O)}$ 105.56 cm
R_T = Temperature correction = 0.931

t_2 (min)	t_1 (min)	$(t_2 - t_1)$ (min)	V (cm^3)	$[LR_T]/[P_B A]$ (cm^3)	K (cm/sec)
5	2	3	0.1	4.51E-03	1.50E-04
10	5	5	0.3	4.51E-03	2.71E-04
15	10	5	0.25	4.51E-03	2.26E-04
40	15	25	0.85	4.51E-03	1.53E-04

K_{avg} = 2.00E-04 cm/sec

CATLIN Engineers and Scientists
Geotechnical Laboratories

PERMEABILITY TEST ANALYSIS (ASTM D5084)

Project : SAIC

Location of Project : HAAF

Description of Soil : Gray Clay

Job # : 99095Y
Date of Testing: 5/26-6/1
Tested by: FB/CA
Boring # :
Sample # : AEJC31
Sample Depth : 5'-7'

Sample Type (**Undisturbed** or Remolded)
Standard Proctor:
Maximim Dry Density: _____ *pcf*
Optimum Moisture Content: _____ *%*

% Sample Compaction: _____ *%*
Sample Dry Density: _____ *pcf*
Sample Moisture Content: _____ *%*
Sample Wet Density: _____ *pcf*

Sample Permeation:

De-Aired Water
% Saturation: 96 *%*
Cell Pressure: 96.5 *psi*
Lower Pressure: 91.5 *psi*
Upper Pressure: 90 *psi*
Gradient: 12.87

Sample Dimensions		
	Before	After
Length (cm)	8.20	7.95
Diameter (cm)	4.80	7.75
Water Content (%)	22.9	24.2
Weight (g)	287.1	283.8

Constant Head Calculation:

$$K = [V(t_1,t_2)\, LR_T]/[P_B A t] \text{ (cm/sec)}$$

$V(t_1,t_2)$ = Volume of flow from t_1 to t_2 (cm^2)
L = Length of Sample = 8.20 cm
A = Area of Sample = 18.1 cm^2
t = $t_2 - t_1$ (sec)
P_B = Bias Pressure = 1.5 psi x 70.37 cm/psi $_{(cm - H2O)}$ 105.56 cm
R_T = Temperature correction = 0.931

t_2 (min)	t_1 (min)	$(t_2 - t_1)*60$ (sec)	V (cm^3)	$[LR_T]/[P_B A]$ (cm^3)	K (cm/sec)
5	0	300	1.3	4.00E-03	1.73E-05
10	5	300	1.2	4.00E-03	1.60E-05
15	10	300	1.4	4.00E-03	1.87E-05
20	15	300	1.4	4.00E-03	1.87E-05

K_{avg} = 1.77E-05 cm/sec

CATLIN Engineers and Scientists
Geotechnical Laboratories

PERMEABILITY TEST ANALYSIS (ASTM D5084)

Project : SAIC

Location of Project : HAAF

Description of Soil : Gray Sand

Job # : 99095Y
Date of Testing: 5/22-5/28
Tested by: FB/CA
Boring # :
Sample # : AEJD31
Sample Depth : 5'-7'

Sample Type (**Undisturbed** or Remolded)
Standard Proctor:
Maximim Dry Density: _____ *pcf*
Optimum Moisture Content: _____ %

% Sample Compaction: _____ %
Sample Dry Density: _____ *pcf*
Sample Moisture Content: _____ %
Sample Wet Density: _____ *pcf*

Sample Permeation:

De-Aired Water
% Saturation: 100 %
Cell Pressure: 66.5 *psi*
Lower Pressure: 61.5 *psi*
Upper Pressure: 60 *psi*
Gradient: 14.07

Sample Dimensions		
	Before	After
Length (cm)	7.50	7.20
Diameter (cm)	4.60	4.60
Water Content (%)	21.2	26.7
Weight (g)	238.3	242.5

Constant Head Calculation:

$$K = [V(t_1,t_2)\ LR_T]/[P_BAt]\ (cm/sec)$$

$V(t_1,t_2)$ = Volume of flow from t_1 to t_2 (cm^2)
L = Length of Sample = 7.50 cm
A = Area of Sample = 16.62 cm^2
t = $t_2 - t_1$ (sec)
P_B = Bias Pressure = 1.5 psi x 70.37 cm/psi $_{(cm - H2O)}$ 105.56 cm
R_T = Temperature correction = 0.931

t_2 (min)	t_1 (min)	$(t_2 - t_1)*60$ (sec)	V (cm^3)	$[LR_T]/[P_BA]$ (cm^3)	K (cm/sec)
10	5	300	0.9	3.98E-03	1.19E-05
15	10	300	0.8	3.98E-03	1.06E-05
20	15	300	1	3.98E-03	1.33E-05
25	20	300	0.8	3.98E-03	1.06E-05

K_{avg} = 1.16E-05 cm/sec

CATLIN Engineers and Scientists
Geotechnical Laboratories

PERMEABILITY TEST ANALYSIS (ASTM D5084)

Project : SAIC
Location of Project : HAAF
Description of Soil : Yellow Orange Gray Clay

Job # : 99095Y
Date of Testing: 5/22-5/28
Tested by: FB/CA
Boring # :
Sample # : AEVW31
Sample Depth : 1.8'-3.8'

Sample Type (**Undisturbed** or Remolded)
Standard Proctor:
Maximim Dry Density: _____ *pcf*
Optimum Moisture Content: _____ %

% Sample Compaction: _____ %
Sample Dry Density: _____ *pcf*
Sample Moisture Content: _____ %
Sample Wet Density: _____ *pcf*

Sample Permeation:

De-Aired Water
% Saturation: 100 %
Cell Pressure: 86 *psi*
Lower Pressure: 81 *psi*
Upper Pressure: 80 *psi*
Gradient: 8.38

Sample Dimensions		
	Before	After
Length (cm)	8.40	7.30
Diameter (cm)	4.80	4.70
Water Content (%)	11.0	34.7
Weight (g)	333.6	340.1

Constant Head Calculation:

$$K = [V(t_1,t_2)\, LR_T]/[P_B A t] \text{ (cm/sec)}$$

$V(t_1,t_2)$ = Volume of flow from t_1 to t_2 (cm^2)
L = Length of Sample = 8.40 cm
A = Area of Sample = 18.1 cm^2
t = $t_2 - t_1$ (sec)
P_B = Bias Pressure = 1 psi x 70.37 cm/psi $_{(cm - H2O)}$ 70.37 cm
R_T = Temperature correction = 0.931

t_2 (min)	t_1 (min)	$(t_2 - t_1)*60$ (sec)	V (cm^3)	$[LR_T]/[P_B A]$ (cm^3)	K (cm/sec)
5	0	300	1.2	6.14E-03	2.46E-05
10	5	300	1.6	6.14E-03	3.28E-05
15	10	300	1.4	6.14E-03	2.87E-05
20	15	300	0.9	6.14E-03	1.84E-05

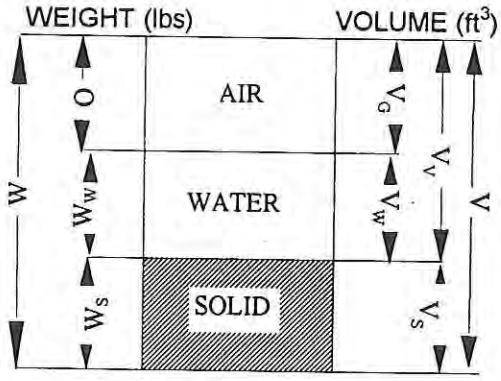
K_{avg} = 2.61E-05 cm/sec

CATLIN Engineers and Scientists
Geotechnical Laboratories

BULK DENSITY, SPECIFIC GRAVITY AND POROSITY

PROJECT: SAIC
LOCATION OF PROJECT: HAAF
DESCRIPTION OF SOIL: Gray Tan Clay
TESTED BY: AJ/CA

JOB NO.: 99095Y
SAMPLE NO.: AEJ331
DEPTH OF SAMPLE: 4'-6'.
DATE OF TESTING: 5/19/99



W = 0.64572
W_W = W - W_S = 0.10072
W_S = Y_d*V = 0.5450

V = 0.00499
V_W = W_W/Y_W = 0.0016
V_S = W_S/G_S*Y_W = 0.0033
V_G = V - (V_S + V_W) = 0.00008
V_V = V_G + V_W = 0.0017

MEASUREMENTS OF TUBE/CAN

HEIGHT= 7.8 cm
DIAMETER= 4.8 cm

CALCULATED VOLUME OF TUBE/CAN

V= 141.15 cm^3
0.00499 ft^3

WT. OF TUBE/CAN + WET SOIL= 405.20 g
WEIGHT OF TUBE/CAN= 112.3 g
WEIGHT OF WET SOIL= 292.90 g
W = 0.64572 lb

MOISTURE CONTENT

M_{CWS} =	27.12	g	M_C =	10.90	g
M_{CDS} =	24.59	g	M_S =	13.69	g
M_W =	2.53	g	w =	18.5	%

Wet Density, Y_m = W / V

Dry Density, Y_d = W_s / V or Y_d = Y_m / (1+ w)

double check
Y_d = W_s / V
Y_d= 109.32 lbs/ft^3

Y_d = Y_m / (1+ w)
Y_m= 129.53 lbs/ft^3
Y_d= 109.32 lbs/ft^3

Void Ratio, e = V_V/V_S
e = 0.5133

Porosity, n = V_V /V
n = 0.34

Specific Gravity = 2.65

Degree of Saturation, S = V_W/V_V
S = 0.9541

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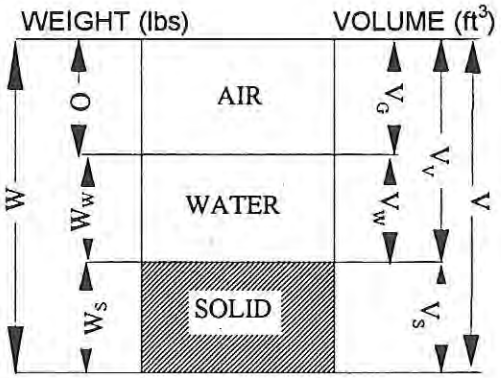
BULK DENSITY, SPECIFIC GRAVITY AND POROSITY

PROJECT: SAIC
LOCATION OF PROJECT: HAAF
DESCRIPTION OF SOIL: Gray Clay
TESTED BY: AJ/CA

JOB NO.: 99095Y
SAMPLE NO.: AEJ531
DEPTH OF SAMPLE:5'-7'.
DATE OF TESTING: 5/19/99



W = 0.69724
W_W = W - W_S = 0.09331
W_S = Y_d*V = 0.6039

V = 0.00568
V_W = W_W/Y_W = 0.0015
V_S = W_S/G_S*Y_W = 0.0037
V_G = V - (V_S + V_W) = 0.00053
V_V = V_G + V_W = 0.0020

MEASUREMENTS OF TUBE/CAN

HEIGHT= 8.7 cm
DIAMETER= 4.85 cm

CALCULATED VOLUME OF TUBE/CAN

V= 160.73 cm^3
0.00568 ft^3

WT. OF TUBE/CAN + WET SOIL= 438.80 g
WEIGHT OF TUBE/CAN= 122.53 g
WEIGHT OF WET SOIL= 316.27 g
W = 0.69724 lb

MOISTURE CONTENT

M_{CWS} =	27.37	g	M_C =	11.23	g
M_{CDS} =	25.21	g	M_S =	13.98	g
M_W =	2.16	g	w =	15.5	%

Wet Density, Y_m = W / V

Dry Density, Y_d = W_s / V or Y_d = Y_m / (1+ w)

double check	Y_d = Y_m / (1+ w)
Y_d = W_s / V	Y_m= 122.82 lbs/ft^3
Y_d= 106.38 lbs/ft^3	Y_d= 106.38 lbs/ft^3

Void Ratio, e = V_V/V_S
e = 0.5551

Porosity, n = V_V /V
n = 0.36

Specific Gravity = 2.65

Degree of Saturation, S = V_W/V_V
S = 0.7376

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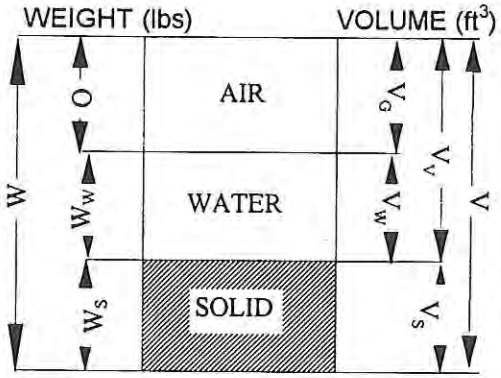
BULK DENSITY, SPECIFIC GRAVITY AND POROSITY

PROJECT: SAIC
LOCATION OF PROJECT: HAAF
DESCRIPTION OF SOIL: Gray Clay
TESTED BY: AJ/CA

JOB NO.: 99095Y
SAMPLE NO.: AEJC31
DEPTH OF SAMPLE:5'-7'.
DATE OF TESTING: 5/19/99



W = 0.67174
W_W = W - W_S = 0.10486
W_S = Y_d*V = 0.5669

V = 0.00537
V_W = W_W/Y_W = 0.0017
V_S = W_S/G_S*Y_W = 0.0034
V_G = V - (V_S +V_W) = 0.00026
V_V = V_G +V_W = 0.0019

MEASUREMENTS OF TUBE/CAN

HEIGHT= 8.4 cm
DIAMETER= 4.8 cm

CALCULATED VOLUME OF TUBE/CAN

V= 152.00 cm^3
0.00537 ft^3

WT. OF TUBE/CAN + WET SOIL= 423.70 g
WEIGHT OF TUBE/CAN= 119 g
WEIGHT OF WET SOIL= 304.70 g
W = 0.67174 lb

MOISTURE CONTENT

M_{CWS} =	43.64	g	M_C =	11.29	g
M_{CDS} =	38.59	g	M_S =	27.30	g
M_W =	5.05	g	w =	18.5	%

Wet Density, Y_m = W / V

Dry Density, Y_d = W_s / V or Y_d = Y_m / (1+ w)

double check	Y_d = Y_m / (1+ w)
Y_d = W_s / V	Y_m= 125.12 lbs/ft^3
Y_d= 105.59 lbs/ft^3	Y_d= 105.59 lbs/ft^3

Void Ratio, e = V_V/V_S
e = 0.5668

Porosity, n = V_V /V
n = 0.36

Specific Gravity = 2.65

Degree of Saturation, S = V_W/V_V
S = 0.8648

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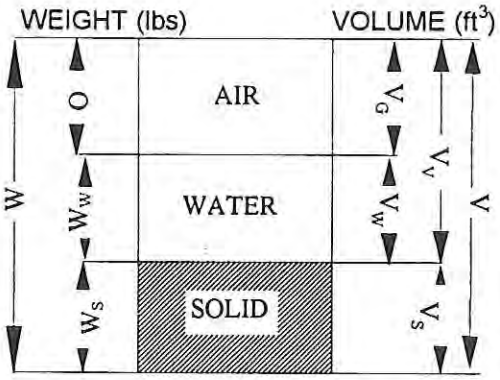
BULK DENSITY, SPECIFIC GRAVITY AND POROSITY

PROJECT: SAIC
LOCATION OF PROJECT: HAAF
DESCRIPTION OF SOIL: Gray Sand
TESTED BY: AJ/CA

JOB NO.: 99095Y
SAMPLE NO.: AEJD31
DEPTH OF SAMPLE:5'-7'
DATE OF TESTING: 5/19/99



W = 0.76874
W_W = W - W_S = 0.13957
W_S = Y_d*V = 0.6292

V = 0.00614
V_W = W_W/Y_W = 0.0022
V_S = W_S/G_S*Y_W = 0.0038
V_G = V - (V_S + V_W) = 0.00010
V_V = V_G + V_W = 0.0023

MEASUREMENTS OF TUBE/CAN

HEIGHT= 9.6 cm
DIAMETER= 4.8 cm

CALCULATED VOLUME OF TUBE/CAN

V= 173.72 cm^3
0.00614 ft^3

WT. OF TUBE/CAN + WET SOIL= 484.40 g
WEIGHT OF TUBE/CAN= 135.7 g
WEIGHT OF WET SOIL= 348.70 g
W = 0.76874 lb

MOISTURE CONTENT

M_{CWS} =	31.77	g	M_C =	11.28	g
M_{CDS} =	28.05	g	M_S =	16.77	g
M_W =	3.72	g	w =	22.2	%

Wet Density, $Y_m = W / V$

Dry Density, $Y_d = W_s / V$ or $Y_d = Y_m / (1+ w)$

double check	$Y_d = Y_m / (1+ w)$
$Y_d = W_s / V$	Y_m= 125.29 lbs/ft^3
Y_d= 102.54 lbs/ft^3	Y_d= 102.54 lbs/ft^3

Void Ratio, $e = V_V/V_S$
e = 0.6134

Porosity, $n = V_V / V$
n = 0.38

Specific Gravity = 2.65

Degree of Saturation, $S = V_W/V_V$
S = 0.9584

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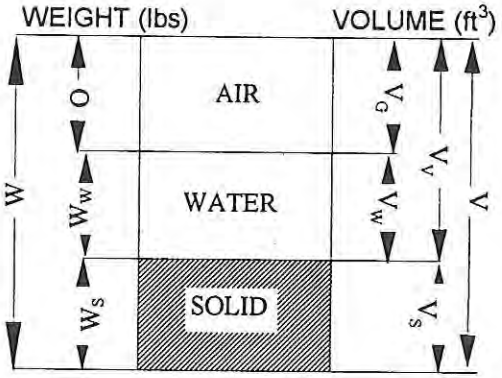
BULK DENSITY, SPECIFIC GRAVITY AND POROSITY

PROJECT: SAIC
LOCATION OF PROJECT: HAAF
DESCRIPTION OF SOIL: Yellow Orange Gray Sand
TESTED BY: AJ/CA

JOB NO.: 99095Y
SAMPLE NO.: AEVW31
DEPTH OF SAMPLE: 1.8'-3.8'.
DATE OF TESTING: 5/19/99



W = 0.68333
W_W = W - W_S = 0.07182
W_S = Y_d*V = 0.6115

V = 0.00548
V_W = W_W/Y_W = 0.0012
V_S = W_S/G_S*Y_W = 0.0037
V_G = V - (V_S + V_W) = 0.00063
V_V = V_G + V_W = 0.0018

MEASUREMENTS OF TUBE/CAN

HEIGHT= 8.4 cm
DIAMETER= 4.85 cm

CALCULATED VOLUME OF TUBE/CAN

V= 155.19 cm^3
0.00548 ft^3

WT. OF TUBE/CAN + WET SOIL= 430.50 g
WEIGHT OF TUBE/CAN= 120.54 g
WEIGHT OF WET SOIL= 309.96 g
W = 0.68333 lb

MOISTURE CONTENT

M_{CWS} = 27.56 g
M_{CDS} = 25.81 g
M_W = 1.75 g
M_C = 10.91 g
M_S = 14.90 g
w = 11.7 %

Wet Density, Y_m = W / V

Dry Density, Y_d = W_s / V or Y_d = Y_m / (1+ w)

double check	Y_d = Y_m / (1+ w)
Y_d = W_s / V	Y_m= 124.67 lbs/ft^3
Y_d= 111.57 lbs/ft^3	Y_d= 111.57 lbs/ft^3

Void Ratio, e = V_V/V_S
e = 0.4829

Porosity, n = V_V /V
n = 0.33

Specific Gravity = 2.65

Degree of Saturation, S = V_W/V_V
S = 0.6445

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ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: SAIC
Location of project: HUNTER ARMY AIR FIELD
Description Of Soil: Gray Clay
Tested By: AJ

Job No.: 99095Y
Sample No.: AEJC31
Depth of Sample: 5' - 7'
Date of Testing: 5/21/99

Liquid Limit Dermination

Can No.	A6	A44	A27	A20	A12	
Wt of Soil + can, Mcws	18.98	19.20	19.01	19.39	16.30	
Wt. of dry soil + can,Mcds	17.36	17.54	17.34	17.67	15.20	
Wt. of can, Mc	11.31	11.23	10.92	11.24	11.20	
Wt. of dry soil, Ms	6.05	6.31	6.42	6.43	4.00	0.00
Wt. of moisture	1.62	1.66	1.67	1.72	1.10	0.00
Water content, w%	26.78	26.31	26.01	26.75	27.50	#DIV/0!
No. of blows, N	20	18	25	37	34	

Plastic Limit Determination

Can no.	A59	A51	C7			
Wt. of wet soil + can, Mcws	4.50	4.78	3.04			
Wt. of dry soil +can, Mcds	4.47	4.71	2.93			
Wt. of can, Mc	4.07	4.10	2.41			
Wt. of dry soil, Ms	0.40	0.61	0.52	0	0	0
Wt. of moisture, Mw	0.03	0.07	0.11	0	0	0
Water content, W% = Wp	7.50	11.48	21.15	#DIV/0!	#DIV/0!	#DIV/0!

LIQUID LIMIT =	25.8
PLASTIC LIMIT =	13.38
PLASTICITY INDEX =	12.42
CLASSIFICATION	CL

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ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: SAIC
Location of project: HUNTER ARMY AIR FIELD
Description Of Soil: Gray/Tan Clay
Tested By: AJ

Job No.: 99095Y
Sample No.: AEJ331
Depth of Sample: 4' - 6'
Date of Testing: 5/21/99

Liquid Limit Dermination

Can No.	A54	A51	A22	A15	A4	
Wt of Soil + can, Mcws	17.83	17.72	17.70	14.60	20.90	
Wt. of dry soil + can,Mcds	16.28	16.13	16.03	13.64	19.39	
Wt. of can, Mc	11.16	11.27	11.28	11.23	15.34	
Wt. of dry soil, Ms	5.12	4.86	4.75	2.41	4.05	0.00
Wt. of moisture	1.55	1.59	1.67	0.96	1.51	0.00
Water content, w%	30.27	32.72	35.16	39.83	37.28	#DIV/0!
No. of blows, N	24	39	29	17	32	

Plastic Limit Determination

Can no.	A28	C8	A17			
Wt. of wet soil + can, Mcws	4.57	3.02	4.69			
Wt. of dry soil +can, Mcds	4.46	2.90	4.57			
Wt. of can, Mc	4.10	2.39	4.07			
Wt. of dry soil, Ms	0.36	0.51	0.50	0	0	0
Wt. of moisture, Mw	0.11	0.12	0.12	0	0	0
Water content, W% = Wp	30.56	23.53	24.00	#DIV/0!	#DIV/0!	#DIV/0!

LIQUID LIMIT = 37
PLASTIC LIMIT = 26.00
PLASTICITY INDEX = 11.00
CLASSIFICATION ML

ATTERBERG LIMITS DETEMINATION (ASTM D4318-93)

Project: SAIC
Location of project: HAAF
Description Of Soil: Gray Clay
Tested By: FB

Job No.: 99095Y
Sample No.: AEJ531
Depth of Sample: 5'- 7'
Date of Testing: 6/15/99

Liquid Limit Dermination

Can No.	A12	A26	A17	A10	A27	
Wt of Soil + can, Mcws	24.85	20.82	18.00	19.82	16.10	
Wt. of dry soil + can,Mcds	22.85	19.88	17.00	19.12	15.30	
Wt. of can, Mc	15.25	15.28	11.20	15.35	10.90	
Wt. of dry soil, Ms	7.60	4.60	5.80	3.77	4.40	0.00
Wt. of moisture	2.00	0.94	1.00	0.70	0.80	0.00
Water content, w%	26.32	20.43	17.24	18.57	18.18	#DIV/0!
No. of blows, N	2	11	17	28	38	

Plastic Limit Determination

Can no.	C5	A51	C8			
Wt. of wet soil + can, Mcws	7.23	7.36	5.58			
Wt. of dry soil +can, Mcds	6.77	6.85	5.00			
Wt. of can, Mc	4.30	4.12	1.90			
Wt. of dry soil, Ms	2.47	2.73	3.10	0	0	0
Wt. of moisture, Mw	0.46	0.51	0.58	0	0	0
Water content, W% = Wp	18.62	18.68	18.71	#DIV/0!	#DIV/0!	#DIV/0!

LIQUID LIMIT =	19
PLASTIC LIMIT =	18.70
PLASTICITY INDEX =	0.30
CLASSIFICATION	ML

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: SAIC	Job No.:99095Y
Project Location: Hunter AAF	Sample No.: AEJ531
Sample Description: Gray Clay	Sample Depth: 5'-7'
	Boring No.:
Tested By: FB/AJ	Date of Testing: 5/21/99

Mcws	Mcds	Mc : A38	Mw	Ms	w%	Mws	Ms
16.72	16.70	14.94	0.02	1.76	1.1	200.48	198.23

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	0	0.00	0.00	100.00
20	0.841	0.06	0.03	0.03	99.97
40	0.42	0.56	0.28	0.31	99.69
60	0.25	6.02	3.04	3.35	96.65
140	0.106	128.77	64.96	68.31	31.69
200	0.074	6.24	3.15	71.46	28.54
pan	---	0.23	0.12	71.57	28.43
total		141.88			

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: SAIC	Job No.:99095Y
Project Location: Hunter AAF	Sample No.: AEJC31
Sample Description: Gray Clay	Sample Depth: 5-7'
	Boring No.:
Tested By: FB/AJ	Date of Testing: 5/21/99

Mcws	Mcds	Mc : A17	Mw	Ms	w%	Mws	Ms
15.41	15.40	11.17	0.01	4.23	0.2	200.21	199.74

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	0.06	0.03	0.03	99.97
20	0.841	0.04	0.02	0.05	99.95
40	0.42	1.01	0.51	0.56	99.44
60	0.25	5.73	2.87	3.42	96.58
140	0.106	111.16	55.65	59.08	40.92
200	0.074	5.47	2.74	61.82	38.18
pan	---	0.22	0.11	61.93	38.07
total		123.69			

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: SAIC	Job No.:99095Y
Project Location: Hunter AAF	Sample No.: AEVW31
Sample Description: Yellow/Orange/Gray Sand	Sample Depth: 1.8-3.8'
	Boring No.:
Tested By: FB/AJ	Date of Testing: 5/21/99

Mcws	Mcds	Mc : A6	Mw	Ms	w%	Mws	Ms
19.53	19.50	15.37	0.03	4.13	0.7	200.43	198.98

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0.25	0.13	0.13	99.87
10	2.00	2	1.01	1.13	98.87
20	0.841	8.19	4.12	5.25	94.75
40	0.42	27.38	13.76	19.01	80.99
60	0.25	54.74	27.51	46.52	53.48
140	0.106	90.27	45.37	91.88	8.12
200	0.074	4.25	2.14	94.02	5.98
pan	—	0.15	0.08	94.09	5.91
total		187.23			

GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: SAIC	Job No.:99095Y
Project Location: Hunter AAF	Sample No.: AEJD31
Sample Description: Gray Sand	Sample Depth: 5-7'
	Boring No.:
Tested By: FB/AJ	Date of Testing: 5/21/99

Mcws	Mcds	Mc : A11	Mw	Ms	w%	Mws	Ms
15.06	15.00	10.90	0.06	4.10	1.5	200.24	197.35

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	0	0.00	0.00	100.00
20	0.841	0.04	0.02	0.02	99.98
40	0.42	0.42	0.21	0.23	99.77
60	0.25	4.6	2.33	2.56	97.44
140	0.106	173.57	87.95	90.51	9.49
200	0.074	3.57	1.81	92.32	7.68
pan	—	0.17	0.09	92.41	7.59
total		182.37			

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GRAIN SIZE ANALYSIS-SIEVE (ASTM D422)

Project: SAIC	Job No.:99095Y
Project Location: Hunter AAF	Sample No.: AEJ331
Sample Description: Gray/Tan Clay	Sample Depth: 4-6'
	Boring No.:
Tested By: FB/AJ	Date of Testing: 5/21/99

Mcws	Mcds	Mc : A42	Mw	Ms	w%	Mws	Ms
17.96	17.90	15.08	0.06	2.82	2.1	200.27	196.10

Sieve No.	Diam. (mm)	Wt. retained	% retained	E % retained	% passing
3	76.2	0	0.00	0.00	100.00
2	50.8	0	0.00	0.00	100.00
1 1/2	25.4	0	0.00	0.00	100.00
3/4	19.05	0	0.00	0.00	100.00
3/8	9.51	0	0.00	0.00	100.00
4	4.76	0	0.00	0.00	100.00
10	2.00	0.14	0.07	0.07	99.93
20	0.841	0.03	0.02	0.09	99.91
40	0.42	0.14	0.07	0.16	99.84
60	0.25	0.95	0.48	0.64	99.36
140	0.106	137.05	69.89	70.53	29.47
200	0.074	7.72	3.94	74.47	25.53
pan	---	0.05	0.03	74.49	25.51
total		146.08			

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APPENDIX VI

ALTERNATE CONCENTRATION LIMIT (ACL) AND ALTERNATE THRESHOLD LEVEL (ATL) CALCULATIONS

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1.0 Alternate Concentration Limits

Benzene, benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)perylene were identified as chemicals of potential concern (COPCs) for groundwater at the site. The closest receptor is an underground storm drain located approximately 65 feet from the MW8 (i.e., center of the source area), thus the dilution attenuation factor (DAF) for lateral migration of benzene in groundwater from the source to the receptor was calculated to be 1.1.

Polyaromatic hydrocarbon (PAH) constituents are much less mobile in the environment than benzene, and the DAF for naphthalene is at least 500 times that of the DAF for benzene. A conservative approach for estimating the DAF for PAH constituents was to use a DAF that was 10 times that of the DAF for benzene. Thus, the DAF for PAH constituents used in the alternate concentration limit (ACL) calculations was 11. The compound-specific regulatory levels or risk-based screening values were used in conjunction with the DAF to develop constituent-specific ACLs, which are presented in Table VI-A. As indicated in Table VI-A, the maximum concentration of each constituent observed during CAP-Part B Site Investigation is adjacent to the calculated ACL. Benzene is the only constituent in groundwater in the pilot study area of the former Northern Fuel Battery, where the concentrations exceed its ACL. Benzo(a)anthracene and chrysene exceeded their respective ACLs in MW56 which is located outside the pilot study area near Former Building 728.

Table VI-A. Alternate Concentration Limits for Contaminants in Groundwater

Contaminant	Regulatory Level (µg/L)	Storm Drain		Maximum Observed CAP-Part B Benzene Concentration (µg/L)
		DAF[1]	ACL[2]	
Benzene	71.28 [a]	1.1	78	**2400** (MW63)
Benzo(a)anthracene	0.0311 [a]	11	0.34	**0.41** (MW56)
Benzo(a)pyrene	0.0311 [a]	11	0.34	0.2 (MW56)
Benzo(k)fluoranthene	0.0311 [a]	11	0.34	0.12 (MW56)
Chrysene	0.0311 [a]	11	0.34	**0.54** (MW56)
Indeno(1,2,3-cd)pyrene	0.0311 [a]	11	0.34	0.075 (MW56)

[1] DAF = Predicted Benzene Concentration at the Source ÷ Predicted Benzene Concentration at the Receptor
= 3250 ÷ 2880 ≈ 1.1 at the storm drain

[2] ACL = Regulatory Level × DAF

[a] In-Stream Water Quality Standard

[b] Risk-based screening criteria

Bold values exceed the calculated ACL.

MW56 is located south of former Building 728 and is outside of the pilot study area.

2.0 Alternate Threshold Levels

Benzene, ethylbenzene, toluene, and xylenes were selected as COPCs for soil. The free product and soil contamination is located at the soil/water interface, thus leaching to groundwater by percolating rain water was not modeled. The nearest preferential pathway is an underground storm drain, which is located approximately 65 feet north of MW8. Thus, the dilution attenuation for benzene from the source (i.e., free product area surrounding MW8) to the underground storm drain was considered in the alternate threshold level (ATL) calculations. As discussed in Section 1.0 above, the DAF for the lateral migration of BTEX compounds was determined to be 1.1. The ATLs for soil are presented in Table VI-B along with the maximum observed concentrations for each constituent.

The ATL for benzene can be calculated using the following steps:

- Step 1 – calculate the fractional organic carbon (f_{cs}) content of the contaminated soil:

  $f_{cs} = 0.002$ (EPA default value)

- Step 2 – calculate the dilution attenuation factor for lateral migration of groundwater (DAF_w) based on the predicted maximum contaminant concentration at the source and the predicted maximum contaminant concentration at the receptor:

$$DAF_w = \frac{C_{source\ max,\ w}}{C_{receptor\ max,\ w}} = \frac{3.25\ mg/L}{2.88\ mg/L} = 1.1\ (dimensionless)$$

  where: $C_{source\ max,\ w}$ = AT123D predicted maximum groundwater concentration at the source
  $C_{receptor\ max,w}$ = AT123D predicted maximum groundwater concentration at the receptor location

- Step 3 – calculate the alternate threshold level:

$$ATL = (K_{oc})\ (f_{cs})\ (C_{std})\ (DAF_w)$$

  where: K_{oc} = organic carbon partitioning coefficient (GA UST CAP-Part A Guidance, Appendix I, Table 1)
  f_{cs} = fractional organic carbon content (calculated in step 1)
  C_{std} = applicable water quality standard
  DAF_w = dilution attenuation factor for the lateral migration of groundwater

Constituent	K_{oc} (mL/g)	f_{cs}	C_{std} (mg/L)	DAF_1	Calculated ATL (mg/kg)
Benzene	81	0.002	0.07128[a]	1.1	0.012
Toluene	133	0.002	200[a]	1.1	58.5
Ethylbenzene	176	0.002	28.718[a]	1.1	11.1
Xylenes	639	0.002	10[b]	1.1	14

[a] In-Stream Water Quality Standard.
[b] Maximum Contaminant Level, the constituent does not have an IWQS.
[c] IWQS for benzo(k)fluoranthene used.
Calculated ATL for xylenes is less than its STL, thus the STL will be used for this constituent.

Table VI-B. Alternate Threshold Levels for Contaminated Soil

Constituent	ATL (mg/kg)	Maximum Observed Concentration (mg/kg)	
		CAP-Part B	Pilot Study Baseline
Benzene	0.012	**<60** (MW59)	**0.625** (D10)
Toluene	58.5	**1100** (MW62)	9.76 (D10)
Ethylbenzene	11.1	**500** (MW59)	4.52 (D10)
Xylenes	20	**1500** (MW59)	**23.2** (D10)

Bold values exceed the calculated ATL.
MW59, MW62, and D10 are located within the free product area associated with the Former Northern Fuel Battery.

APPENDIX VII

MONITORING WELL DETAILS

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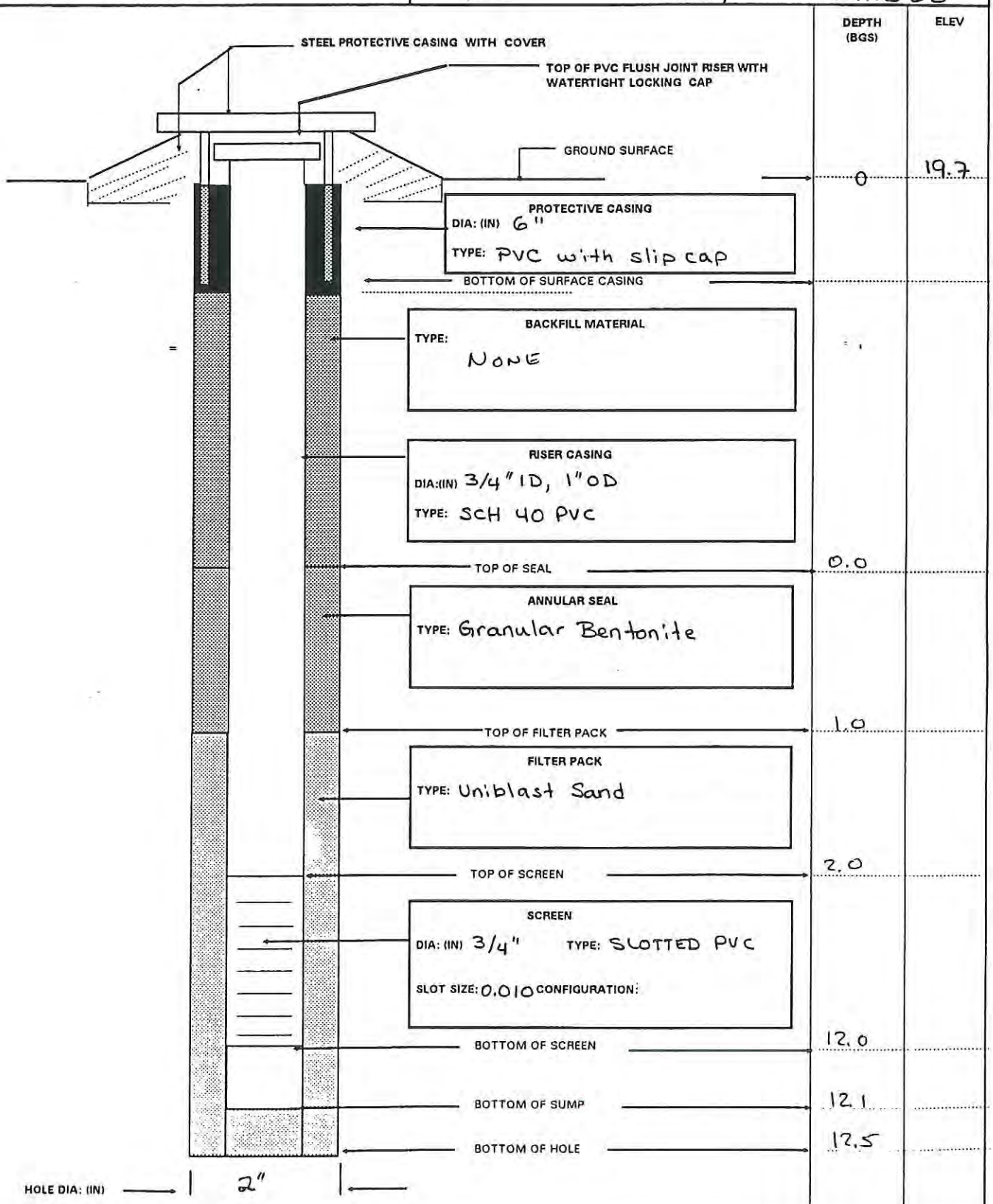
MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

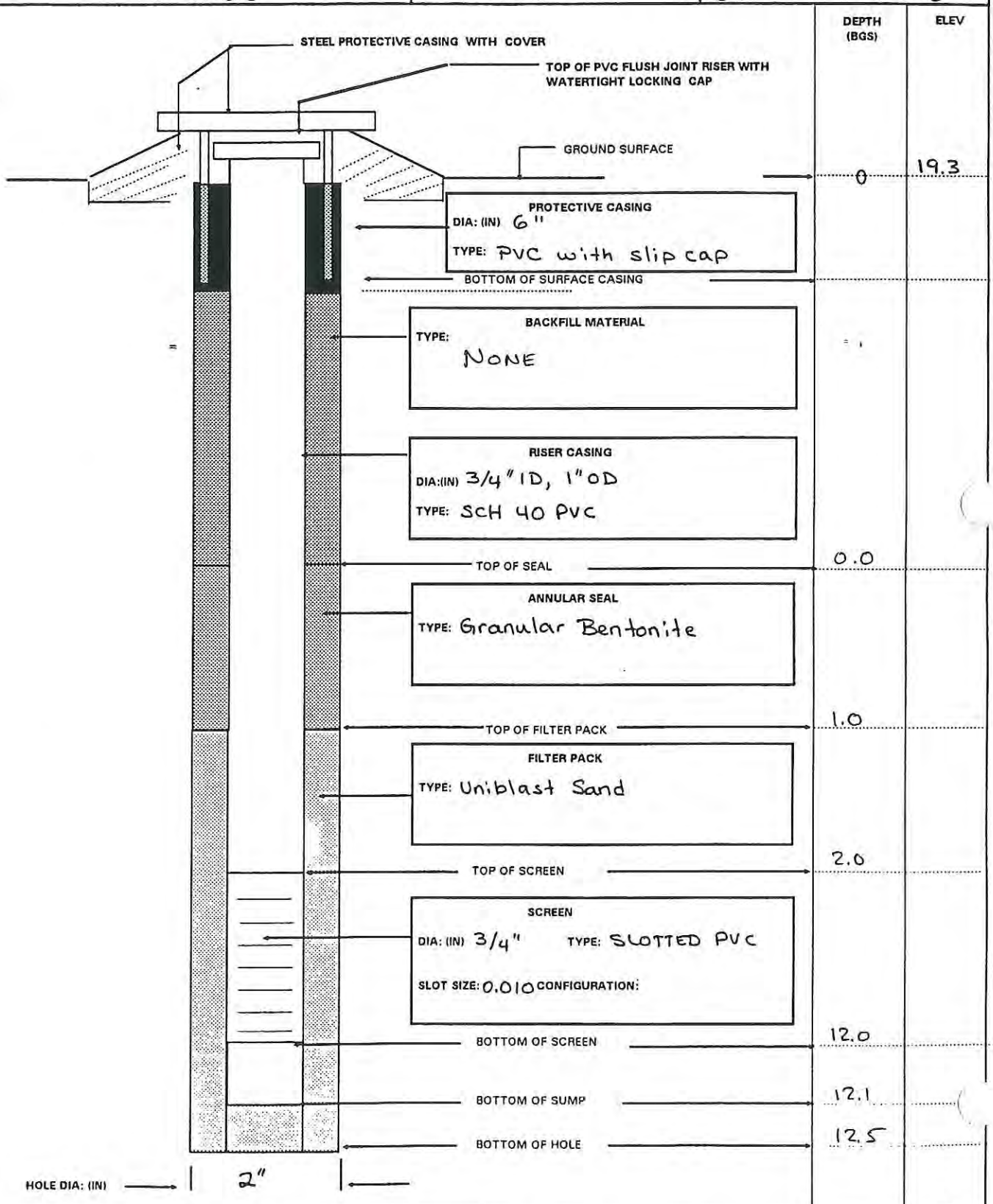
WELL NUMBER: AE-D1	**BEGIN:** 5/6/99	**END:** 5/6/99
COORDINATES: N: 740054.93 E: 976051.27	**REFERENCE POINT:** TOC	**ELEVATION:** 20.07
DATUM/UNITS: NAD 83		**DATUM/UNITS:** NAVD 88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

