APPENDIX B

MONITORING WELLS

INSTALLATION LOGS AND CONSTRUCTION DIAGRAMS

8E

MONITORING WELL INSTALLATION LOG HOLE NUMBER: BKGmw-008

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Brad Baker

SHEET 1 OF 1

MONITORING WELL ID: BKGmw-008

INSTALLATION START: DATE: 26 Apr 98 TIME: 0820

INSTALLATION FINISH