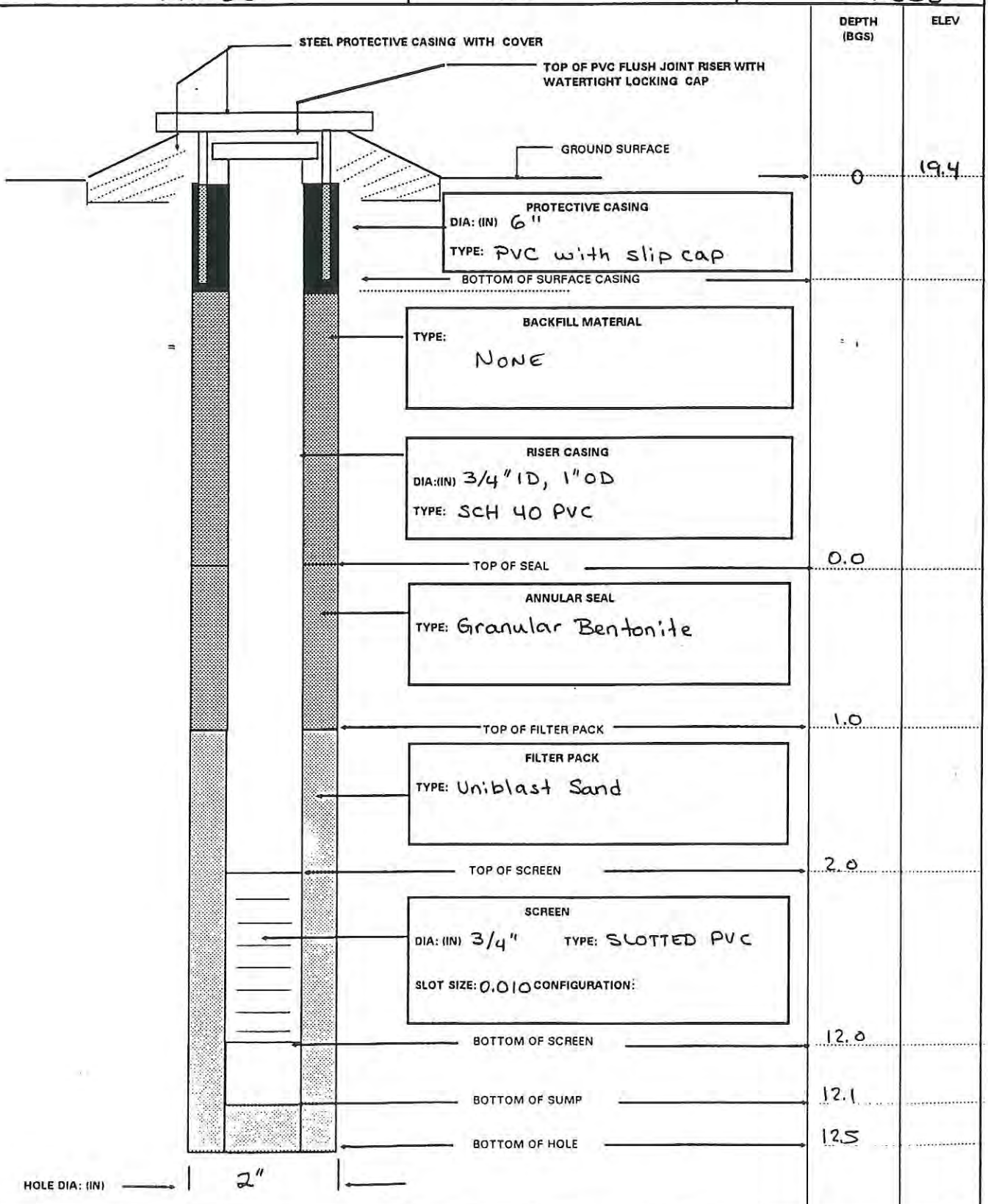
WELL NUMBER: AED2	**BEGIN:** 5/6/99	**END:** 5/6/99
COORDINATES: N: 740050.53 E: 976070.34	**REFERENCE POINT:** TOC	**ELEVATION:** 19.60
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-D3		**BEGIN:** 5/6/99	**END:** 5/6/99
COORDINATES:	N: 740050.07 E: 9760089.18	**REFERENCE POINT:**	**ELEVATION:** / **DATUM/UNITS:**
DATUM/UNITS:	NAD83	TOC	19.69 NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-D4	**BEGIN:** 5/6/99	**END:** 5/6/99
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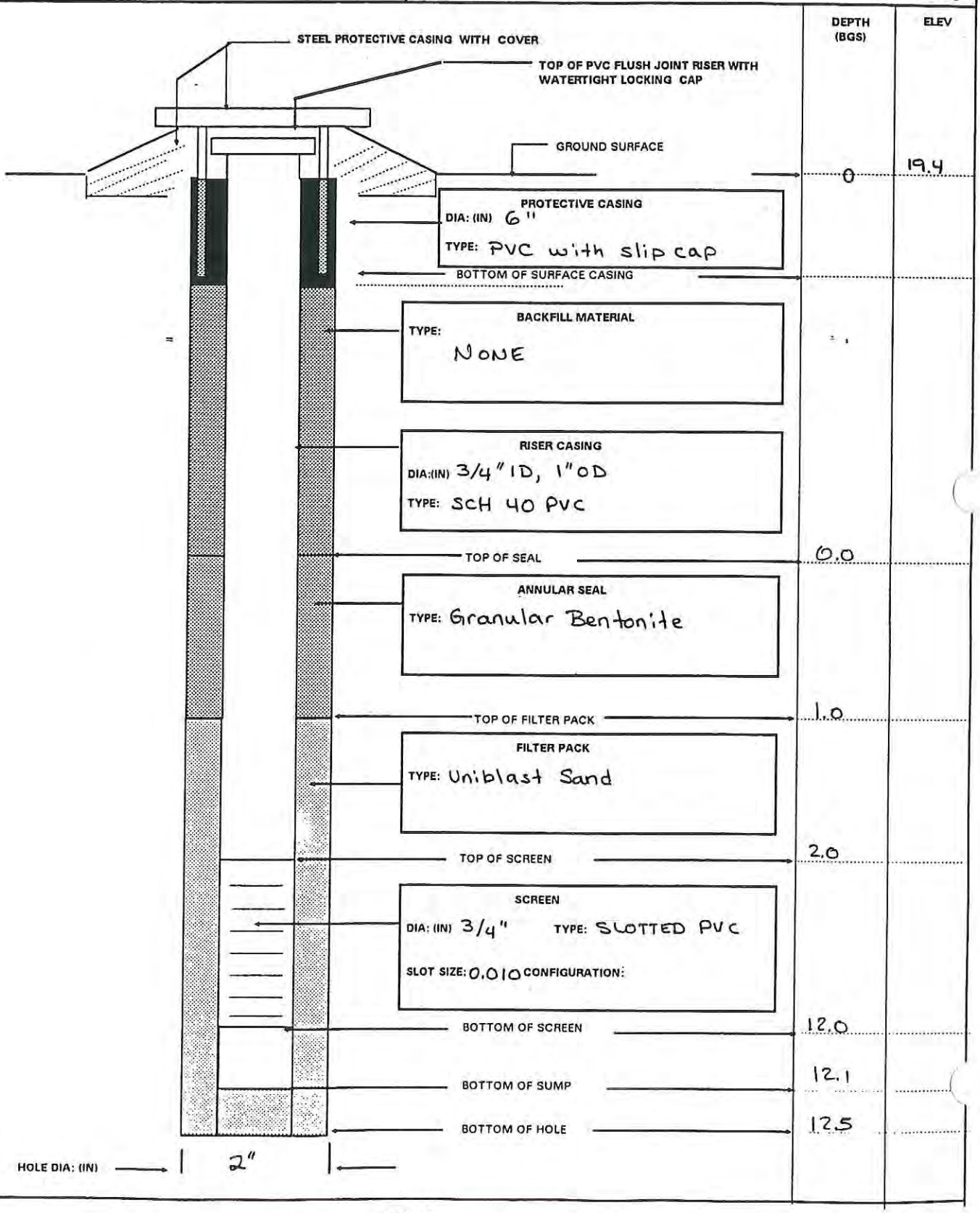

MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

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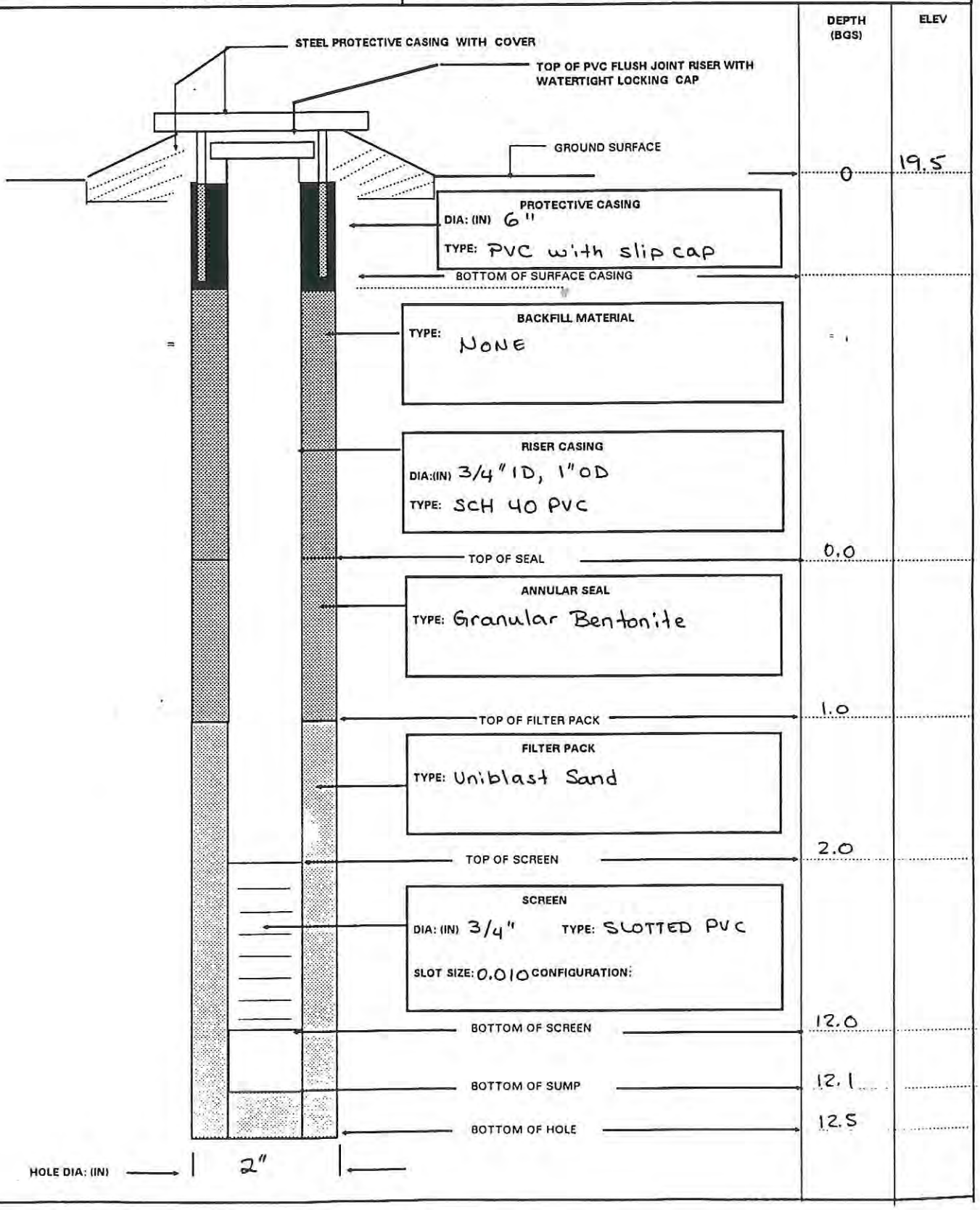
COORDINATES: N: 740037.25 E: 976028.69	**REFERENCE POINT:** TOC	**ELEVATION:** 19.88
DATUM/UNITS: NAD 83		**DATUM/UNITS:** NAVD 88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

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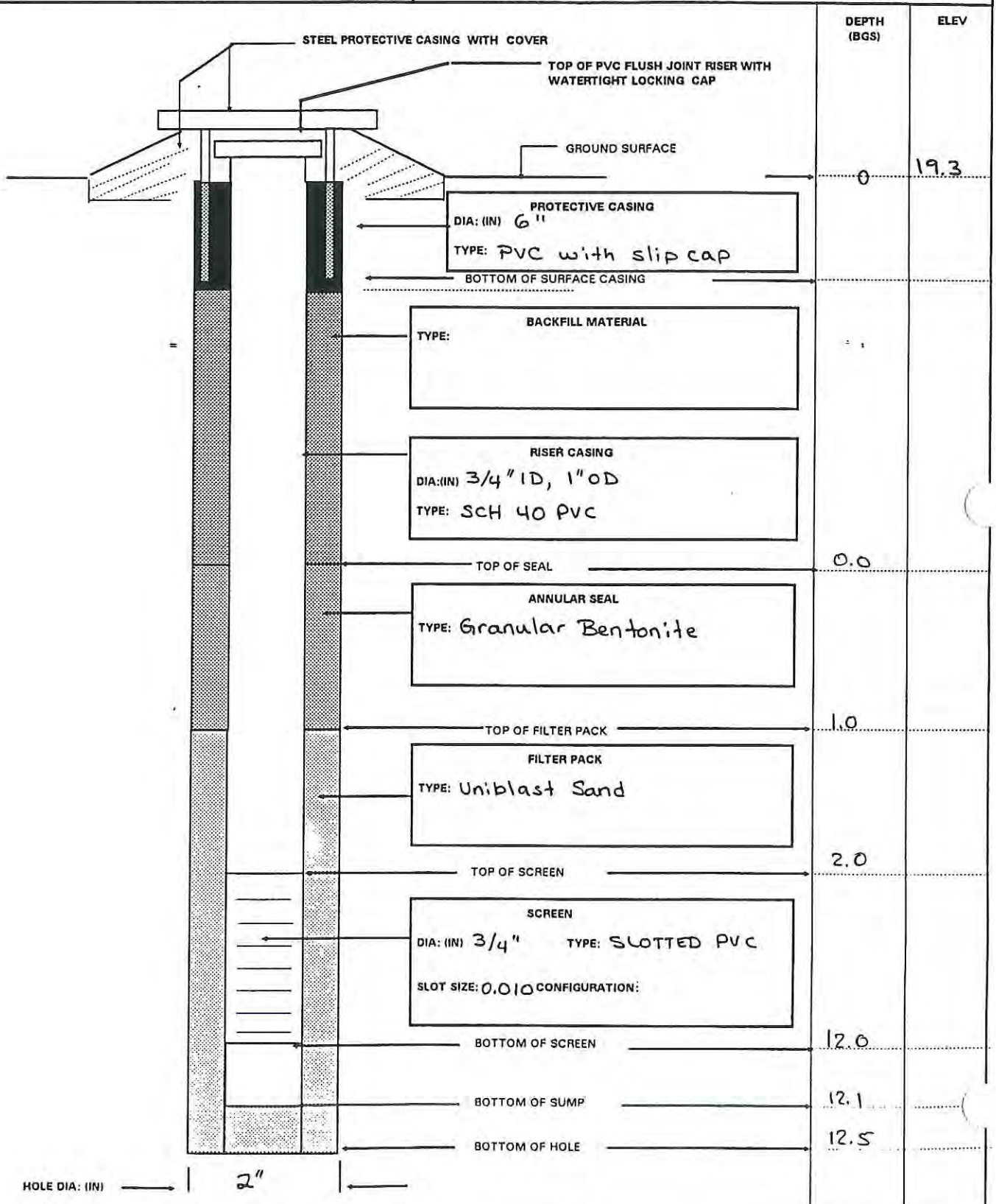
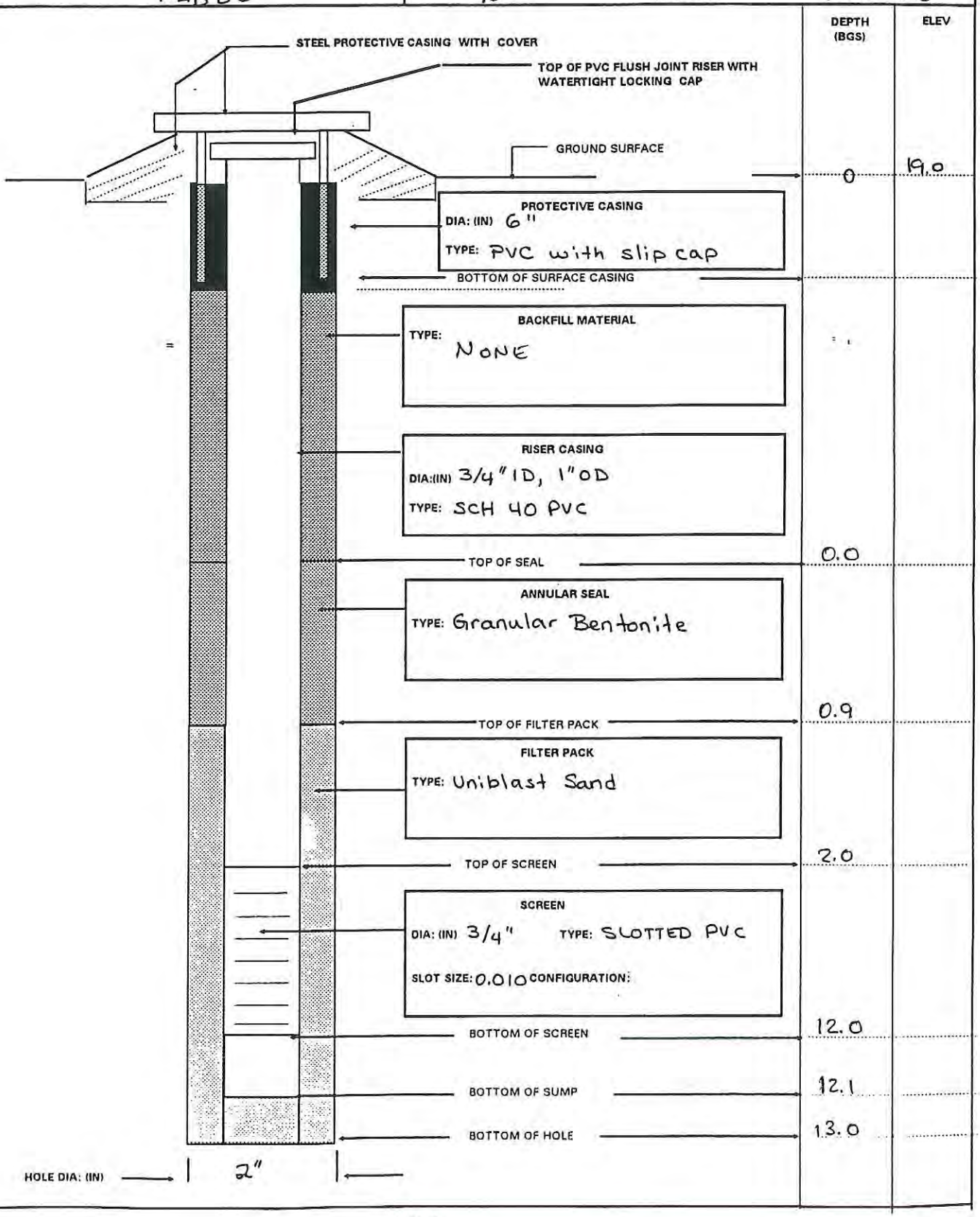
COORDINATES:	N: 740034.06 E: 976047.99	**REFERENCE POINT:**	**ELEVATION:** / **DATUM/UNITS:**
DATUM/UNITS:	NAD83	TOC	19.66 / NAVD 88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-D7	**BEGIN:** 5/5/99	**END:** 5/5/99
COORDINATES: N: 740030.52 E: 976086.58	**REFERENCE POINT:** TOC	**ELEVATION:** 19.35
DATUM/UNITS: NAD 83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-D8	**BEGIN:** 5/5/99	**END:** 5/5/99
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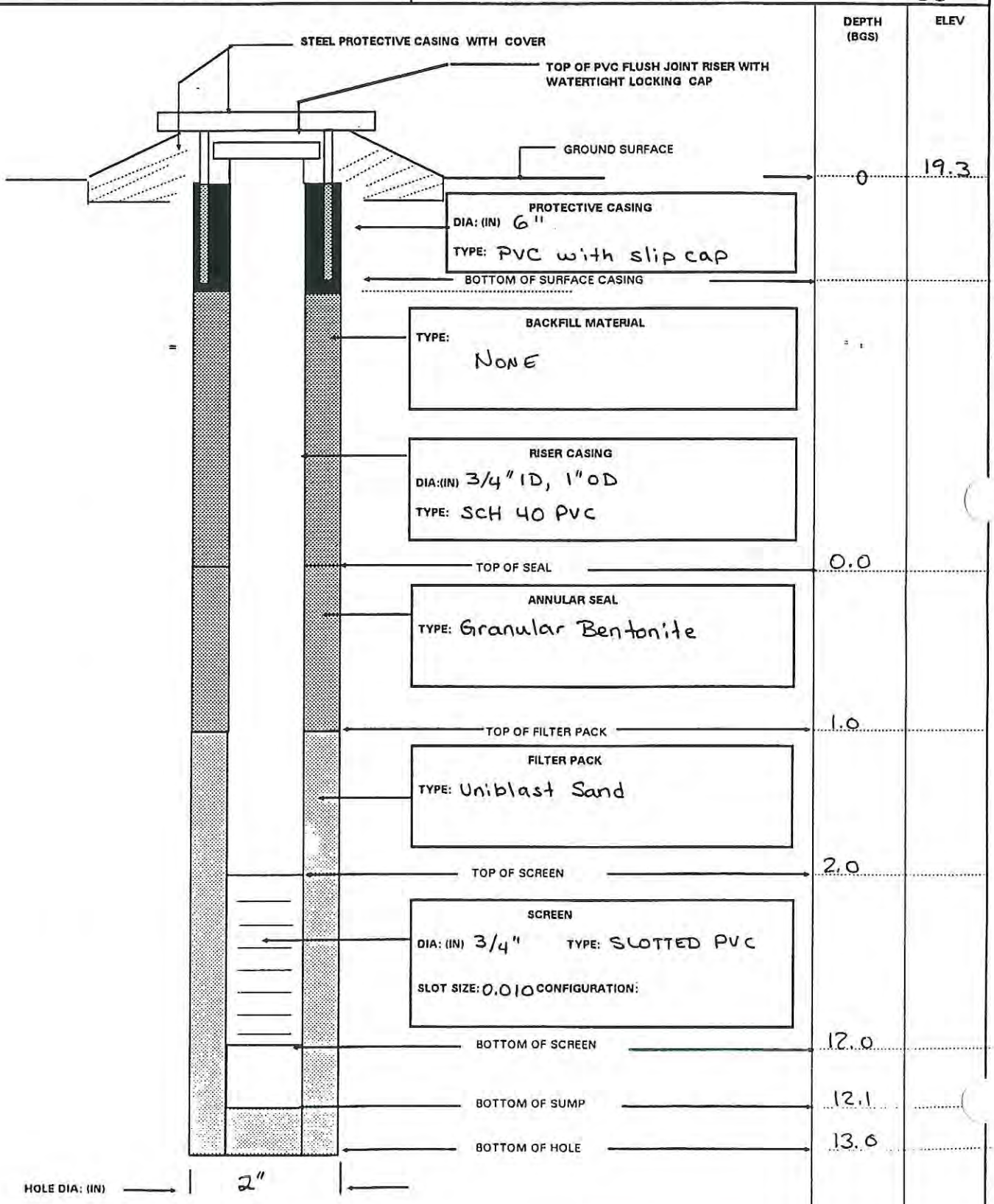
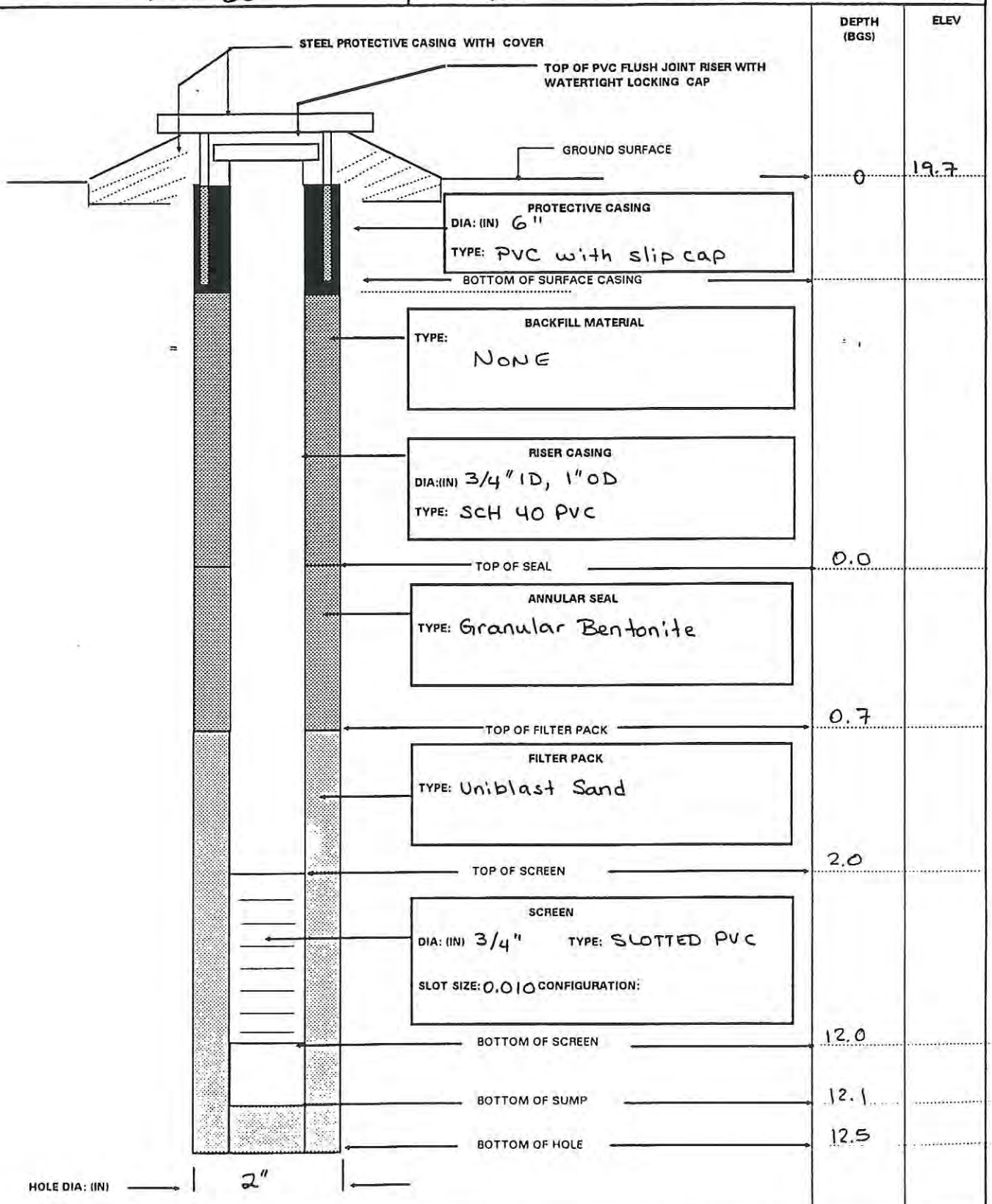
DATUM/UNITS: NAD 83		**DATUM/UNITS:** NAVD 88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-D9	**BEGIN:** 5/6/99	**END:** 5/6/99
COORDINATES: N: 740025.75 E: 976125.99	**REFERENCE POINT:** TOC	**ELEVATION:** 20.02
DATUM/UNITS: NAD 83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

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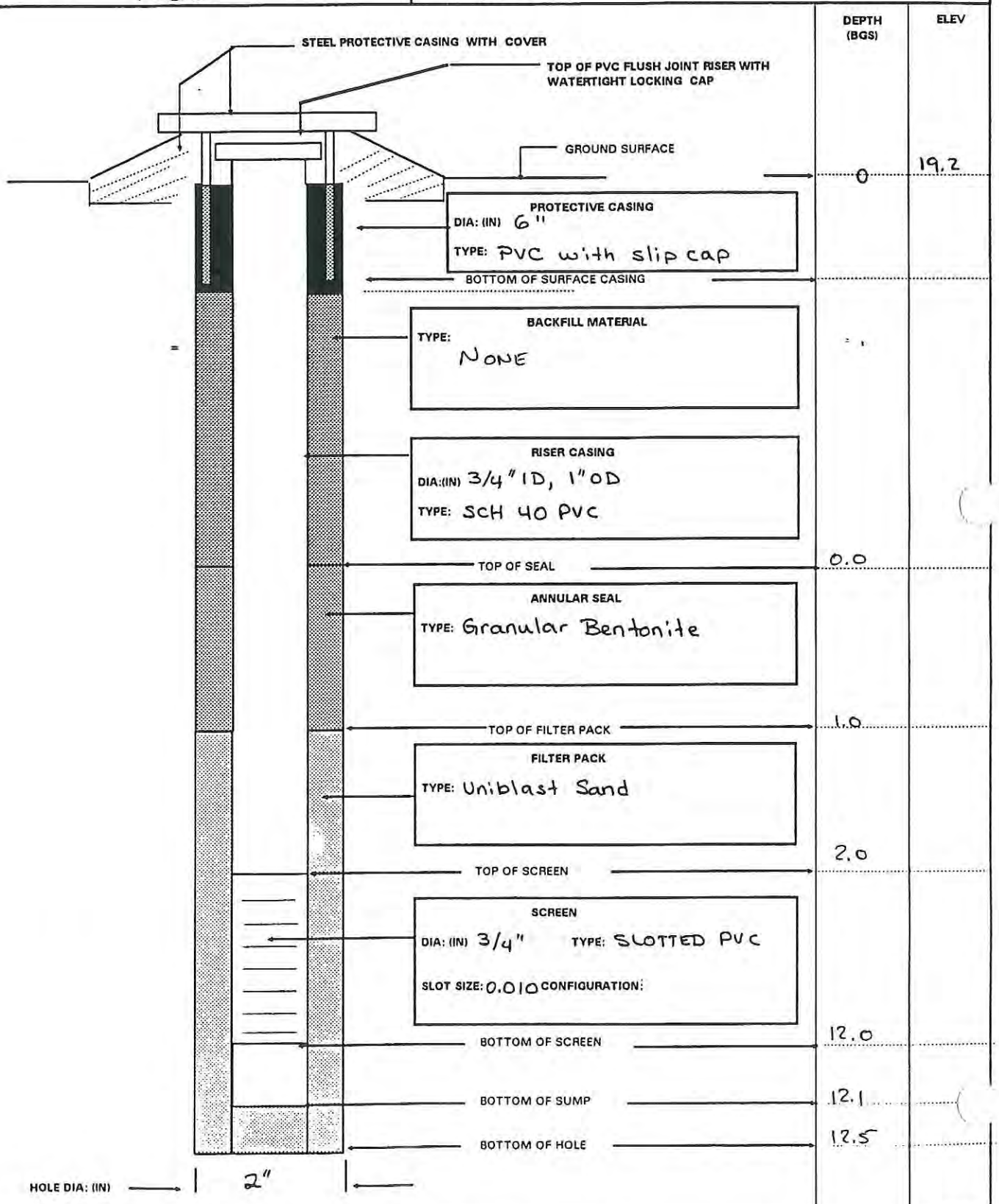
DATUM/UNITS: NAD 83		**DATUM/UNITS:** NAVD 88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-D11	**BEGIN:** 5/6/99	**END:** 5/6/99
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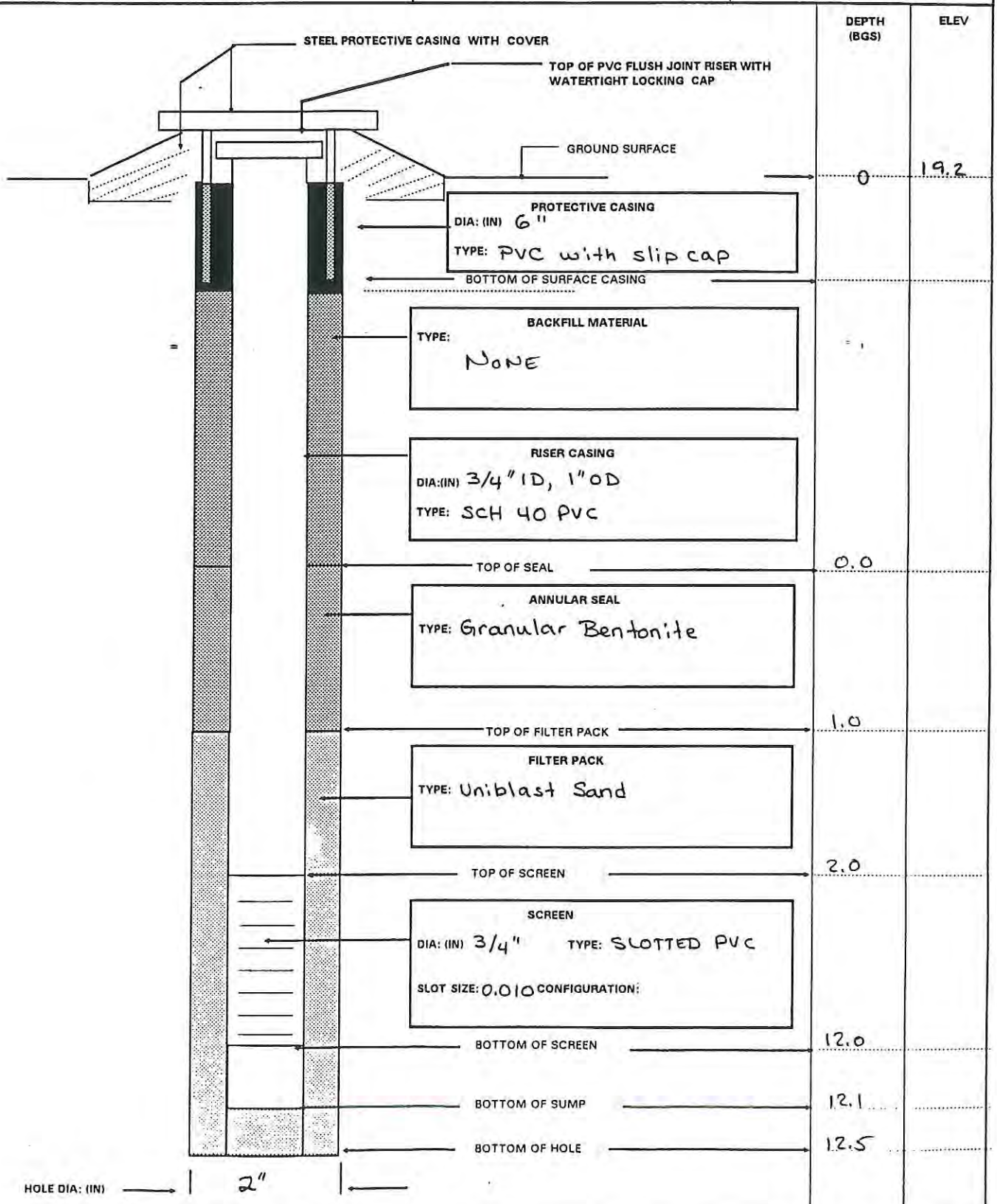
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



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PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

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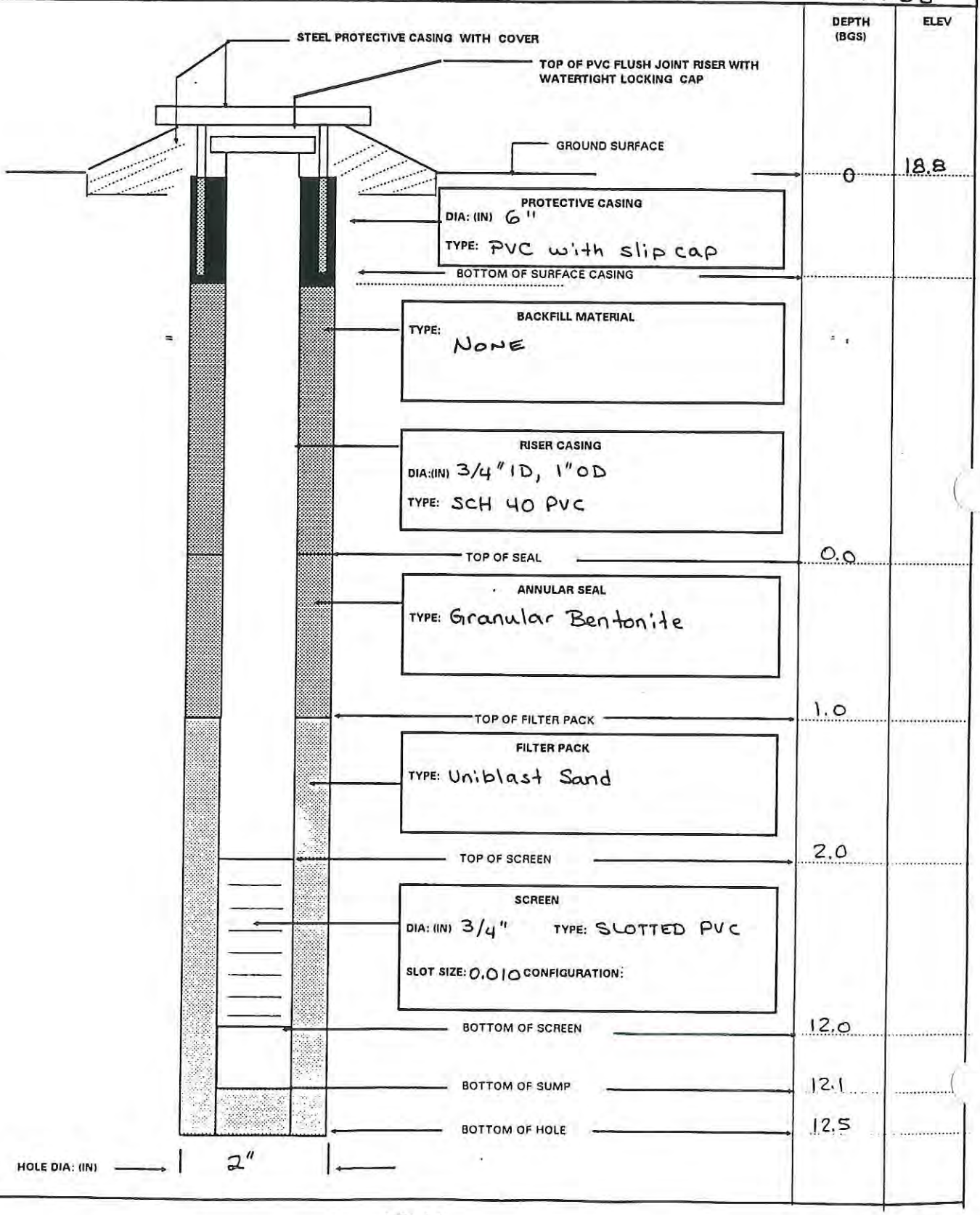

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PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

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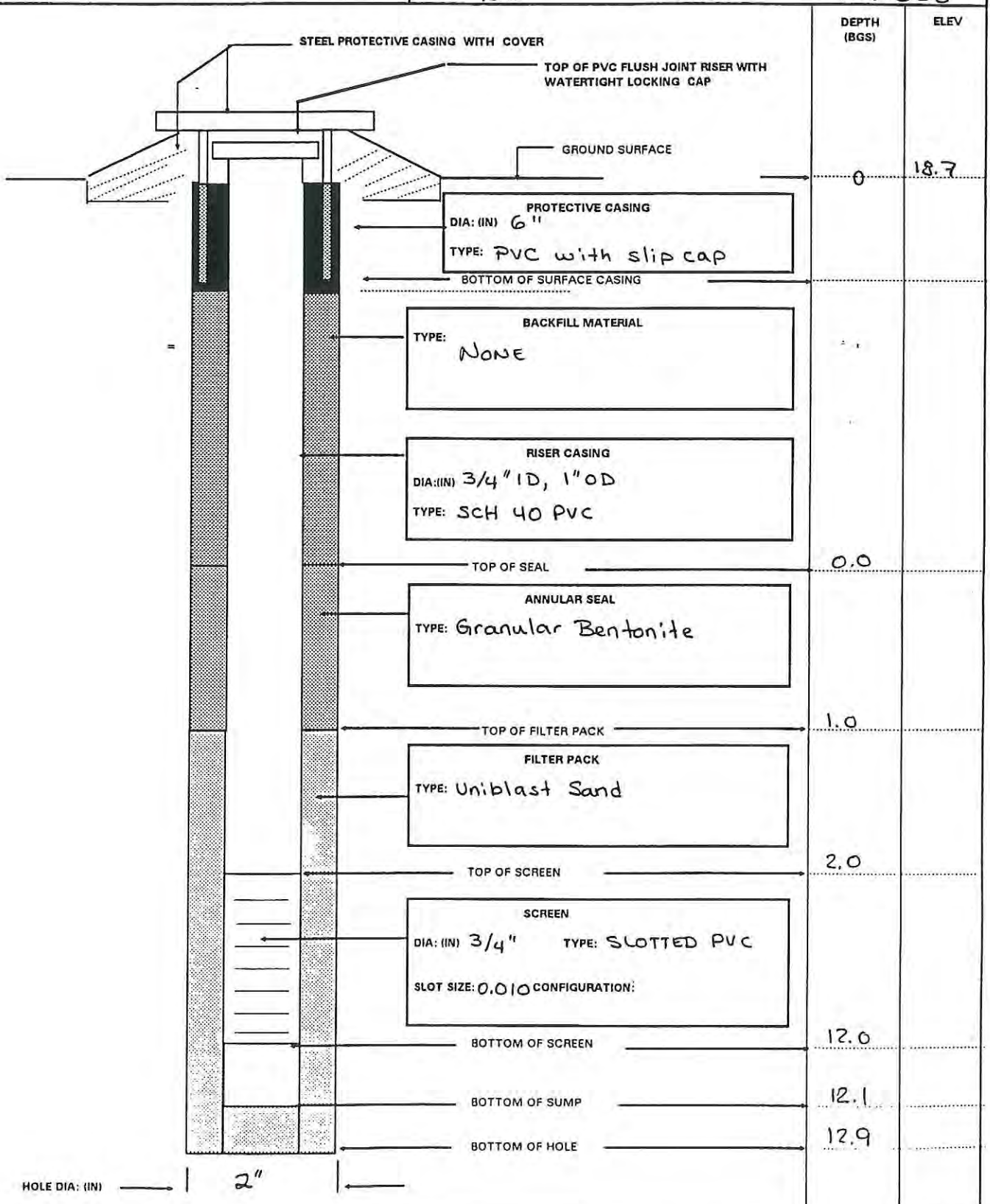

MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

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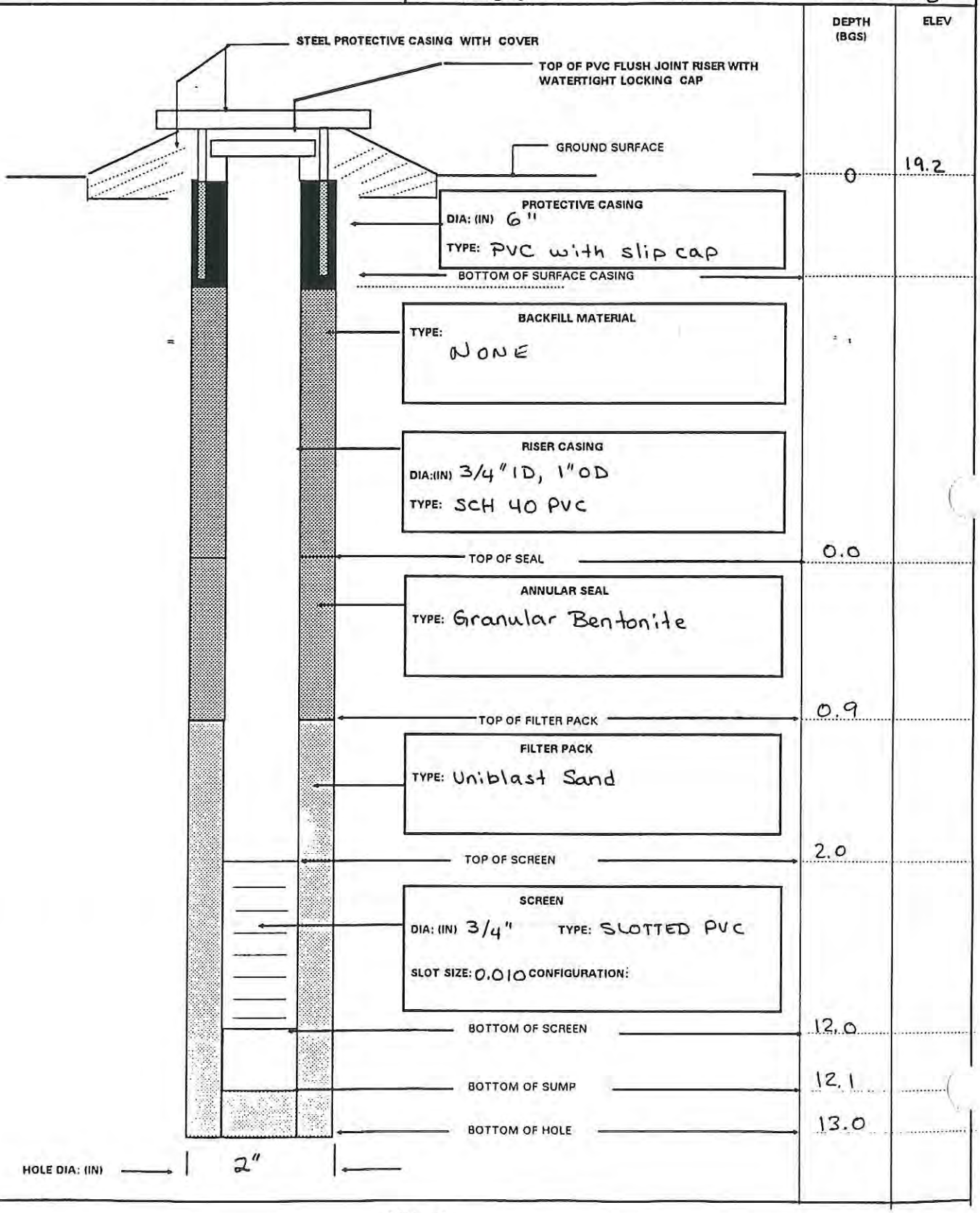

MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

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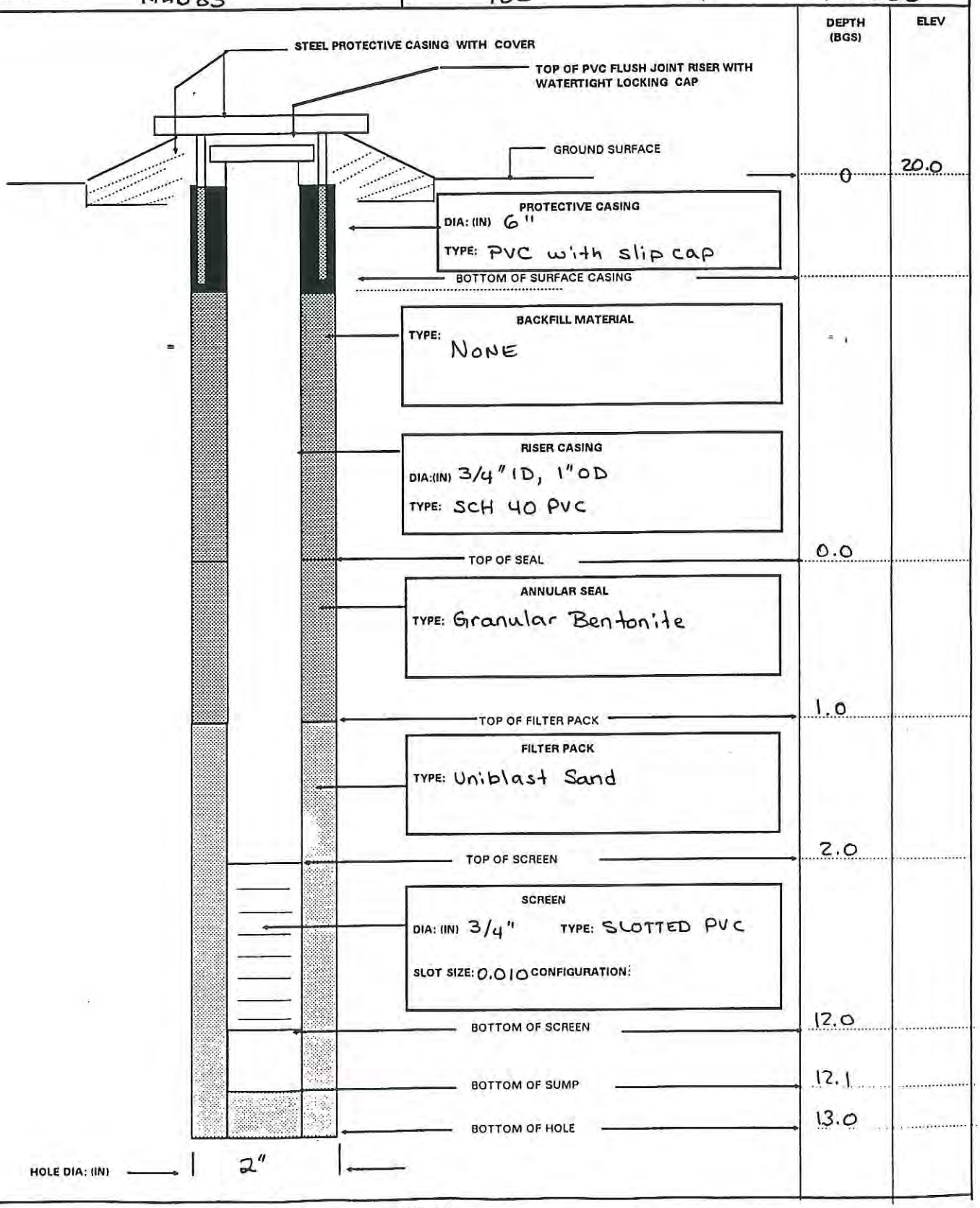
DATUM/UNITS: NAD 83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-D16	**BEGIN:** 5/6/99	**END:** 5/6/99
COORDINATES: N: 739997.75 E: 976022.32	**REFERENCE POINT:** TOC	**ELEVATION:** 19.13
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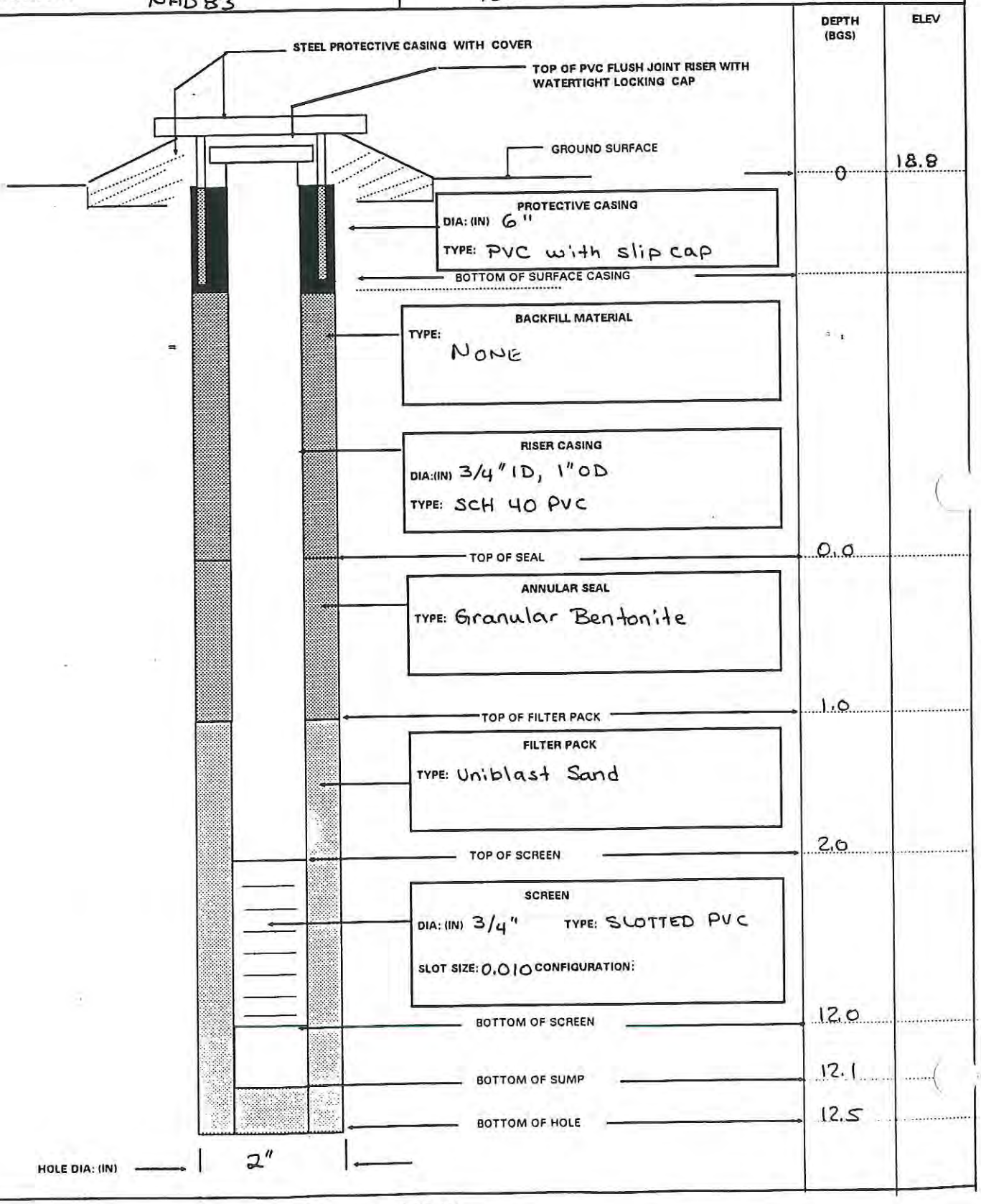

MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

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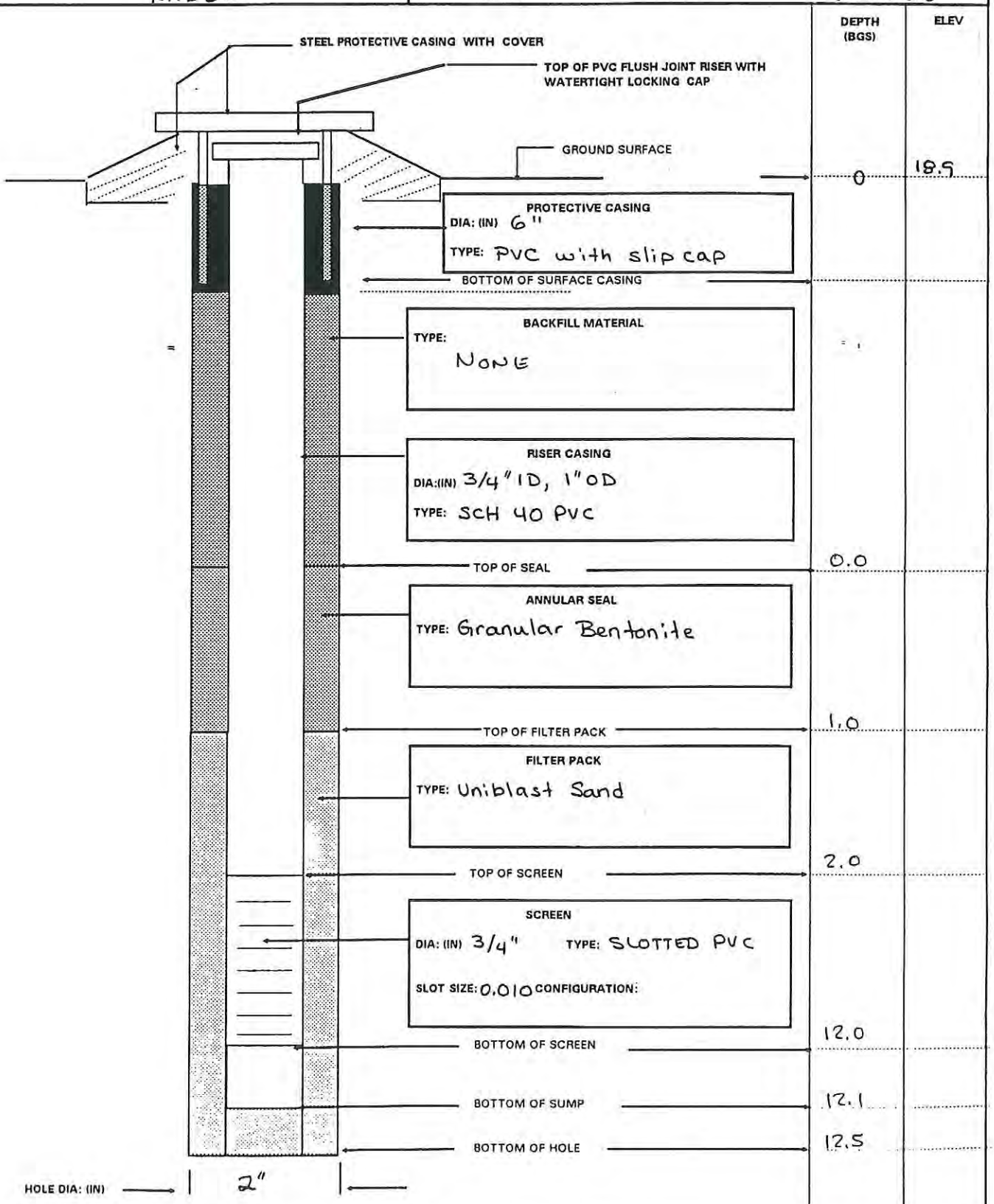
DATUM/UNITS: NAD83			



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

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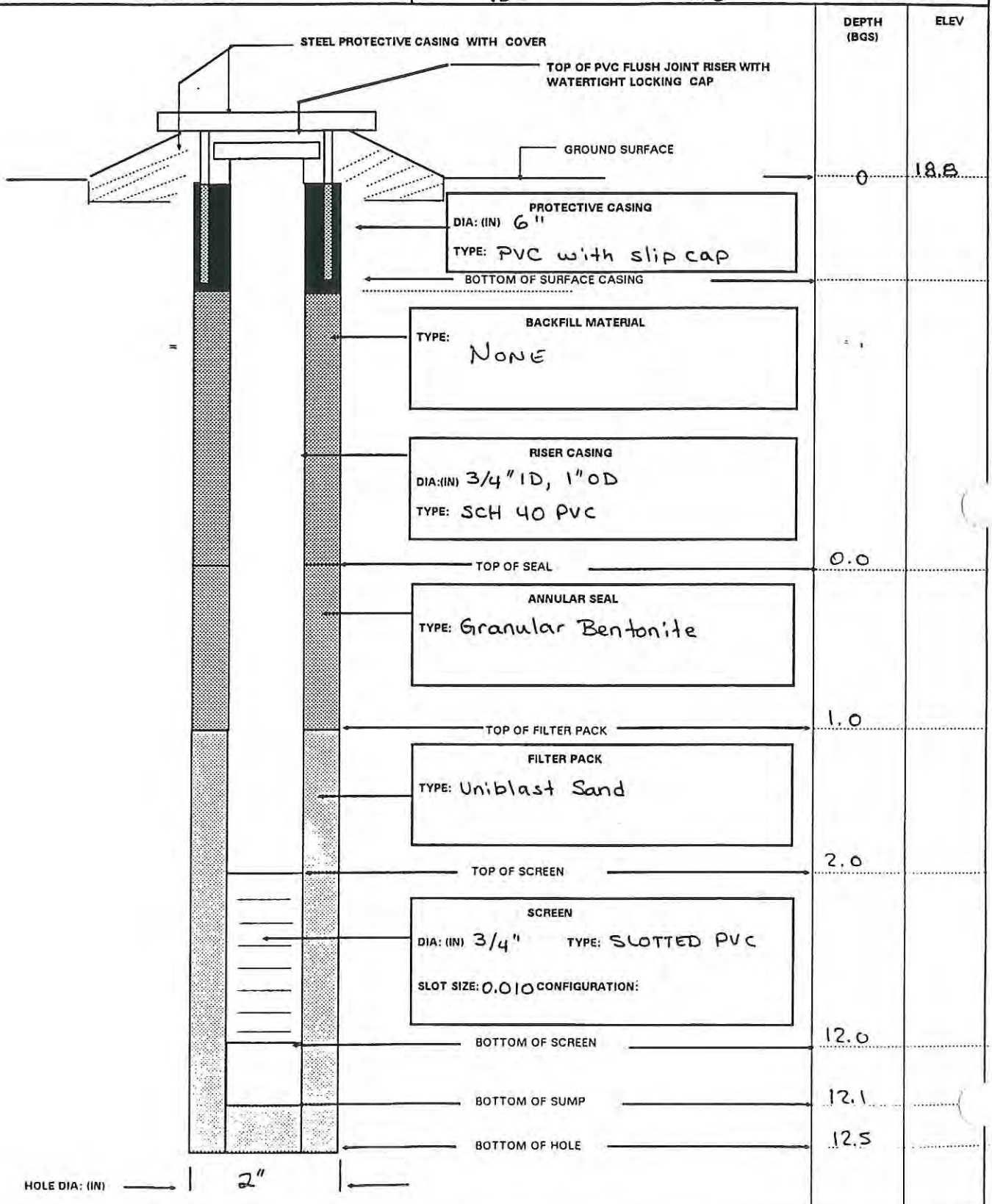

MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

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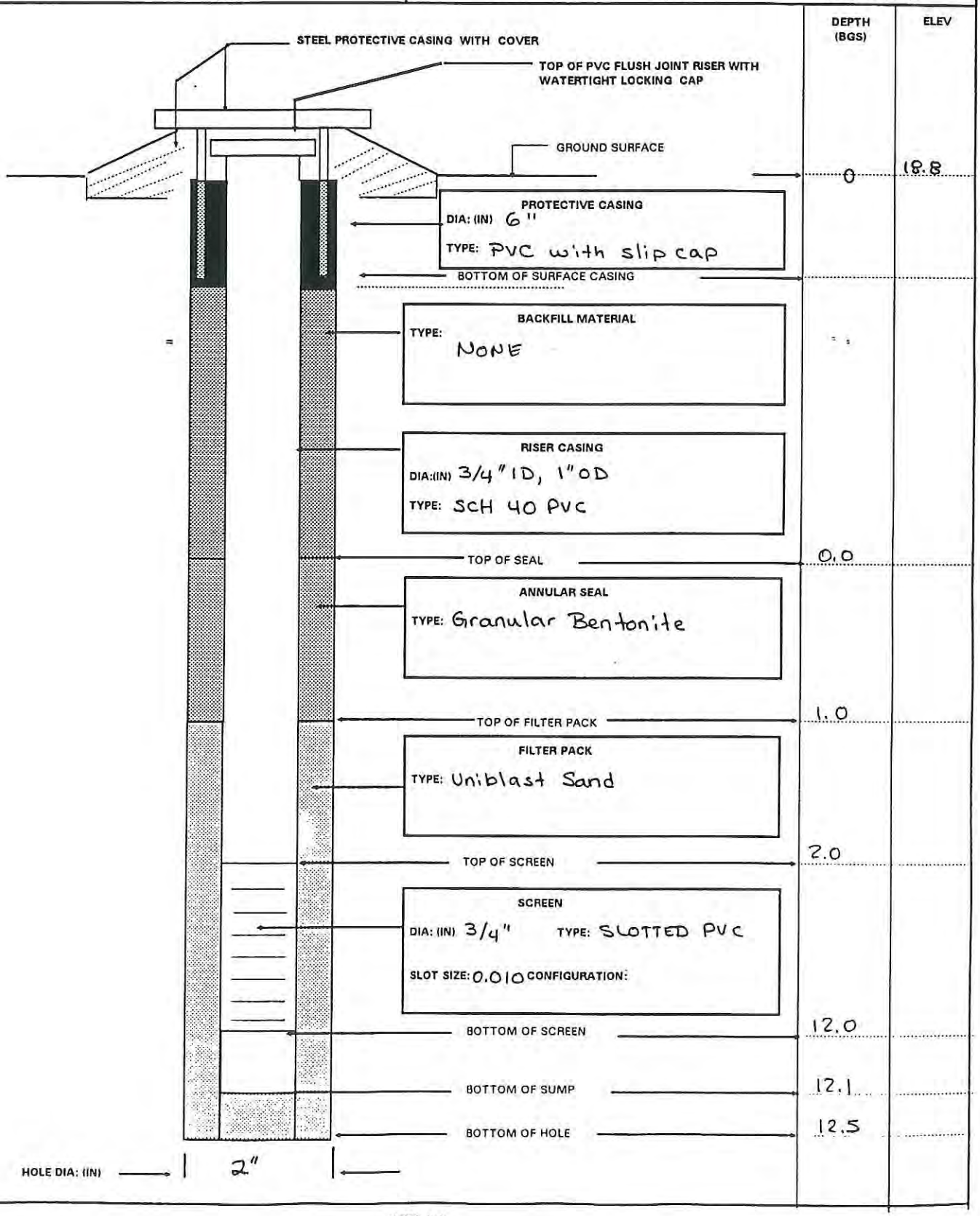
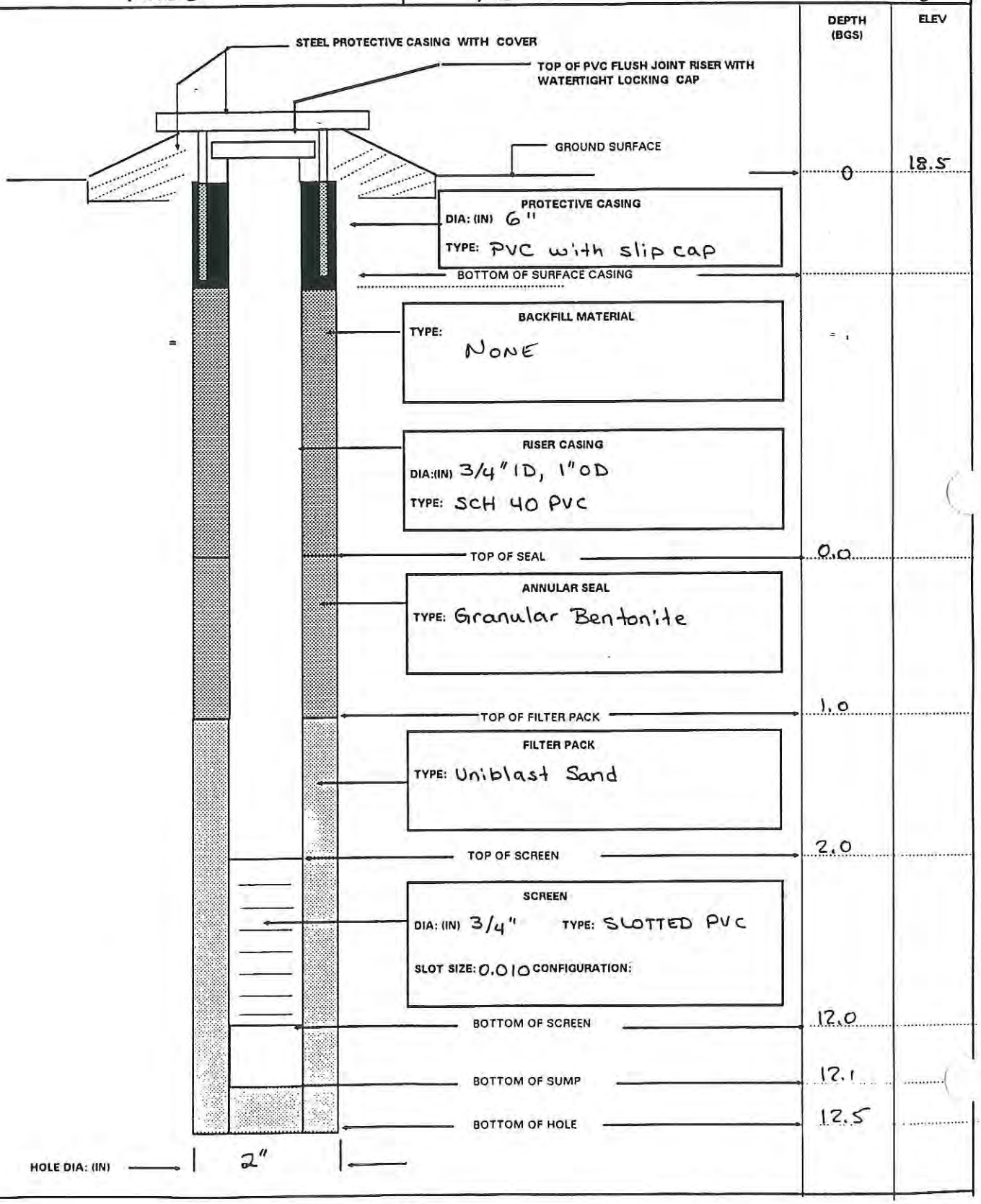


MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

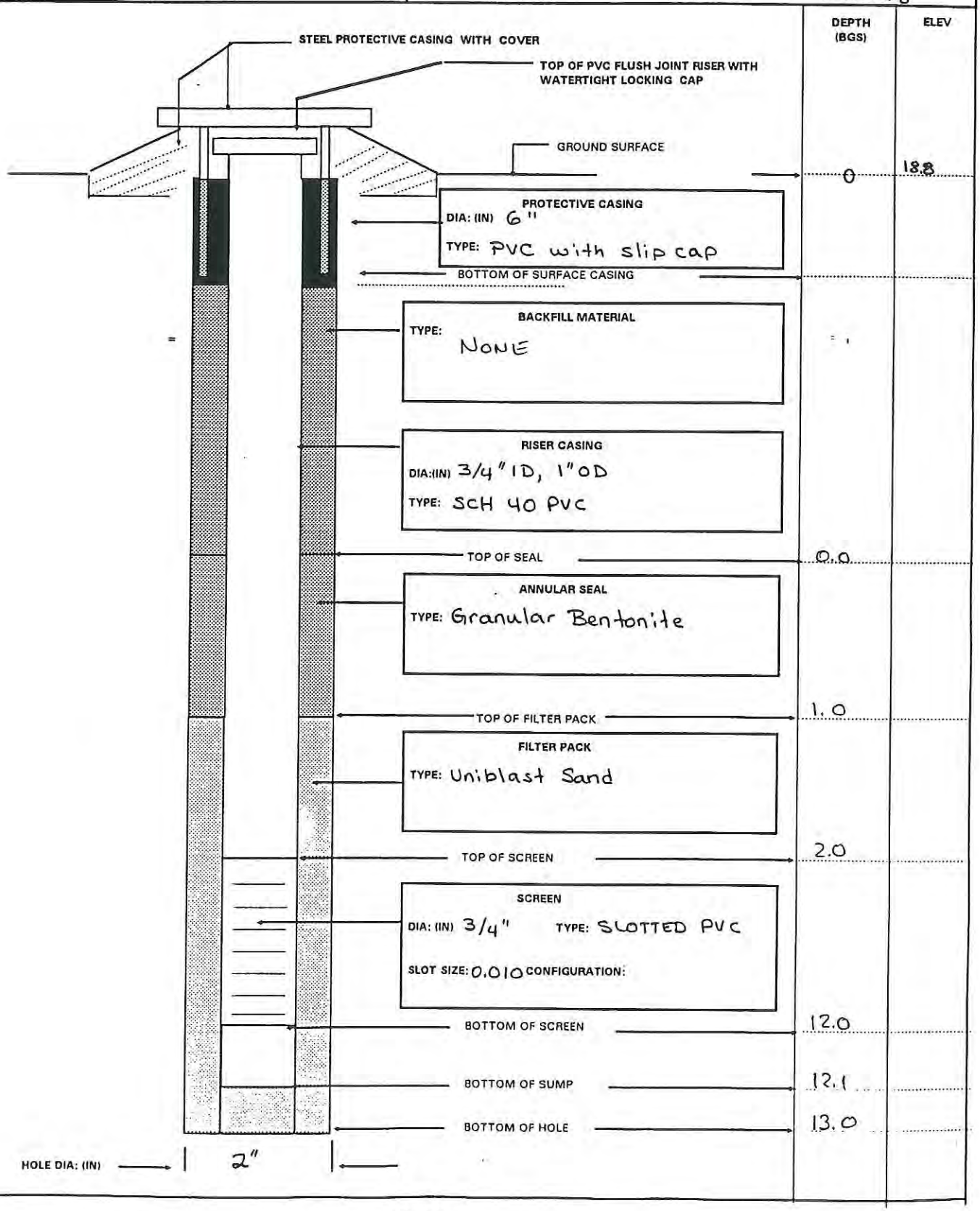
WELL NUMBER: AE-D20	**BEGIN:** 5/6/99	**END:** 5/6/99	
COORDINATES: N: 739976.07 E: 976020.55	**REFERENCE POINT:** TOC	**ELEVATION:** 18.90	**DATUM/UNITS:** NAVD88
DATUM/UNITS: NAD83			



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study DELIVERY ORDER NO:

WELL NUMBER: AE-D21		BEGIN: 5/6/99	END: 5/6/99
COORDINATES:	N: 739971.67 E: 9760778.73	REFERENCE POINT:	ELEVATION: / DATUM/UNITS:
DATUM/UNITS:	NAD83	TOC	19.23 NAVD 88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-D22	**BEGIN:** 5/7/99	**END:** 5/7/99
COORDINATES: N: 740069.38 E: 976068.43	**REFERENCE POINT:** TOC	**ELEVATION:** 20.30
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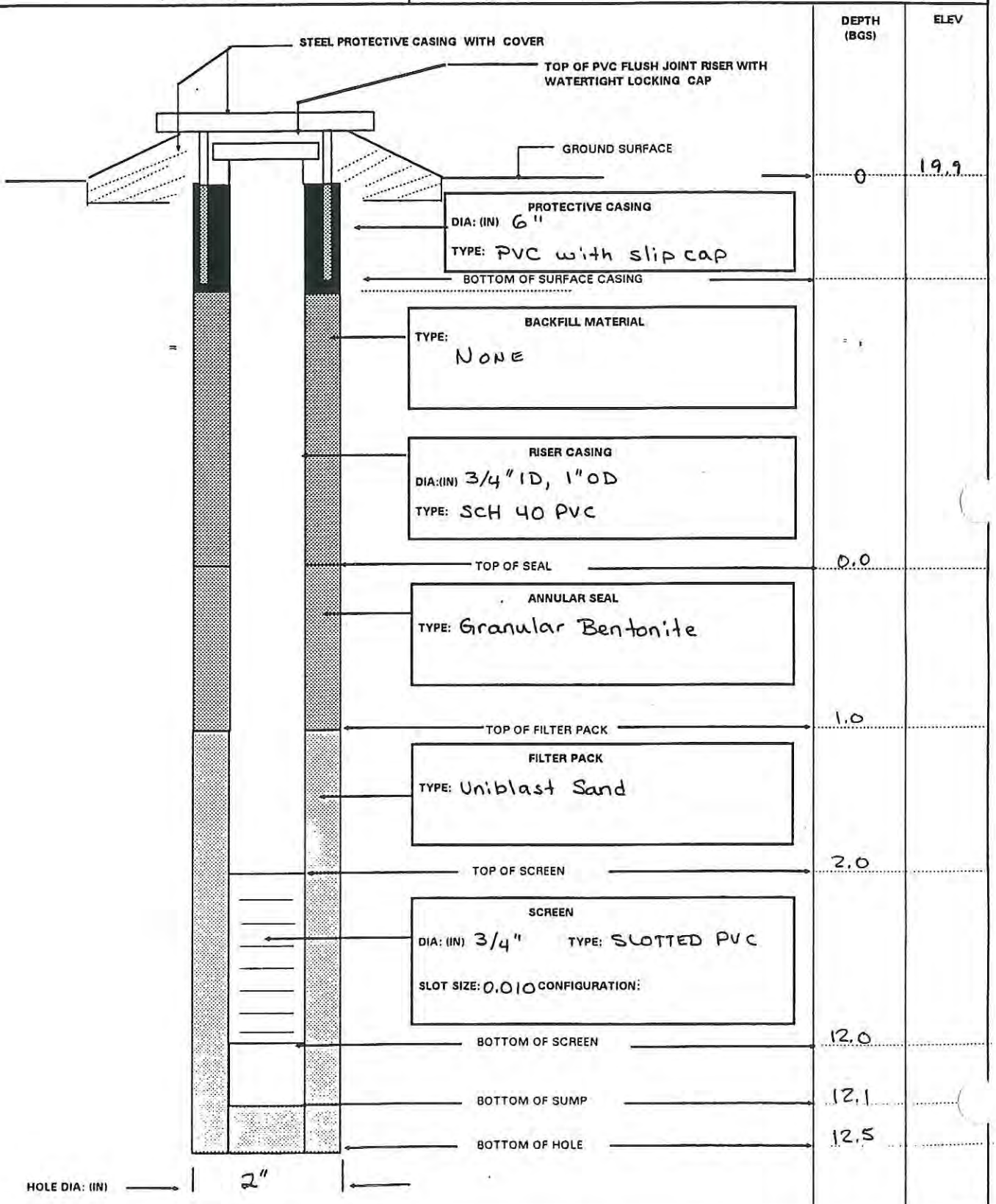


MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

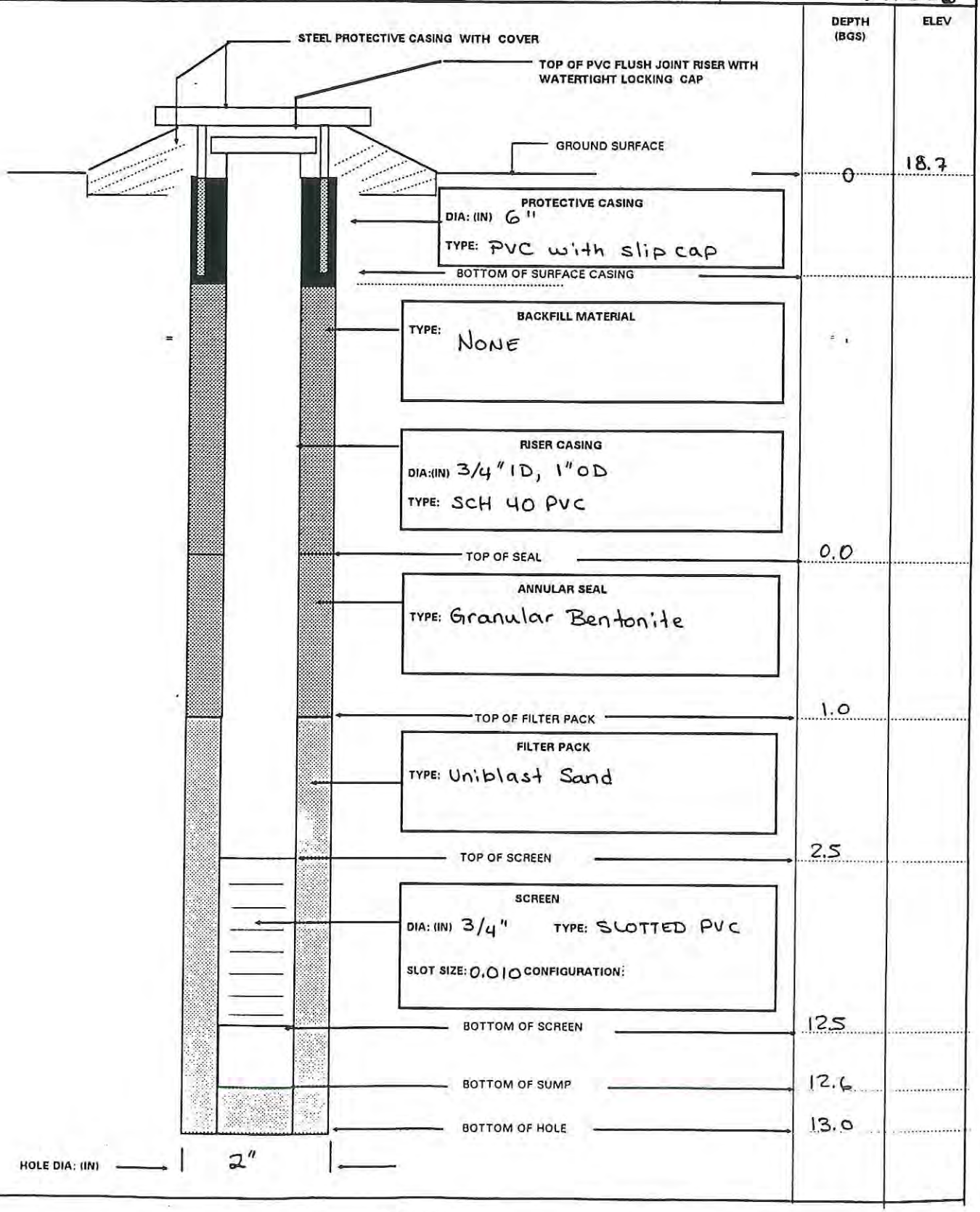
WELL NUMBER: AE-D23

BEGIN: 5/8/99 **END:** 5/8/99

COORDINATES: N: 739999.74 E: 976010.69

DATUM/UNITS: NAD83

REFERENCE POINT: TOC **ELEVATION:** 19.07 **DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-D24	**BEGIN:** 5/8/99	**END:** 5/8/99
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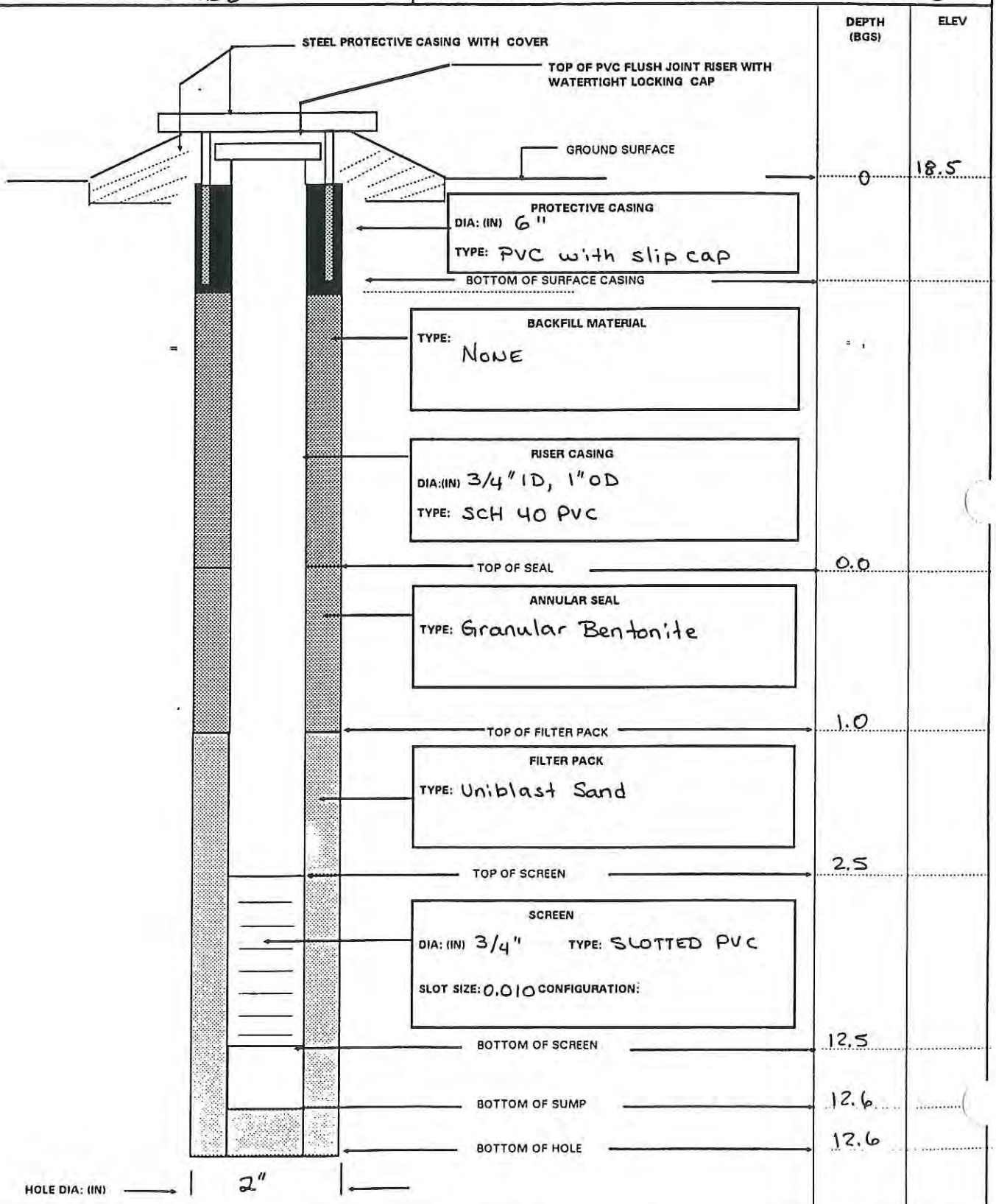
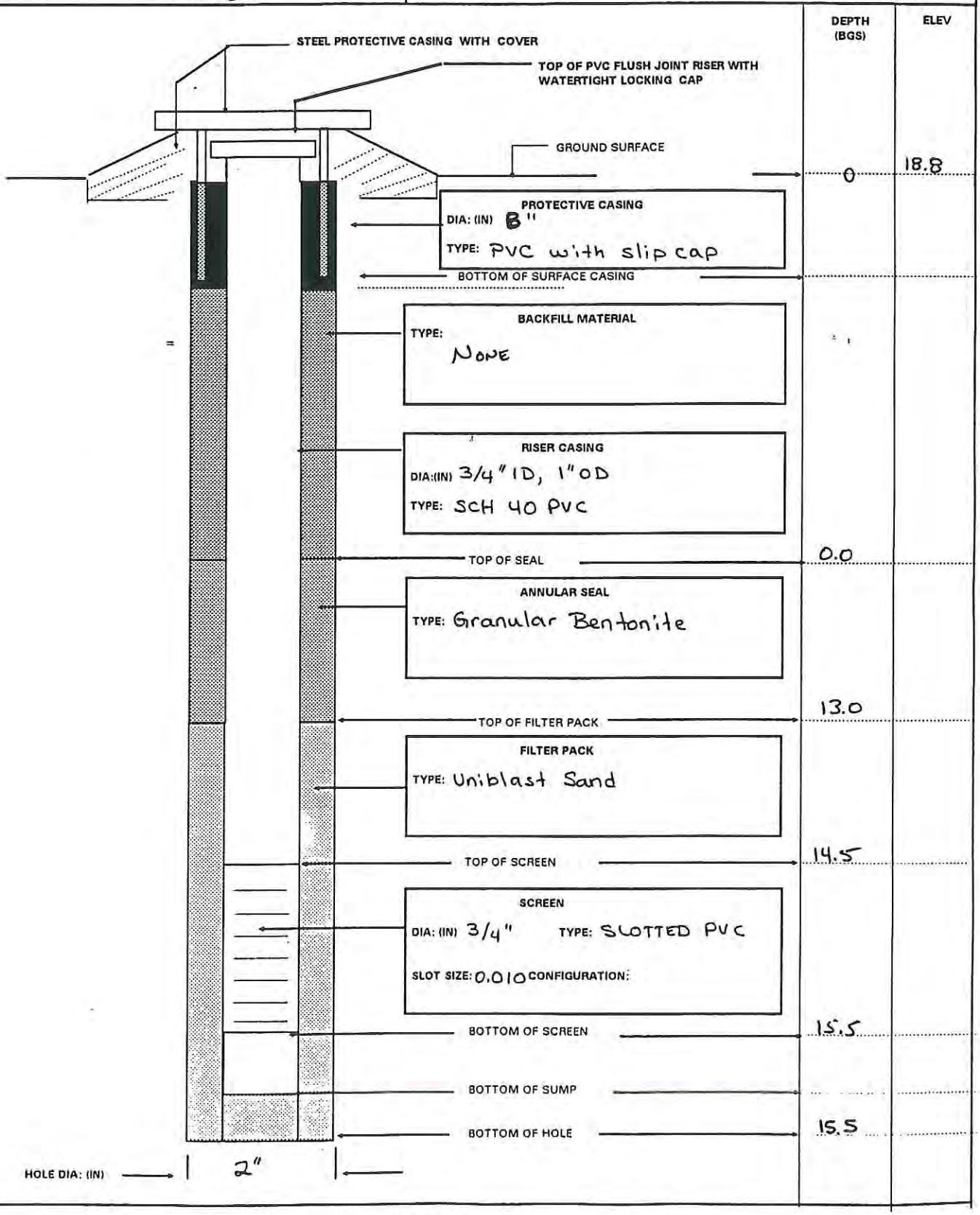


MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

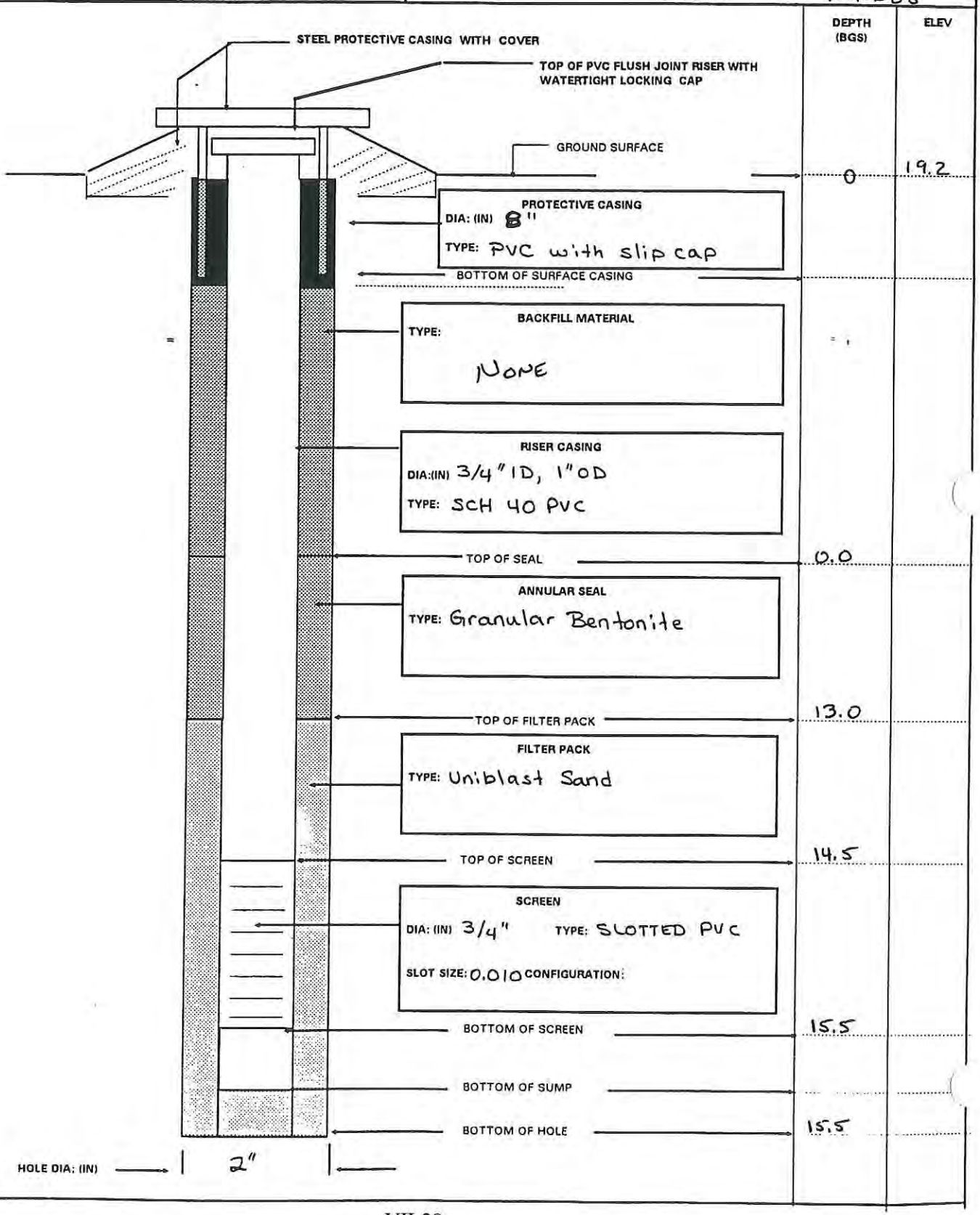
WELL NUMBER: AE-J1	**BEGIN:** 5/4/99	**END:** 5/4/99
COORDINATES: N: 740104.80 E: 975939.61	**REFERENCE POINT:** TOC	**ELEVATION:** 19.34
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

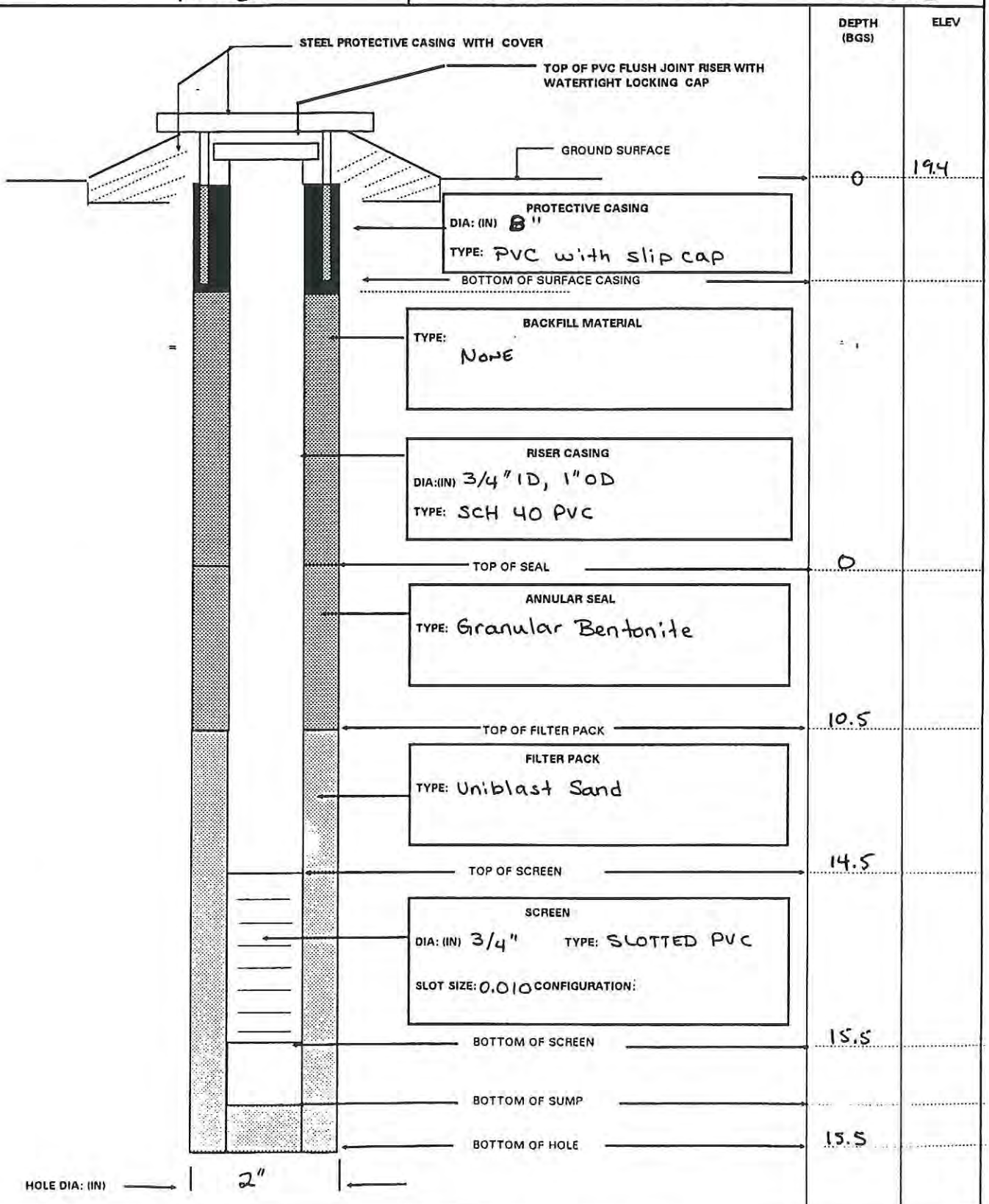
WELL NUMBER: AE-J2	**BEGIN:** 5/4/99	**END:** 5/4/99
COORDINATES: N: 740077.21 E: 975968.34	**REFERENCE POINT:** TOC	**ELEVATION:** 19.83
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

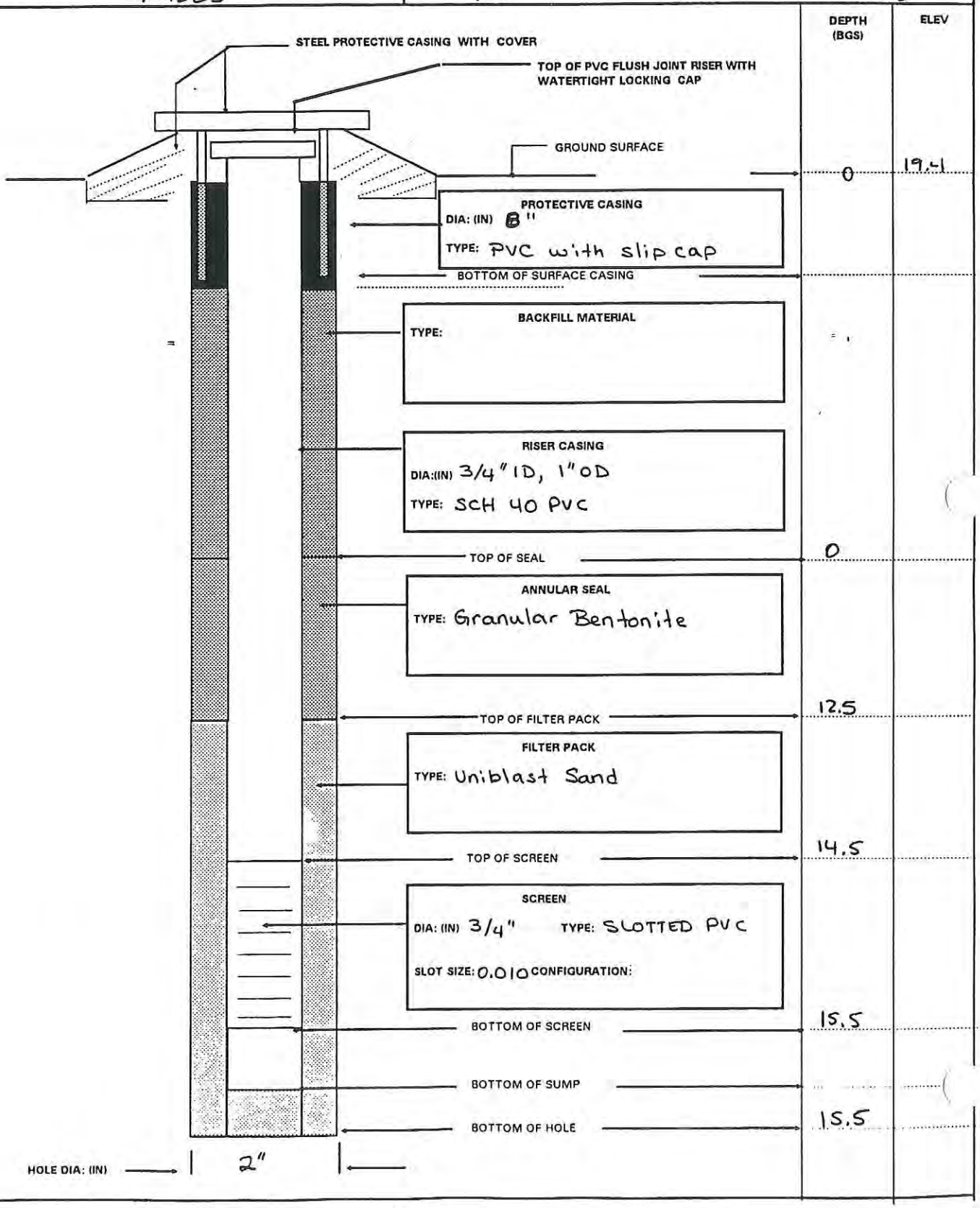
WELL NUMBER: AE-33		**BEGIN:** 5/4/99	**END:** 5/4/99
COORDINATES:	N: 740090.75 E: 975981.69	**REFERENCE POINT:**	**ELEVATION:** / **DATUM/UNITS:**
DATUM/UNITS:	NAD83	TOC	20.04 / NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-J4		**BEGIN:** 5/4/99	**END:** 5/4/99
COORDINATES:	N: 74005.14 E: 975995.76	**REFERENCE POINT:**	**ELEVATION:** / **DATUM/UNITS:**
DATUM/UNITS:	NAD83	TOC	19.94 NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-I5	**BEGIN:** 5/5/99	**END:** 5/5/99	
COORDINATES: N: 740050.31 E: 97599813	**REFERENCE POINT:** TOC	**ELEVATION:** 20.04	**DATUM/UNITS:** NAVD 88
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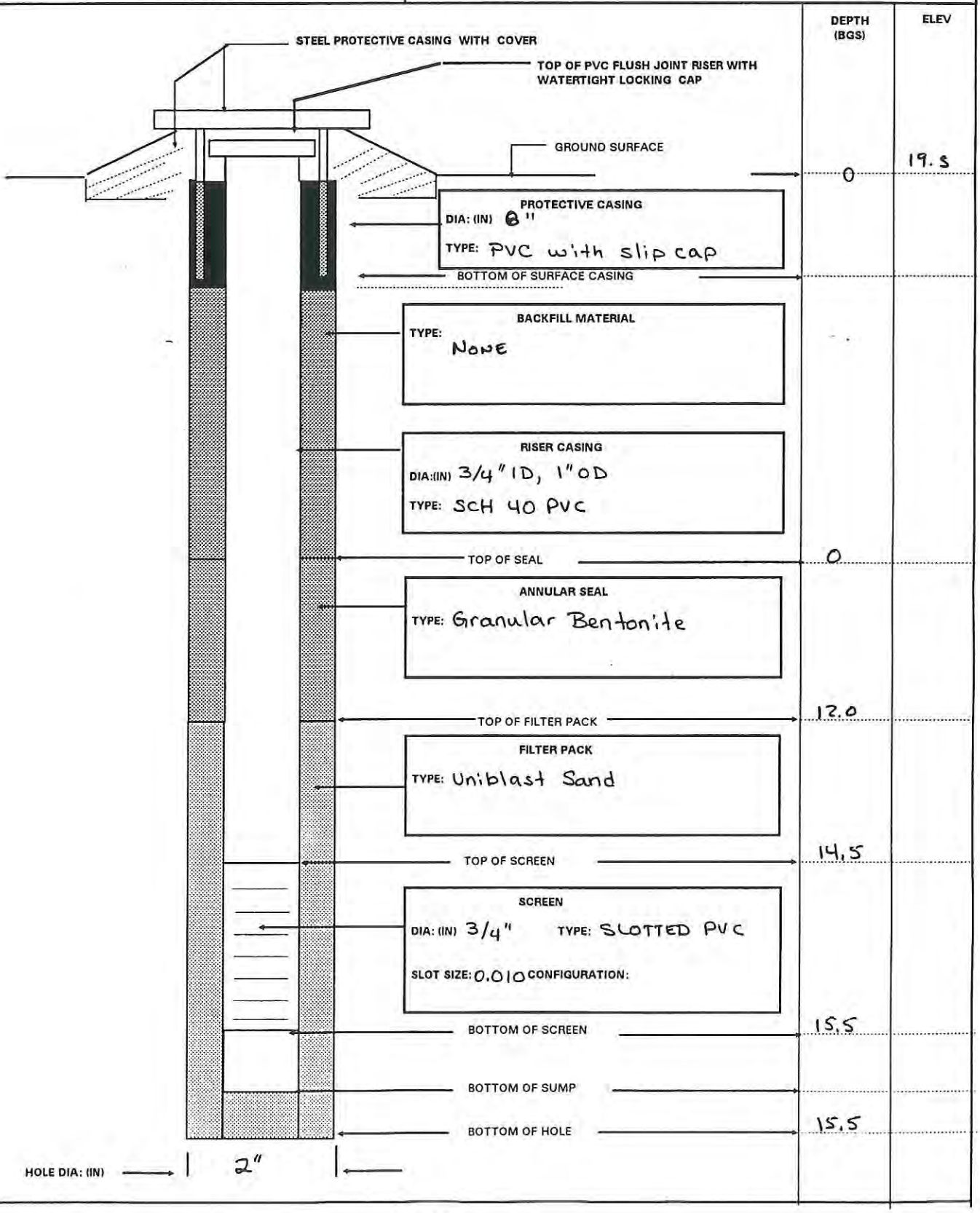
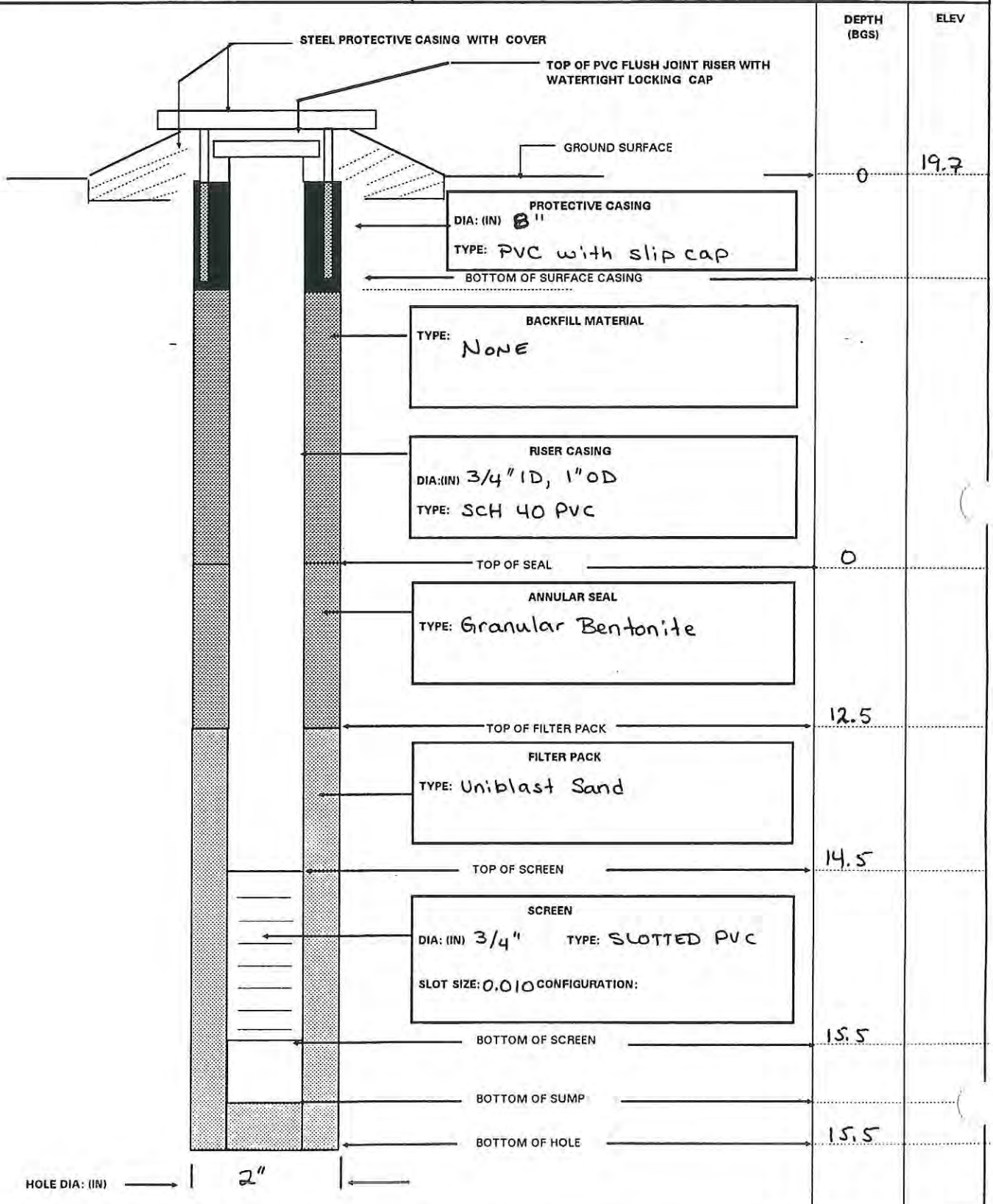


MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

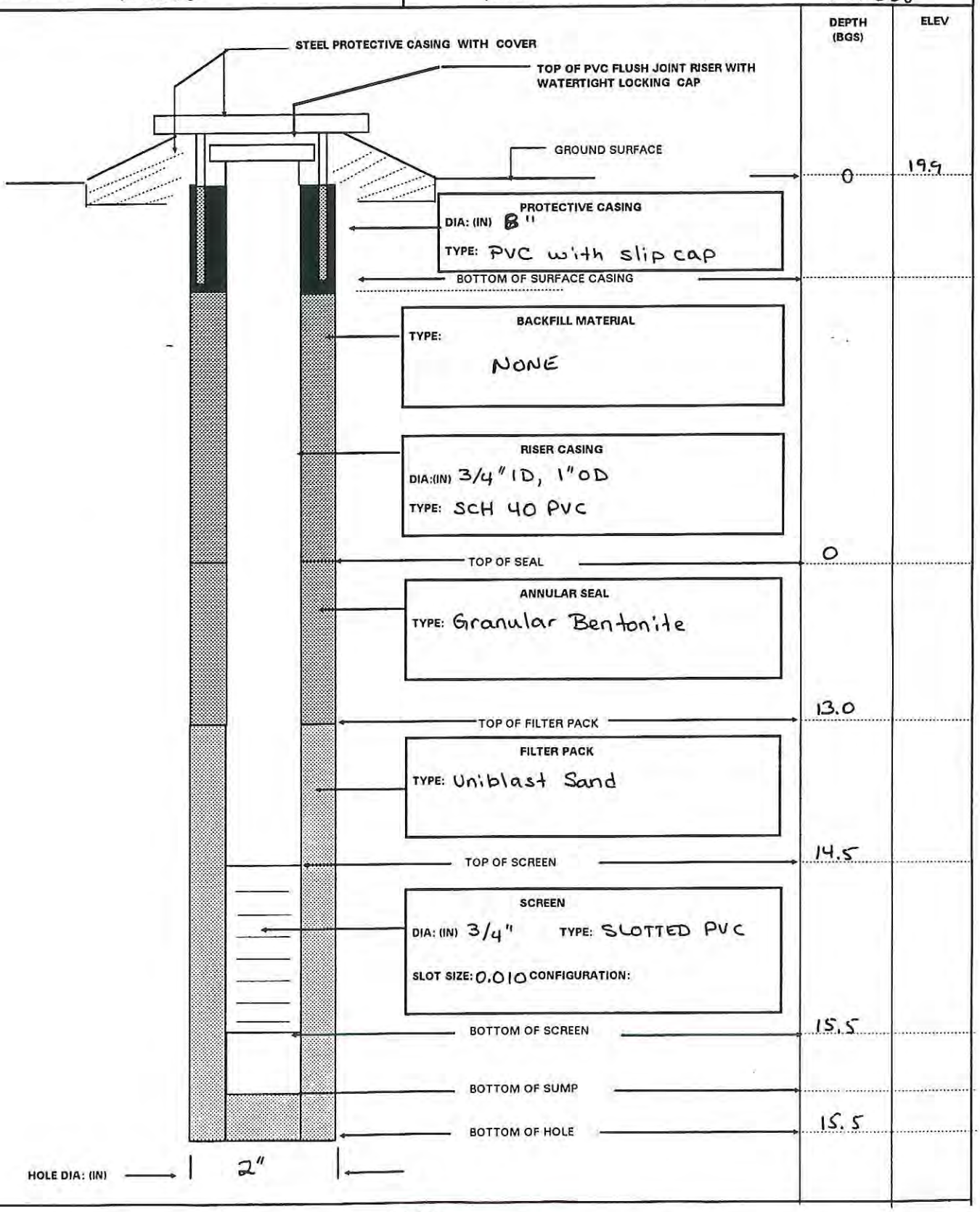
WELL NUMBER: AE-J6	**BEGIN:** 5/5/99	**END:** 5/5/99
COORDINATES: N: 740064.10 E: 976011.06	**REFERENCE POINT:** TOC	**ELEVATION:** 20.32
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

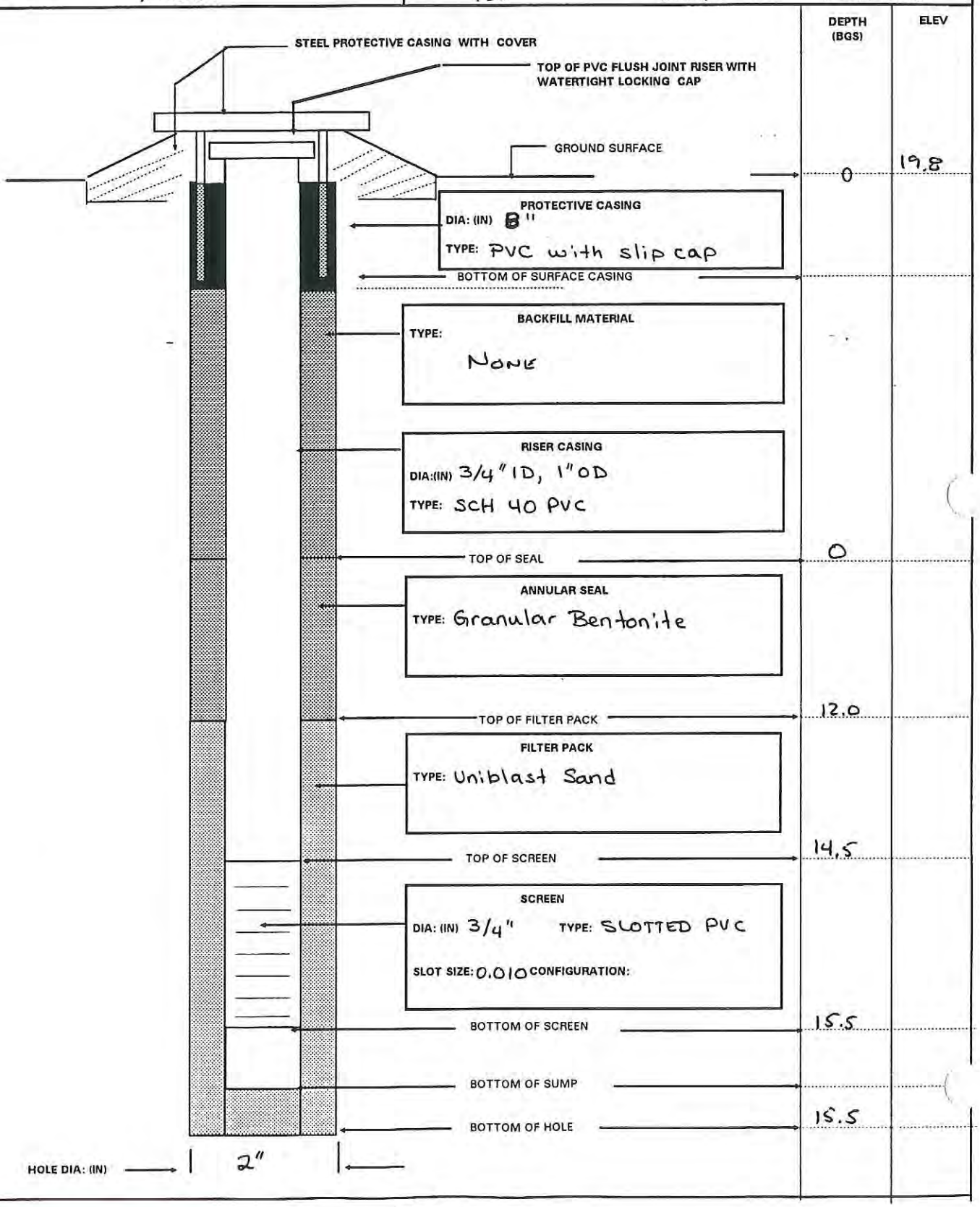
WELL NUMBER: AE-J7	**BEGIN:** 5/5/99	**END:** 5/5/99
COORDINATES: N: 740079.00 E: 976025.13	**REFERENCE POINT:** TOC	**ELEVATION:** 20.49
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAUD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

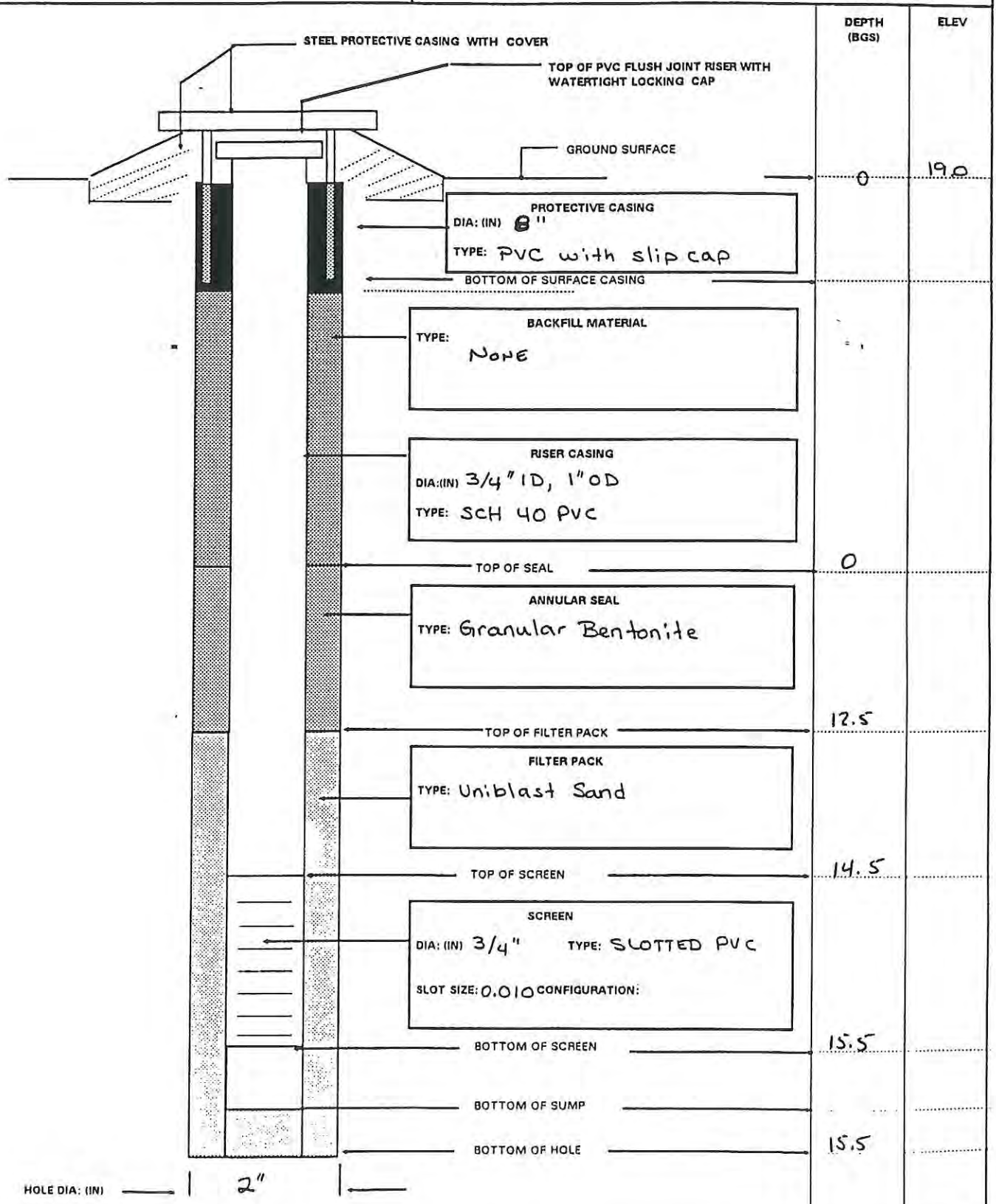
WELL NUMBER: AE-J8		**BEGIN:** 5/5/99	**END:** 5/5/99
COORDINATES:	N: 740092.29 E: 976038.25	**REFERENCE POINT:**	**ELEVATION:** / **DATUM/UNITS:**
DATUM/UNITS:	NAD83	TOC	20.41 / NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study DELIVERY ORDER NO:

WELL NUMBER: AE-59	BEGIN: 5/5/99	END: 5/5/99	
COORDINATES: N: 740014.69 E: 976013.41	REFERENCE POINT: TOC	ELEVATION: 19.55	DATUM/UNITS: NAVD88
DATUM/UNITS: NAD83			



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study DELIVERY ORDER NO:

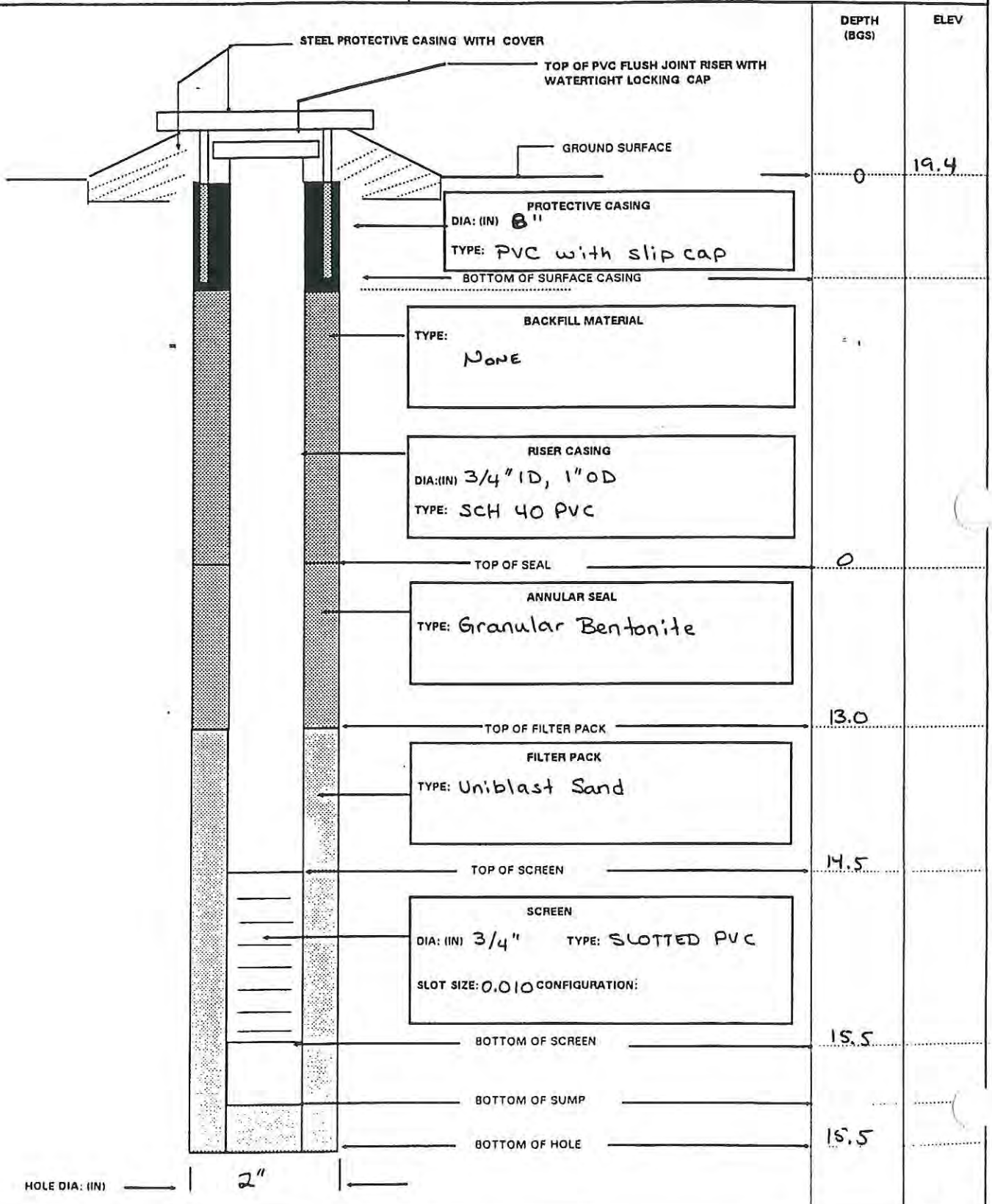
WELL NUMBER: AE-J10

BEGIN: 5/5/99 END: 5/5/99

COORDINATES: N: 740028.91
E: 976029.17

DATUM/UNITS: NAD83

REFERENCE POINT: TOC ELEVATION: 19.91 DATUM/UNITS: NAVD 88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

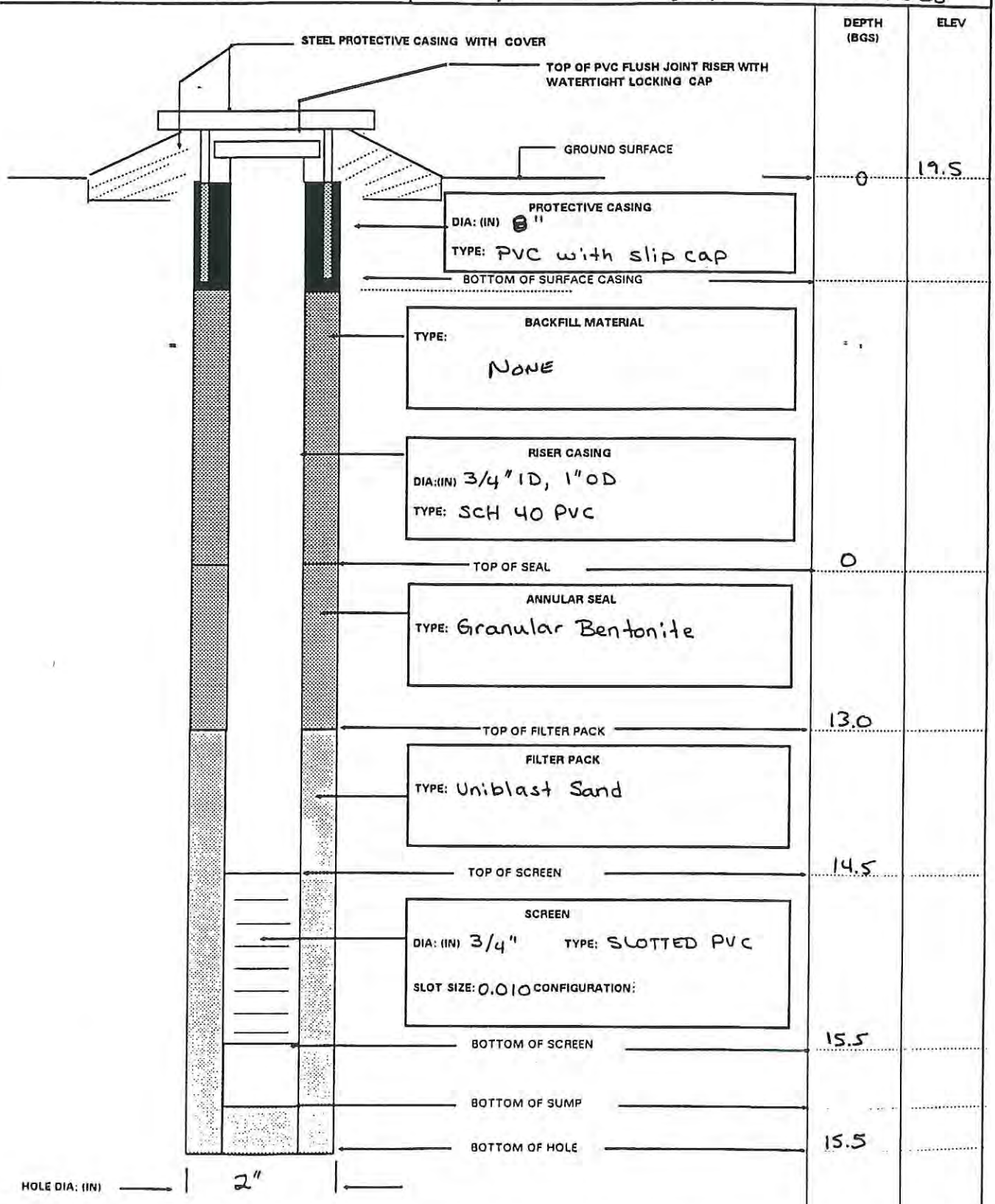
WELL NUMBER: AE-J11

BEGIN: 5/5/99 **END:** 5/5/99

COORDINATES: N: 740040.97 E: 976044.44

DATUM/UNITS: NAD83

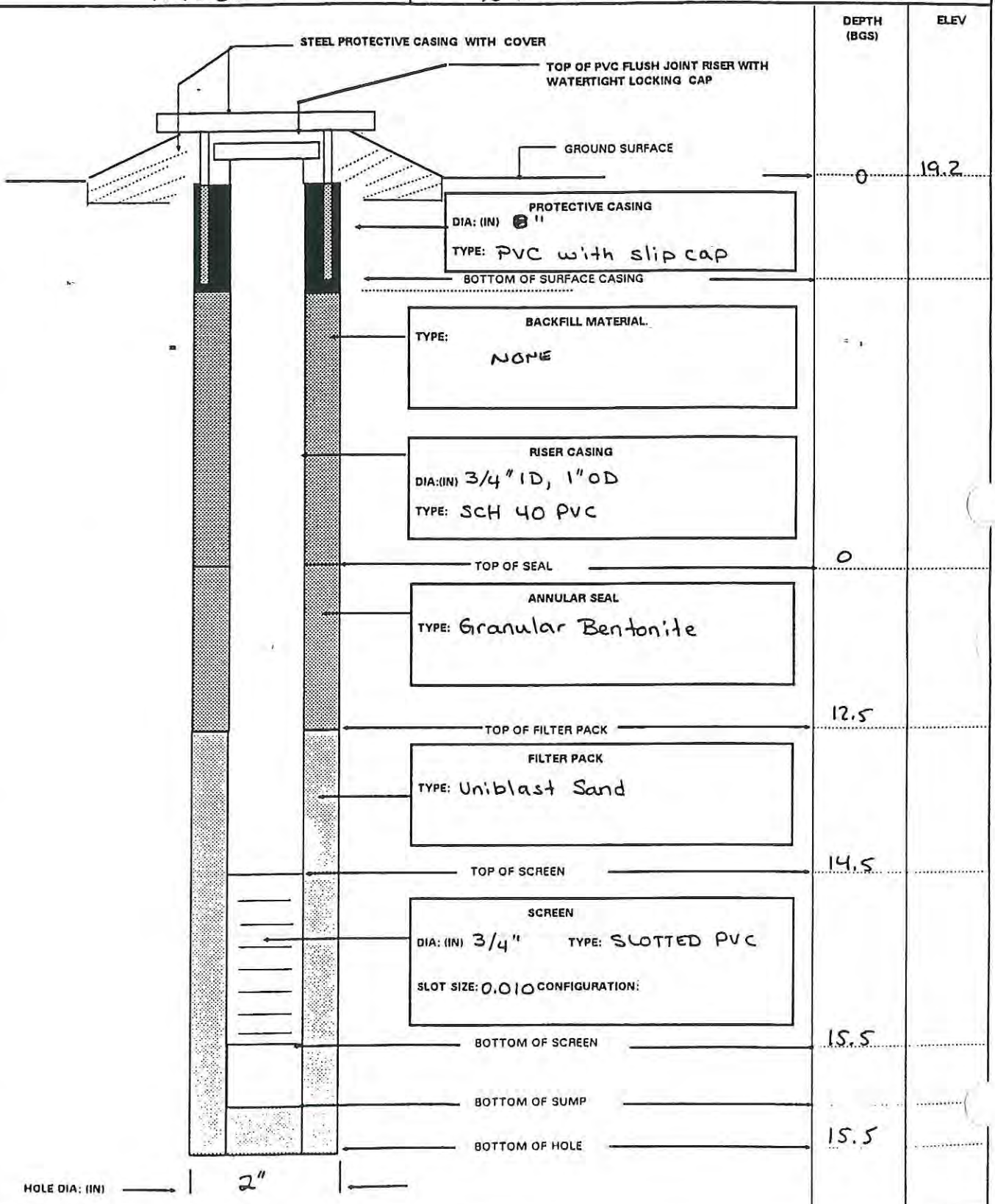
REFERENCE POINT: TOC **ELEVATION:** 20.11 **DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

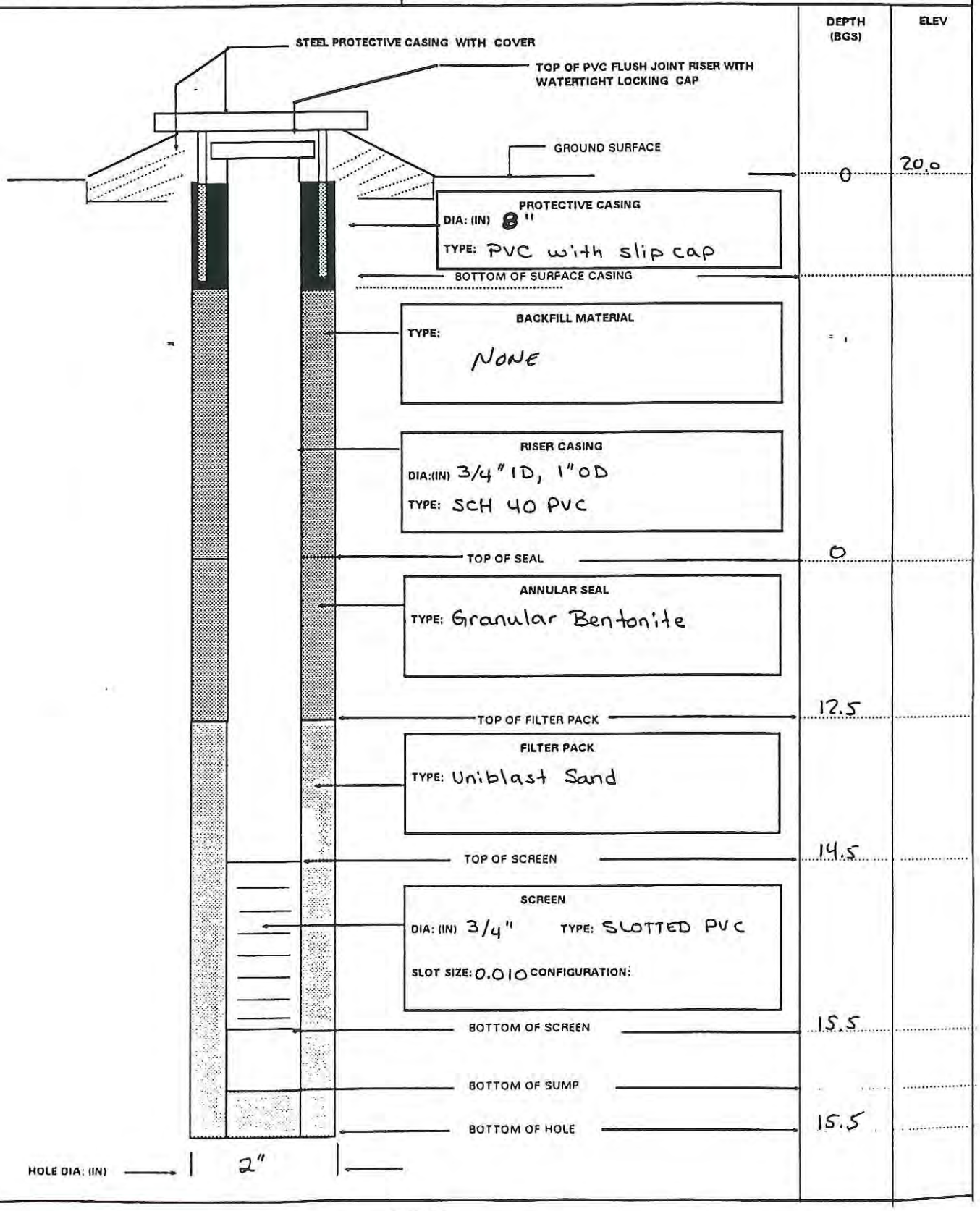
WELL NUMBER: AE-J12	**BEGIN:** 5/5/99	**END:** 5/5/99
COORDINATES: N: 740053.18 E: 9760061.26	**REFERENCE POINT:** TOC	**ELEVATION:** 19.73
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study DELIVERY ORDER NO:

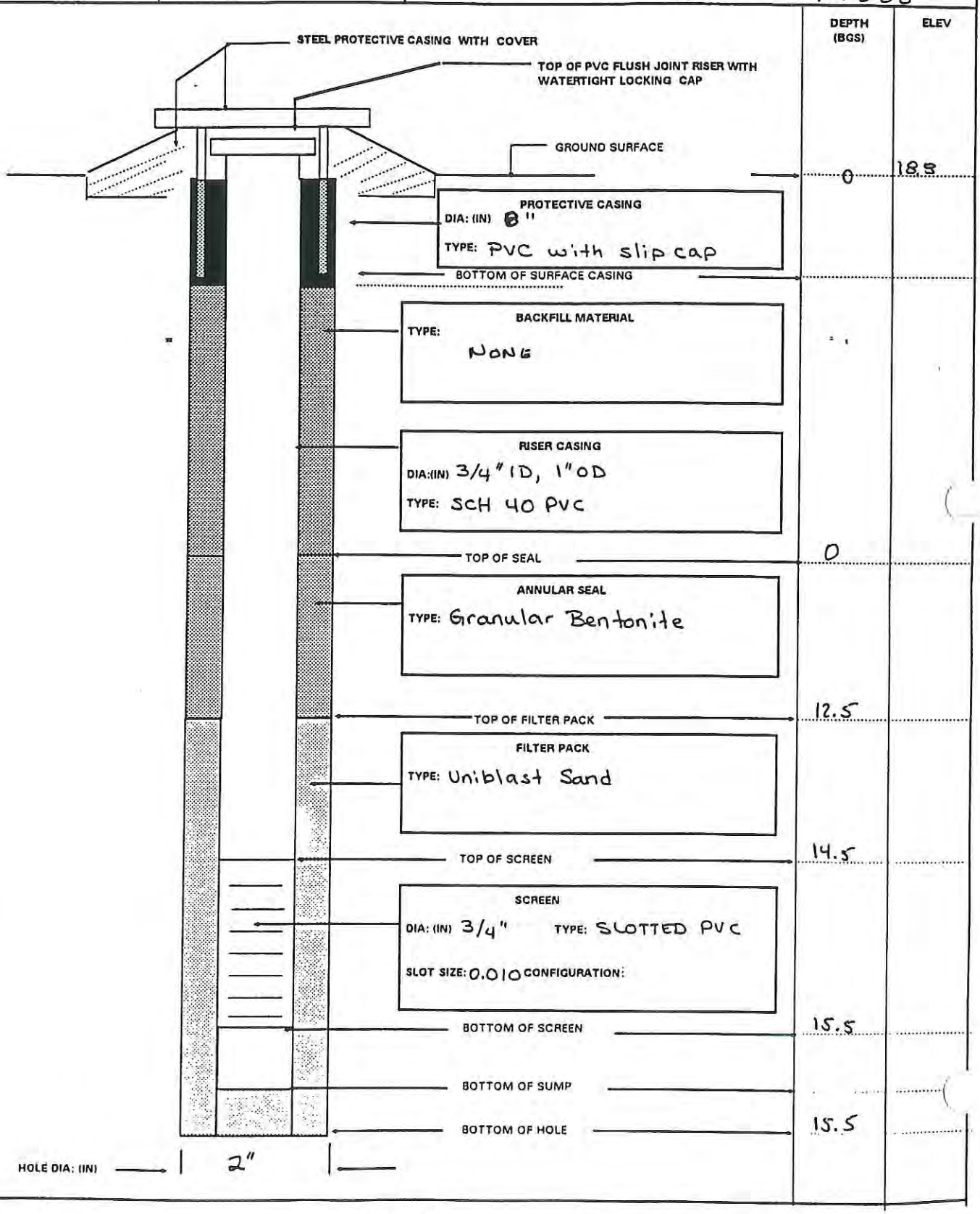
WELL NUMBER: AE-J13	BEGIN: 5/6/99	END: 5/6/99
COORDINATES: N: 740063.56 E: 976075.42	REFERENCE POINT: TOC	ELEVATION: 20.49
DATUM/UNITS: NAVD83		DATUM/UNITS: NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

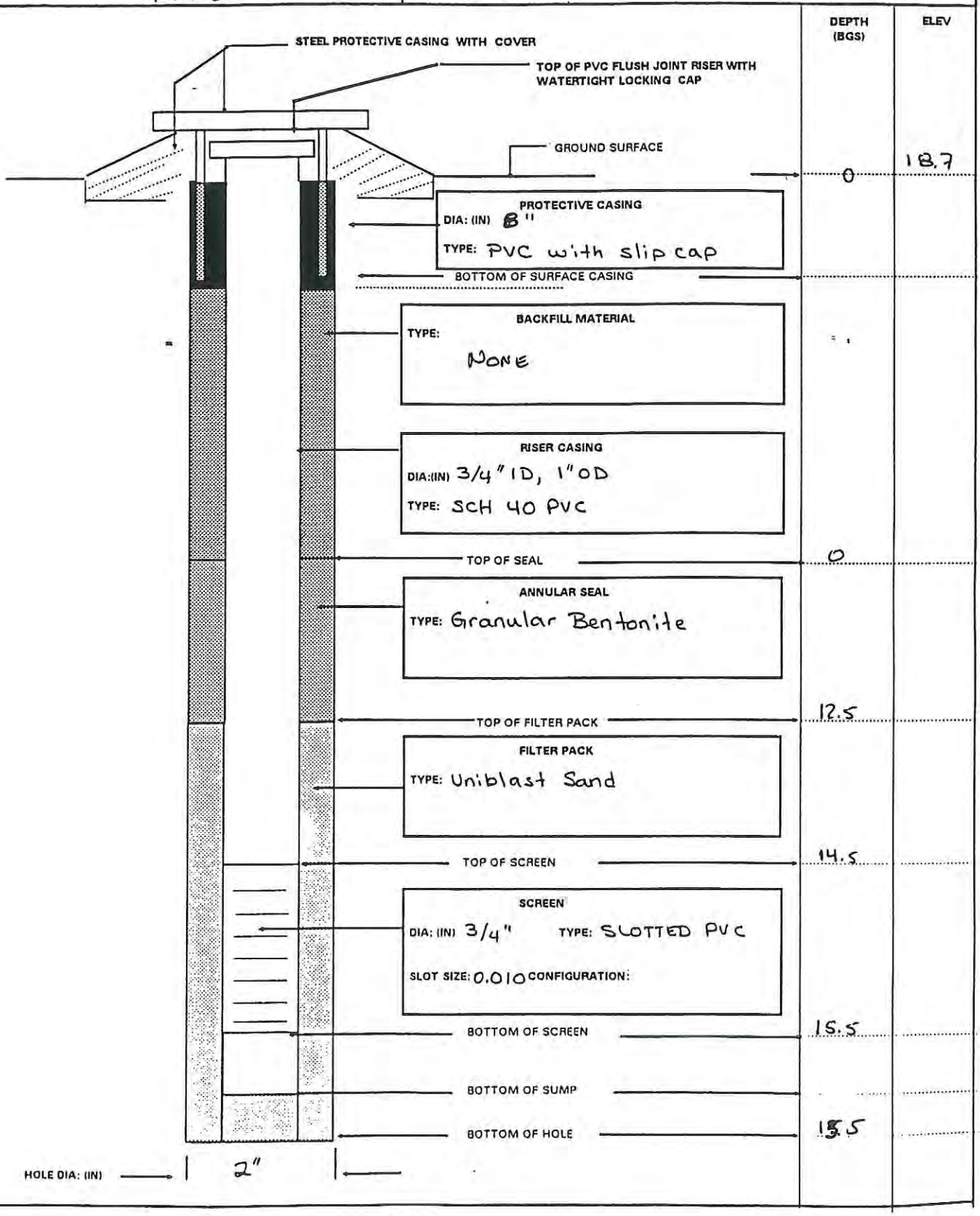
WELL NUMBER: AE-J14	**BEGIN:** 5/6/99	**END:** 5/6/99
COORDINATES: N: 739969.84 E: 976025.51	**REFERENCE POINT:** TOC	**ELEVATION:** 19.29
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD 88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

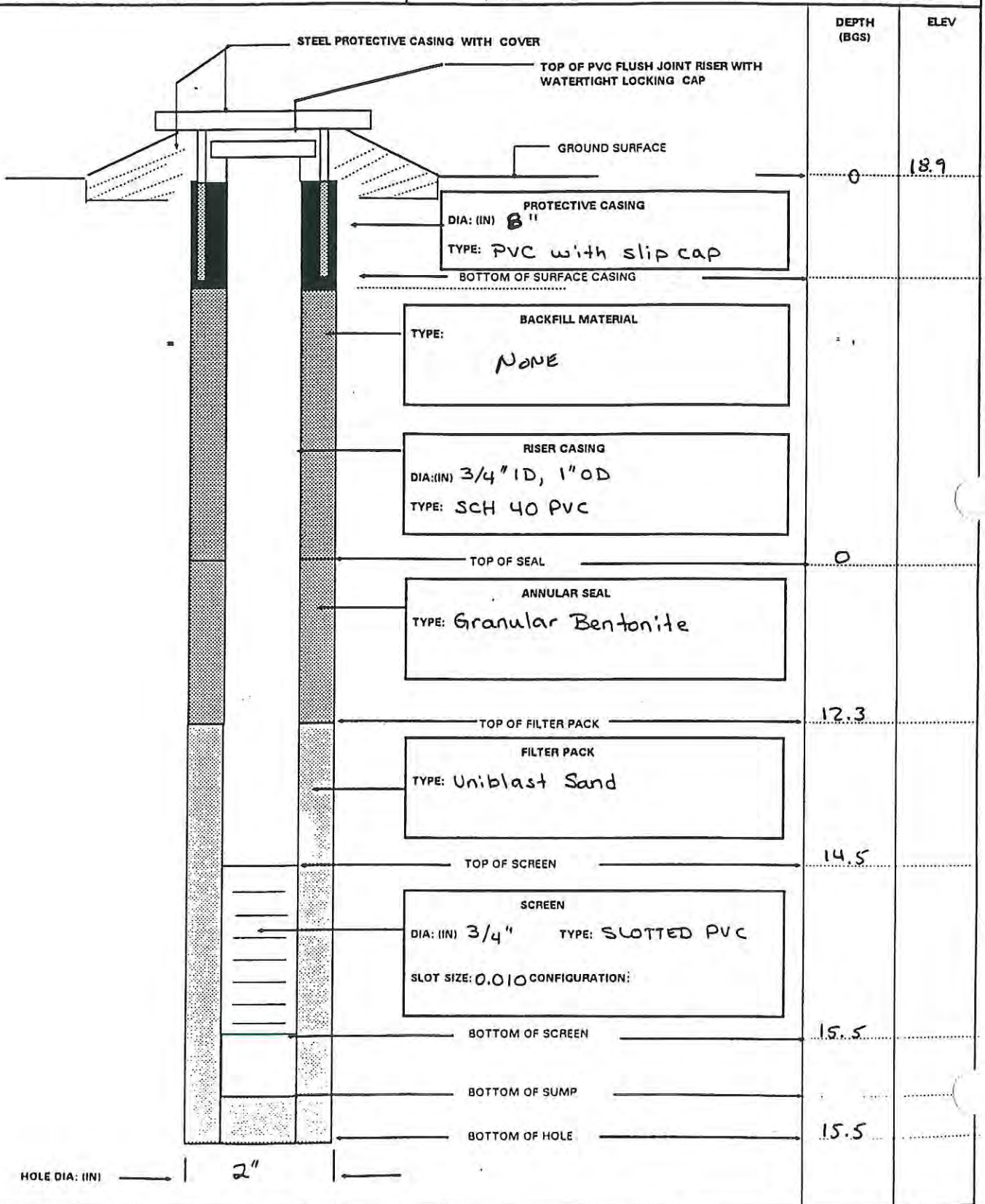
WELL NUMBER: AE-J15	**BEGIN:** 5/6/99	**END:** 5/6/99
COORDINATES: N: 739982.53 E: 976040.17	**REFERENCE POINT:** TOC	**ELEVATION:** 19.13
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

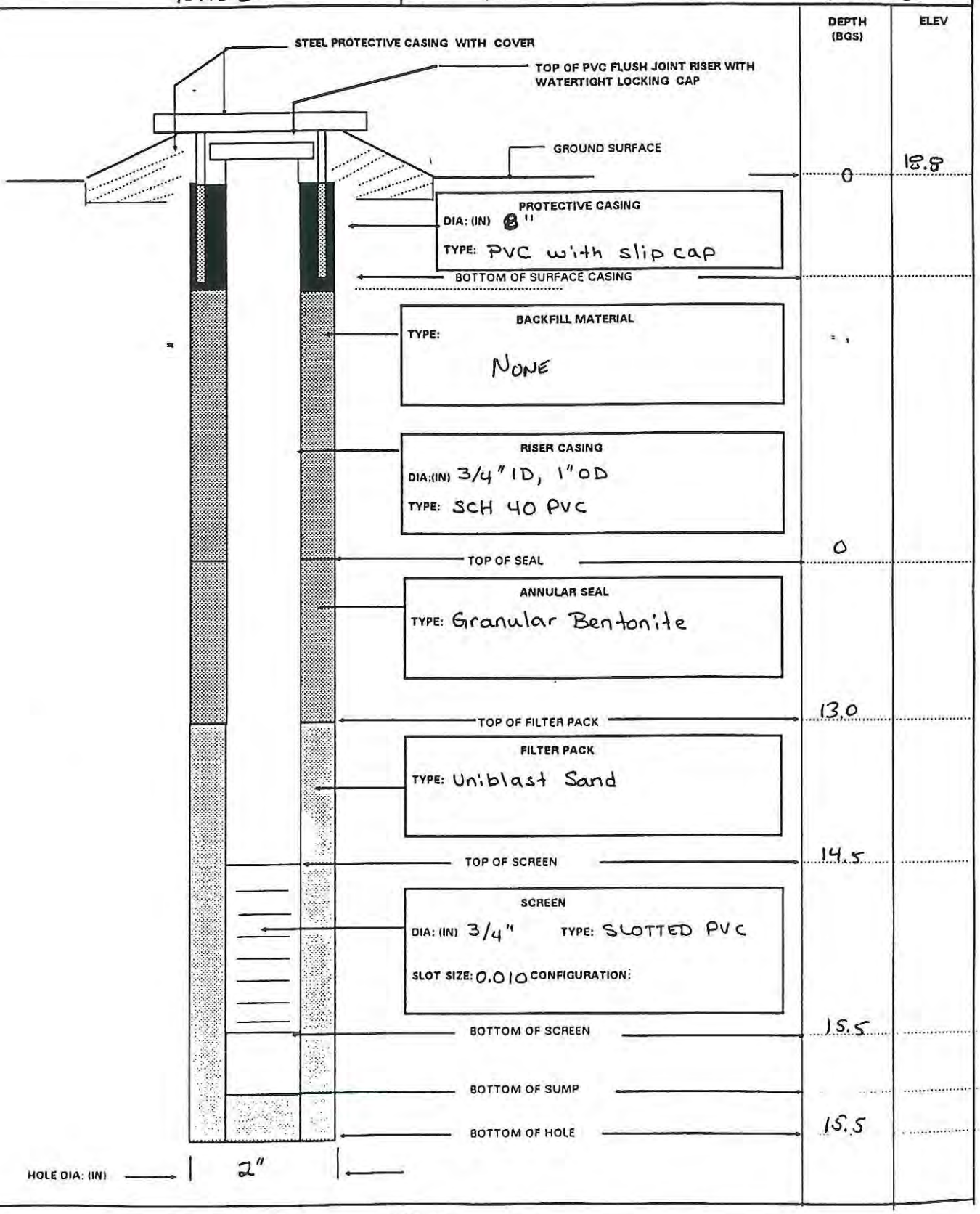
WELL NUMBER: AE-16	**BEGIN:** 5/6/99	**END:** 5/6/99
COORDINATES: N: 739995.29 E: 976056.95		
DATUM/UNITS: NAD83	**REFERENCE POINT:** TOC	**ELEVATION:** ~~18~~ 19.38 **DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-J17	**BEGIN:** 5/6/99	**END:** 5/6/99
COORDINATES: N: 740008.13 E: 976071.76	**REFERENCE POINT:** TOC	**ELEVATION:** 19.32
DATUM/UNITS: NAD 83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study DELIVERY ORDER NO:

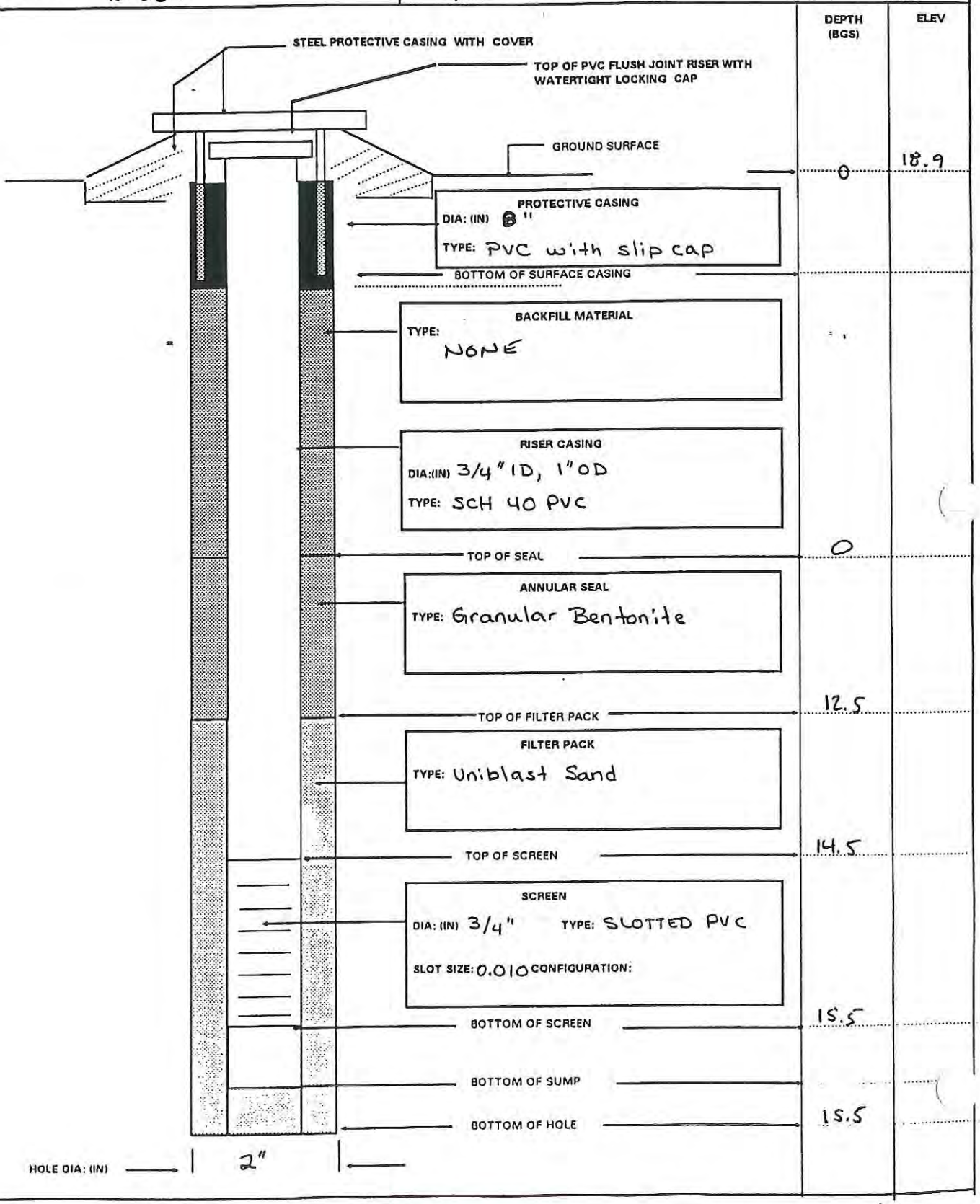
WELL NUMBER: AE-J18

BEGIN: 5/6/99 END: 5/6/99

COORDINATES: N: 740020.77
E: 976085.46

DATUM/UNITS: NAD83

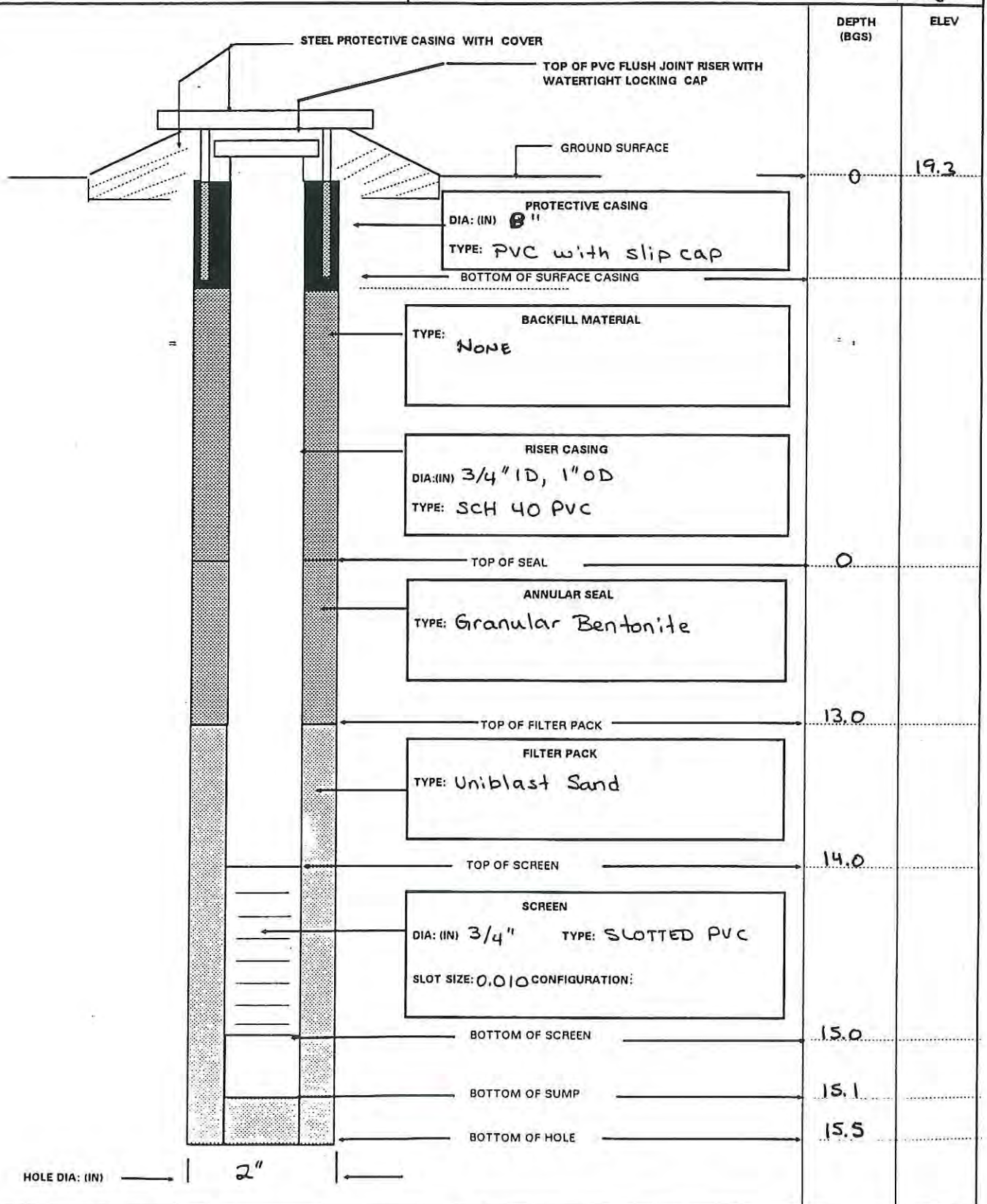
REFERENCE POINT: TOC ELEVATION: 19.43 DATUM/UNITS: NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study DELIVERY ORDER NO:

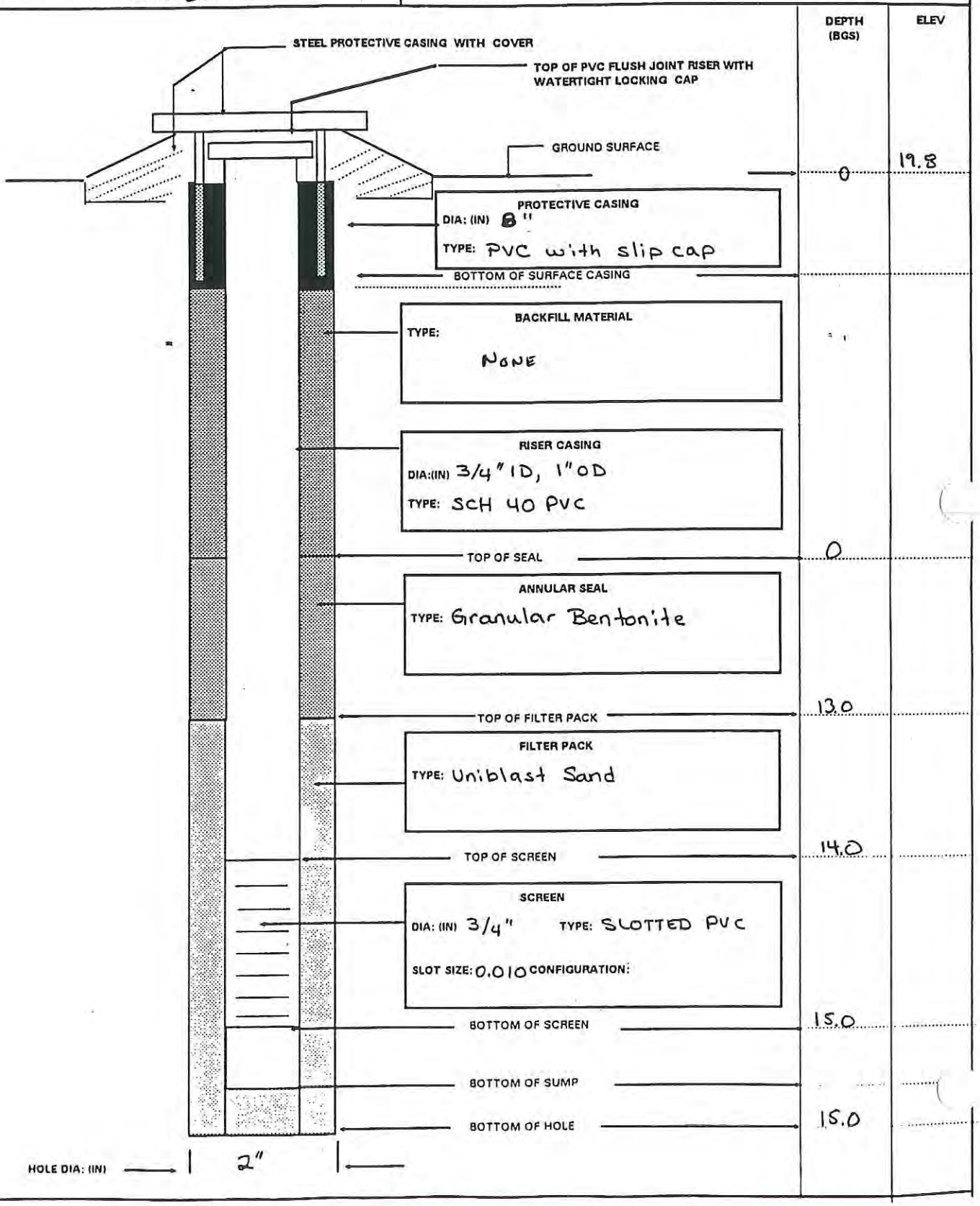
WELL NUMBER: AE-J19	BEGIN: 5/6/99	END: 5/6/99
COORDINATES: N: 740033.25 E: 976101.09	REFERENCE POINT: TOC	ELEVATION: 19.74
DATUM/UNITS: NAD83		DATUM/UNITS: NAVD 88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

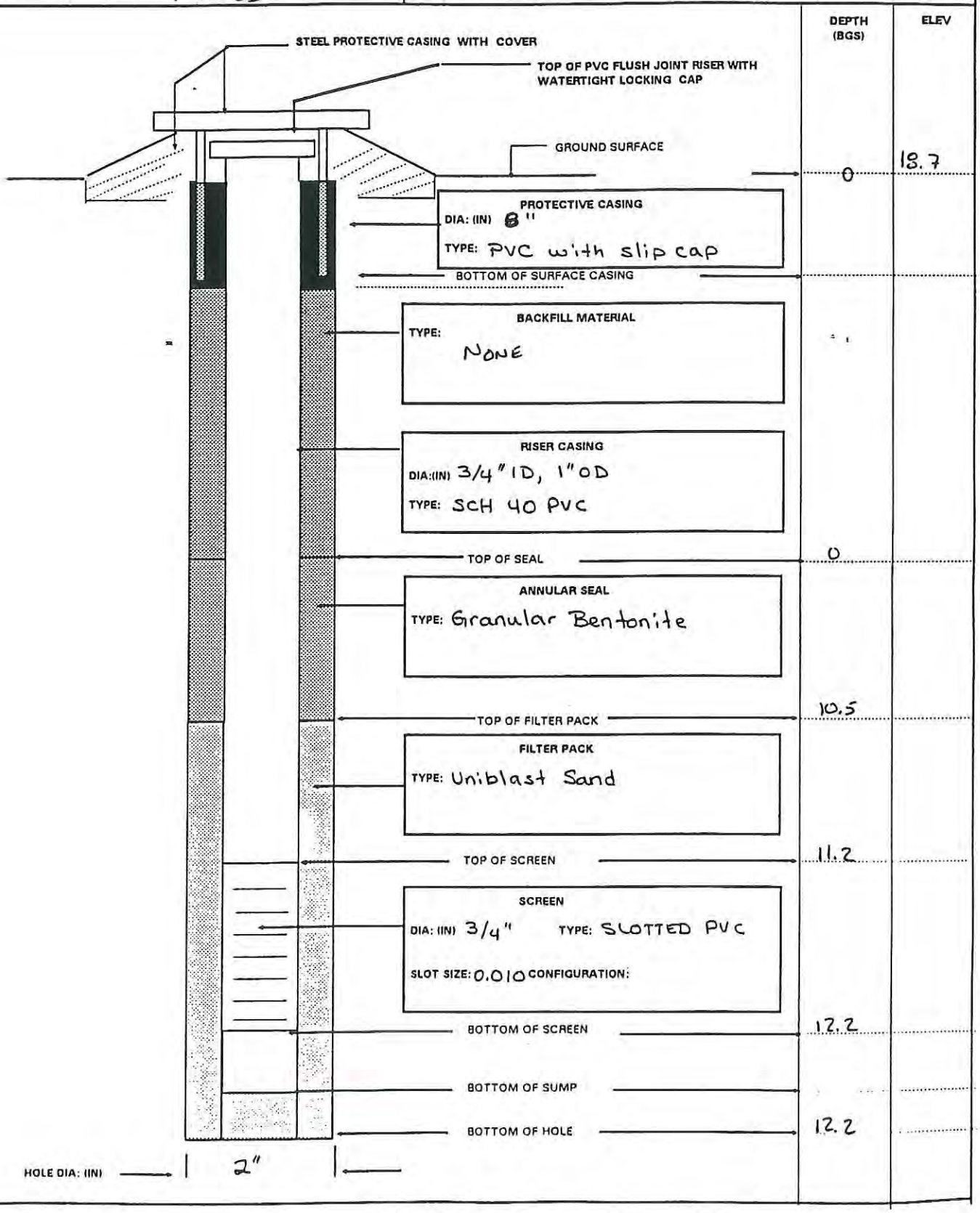
WELL NUMBER: AE-J20	**BEGIN:** 5/7/99	**END:** 5/7/99
COORDINATES: N: 740048.06 E: 976117.43	**REFERENCE POINT:** TOC	**ELEVATION:** 20.27
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

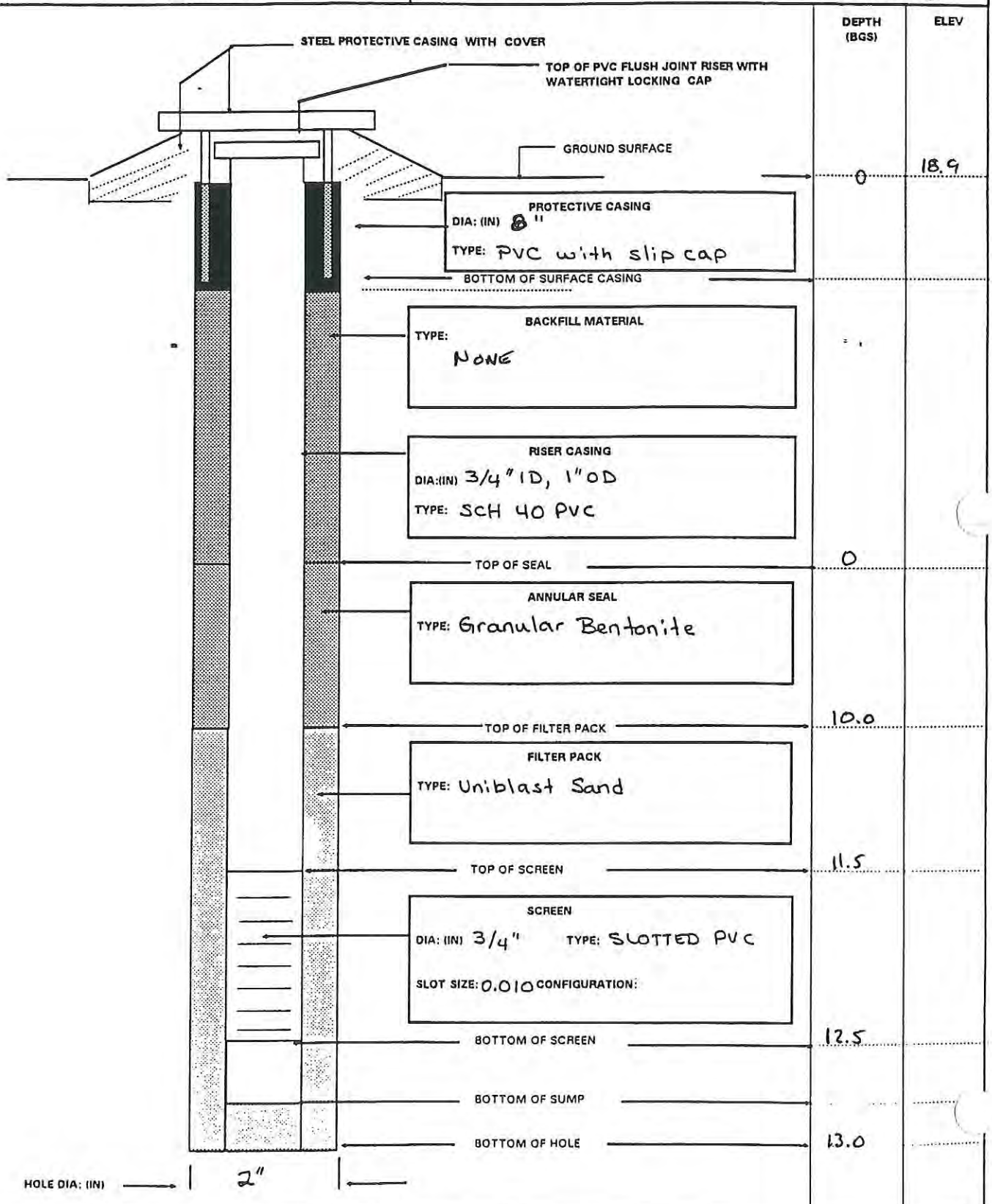
WELL NUMBER: AE-J21	**BEGIN:** 5/7/99	**END:** 5/7/99
COORDINATES: N: 739952.01 E: 976066.51	**REFERENCE POINT:** TOC	**ELEVATION:** 19.18
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

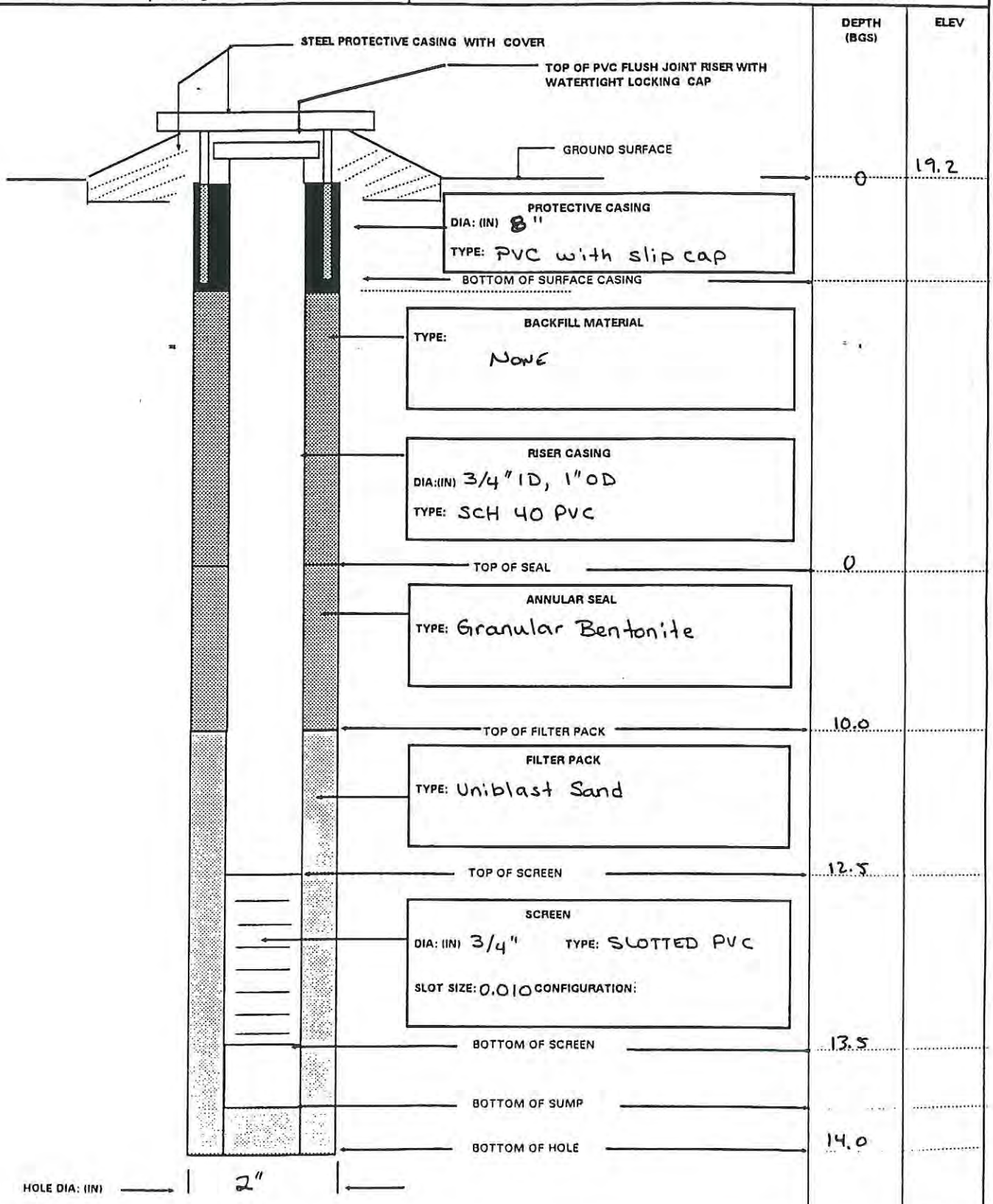
WELL NUMBER: AE-J22		**BEGIN:** 5/7/99	**END:** 5/7/99
COORDINATES:	N: 739966.45 E: 976081.80	**REFERENCE POINT:**	**ELEVATION:** / **DATUM/UNITS:**
DATUM/UNITS:	NAD 83	TOC	19.37 NAVD 88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study DELIVERY ORDER NO:

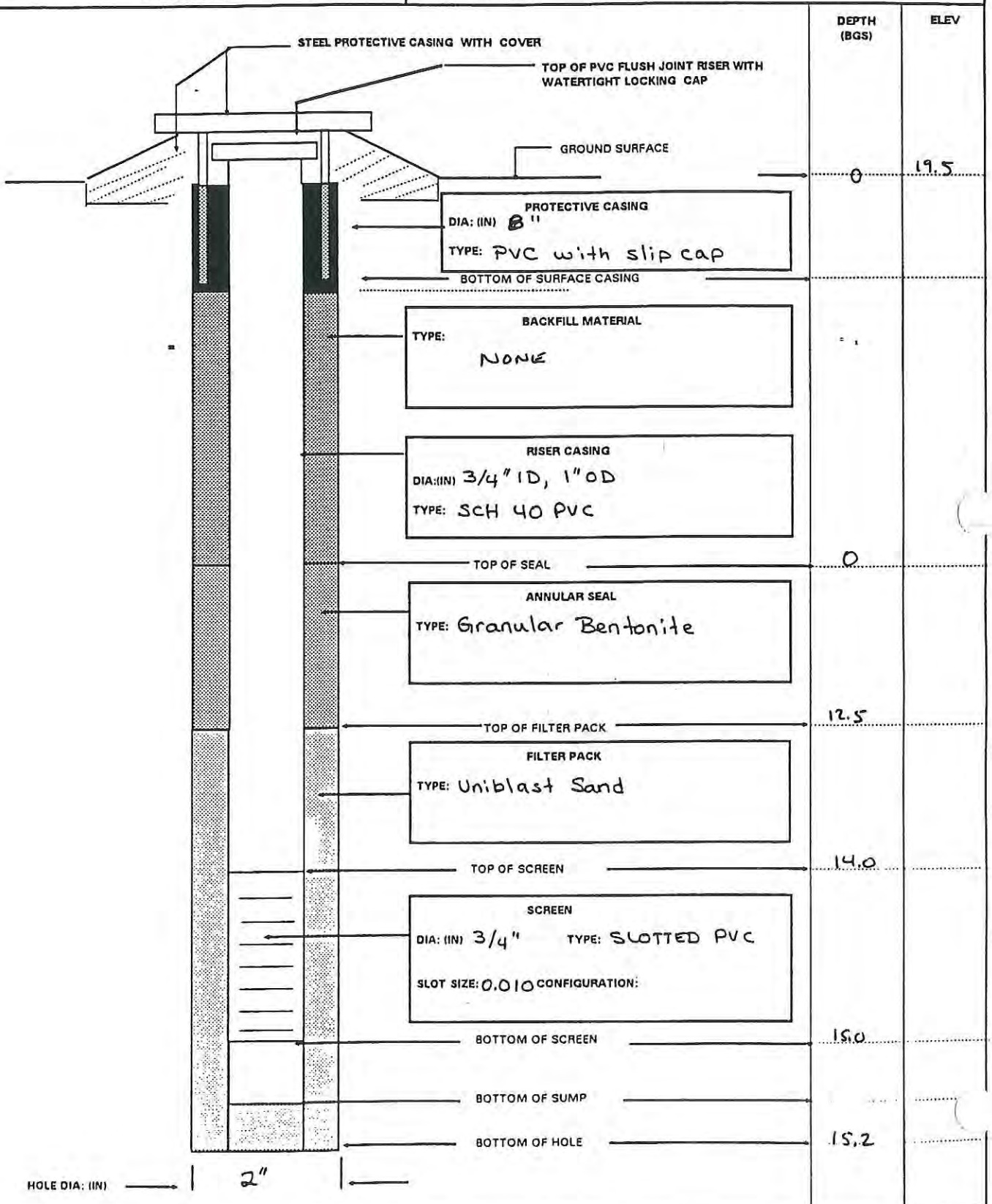
WELL NUMBER: AE-J23	BEGIN: 5/7/99	END: 5/7/99
COORDINATES: N: 739979.58 E: 976097.09	REFERENCE POINT: TOC	ELEVATION: 19.64
DATUM/UNITS: NAD83		DATUM/UNITS: NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

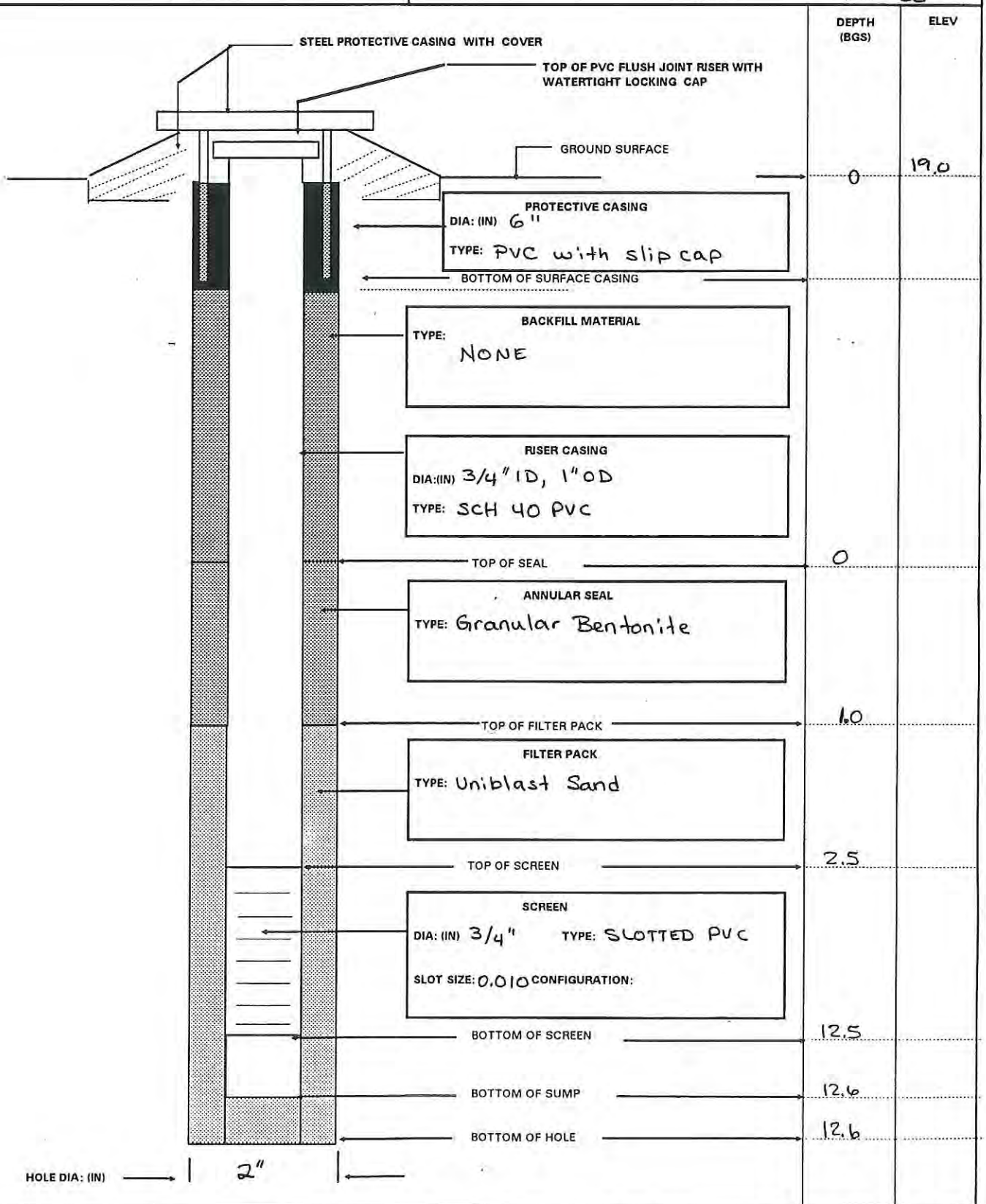
WELL NUMBER: AE-J24		**BEGIN:** 5/7/99	**END:** 5/7/99
COORDINATES:	N: 739991.47 E: 976110.47	**REFERENCE POINT:**	**ELEVATION:** / **DATUM/UNITS:**
DATUM/UNITS:	NAD83	TOC	19.99 NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

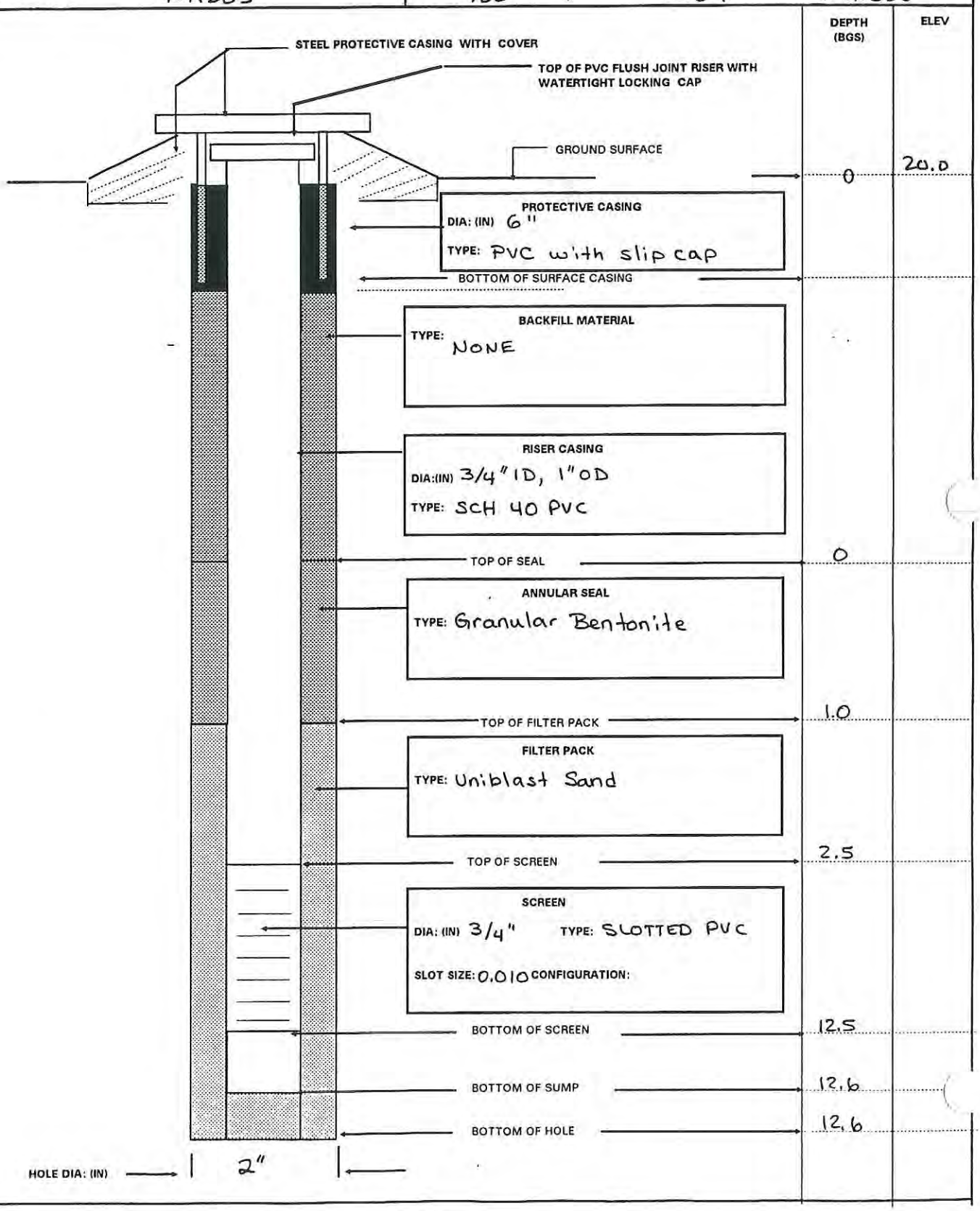
WELL NUMBER: AE-P1	**BEGIN:** 5/7/99	**END:** 5/7/99
COORDINATES: N: 740097.33 E: 975961.13	**REFERENCE POINT:** TOC	**ELEVATION:** 19.42
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

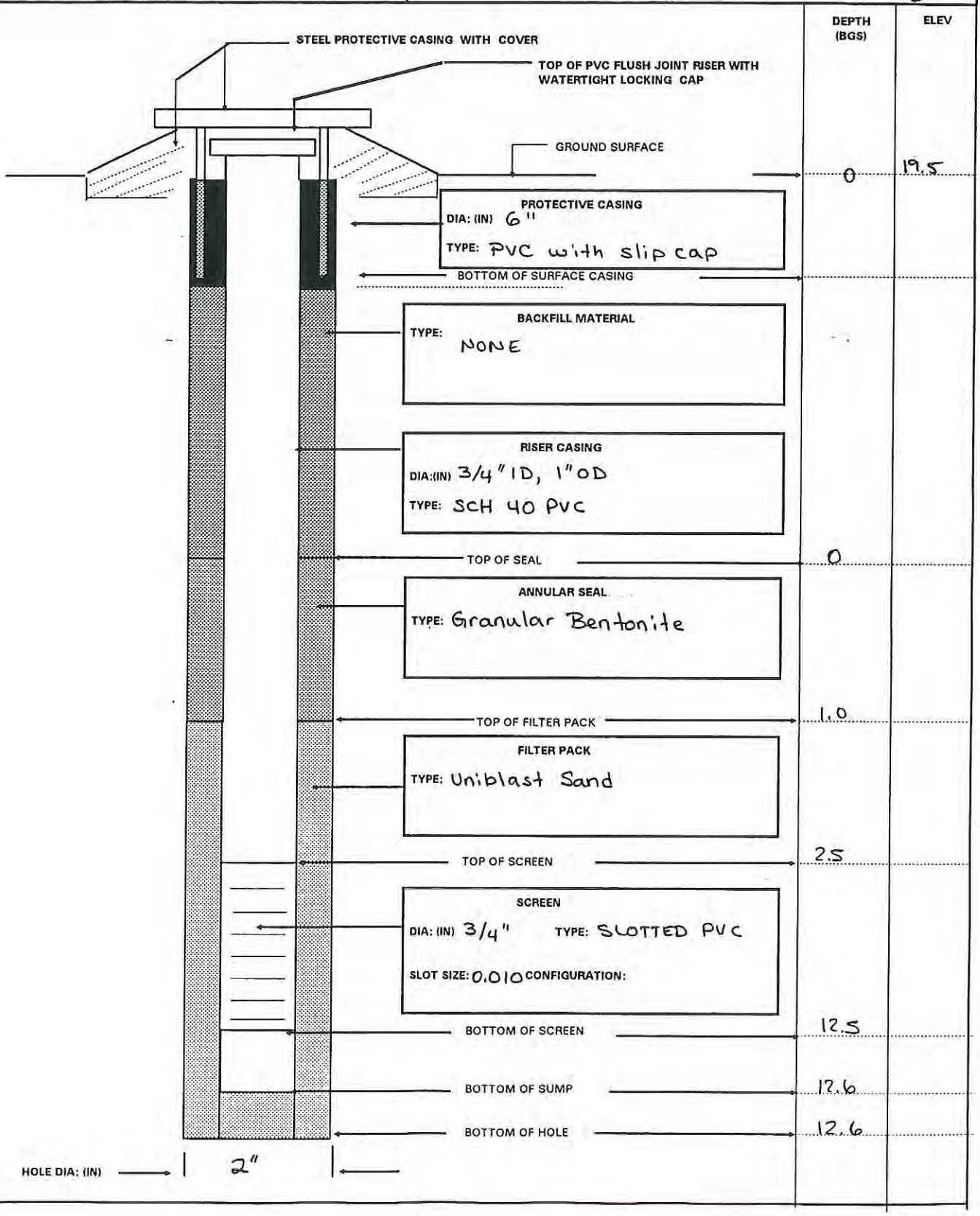
WELL NUMBER: AE-P2	**BEGIN:** 5/7/99	**END:** 5/7/99
COORDINATES: N: 740073.70 E: 976044.53	**REFERENCE POINT:** TOC	**ELEVATION:** 20.34
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-P3	**BEGIN:** 5/7/99	**END:** 5/7/99
COORDINATES: N: 740072.60 E: 975987.25	**REFERENCE POINT:** TOC	**ELEVATION:** 19.91
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

WELL NUMBER: AE-P4		**BEGIN:** 5/7/99	**END:** 5/7/99
COORDINATES:	N: 740044.16 E: 976018.15	**REFERENCE POINT:**	**ELEVATION:** / **DATUM/UNITS:**
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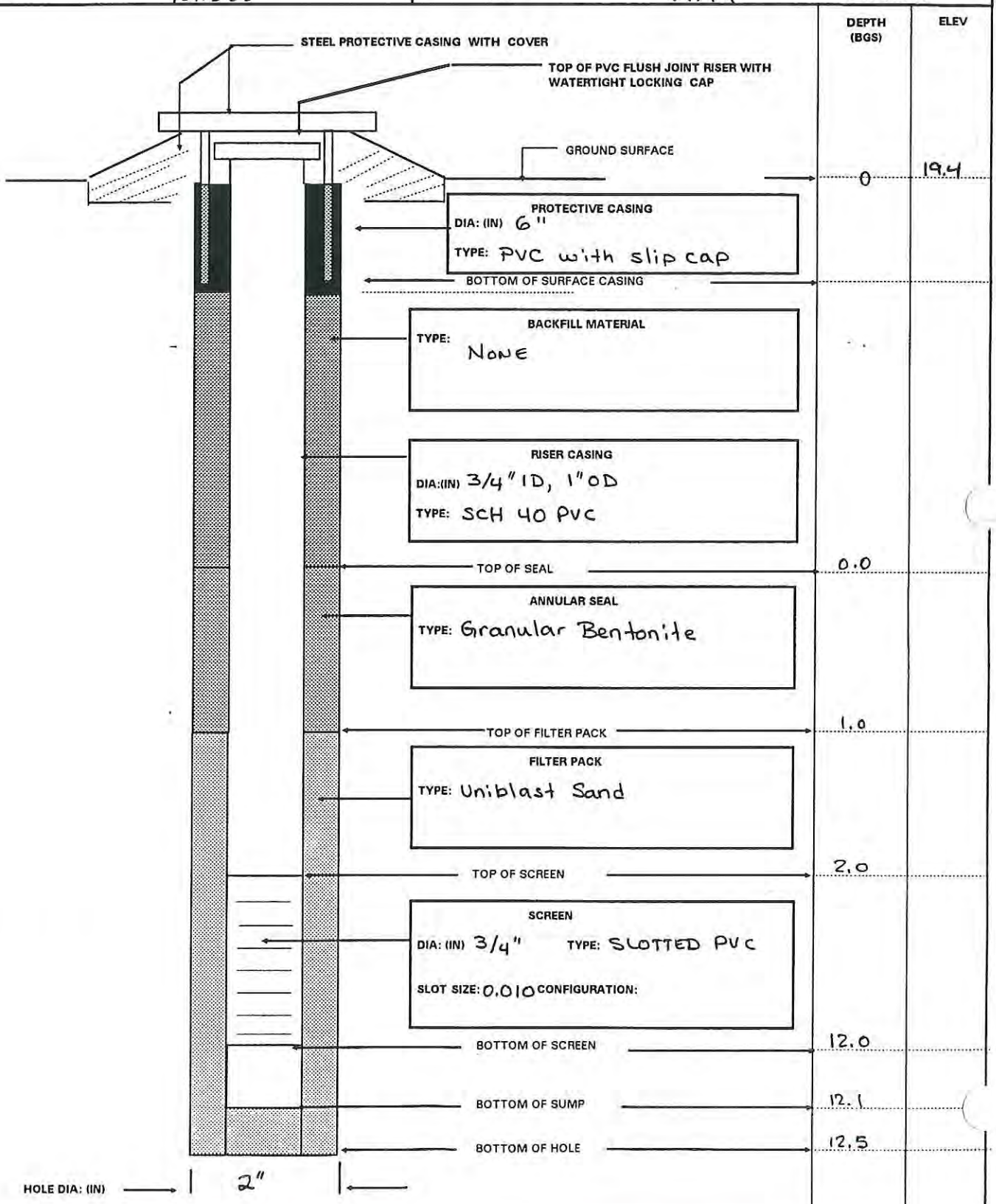
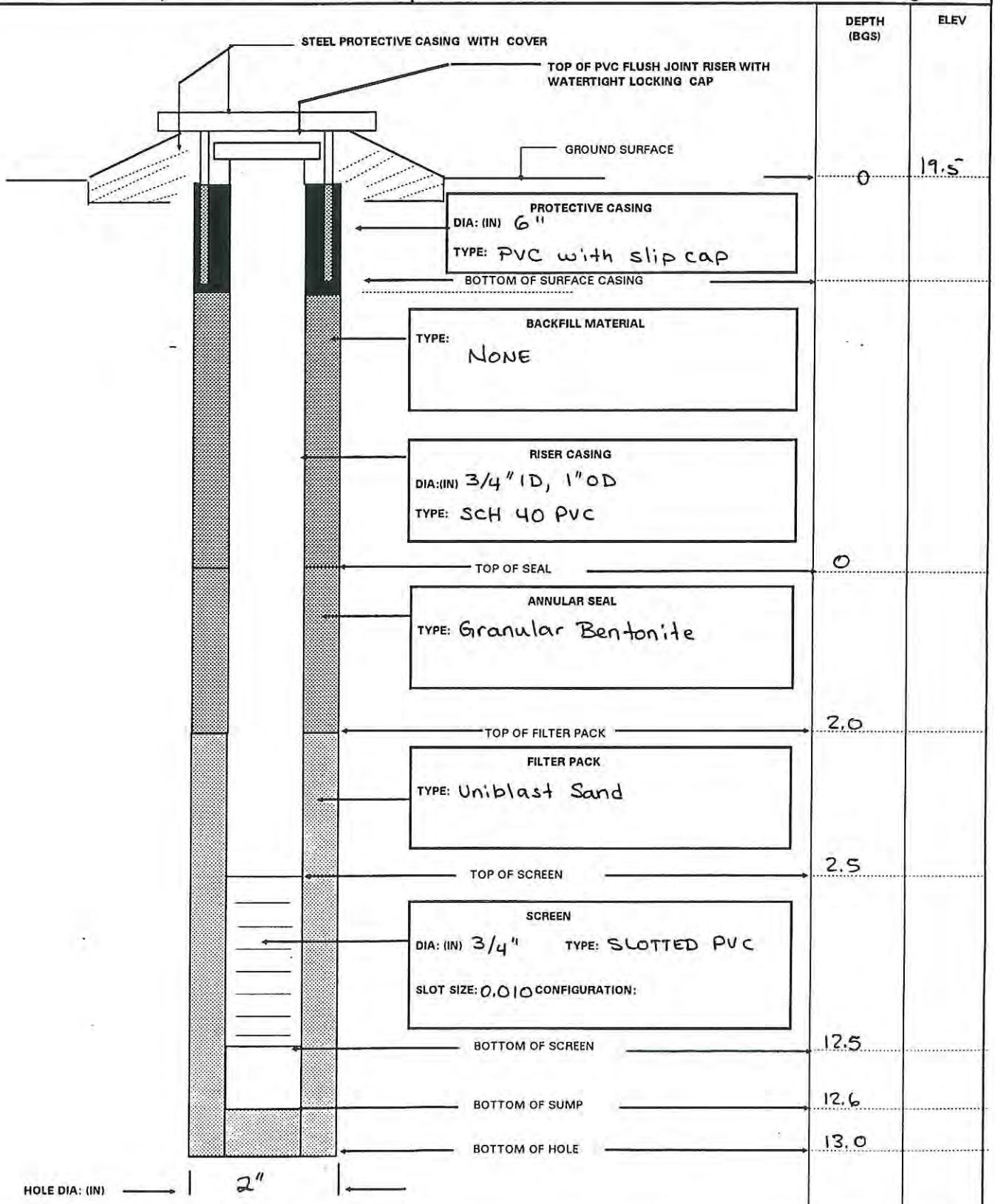


MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

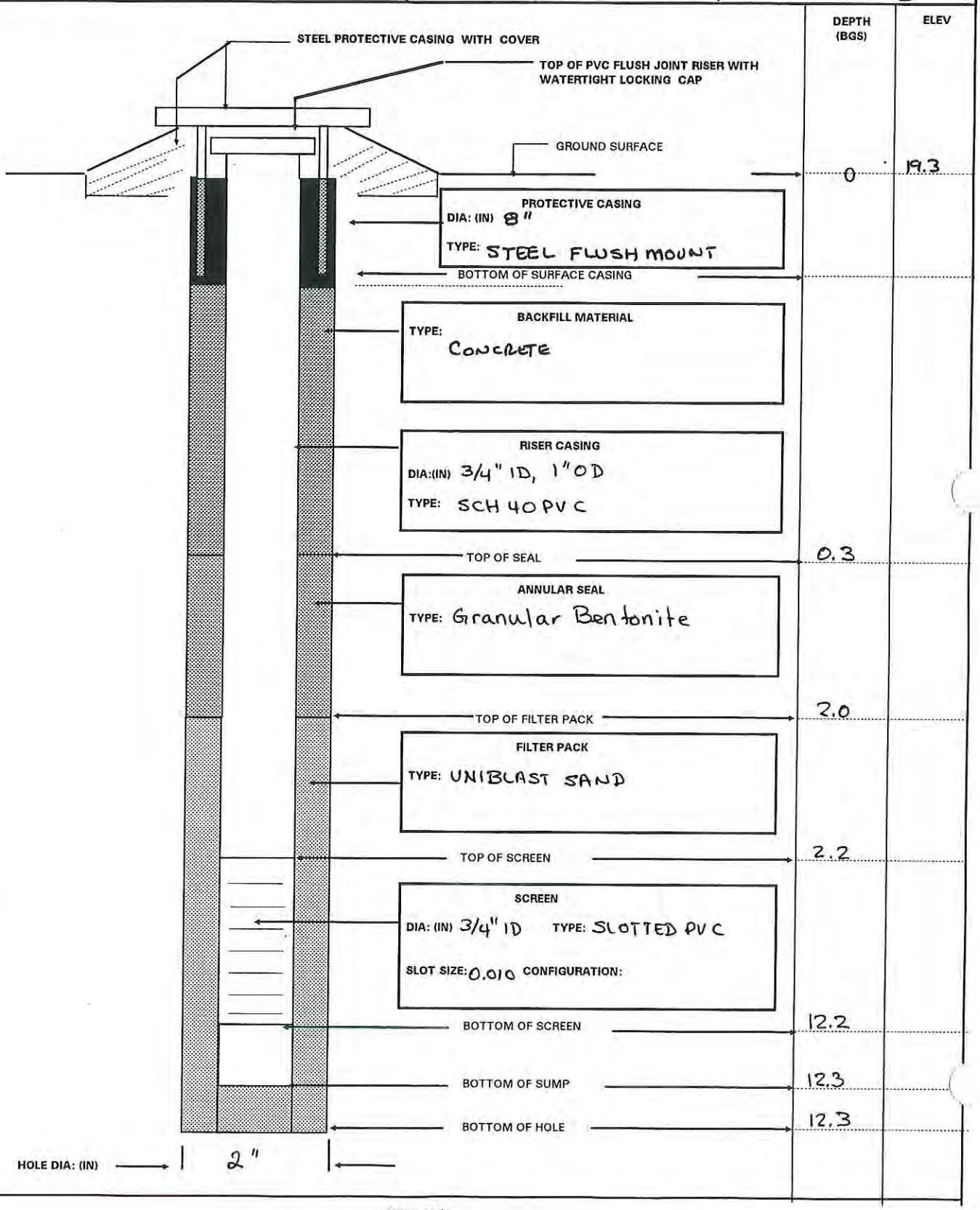
WELL NUMBER: AE-PS	**BEGIN:** 5/8/99	**END:** 5/8/99	
COORDINATES: N: 739965.59 E: 976102.85	**REFERENCE POINT:** TOC	**ELEVATION:** 19.84	**DATUM/UNITS:** NAVD88
DATUM/UNITS: NAD83			



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

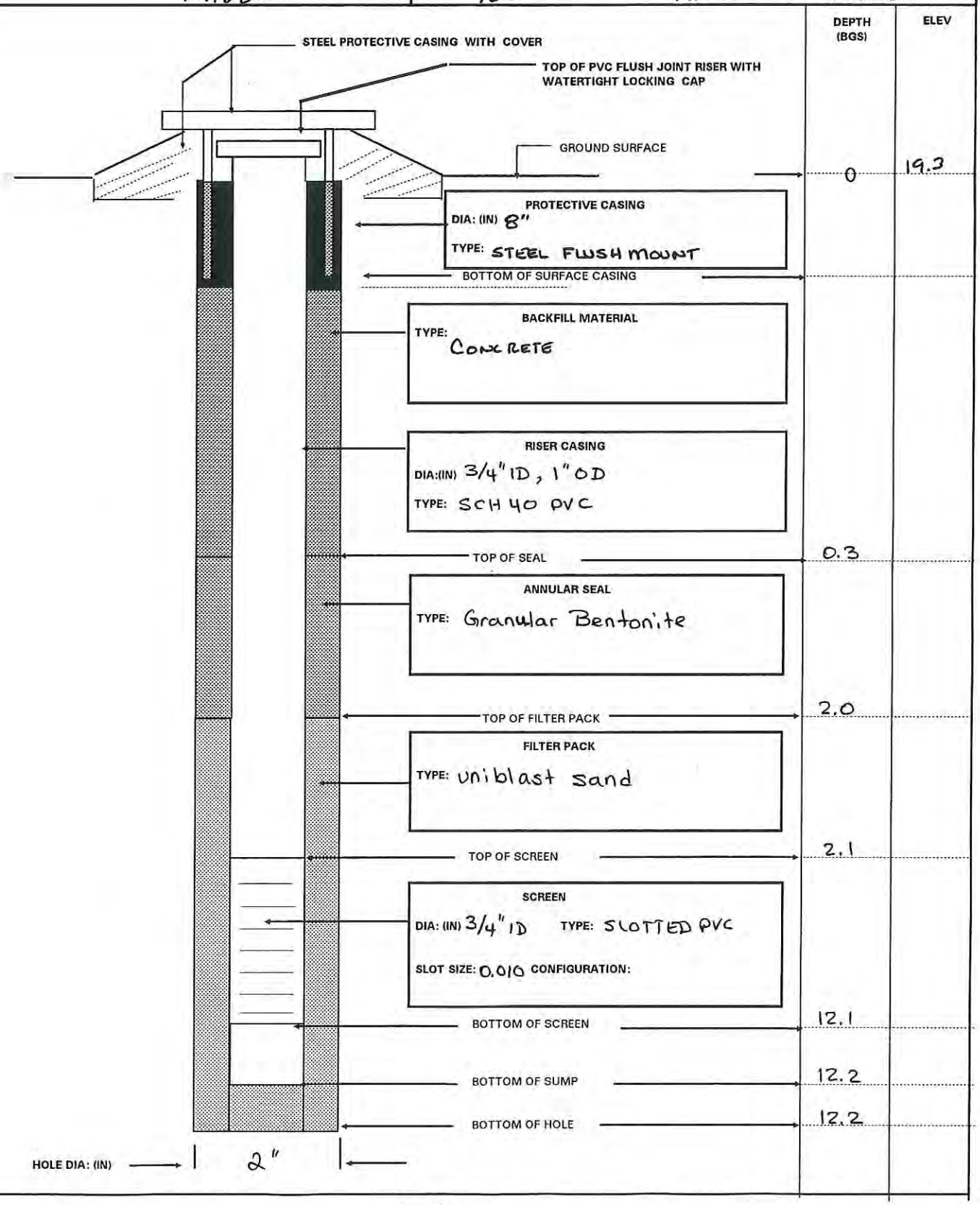
WELL NUMBER: AE-V1		**BEGIN:** 5/6/99	**END:** 5/6/99
COORDINATES:	N: 739822.95 E: 976270.18	**REFERENCE POINT:**	**ELEVATION:** / **DATUM/UNITS:**
DATUM/UNITS:	NAD83	TOC	19.54 NAD83



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study **DELIVERY ORDER NO:**

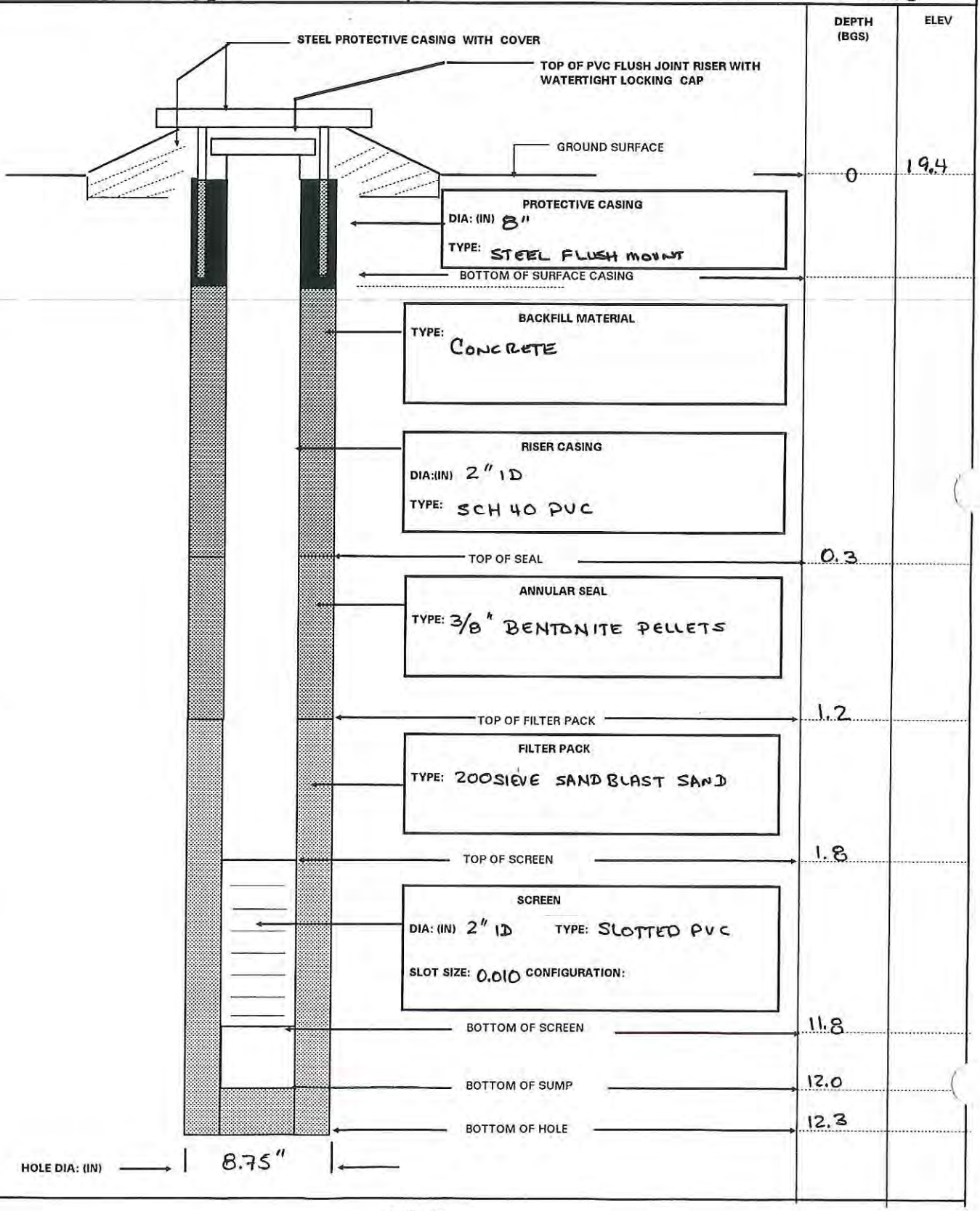
WELL NUMBER: AE-V2	**BEGIN:** 5/7/99	**END:** 5/7/99
COORDINATES: N: 739806.61 E: 976282.91	**REFERENCE POINT:** TOC	**ELEVATION:** 19.20
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF BLDG 728 PILOT STUDY **DELIVERY ORDER NO:**

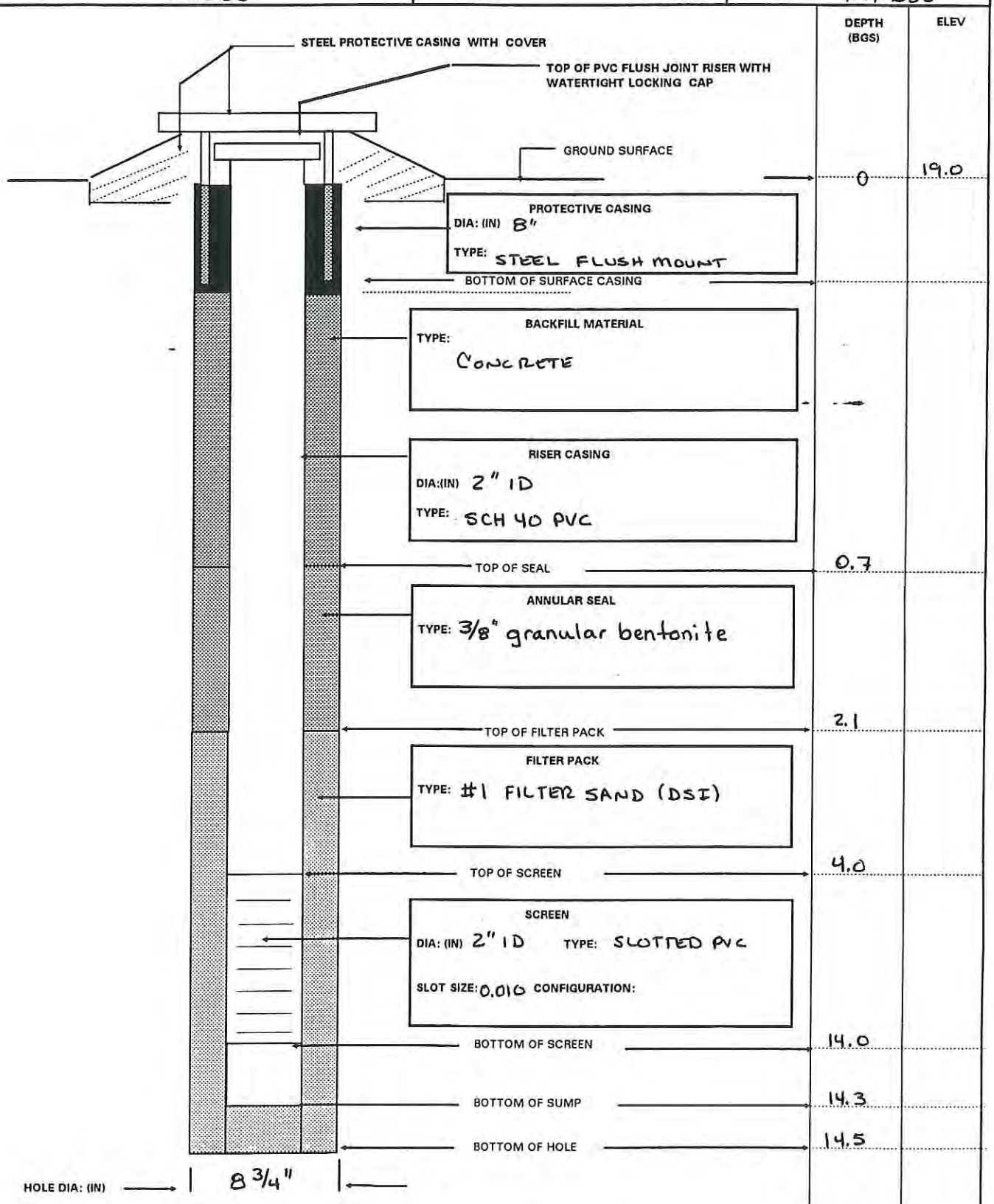
WELL NUMBER: VW-1	**BEGIN:** 5/9/99	**END:** 5/9/99
COORDINATES: N: 739818.57 E: 976268.30		
DATUM/UNITS: NAD83	**REFERENCE POINT:** TOC	**ELEVATION:** 19.29 **DATUM/UNITS:** NAD88



MONITORING WELL

PROJECT: HAAF BLDG 728 Pilot Study

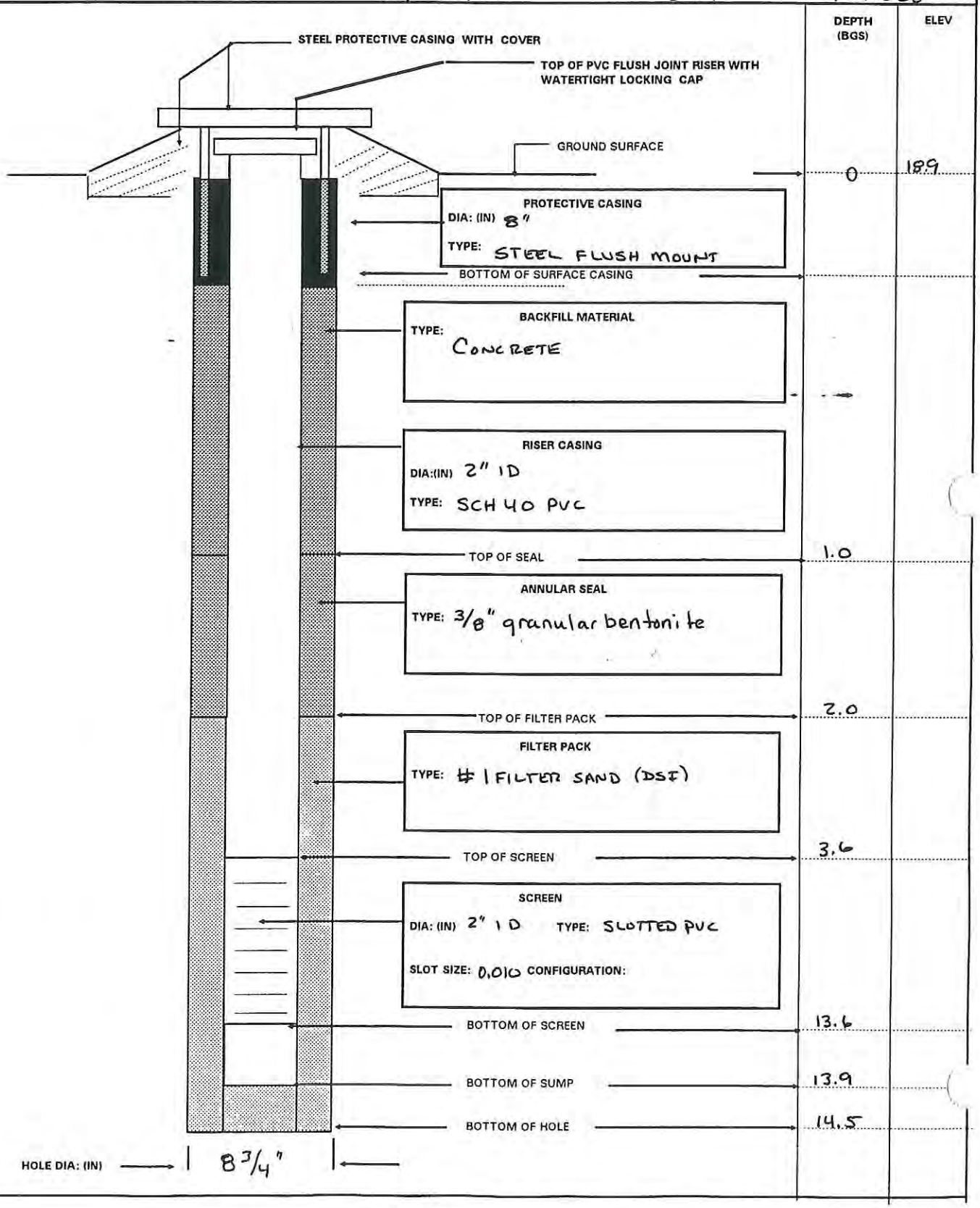
WELL NUMBER: MW8A	**BEGIN:** 6/2/99	**END:** 6/2/99
COORDINATES: N: 740034.10 E: 976071.08	**REFERENCE POINT:** TOC	**ELEVATION:** 18.67
DATUM/UNITS: NAD 83		**DATUM/UNITS:** NAVD83



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study

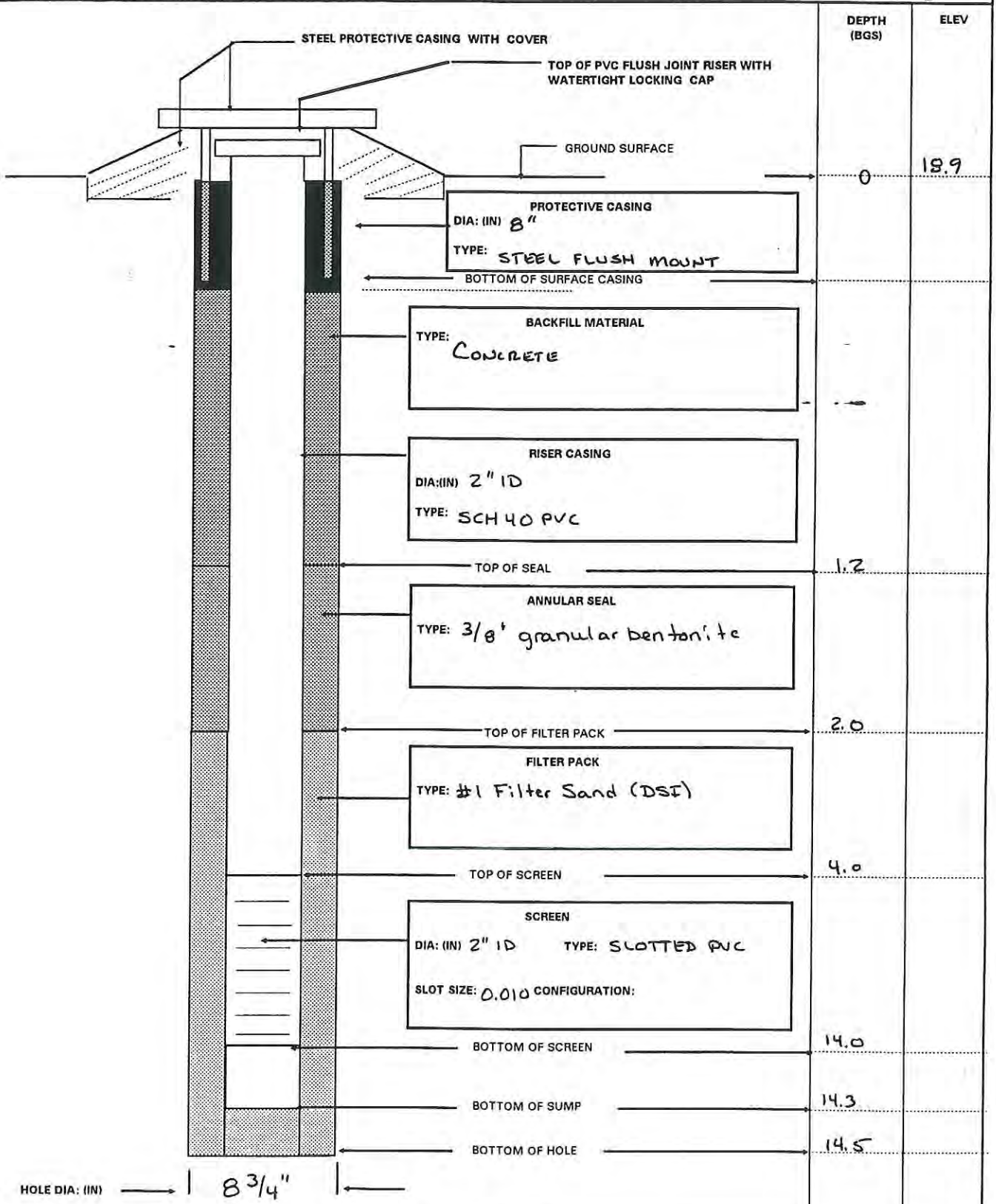
WELL NUMBER: PR-1	**BEGIN:** 6/2/99	**END:** 6/2/99
COORDINATES: N: 740026.22 E: 976090.39	**REFERENCE POINT:** TOC	**ELEVATION:** 18.64
DATUM/UNITS: NAD83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Bldg 728 Pilot Study

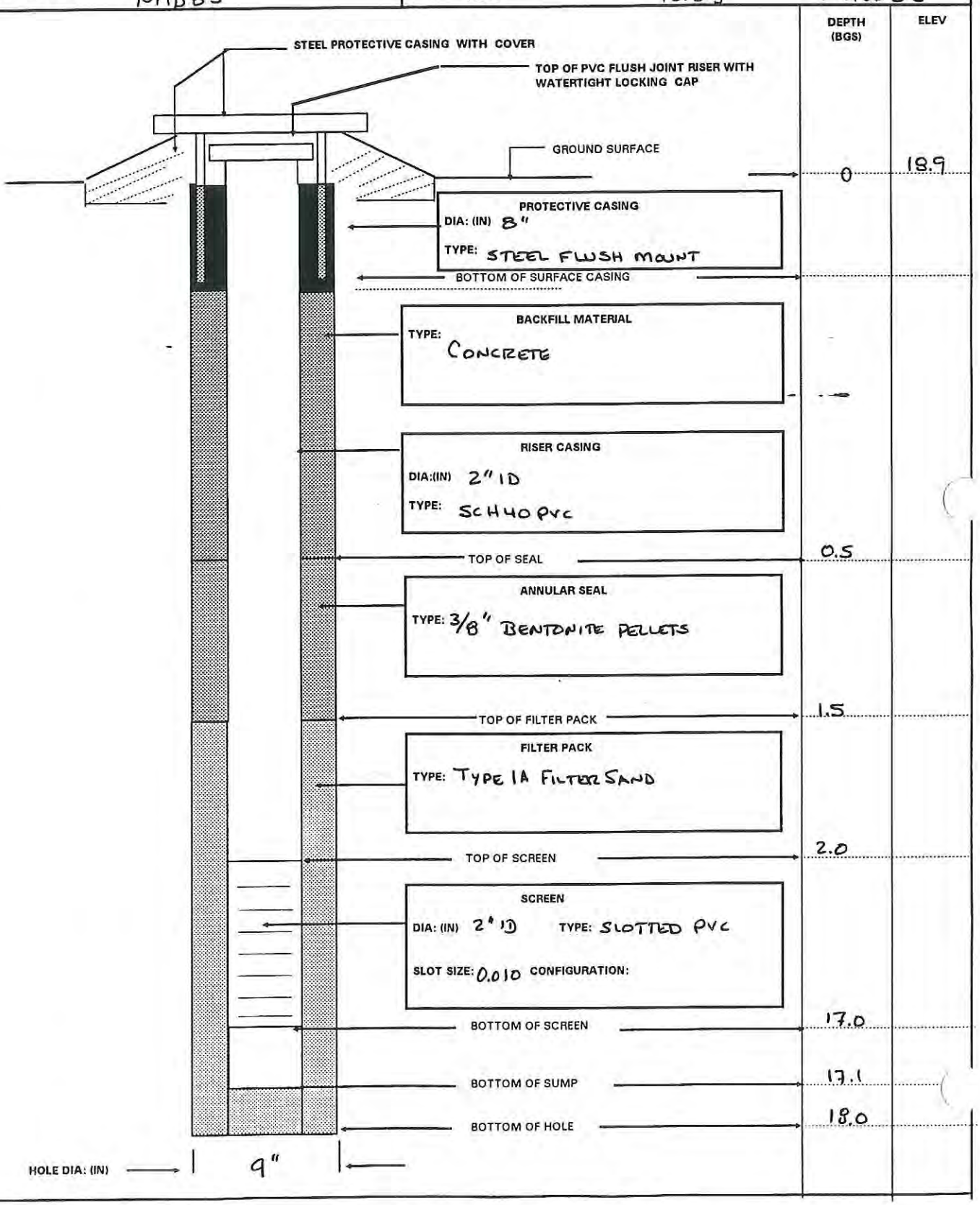
WELL NUMBER: PR-2	**BEGIN:** 6/2/99	**END:** 6/2/99
COORDINATES: N: 740008.71 E: 976055.87	**REFERENCE POINT:** TOC	**ELEVATION:** 18.54
DATUM/UNITS: NAD 83		**DATUM/UNITS:** NAVD88



MONITORING WELL

PROJECT: HAAF Building 728 Pilot Study

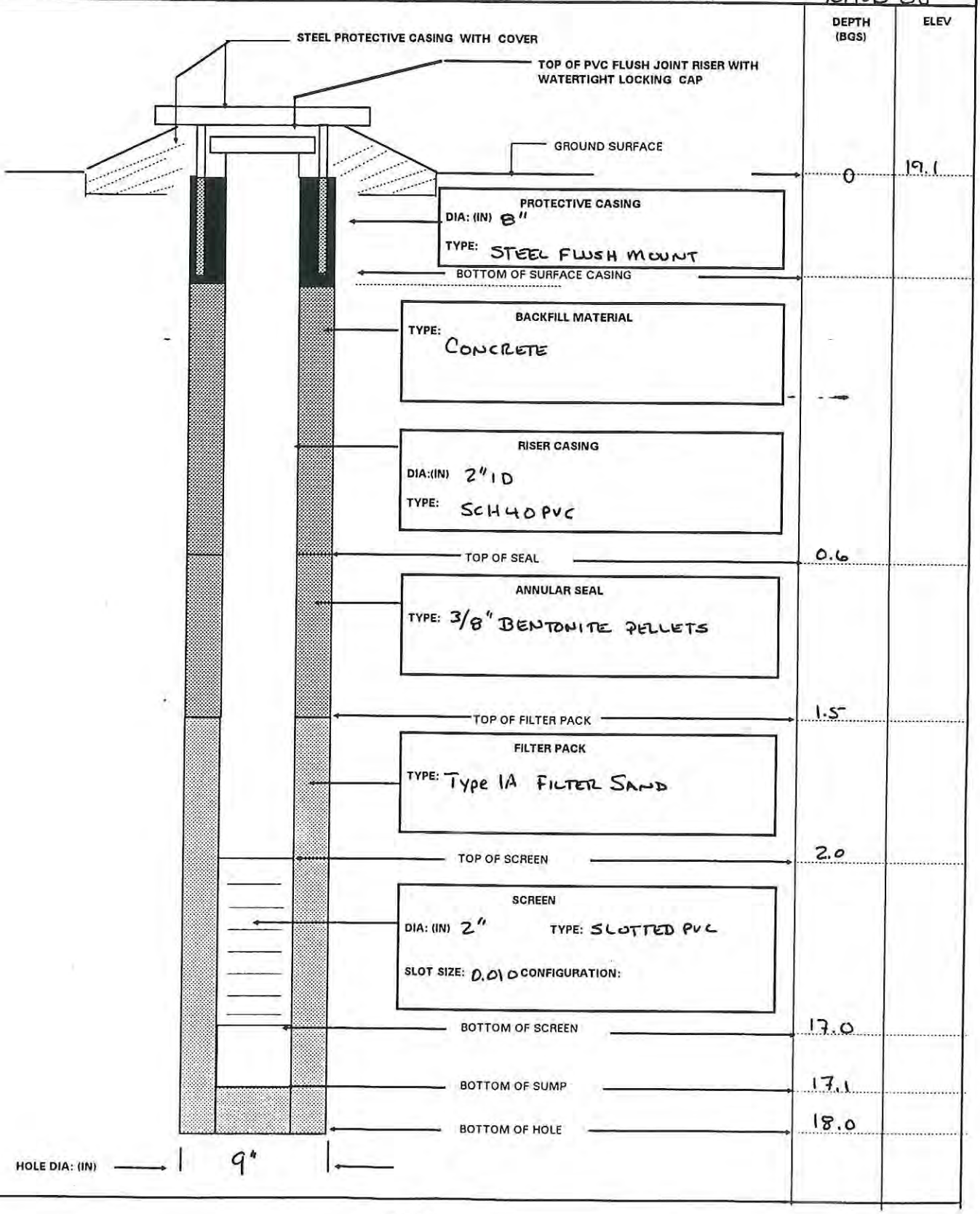
WELL NUMBER: PR-3	BEGIN: 10/9/99	END: 10/9/99
COORDINATES: N: 740000.94 E: 976026.62	REFERENCE POINT: TOC	ELEVATION: 18.69
DATUM/UNITS: NAD83		DATUM/UNITS: NAVD83



MONITORING WELL

PROJECT: HAAF Building 728 Pilot Study

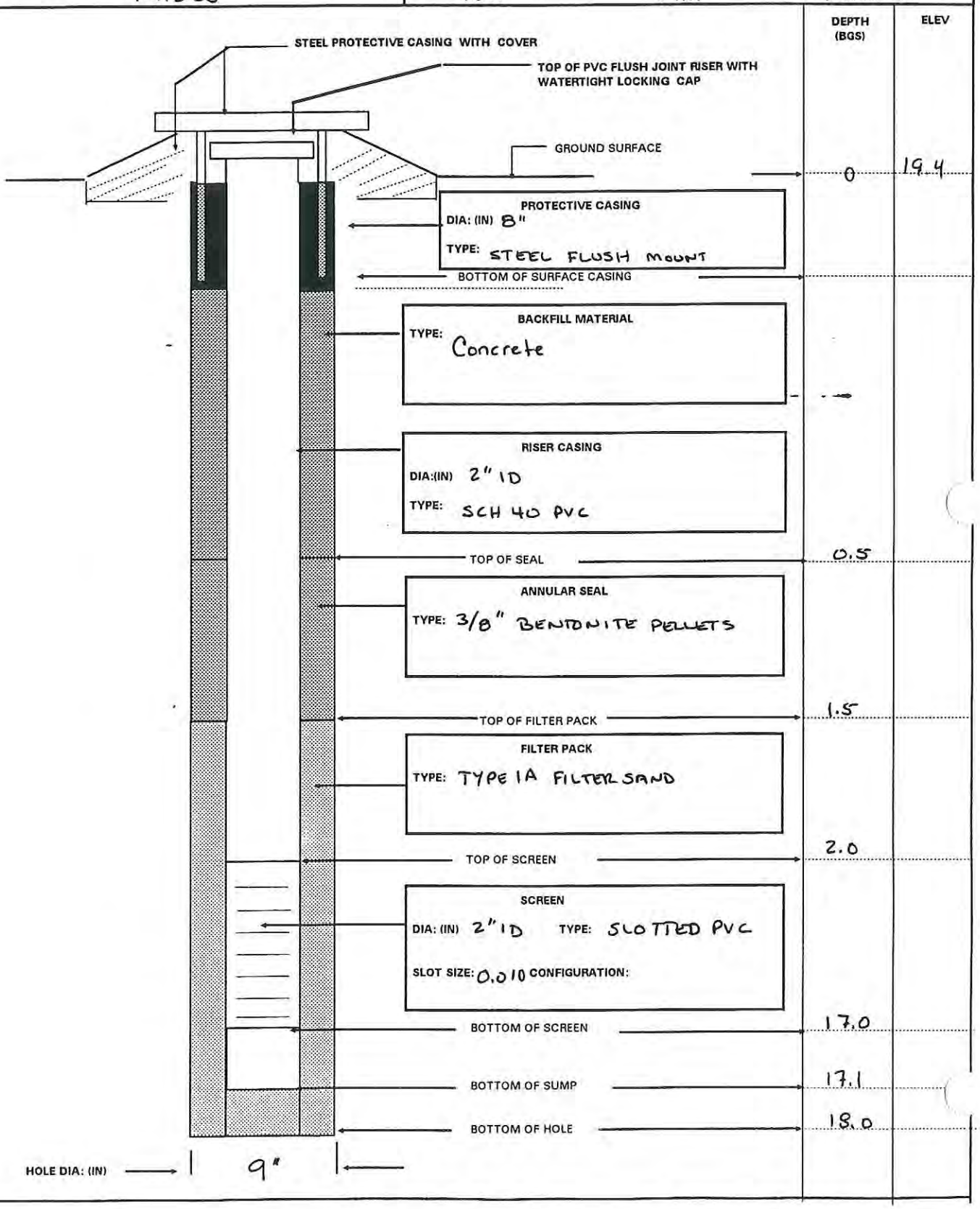
WELL NUMBER: PR-4	**BEGIN:** 10/9/99	**END:** 10/9/99
COORDINATES: N: 740020.46 E: 976024.53	**REFERENCE POINT:** TOC	**ELEVATION:** 19.01
DATUM/UNITS: NAD 83		**DATUM/UNITS:** NAVD 88



MONITORING WELL

PROJECT: HAAF Building 728 Pilot Study

WELL NUMBER: PR-S	**BEGIN:** 10/9/99	**END:** 10/9/99	
COORDINATES: N: 740036.19 E: 976042.98	**REFERENCE POINT:** TOC	**ELEVATION:** 19.11	**DATUM/UNITS:** NAVD 88
DATUM/UNITS: NAD 83			



APPENDIX VIII

GROUNDWATER LABORATORY RESULTS

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GROUNDWATER ANALYTICAL RESULTS
BASELINE SAMPLING

MAY 1999

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE0612

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) WATER Lab Sample ID: 9905399-07

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7K117

Level: (low/med) LOW Date Received: 05/12/99

% Moisture: not dec. _____ Date Analyzed: 05/24/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	benzene	2.1	-	U HOL
108-88-3	toluene	2.0	U	U
100-41-4	ethylbenzene	2.0	U	U
1330-20-7	xylenes (total)	3.0	U	U

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007W

Method Type: Total Metals

Sample ID: 9905340-08

Client ID: AE0612

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	79500	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007WF

Method Type: Total Metals

Sample ID: 9905340-09

Client ID: AE0612F

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	77300	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

DATA VALIDATION COPY

Client:	Science Applications International Corp. P.O. Box 2502 800 Oak Ridge Turnpike Oak Ridge, Tennessee 37831
Contact:	Ms. Leslie Barbour
Project Description:	Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 27, 1999

Sample ID	: AE0612
Lab ID	: 9905340-08
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
ALKALINITY		157 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1300	149096	1
CARBON DIOXIDE, FREE		286 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	2
SULFIDES	J	0.0230 U F01,F06	0.00900	0.100	mg/l	1.0	JBK	05/13/99	0630	148954	3
SULFATE		3.58 =	0.0380	0.200	mg/l	1.0	RWS	05/12/99	0027	148904	4
TOTAL DISSOLVED SOLIDS		382 =	5.04	10.0	mg/l	1.0	TSM2	05/14/99	1010	149107	5
NITRATE/NITRITE	J	0.0200 J U F01, F06 MCG 7-6-99	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	6

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 300.0
M 5	EPA 160.1
M 6	EPA 353.1

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999

Report Date: May 28, 1999

Sample ID	: AE0612
Lab ID	: 9905336-07
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Total Rec. Petro. Hydrocarbons	J	0.677	J	0.277	1.00	mg/l	1.0	AAT	05/26/99	1030	149963	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE1112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) WATER Lab Sample ID: 9905399-03

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7K120

Level: (low/med) LOW Date Received: 05/12/99

% Moisture: not dec. _____ Date Analyzed: 05/24/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	256	
108-88-3	toluene	21.1	
100-41-4	ethylbenzene	32.1	
1330-20-7	xylenes (total)	197	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AE1112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) Lab Sample ID: 9905399-03

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 038B3801

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 60.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	4680	B	J D08, F06

FORM I VOA

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007W

Method Type: Total Metals

Sample ID: 9905340-12		Client ID: AE1112	
Contract: SAIC00999	Lab Code: GEL	Case No.:	SAS No.:
Matrix: WATER	Date Received: 5/11/99	Level: LOW	
% Solids: 0.00			

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	2870	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: **Clarity Before:** **Texture:**

Color After: **Clarity After:** **Artifacts:**

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007WF

Method Type: Total Metals

Sample ID: 9905340-13

Client ID: AE1112F

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	2680	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 27, 1999

Sample ID : AE1112
Lab ID : 9905340-12
Matrix : Water
Date Collected : 05/10/99
Date Received : 05/11/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
CARBON DIOXIDE, FREE		95.0	=	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	1
SULFIDES		0.900	=	0.0450	0.500	mg/l	5.0	JBK	05/13/99	0630	148954	2
SULFATE		4.70	=	0.0380	0.200	mg/l	1.0	RWS	05/12/99	0121	148904	3
TOTAL DISSOLVED SOLIDS		55.0	=	5.04	10.0	mg/l	1.0	TSM2	05/14/99	1010	149107	4
NITRATE/NITRITE	J	0.0200	J U Fo1,Fo6	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	5

MCG 5/26-99

M = Method	Method-Description
M 1	SM 18th ed. 4500-CO2
M 2	EPA 376.2
M 3	EPA 300.0
M 4	EPA 160.1
M 5	EPA 353.1

Notes:
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 28, 1999

Sample ID	: AE1112
Lab ID	: 9905336-10
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons	J	0.354 J	0.277	1.00	mg/l	1.0	AAT	05/26/99	1030	149963	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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Reviewed By

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DUPLICATE

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE1114

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) WATER Lab Sample ID: 9905399-09

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7K125

Level: (low/med) LOW Date Received: 05/12/99

% Moisture: not dec. _____ Date Analyzed: 05/24/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	276	
108-88-3	toluene	23.4	
100-41-4	ethylbenzene	40.1	
1330-20-7	xylenes (total)	230	

Form 1: Inorganic Analyses Data Sheet

DUPLICATE

SDG No.: HPS007W

Method Type: Total Metals

Sample ID: 9905340-05

Client ID: AE11184 KA01499

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	2880	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Client:	Science Applications International Corp. P.O. Box 2502 800 Oak Ridge Turnpike Oak Ridge, Tennessee 37831
Contact:	Ms. Leslie Barbour
Project Description:	Remdial Design and Pilot Study, Former Bldg. 728

DUPLICATE

cc: SAIC00999 Report Date: May 27, 1999

Sample ID	: AE11164 WP 6499
Lab ID	: 9905340-05
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
SULFIDES		6.96 =	0.180	2.00	mg/l	20.	JBK	05/13/99	0630	148954	1
SULFATE		4.53 =	0.0380	0.200	mg/l	1.0	RWS	05/12/99	0001	148904	2
NITRATE/NITRITE	J	0.0300 J L1 Fol, Fcl mcc 7-6-99	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	3

M = Method	Method-Description
M 1	EPA 376.2
M 2	EPA 300.0
M 3	EPA 353.1

Notes:
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This data report has been prepared and reviewed
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standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

70

Client:	Science Applications International Corp. P.O. Box 2502 800 Oak Ridge Turnpike Oak Ridge, Tennessee 37831
Contact:	Ms. Leslie Barbour
Project Description:	Remdial Design and Pilot Smdy, Former Bldg. 728

DUPLICATE

cc: SAIC00999

Report Date: May 28, 1999

Sample ID	: AE111
Lab ID	: 9905336-09
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons	J	0.283 J	0.277	1.00	mg/l	1.0	AAT	05/26/99	1030	149963	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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Reviewed By

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE6012

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) WATER Lab Sample ID: 9905399-05

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7K122

Level: (low/med) LOW Date Received: 05/12/99

% Moisture: not dec. _____ Date Analyzed: 05/24/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 20.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	1610	
108-88-3	toluene	122	
100-41-4	ethylbenzene	300	
1330-20-7	xylenes (total)	1330	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AE6012

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) Lab Sample ID: 9905399-05

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 015B1501

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/21/99

Injection Volume: 1.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	19600	B	J D08, F08

FORM I VOA

Form 1: Inorganic Analyses Data Sheet

DG No.: HPS007W — **Method Type:** Total Metals

Sample ID: 9905340-06 — **Client ID:** AE6012

Contract: SAIC00999 — **Lab Code:** GEL — **Case No.:** — **SAS No.:**

Matrix: WATER — **Date Received:** 5/11/99 — **Level:** LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	23300	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: — **Clarity Before:** — **Texture:**

Color After: — **Clarity After:** — **Artifacts:**

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007WF

Method Type: Total Metals

Sample ID: 9905340-07

Client ID: AE6012F

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	23100	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 27, 1999

Sample ID : AE6012
Lab ID : 9905340-06
Matrix : Water
Date Collected : 05/10/99
Date Received : 05/11/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
ALKALINITY		143 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1300	149096	1
CARBON DIOXIDE, FREE		222 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	2
SULFIDES		0.257 =	0.00900	0.100	mg/l	1.0	JBK	05/13/99	0630	148954	3
SULFATE	U	0.00 U	0.0380	0.200	mg/l	1.0	RWS	05/12/99	0014	148904	4
TOTAL DISSOLVED SOLIDS		204 =	5.04	10.0	mg/l	1.0	TSM2	05/14/99	1010	149107	5
NITRATE/NITRITE	J	0.0300 J U for, for	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	6

MCG 7-6-99

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 300.0
M 5	EPA 160.1
M 6	EPA 353.1

Notes:
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Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999

Report Date: May 28, 1999

Sample ID	: AE6012
Lab ID	: 9905336-12
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Total Rec. Petro. Hydrocarbons		2.26	=	0.277	1.00	mg/l	1.0	AAT	05/26/99	1030	149963	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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standard operating procedures. Please direct
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Reviewed By

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE6112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) WATER Lab Sample ID: 9905399-04

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7K121

Level: (low/med) LOW Date Received: 05/12/99

% Moisture: not dec. _____ Date Analyzed: 05/24/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 10.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	612	
108-88-3	toluene	15.0	J
100-41-4	ethylbenzene	121	
1330-20-7	xylenes (total)	465	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AE6112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) Lab Sample ID: 9905399-04

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 007B0701

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/21/99

Injection Volume: 1.0(uL) Dilution Factor: 250.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-82-8	Methane	12900	B

J D08, FD8

FORM I VOA

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Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007W

Method Type: Total Metals

Sample ID: 9905340-01

Client ID: AE6112

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	20500	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007WF

Method Type: Total Metals

Sample ID: 9905340-02

Client ID: AE6112F

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	22000	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 27, 1999

Sample ID	: AE6112
Lab ID	: 9905340-01
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
ALKALINITY		46.9 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1300	149096	1
CARBON DIOXIDE, FREE		115 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	2
SULFIDES		0.592 =	0.00900	0.100	mg/l	1.0	JBK	05/13/99	0630	148954	3
SULFATE		1.13 =	0.0380	0.200	mg/l	1.0	RWS	05/11/99	2307	148904	4
TOTAL DISSOLVED SOLIDS		122 =	5.04	10.0	mg/l	1.0	TSM2	05/14/99	1010	149107	5
NITRATE/NITRITE	J	0.0200 J u Fal/FU6 mcc 7-6-99	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	6

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 300.0
M 5	EPA 160.1
M 6	EPA 353.1

Notes:
The qualifiers in this report are defined as follows:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 28, 1999

Sample ID	: AE6112
Lab ID	: 9905336-02
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons	J	0.886 J A05	0.277	1.00	mg/l	1.0	AAT	05/26/99	1030	149963	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE6312

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) WATER Lab Sample ID: 9905399-10

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7K126

Level: (low/med) LOW Date Received: 05/12/99

% Moisture: not dec. _____ Date Analyzed: 05/24/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 20.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	1310	
108-88-3	toluene	113	
100-41-4	ethylbenzene	154	
1330-20-7	xylenes (total)	710	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AE6312

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) Lab Sample ID: 9905399-10

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 052B5201

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	19500	B	J D08, F08

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007W

Method Type: Total Metals

Sample ID: 9905340-03

Client ID: AE6312

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	11200	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007WF

Method Type: Total Metals

Sample ID: 9905340-04

Client ID: AE6312F

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	10800	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 27, 1999

Sample ID	: AE6312
Lab ID	: 9905340-03
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
ALKALINITY		65.3 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1300	149096	1
CARBON DIOXIDE, FREE		189 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	2
SULFIDES	J	0.305 J	0.0450	0.500	mg/l	5.0	JBK	05/13/99	0630	148954	3
SULFATE		0.837 =	0.0380	0.200	mg/l	1.0	RWS	05/11/99	2347	148904	4
TOTAL DISSOLVED SOLIDS		117 =	5.04	10.0	mg/l	1.0	TSM2	05/14/99	1010	149107	5
NITRATE/NITRITE	J	0.0300 J U FQ1,FQ6	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	6

JCG 7-1-99

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 300.0
M 5	EPA 160.1
M 6	EPA 353.1

Notes:
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U indicates that the analyte was not detected at a concentration greater than the detection limit.
" indicates that a quality control analyte recovery is outside of specified acceptance criteria.

DATA VALIDATION COPY

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999

Report Date: May 28, 1999

Sample ID	: AE6312
Lab ID	: 9905336-11
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Total Rec. Petro. Hydrocarbons		2.12	=	0.277	1.00	mg/l	1.0	AAT	05/26/99	1030	149963	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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Reviewed By

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AE6412

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) WATER Lab Sample ID: 9905399-01

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7K119

Level: (low/med) LOW Date Received: 05/12/99

% Moisture: not dec. _____ Date Analyzed: 05/24/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	107	
108-88-3	toluene	170	
100-41-4	ethylbenzene	73.3	
1330-20-7	xylenes (total)	706	

FORM I VOA OLM03.0

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AE6412

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) Lab Sample ID: 9905399-01

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 037B3701

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 60.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	4250	B	J DOB, FOS

FORM I VOA

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS010W

Method Type: Total Metals

Sample ID: 9905399-01		Client ID: AE6412	
Contract: SAIC00999	Lab Code: GEL	Case No.:	SAS No.:
Matrix: WATER	Date Received: 5/12/99	Level: LOW	
% Solids: 0.00			

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	2340	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:

DATA VALIDATION COPY

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS010W

Method Type: Total Metals

Sample ID: 9905399-02

Client ID: AE6412F

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/12/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	2190	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999

Report Date: June 03, 1999

Sample ID	: AE6412
Lab ID	: 9905399-01
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/12/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
ALKALINITY		61.2	0.500	1.00	mg/l	1.0	JBK	05/14/99	1300	149096	1
CARBON DIOXIDE, FREE		256	0.500	1.00	mg/l	1.0	JBK	05/17/99	1600	149346	2
SULFIDES		2.06	0.0900	1.00	mg/l	10.	JBK	05/14/99	1600	149311	3
SULFATE		2.63	0.0380	0.200	mg/l	1.0	RWS	05/21/99	0310	149576	4
TOTAL DISSOLVED SOLIDS		78.0	5.04	10.0	mg/l	1.0	TSM2	05/14/99	1016	149108	5
NITRATE/NITRITE	J	0.0200U F01, F06	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	6

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 300.0
M 5	EPA 160.1
M 6	EPA 353.1

Notes:
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9905399-01

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DATA VALIDATION

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999

Report Date: May 28, 1999

Sample ID : AE6412
Lab ID : 9905336-01
Matrix : Water
Date Collected : 05/10/99
Date Received : 05/11/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Total Rec. Petro. Hydrocarbons	J	0.461	J	0.277	1.00	mg/l	1.0	AAT	05/26/99	1030	149963	1

M = Method	Method-Description
M 1	EPA 418.1

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Reviewed By

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) WATER Lab Sample ID: 9905399-11

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7K127

Level: (low/med) LOW Date Received: 05/12/99

% Moisture: not dec. _____ Date Analyzed: 05/24/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 20.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	1460	
108-88-3	toluene	111	
100-41-4	ethylbenzene	284	
1330-20-7	xylenes (total)	725	

FORM I VOA OLM03.0

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AED112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) Lab Sample ID: 9905399-11

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 053B5301

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 400.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	29800	B	J DD8, FD8

FORM I VOA

Form 1: Inorganic Analyses Data Sheet

G No.: HPS007W

Method Type: Total Metals

Sample ID: 9905340-14

Client ID: AED112

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	51800	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HFS007WF

Method Type: Total Metals

Sample ID: 9905340-15

Client ID: AED112F

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	49400	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 27, 1999

Sample ID : AED112
Lab ID : 9905340-14
Matrix : Water
Date Collected : 05/10/99
Date Received : 05/11/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
ALKALINITY		169 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1300	149096	1
CARBON DIOXIDE, FREE		195 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	2
SULFIDES	J	0.0330 J	0.00900	0.100	mg/l	1.0	JBK	05/13/99	0630	148954	3
SULFATE	J	0.132 U F01,F06	0.0380	0.200	mg/l	1.0	RWS	05/12/99	0134	148904	4
TOTAL DISSOLVED SOLIDS		280 =	5.04	10.0	mg/l	1.0	TSM2	05/14/99	1010	149107	5
NITRATE/NITRITE	J	0.0200 J U F01,F06	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	6

mcc 7-6-99

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 300.0
M 5	EPA 160.1
M 6	EPA 353.1

Notes:
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Client:	Science Applications International Corp. P.O. Box 2502 800 Oak Ridge Turnpike Oak Ridge, Tennessee 37831
Contact:	Ms. Leslie Barbour
Project Description:	Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 28, 1999

Sample ID	: AED112
Lab ID	: 9905336-03
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Total Rec. Petro. Hydrocarbons		1.43	=	0.277	1.00	mg/l	1.0	AAT	05/26/99	1030	149963	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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Reviewed By

16

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED312

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) WATER Lab Sample ID: 9905399-13

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7K129

Level: (low/med) LOW Date Received: 05/12/99

% Moisture: not dec. _____ Date Analyzed: 05/24/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 25.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	2580	E
108-88-3	toluene	853	"
100-41-4	ethylbenzene	521	"
1330-20-7	xylenes (total)	1480	"

MD7

FORM I VOA OLM03.0

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AED312

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) Lab Sample ID: 9905399-13

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 059B5901

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 500.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	26900	B	J D08, F08

FORM I VOA

95

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007W

Method Type: Total Metals

Sample ID: 9905340-20

Client ID: AED312

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	74300	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007WF

Method Type: Total Metals

Sample ID: 9905340-21

Client ID: AED312F

Contract: SAIC00999

Lab Code: GEL

Case No.:

SAS No.:

Matrix: WATER

Date Received: 5/11/99

Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	45200	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990516-1

Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:

25

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 27, 1999

Sample ID : AED312
Lab ID : 9905340-20
Matrix : Water
Date Collected : 05/10/99
Date Received : 05/11/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
ALKALINITY		51.0 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1300	149096	1
CARBON DIOXIDE, FREE		151 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	2
SULFIDES	J	0.0260 U F01, F06	0.00900	0.100	mg/l	1.0	JBK	05/13/99	0630	148954	3
SULFATE	U	0.00 U	0.0380	0.200	mg/l	1.0	RWS	05/12/99	0214	148904	4
TOTAL DISSOLVED SOLIDS		192 =	5.04	10.0	mg/l	1.0	TSM2	05/14/99	1010	149107	5
NITRATE/NITRITE		0.0500 U F01, F07	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	6

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 300.0
M 5	EPA 160.1
M 6	EPA 353.1

Notes:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

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Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999

Report Date: May 28, 1999

Sample ID	: AED312
Lab ID	: 9905336-06
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Total Rec. Petro. Hydrocarbons		2.70	=	0.277	1.00	mg/l	1.0	AAT	05/26/99	1030	149963	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED412

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) WATER Lab Sample ID: 9905399-08

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7K124

Level: (low/med) LOW Date Received: 05/12/99

% Moisture: not dec. _____ Date Analyzed: 05/24/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	288	
108-88-3	toluene	76.4	
100-41-4	ethylbenzene	89.5	
1330-20-7	xylenes (total)	211	

FORM I VOA OLM03.0

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AED412

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) Lab Sample ID: 9905399-08

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 051B5101

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	15000	B	J D08, F08

FORM I VOA

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007W

Method Type: Total Metals

Sample ID: 9905340-10

Client ID: AED412

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	58800	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007WF

Method Type: Total Metals

Sample ID: 9905340-11

Client ID: AED412F

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	49100	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 27, 1999

Sample ID : AED412
Lab ID : 9905340-10
Matrix : Water
Date Collected : 05/10/99
Date Received : 05/11/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
ALKALINITY		79.6	=	0.500	1.00	mg/l	1.0	JBK	05/21/99	0800	149604	1
CARBON DIOXIDE, FREE		155	=	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	2
SULFIDES	J	0.0440	J	0.00900	0.100	mg/l	1.0	JBK	05/13/99	0630	148954	3
SULFATE		0.432	=	0.0380	0.200	mg/l	1.0	RWS	05/12/99	0108	148904	4
TOTAL DISSOLVED SOLIDS		168	=	5.04	10.0	mg/l	1.0	TSM2	05/14/99	1010	149107	5
NITRATE/NITRITE	J	0.0300	J U Fol, Fol	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	6

MCG 5-6-99

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 300.0
M 5	EPA 160.1
M 6	EPA 353.1

Notes:
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Client:	Science Applications International Corp. P.O. Box 2502 800 Oak Ridge Turnpike Oak Ridge, Tennessee 37831
Contact:	Ms. Leslie Barbour
Project Description:	Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 28, 1999

Sample ID	: AED412
Lab ID	: 9905336-04
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Total Rec. Petro. Hydrocarbons		1.49	=	0.277	1.00	mg/l	1.0	AAT	05/26/99	1030	149963	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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Reviewed By

DUPLICATE

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AED414

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) WATER Lab Sample ID: 9905399-06

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7K123

Level: (low/med) LOW Date Received: 05/12/99

% Moisture: not dec. _____ Date Analyzed: 05/24/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	292	
108-88-3	toluene	74.6	
100-41-4	ethylbenzene	89.9	
1330-20-7	xylenes (total)	202	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

DUPLICATE
SAIC SAMPLE NO.

AED414

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) Lab Sample ID: 9905399-06

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 04984901

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	17600	B	J D08, F01

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007W

Method Type: Total Metals

DUPLICATE

Sample ID: 9905340-18

Client ID: AED414

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	58400	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007WF | Method Type: Total Metals | DUPLICATE

Sample ID: 9905340-19 | Client ID: AED414F

Contract: SAIC00999 | Lab Code: GEL | Case No.: | SAS No.:

Matrix: WATER | Date Received: 5/11/99 | Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	56800	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: | Clarity Before: | Texture:

Color After: | Clarity After: | Artifacts:

Comments:

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Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

DUPLICATE

cc: SAIC00999 Report Date: May 27, 1999

Sample ID : AED414
Lab ID : 9905340-18
Matrix : Water
Date Collected : 05/10/99
Date Received : 05/11/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
ALKALINITY		77.5 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1300	149096	1
CARBON DIOXIDE, FREE		200 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	2
SULFIDES	J	0.0250 U FQ1, FQ2	0.00900	0.100	mg/l	1.0	JBK	05/13/99	0630	148954	3
SULFATE		0.480 =	0.0380	0.200	mg/l	1.0	RWS	05/12/99	0201	148904	4
TOTAL DISSOLVED SOLIDS		184 =	5.04	10.0	mg/l	1.0	TSM2	05/14/99	1010	149107	5
NITRATE/NITRITE	J	0.0300 ~~J~~ U FQ1, FQ2	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	6

MCG 7-6-99

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 300.0
M 5	EPA 160.1
M 6	EPA 353.1

Notes:
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Contact:	Ms. Leslie Barbour
Project Description:	Remdial Design and Pilot Study, Former Bldg. 728

DUPLICATE

cc: SAIC00999 Report Date: May 28, 1999 Page 1 of 1

Sample ID	: AED414
Lab ID	: 9905336-05
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Total Rec. Petro. Hydrocarbons		1.81	=	0.277	1.00	mg/l	1.0	AAT	05/26/99	1030	149963	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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Reviewed By

18

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEDMI2 ~~2~~ 1(1)

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) WATER Lab Sample ID: 9905399-12

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 7K131

Level: (low/med) LOW Date Received: 05/12/99

% Moisture: not dec. _____ Date Analyzed: 05/24/99

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: 5.0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
71-43-2	benzene	251 ~~239~~	E D	=
108-88-3	toluene	8.3		U GDL
100-41-4	ethylbenzene	784 ~~706~~	E D	=
1330-20-7	xylenes (total)	2340 ~~1610~~	E D	=

MAP 6/27/99

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AEDM12 2 X5

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS010W

Matrix: (soil/water) Lab Sample ID: 9905399-12

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 054B5401

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: ______ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	10800	B	J D08, F08

FORM I VOA

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007W

Method Type: Total Metals

Sample ID: 9905340-16

Client ID: AEDMEZ 12 KA 4499

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	88800	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS007WF

Method Type: Total Metals

Sample ID: 9905340-17

Client ID: AEDM~~ZF~~ ICP 4-9-99

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/11/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	49300	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990526-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 27, 1999

Sample ID : AEDM[illegible]
Lab ID : 9905340-16
Matrix : Water
Date Collected : 05/10/99
Date Received : 05/11/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
ALKALINITY		63.2	=	0.500	1.00	mg/l	1.0	JBK	05/14/99	1300	149096	1
CARBON DIOXIDE, FREE		333	=	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	2
SULFIDES	J	0.0530	J	0.00900	0.100	mg/l	1.0	JBK	05/13/99	0630	148954	3
SULFATE		34.0	=	0.0380	0.200	mg/l	1.0	RWS	05/12/99	0148	148904	4
TOTAL DISSOLVED SOLIDS		346	=	5.04	10.0	mg/l	1.0	TSM2	05/14/99	1010	149107	5
NITRATE/NITRITE	J	0.0400	J U Fol, Foc	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	6

MCG 7-6-99

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 300.0
M 5	EPA 160.1
M 6	EPA 353.1

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Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999

Report Date: May 28, 1999

Sample ID	: AEDM12
Lab ID	: 9905336-08
Matrix	: Water
Date Collected	: 05/10/99
Date Received	: 05/11/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Total Rec. Petro. Hydrocarbons		2.84	=	0.277	1.00	mg/l	1.0	AAT	05/26/99	1030	149963	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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Reviewed By

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) WATER Lab Sample ID: 9905244-01

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8J510

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. _____ Date Analyzed: 05/21/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 50.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	1890	
108-88-3	toluene	2390	
100-41-4	ethylbenzene	344	
1330-20-7	xylenes (total)	2100	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AEP112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) Lab Sample ID: 9905244-01

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 011B1101

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	5480	B	J D08, F08

FORM I VOA

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS004W

Method Type: Total Metals

Sample ID: 9905244-01

Client ID: AEP112

Contract: SAIC00999 **Lab Code:** GEL **Case No.:** **SAS No.:**

Matrix: WATER **Date Received:** 5/8/99 **Level:** LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	26400	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990517-1

Color Before: **Clarity Before:** **Texture:**

Color After: **Clarity After:** **Artifacts:**

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS004W **Method Type:** Total Metals

Sample ID: 9905244-02 **Client ID:** AEP112F

Contract: SAIC00999 **Lab Code:** GEL **Case No.:** **SAS No.:**

Matrix: WATER **Date Received:** 5/8/99 **Level:** LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	3880	µg/L			P	8.4	TJA61 Trace2 ICPAES	990517-1

Color Before: **Clarity Before:** **Texture:**

Color After: **Clarity After:** **Artifacts:**

Comments:

DATA VALIDATION COPY

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 26, 1999

Sample ID : AEP112
Lab ID : 9905244-01
Matrix : Water
Date Collected : 05/07/99
Date Received : 05/08/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
CARBON DIOXIDE, FREE		800 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	1
SULFIDES		1.81 =	0.0450	0.500	mg/l	5.0	JBK	05/13/99	0630	148954	2
SULFATE		1.16 =	0.0380	0.200	mg/l	1.0	RWS	05/10/99	1348	148743	3
NITRATE/NITRITE	U	0.00 U	0.00860	0.0500	mg/l	1.0	THL	05/17/99	1818	149309	4

M = Method	Method-Description
M 1	SM 18th ed. 4500-CO2
M 2	EPA 376.2
M 3	EPA 300.0
M 4	EPA 353.1

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
= indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 26, 1999 Page 1 of 1

Sample ID	: AEP112
Lab ID	: 9905244-17
Matrix	: Water
Date Collected	: 05/07/99
Date Received	: 05/08/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Total Rec. Petro. Hydrocarbons		2.44	=	0.277	1.00	mg/l	1.0	AAT	05/21/99	2100	149713	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

9905244-17

261

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP212

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) WATER Lab Sample ID: 9905244-03

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8J440

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. _____ Date Analyzed: 05/21/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 50.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	2510	
108-88-3	toluene	2070	
100-41-4	ethylbenzene	447	
1330-20-7	xylenes (total)	1980	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AEP212

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) Lab Sample ID: 9905244-03

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 031B3101

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 300.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	17700	B	J D08, F08

FORM I VOA

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS004W

Method Type: Total Metals

Sample ID: 9905244-03

Client ID: AEP212

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/8/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	14400	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990517-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS004W

Method Type: Total Metals

Sample ID: 9905244-04

Client ID: AEP212F

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/8/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	10500	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990517-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

DATA VALIDATION COPY

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 26, 1999

Sample ID	: AEP212
Lab ID	: 9905244-03
Matrix	: Water
Date Collected	: 05/07/99
Date Received	: 05/08/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
ALKALINITY		39.0 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1300	149096	1
CARBON DIOXIDE, FREE		236 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	2
SULFIDES		0.536 =	0.00900	0.100	mg/l	1.0	JBK	05/13/99	0630	148954	3
SULFATE		0.518 =	0.0380	0.200	mg/l	1.0	RWS	05/10/99	1428	148743	4
NITRATE/NITRITE		0.110 =	0.00860	0.0500	mg/l	1.0	THL	05/17/99	1818	149309	5

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 300.0
M 5	EPA 353.1

Notes:
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999

Report Date: May 26, 1999

Sample ID	: AEP212
Lab ID	: 9905244-16
Matrix	: Water
Date Collected	: 05/07/99
Date Received	: 05/08/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Total Rec. Petro. Hydrocarbons		4.80	=	0.277	1.00	mg/l	1.0	AAT	05/21/99	2100	149713	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
The qualifiers in this report are defined as follows:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
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* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

DUPLICATE

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP214

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) WATER Lab Sample ID: 9905244-05

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8J441

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. _____ Date Analyzed: 05/21/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 50.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	2100	
108-88-3	toluene	1420	
100-41-4	ethylbenzene	309	
1330-20-7	xylenes (total)	1340	

DUPLICATE

SAIC SAMPLE NO.

AEP214

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) Lab Sample ID: 9905244-05

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 032B3201

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	15800	B	J D08, F08

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS004W

Method Type: Total Metals

DUPLICATE

Sample ID: 9905244-05

Client ID: AEP214

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/8/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	18800	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990517-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

DUPLICATE

SDG No.: HPS004W

Method Type: Total Metals

Sample ID: 9905244-06

Client ID: AEP214F

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/8/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	8230	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990517-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

DUPLICATE

DATA VALIDATION COPY

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 26, 1999

Sample ID	: AEP214
Lab ID	: 9905244-05
Matrix	: Water
Date Collected	: 05/07/99
Date Received	: 05/08/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
CARBON DIOXIDE, FREE		207 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	1
SULFIDES		0.945 =	0.0450	0.500	mg/l	5.0	JBK	05/13/99	0630	148954	2
SULFATE		0.391 =	0.0380	0.200	mg/l	1.0	RWS	05/10/99	1442	148743	3
NITRATE/NITRITE	J	0.0100 J	0.00860	0.0500	mg/l	1.0	THL	05/17/99	1818	149309	4

M = Method	Method-Description
M 1	SM 18th ed. 4500-CO2
M 2	EPA 376.2
M 3	EPA 300.0
M 4	EPA 353.1

Notes:
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Reviewed By

DUPLICATE

DATA VALIDATION
C.J.Y

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999

Report Date: May 26, 1999

Sample ID	: AEP214
Lab ID	: 9905244-14
Matrix	: Water
Date Collected	: 05/07/99
Date Received	: 05/08/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons		4.01 =	0.277	1.00	mg/l	1.0	AAT	05/21/99	2100	149713	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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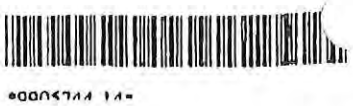
Reviewed By



1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP312

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) WATER Lab Sample ID: 9905244-07

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8J442

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. _____ Date Analyzed: 05/21/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 50.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	2600	
108-88-3	toluene	4250	
100-41-4	ethylbenzene	578	
1330-20-7	xylenes (total)	3360	

FORM I VOA OLM03.0

FORM I
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AEP312

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) Lab Sample ID: 9905244-07

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 033B3301

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	9820	B	J D08,F08

FORM I VOA

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS004W

Method Type: Total Metals

Sample ID: 9905244-07

Client ID: AEP312

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/8/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	79500	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990517-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS004W

Method Type: Total Metals

Sample ID: 9905244-08

Client ID: AEP312F

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/8/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	3560	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990517-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

DATA VALIDATION COPY

cc: SAIC00999 Report Date: May 26, 1999

Sample ID	: AEP312
Lab ID	: 9905244-07
Matrix	: Water
Date Collected	: 05/07/99
Date Received	: 05/08/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
ALKALINITY		8.42 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1300	149096	1
CARBON DIOXIDE, FREE		161 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	2
SULFIDES	J	0.365 J	0.0450	0.500	mg/l	5.0	JBK	05/13/99	0630	148954	3
SULFATE		0.657 =	0.0380	0.200	mg/l	1.0	RWS	05/10/99	1455	148743	4
NITRATE/NITRITE	U	0.00 U	0.00860	0.0500	mg/l	1.0	THL	05/17/99	1818	149309	5

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 300.0
M 5	EPA 353.1

Notes:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
= indicates that a quality control analyte recovery is outside of specified acceptance criteria.

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 26, 1999 Page 1 of 1

Sample ID : AEP312
Lab ID : 9905244-15
Matrix : Water
Date Collected : 05/07/99
Date Received : 05/08/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry												
Total Rec. Petro. Hydrocarbons		3.12	=	0.277	1.00	mg/l	1.0	AAT	05/21/99	2100	149713	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
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J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
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standard operating procedures. Please direct
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Reviewed By

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP412

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) WATER Lab Sample ID: 9905244-09

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8J443

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. _____ Date Analyzed: 05/21/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 50.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	823	U
108-88-3	toluene	1950	U
100-41-4	ethylbenzene	237	U
1330-20-7	xylenes (total)	1510	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

SAIC SAMPLE NO.

AEP412

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) Lab Sample ID: 9905244-09

Sample wt/vol: 1.000 (g/mL) ML Lab File ID: 034B3401

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/19/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/19/99

Injection Volume: 1.0(uL) Dilution Factor: 200.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
74-82-8	Methane	19500	B	J D08,F08

FORM I VOA

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS004W

Method Type: Total Metals

Sample ID: 9905244-09

Client ID: AEP412

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/8/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	48900	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990517-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS004W

Method Type: Total Metals

Sample ID: 9905244-10

Client ID: AEP412F

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/8/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	48300	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990517-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Client:	Science Applications International Corp. P.O. Box 2502 800 Oak Ridge Turnpike Oak Ridge, Tennessee 37831
Contact:	Ms. Leslie Barbour
Project Description:	Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: May 26, 1999

Sample ID	: AEP412
Lab ID	: 9905244-09
Matrix	: Water
Date Collected	: 05/07/99
Date Received	: 05/08/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
CARBON DIOXIDE, FREE		106 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	1
SULFIDES	J	0.335 J	0.0450	0.500	mg/l	5.0	JBK	05/13/99	0630	148954	2
SULFATE	J	0.198 J	0.0380	0.200	mg/l	1.0	RWS	05/11/99	2227	148904	3
NITRATE/NITRITE	U	0.00 U	0.00860	0.0500	mg/l	1.0	THL	05/17/99	1818	149309	4

M = Method	Method-Description
M 1	SM 18th ed. 4500-CO2
M 2	EPA 376.2
M 3	EPA 300.0
M 4	EPA 353.1

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed
in accordance with General Engineering Laboratories
standard operating procedures. Please direct
any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

DATA VALIDATION COPY

cc: SAIC00999 Report Date: May 26, 1999 Page 1 of 1

Sample ID	: AEP412
Lab ID	: 9905244-18
Matrix	: Water
Date Collected	: 05/07/99
Date Received	: 05/08/99
Priority	: Routine
Collector	: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
Total Rec. Petro. Hydrocarbons		2.77	0.277	1.00	mg/l	1.0	AAT	05/21/99	2100	149713	1

M = Method	Method-Description
M 1	EPA 418.1

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories standard operating procedures. Please direct any questions to your Project Manager, Valerie Davis at (843) 769-7391.

Reviewed By

9905244-18

262

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEP512

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS006W

Matrix: (soil/water) WATER Lab Sample ID: 9905252-02

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8J607

Level: (low/med) LOW Date Received: 05/09/99

% Moisture: not dec. _____ Date Analyzed: 05/22/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2	benzene	7.2	J
108-88-3	toluene	10.0	U
100-41-4	ethylbenzene	208	
1330-20-7	xylenes (total)	600	

5 U

Form 1: Inorganic Analyses Data Sheet

SDG No.: HPS006W

Method Type: Total Metals

Sample ID: 9905252-02

Client ID: AEP512

Contract: SAIC00999 Lab Code: GEL Case No.: SAS No.:

Matrix: WATER Date Received: 5/9/99 Level: LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	80600	µg/L	=		P	8.4	TJA61 Trace2 ICPAES	990524-1

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Form 1: Inorganic Analyses Data Sheet

G No.: HPS006W

Method Type: Total Metals

Sample ID: 9905252-03

Client ID: AEP512F

Contract: SAIC00999 **Lab Code:** GEL **Case No.:** **SAS No.:**

Matrix: WATER **Date Received:** 5/9/99 **Level:** LOW

% Solids: 0.00

CAS No.	Analyte	Concentration	Units	C	Qual	M	DL	Instrument ID	Analytical Run
7439-89-6	Iron	57000	µg/L		=	P	8.4	TJA61 Trace2 ICPAES	990524-1

Color Before: **Clarity Before:** **Texture:**

Color After: **Clarity After:** **Artifacts:**

Comments:

Client: Science Applications International Corp.
P.O. Box 2502
800 Oak Ridge Turnpike
Oak Ridge, Tennessee 37831
Contact: Ms. Leslie Barbour
Project Description: Remdial Design and Pilot Study, Former Bldg. 728

cc: SAIC00999 Report Date: June 01, 1999

Sample ID : AEP512
Lab ID : 9905252-02
Matrix : Water
Date Collected : 05/08/99
Date Received : 05/09/99
Priority : Routine
Collector : Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	M
General Chemistry											
ALKALINITY		65.3 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1300	149096	1
CARBON DIOXIDE, FREE		80.5 =	0.500	1.00	mg/l	1.0	JBK	05/14/99	1530	148951	2
SULFIDES	U	-0.0150 U	0.0450	0.500	mg/l	5.0	JBK	05/13/99	0630	148954	3
Total Rec. Petro. Hydrocarbons		2.98 =	0.277	1.00	mg/l	1.0	AAT	05/24/99	1100	149857	4
SULFATE		3310 =	7.60	40.0	mg/l	200	RWS	05/10/99	1533	148743	5
NITRATE/NITRITE		0.0500 U F01, F06	0.00860	0.0500	mg/l	1.0	THL	05/18/99	1613	149425	6

M = Method	Method-Description
M 1	EPA 310.1
M 2	SM 18th ed. 4500-CO2
M 3	EPA 376.2
M 4	EPA 418.1
M 5	EPA 300.0
M 6	EPA 353.1

Notes:
The qualifiers in this report are defined as follows:
ND indicates that the analyte was not detected at a concentration greater than the detection limit.
J indicates presence of analyte at a concentration less than the reporting limit (RL) and greater than the detection limit (DL).
U indicates that the analyte was not detected at a concentration greater than the detection limit.
* indicates that a quality control analyte recovery is outside of specified acceptance criteria.

SAIC An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

CHAIN OF CUSTODY RECORD

COC NO.: HP0009

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

REQUESTED PARAMETERS

	Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	SVOC									No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
14	AEPZ14	5/7/99	1720	water		2																		2		
15	AEP312	5/7/99	1630			2																		2		
16	AEPZ12	5/7/99	1720			2																		2		
17	AEP112	5/7/99	1600			2																		2		
18	AEP412	5/7/99	1730			2																		2		
19	AEV112	5/7/99	345												2									2		
20	AEV212	5/7/99	1059												2									2		

VIII-109

401
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LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/8/99 1040	P. Mauck	5/8/99 15:00
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL	5/8/99 1040	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME: GEL	5/8/99 1500	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 14

Cooler ID: # 552

Cooler Temperature: 3°C

FEDEX NUMBER:

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800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

9905244%

CHAIN OF CUSTODY RECORD

COC NO.: HP010

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	Alkalinity	VOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
1/2 AEP11Z	5/7/99	1600	water	2		1	1	1	1	1	2	1				12		4:17 .1/.
1/4 AEP21Z	5/7/99	1720		2		1	1	1	1	1	2	1		2		12		.2
1/6 AEP21Y	5/7/99	1720		2		1	1	1	1	1	2	1				10		.1
1/8 AEP31Z	5/7/99	1430		2		1	1	1	1	1	2	1		1		11		.2
1/10 AEP41Z	5/7/99	1730		2		1	1	1	1	1	2	1				10		.1
1/2 AEV21Z	5/7/99	1059													2	2		.3
12 AEV11Z	5/7/99	845													2	2		
13 HP0004	5/7/99	745	↓	2												2		.4

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/8/99	P. Houck	5/8/99
COMPANY NAME: SAIC	1040	COMPANY NAME: GEL	15:00
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME:	5/8/99 1040	COMPANY NAME:	
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
COMPANY NAME:	5/8/99 1500	COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 59

Cooler ID: #716

Cooler Temperature: 3°C

FEDEX NUMBER:

SAIC An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

9905336

CHAIN OF CUSTODY RECORD

COC NO.: HP017

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
1- AE 641 2	5/10/99	1640	water		2									2		
2- AE 611 2	5/10/99	1525			2									2		
3- AE D 11 2	5/10/99	930			2									2		
4- AE D 41 2	5/10/99	1337			2									2		
5- AE D 41 4	5/10/99	1337			2									2		
6- AE D 31 2	5/10/99	1120			2									2		
7- AE 061 2	5/10/99	1750			2									2		

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/99 1400	P. Power	5/11/99 16:50
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RECEIVED BY: Raymel Reed	5/11/99 1400	RELINQUISHED BY:	Date/Time
COMPANY NAME: GEL		COMPANY NAME:	
RELINQUISHED BY: Raymel Reed	5/11/99 1650	RECEIVED BY:	Date/Time
COMPANY NAME: GEL		COMPANY NAME:	

TOTAL NUMBER OF CONTAINERS: 14

Cooler Temperature: 3°C

Cooler ID: #691

FEDEX NUMBER:

VIII-111

SAIC An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

99052529 52499

CHAIN OF CUSTODY RECORD

COC NO.: HP016

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

	Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	SVOC	Alkalinity	VOC	SVOC TPH-DRO TOC	TPH-GRO					No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
1	AEVW12	5/6/99	1615	water											2		2							4		99052529
1/3	AEP512	5/6/99	1440	↓	2	2	1	1	1	1	1	2	1			1								13		
4	HP0007	5/6/99	1200	↓													2							2		
5249 -06	AEVW11	5/6/99	1540	Soil													1	1	1					3		
-07	AEP511	5/6/99	1500	Soil	1	1																		2		

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time	TOTAL NUMBER OF CONTAINERS: 24	Cooler Temperature: 3°C
COMPANY NAME: SAIC	5/9/99 1030	COMPANY NAME: GEL	5/9/99 13:00	Cooler ID: # 376	FEDEX NUMBER:
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time		
COMPANY NAME:	5/9/99 1030	COMPANY NAME:			
RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time		
COMPANY NAME:	5/9/99 1330	COMPANY NAME:			

VIII-112

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Science Applications International Corporation
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Q-40180→ 9905339%

CHAIN OF CUSTODY RECORD

COC NO.: HPØ18

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature) (Printed Name) Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road, Charleston, SC 29407

PHONE NO: (843) 556-8171

	Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	Oil & Grease	Total Phenols	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
8	AEDM12	5/10/99	1512	water		2											2		
9	AE1116	5/10/99	935	↓		2											2		
10	AE1112	5/10/99	936	↓		2											2		
11	AE6312	5/10/99	1155	↓		2											2		
12	AE6012	5/10/99	1355	↓		2											2		
01	HDW002	5/10/99	1904	↓											2	2	4		7-Day Turn

5/11/99

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
[signature] / COMPANY NAME: SAIC	5/11/99 1400	P. Nower / COMPANY NAME: Gel	5/11/99 16:50
RECEIVED BY: Raymond Reed / COMPANY NAME: GEL	5/11/99 1400	RELINQUISHED BY: / COMPANY NAME:	Date/Time
RELINQUISHED BY: Raymond Reed / COMPANY NAME: GEL	5/11/99 16:50	RECEIVED BY: / COMPANY NAME:	Date/Time

TOTAL NUMBER OF CONTAINERS: 14

Cooler ID: #770

Cooler Temperature: 3°C

FEDEX NUMBER:

SAIC An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

9905340%

CHAIN OF CUSTODY RECORD

COC NO.: HP019

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature) Laura Lumley (Printed Name) Laura Lumley

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	Alkalinity	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
1/12 AED412 10/11	5/10/99	1337	water			1	1	1	1	1		1		1	40	.1	
2/13 AE 1112 12/13	5/10/99	936				1	1	1	1	1		1			4	.1	
3/14 AED112 14/15	5/10/99	930				1	1	1	1	1		1		1	7	.1	
4/15 AEDM12 16/17	5/10/99	1512				1	1	1	1	1		1		1	67	.1	
5/16 AED414 18/19	5/10/99	1337				1	1	1	1	1		1		1	7	.1	
6/17 AED312 20/21	5/10/99	1120				1	1	1	1	1		1		1	7	.1	

40 .1 ↓ .2

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/99 1400	P. Nolen	5/11/99 16:50
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RECEIVED BY: Raynal Reed	5/11/99 1400	RELINQUISHED BY:	
COMPANY NAME: GEL		COMPANY NAME:	
RELINQUISHED BY: Raynal Reed	5/11/99 1650	RECEIVED BY: P. Nolen	5/11/99 1650
COMPANY NAME: GEL		COMPANY NAME: GEL	

TOTAL NUMBER OF CONTAINERS: 40

Cooler Temperature: 3°C

Cooler ID: #443

FEDEX NUMBER:

VIII-114

SAIC An Employee-Owned Company
Science Applications International Corporation
800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

9905340/2

CHAIN OF CUSTODY RECORD

COC NO.: HP020

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

REQUESTED PARAMETERS

Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	Alkalinity	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
1/2 AE6112 1/2	5/10/99	1525	water			1	1	1	1	1		1		1	7	6.1	
3/4 AE6312 3/4	5/10/99	1155				1	1	1	1	1		1		1	7	6.1	
~~AE6114~~																	
AE1116 5	5/10/99	936				1	1	1	1						4		
AE6012 6/9	5/10/99	1355				1	1	1	1	1		1		1	7		
8/9 AE0612 8/9	5/10/99	1756	↓			1	1	1	1	1		1		1	7		

40' .2 .4 .8

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556-8171

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/11/99 1400	T. Nowell	5/11/99 16:50
COMPANY NAME: SAIC		COMPANY NAME: GEL	
RECEIVED BY: Raynal Reed	5/11/99 1700	RELINQUISHED BY:	
COMPANY NAME: GEL		COMPANY NAME:	
RELINQUISHED BY: Raynal Reed	5/11/99 16:50	RECEIVED BY: P. Kelley	5/11/99 16:50
COMPANY NAME: GEL		COMPANY NAME: Gel	

TOTAL NUMBER OF CONTAINERS: 32

Cooler ID: # 611

Cooler Temperature: 3°c

FEDEX NUMBER:

SAIC An Employee-Owned Company
Science Applications International Corporation

800 Oak Ridge Turnpike, Oak Ridge, TN 37831 (423) 481-4600

99053999 1 of 2

CHAIN OF CUSTODY RECORD

COC NO.: HPØ21

PROJECT NAME: HAAF-Pilot Study

PROJECT NUMBER: 01-0331-04-1829-100

PROJECT MANAGER: Patty Stoll

Sampler (Signature): Laura Lumley (Printed Name): Laura Lumley

LABORATORY NAME: General Engineering Laboratory

LABORATORY ADDRESS: 2040 Savage Road Charleston, SC 29407

PHONE NO: (843) 556-8171

REQUESTED PARAMETERS

	Sample ID	Date Collected	Time Collected	Matrix	BTEX	TPH	Nitrate	Sulfate	Sulfide	Total Iron	Dissolved Iron	Methane	CO2	TOC	Alkalinity	VOC	pH	No. of Bottles/ Vials:	OVA SCREENING	OBSERVATIONS, COMMENTS, SPECIAL INSTRUCTIONS
1/2	AE6412	5/10/99	1640	water	Z		1	1	1	1	1	Z	1		1			11		
3	AE1112	5/10/99	936		Z							Z						4		
4	AE6112	5/10/99	1525		Z							Z						4		
5	AE6012	5/10/99	1355		Z							Z						4		
6	AED414	5/10/99	1337		Z							Z						4		
7	AEØ612	5/10/99	1750		Z							Z						4		
8	AED412	5/10/99	1337		Z							Z						4		
9	AE1114	5/10/99	936		Z													2		
10	AE6312	5/10/99	1155		Z							Z						4		
11	AED112	5/10/99	930		Z							Z						4		
12	AEDm12	5/10/99	1512		Z							Z						4		
13	AED312	5/10/99	1120		Z							Z						4		
14	ADWØØ2	5/10/99	1900												2	1		3		

RELINQUISHED BY:	Date/Time	RECEIVED BY:	Date/Time
Laura Lumley	5/12/99 1145	[signature]	5/12/99 1145
COMPANY NAME: SAIC		COMPANY NAME: GEC	
RECEIVED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME:		COMPANY NAME:	P.D.
RELINQUISHED BY: [signature]	Date/Time 5/12/99 1530	RECEIVED BY: D. Nauer	Date/Time 5/12/99 1530
COMPANY NAME: SAIC		COMPANY NAME: GEL	

TOTAL NUMBER OF CONTAINERS:

Cooler ID: # 671

Cooler Temperature: 3°C

FEDEX NUMBER:

GROUNDWATER ANALYTICAL RESULTS
VAPOR TEST WELLS

MAY 1999

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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W1

Matrix: (soil/water) WATER Lab Sample ID: 9905244-12

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8J414

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. _____ Date Analyzed: 05/20/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	2.0	U
74-83-9	bromomethane	2.0	U
75-01-4	vinyl chloride	2.0	U
75-00-3	chloroethane	1.9	J
75-09-2	methylene chloride	2.0	U
67-64-1	acetone	70.6	B
75-15-0	carbon disulfide	5.0	U
75-35-4	1,1-dichloroethene	2.0	U
75-34-3	1,1-dichloroethane	10.7	
67-66-3	chloroform	2.0	U
107-06-2	1,2-dichloroethane	2.0	U
78-93-3	2-butanone	5.0	U
71-55-6	1,1,1-trichloroethane	2.0	U
56-23-5	carbon tetrachloride	2.0	U
75-27-4	bromodichloromethane	5.0	U
78-87-5	1,2-dichloropropane	2.0	U
10061-01-5	cis-1,3-dichloropropene	2.0	U
79-01-6	trichloroethene	2.0	U
124-48-1	dibromochloromethane	2.0	U
79-00-5	1,1,2-trichloroethane	2.0	U
71-43-2	benzene	43.7	
10061-02-6	trans-1,3-dichloropropene	2.0	U
75-25-2	bromoform	2.0	U
108-10-1	4-methyl-2-pentanone	8.6	
591-78-6	2-hexanone	5.0	U
127-18-4	tetrachloroethene	2.0	U
79-34-5	1,1,2,2-tetrachloroethane	2.0	U
108-88-3	toluene	1.8	J
108-90-7	chlorobenzene	2.0	U
100-41-4	ethylbenzene	32.2	
100-42-5	styrene	2.0	U
1330-20-7	xylenes (total)	32.6	
540-59-0	1,2-dichloroethylene (total)	26.6	

F08, C05

FORM I VOA OLM03.0

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9905244-19

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 8U123

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/18/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
108-95-2	phenol	10.2	U	R GD4
111-44-4	bis(2-chloroethyl)ether	10.2	U	U
95-57-8	2-chlorophenol	10.2	U	R GD4
541-73-1	1,3-dichlorobenzene	10.2	U	U
106-46-7	1,4-dichlorobenzene	10.2	U	
95-50-1	1,2-dichlorobenzene	10.2	U	
108-60-1	2,2'-Oxybis(1-chloropropane)	10.2	U	
95-48-7	2-methylphenol	10.2	U	R GD4
621-64-7	N-nitroso-di-n-propylamine	10.2	U	U
106-44-5	3,4-methylphenol	10.2	U	R GD4
67-72-1	hexachloroethane	10.2	U	U
98-95-3	nitrobenzene	10.2	U	
78-59-1	isophorone	10.2	U	
88-75-5	2-nitrophenol	10.2	U	R GD4
105-67-9	2,4-dimethylphenol	10.2	U	R GD4
111-91-1	bis(2-chloroethoxy)methane	10.2	U	U
120-83-2	2,4-dichlorophenol	10.2	U	R GD4
120-82-1	1,2,4-trichlorobenzene	10.2	U	U
91-20-3	naphthalene	117		=
106-47-8	4-chloroaniline	20.4	U	U
87-68-3	hexachlorobutadiene	10.2	U	U
59-50-7	4-chloro-3-methylphenol	10.2	U	R GD4
91-57-6	2-methylnaphthalene	46.3		=
77-47-4	hexachlorocyclopentadiene	10.2	U	U
88-06-2	2,4,6-trichlorophenol	10.2	U	R GD4
95-95-4	2,4,5-trichlorophenol	10.2	U	R GD4
91-58-7	2-chloronaphthalene	10.2	U	U
99-09-2	3-nitroaniline	25.5	U	
88-74-4	2-nitroaniline	25.5	U	
131-11-3	dimethylphthalate	10.2	U	
606-20-2	2,6-dinitrotoluene	10.2	U	
208-96-8	acenaphthylene	10.2	U	
83-32-9	acenaphthene	74.6		=

FORM I SV-1 OLM03.0

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV112

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9905244-19

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 8U123

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N)___ Date Extracted:05/11/99

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 05/18/99

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
51-28-5	2,4-dinitrophenol	20.4	U	R G04
132-64-9	dibenzofuran	10.2	U	U
121-14-2	2,4-dinitrotoluene	10.2	U	U
84-66-2	diethylphthalate	10.2	U	U
100-02-7	4-nitrophenol	20.4	U	R G04
86-73-7	fluorene	10.2	U	U
7005-72-3	4-chlorophenylphenylether	10.2	U	U
534-52-1	4,6-dinitro-2-methylphenol	10.2	U	R G04
100-01-6	4-nitroaniline	25.5	U	U
101-55-3	4-bromophenylphenylether	10.2	U	U
118-74-1	hexachlorobenzene	10.2	U	U
87-86-5	pentachlorophenol	10.2	U	R G04
85-01-8	phenanthrene	10.2	U	U
120-12-7	anthracene	39.9		U
84-74-2	di-n-butylphthalate	10.2	U	U
206-44-0	fluoranthene	10.2	U	U
129-00-0	pyrene	10.2	U	U
85-68-7	butylbenzylphthalate	10.2	U	U
56-55-3	benzo(a)anthracene	14.8		U
91-94-1	3,3'-dichlorobenzidine	51.0	U	U
218-01-9	chrysene	10.2	U	U
117-81-7	bis(2-ethylhexyl)phthalate	10.2	U	U
117-84-0	di-n-octylphthalate	10.2	U	U
205-99-2	benzo(b)fluoranthene	10.2	U	U
207-08-9	benzo(k)fluoranthene	10.2	U	U
50-32-8	benzo(a)pyrene	10.2	U	U
193-39-5	indeno(1,2,3-cd)pyrene	10.2	U	U
53-70-3	dibenz(a,h)anthracene	10.2	U	U
191-24-2	benzo(g,h,i)perylene	10.2	U	U
122-39-4	diphenylamine	10.2	U	U
86-74-8	Carbazole	10.2	U	U

FORM I SV-2 OLM03.0

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV212

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W1

Matrix: (soil/water) WATER Lab Sample ID: 9905244-11

Sample wt/vol: 5.000 (g/ml) ML Lab File ID: 8J415

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: not dec. _____ Date Analyzed: 05/20/99

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	chloromethane	2.0	U
74-83-9	bromomethane	2.0	U
75-01-4	vinyl chloride	2.0	U
75-00-3	chloroethane	3.3	
75-09-2	methylene chloride	2.0	U
67-64-1	acetone	63.2	B
75-15-0	carbon disulfide	5.0	U
75-35-4	1,1-dichloroethene	2.0	U
75-34-3	1,1-dichloroethane	11.1	
67-66-3	chloroform	2.0	U
107-06-2	1,2-dichloroethane	2.0	U
78-93-3	2-butanone	10.8	
71-55-6	1,1,1-trichloroethane	2.0	U
56-23-5	carbon tetrachloride	2.0	U
75-27-4	bromodichloromethane	5.0	U
78-87-5	1,2-dichloropropane	2.0	U
10061-01-5	cis-1,3-dichloropropene	2.0	U
79-01-6	trichloroethene	2.0	U
124-48-1	dibromochloromethane	2.0	U
79-00-5	1,1,2-trichloroethane	2.0	U
71-43-2	benzene	39.5	
10061-02-6	trans-1,3-dichloropropene	2.0	U
75-25-2	bromoform	2.0	U
108-10-1	4-methyl-2-pentanone	11.8	
591-78-6	2-hexanone	5.0	U
127-18-4	tetrachloroethene	2.0	U
79-34-5	1,1,2,2-tetrachloroethane	2.0	U
108-88-3	toluene	3.1	
108-90-7	chlorobenzene	2.0	U
100-41-4	ethylbenzene	79.8	
100-42-5	styrene	2.0	U
1330-20-7	xylenes (total)	79.2	
540-59-0	1,2-dichloroethylene (total)	40.8	

F08, C05

FORM I VOA OLM03.0

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

AEV212

Lab Name: GENERAL ENGINEERING LABOR Contract: NA

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: HPS004W

Matrix: (soil/water) GROUNDH2O Lab Sample ID: 9905244-20

Sample wt/vol: 980.0 (g/mL) ML Lab File ID: 8U124

Level: (low/med) LOW Date Received: 05/08/99

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: 05/11/99

Concentrated Extract Volume: 1.00 (mL) Date Analyzed: 05/18/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
108-95-2	phenol	10.2	U	R GPY
111-44-4	bis(2-chloroethyl)ether	10.2	U	U
95-57-8	2-chlorophenol	10.2	U	R GPY
541-73-1	1,3-dichlorobenzene	10.2	U	U
106-46-7	1,4-dichlorobenzene	10.2	U	
95-50-1	1,2-dichlorobenzene	10.2	U	
108-60-1	2,2'-Oxybis(1-chloropropane)	10.2	U	
95-48-7	2-methylphenol	10.2	U	R GPY
621-64-7	N-nitroso-di-n-propylamine	10.2	U	U
106-44-5	3,4-methylphenol	10.2	U	R GPY
67-72-1	hexachloroethane	10.2	U	U
98-95-3	nitrobenzene	10.2	U	
78-59-1	isophorone	10.2	U	
88-75-5	2-nitrophenol	10.2	U	R GPY
105-67-9	2,4-dimethylphenol	10.2	U	R GPY
111-91-1	bis(2-chloroethoxy)methane	10.2	U	U
120-83-2	2,4-dichlorophenol	10.2	U	R GPY
120-82-1	1,2,4-trichlorobenzene	10.2	U	U
91-20-3	naphthalene	33.5		=
106-47-8	4-chloroaniline	20.4	U	U
87-68-3	hexachlorobutadiene	10.2	U	U
59-50-7	4-chloro-3-methylphenol	10.2	U	R GPY
91-57-6	2-methylnaphthalene	11.2		=
77-47-4	hexachlorocyclopentadiene	10.2	U	U
88-06-2	2,4,6-trichlorophenol	10.2	U	R GPY
95-95-4	2,4,5-trichlorophenol	10.2	U	R GPY
91-58-7	2-chloronaphthalene	10.2	U	U
99-09-2	3-nitroaniline	25.5	U	
88-74-4	2-nitroaniline	25.5	U	
131-11-3	dimethylphthalate	10.2	U	
606-20-2	2,6-dinitrotoluene	10.2	U	
208-96-8	acenaphthylene	10.2	U	
83-32-9	acenaphthene	7.0	J	J

FORM I SV-1 OLM03.0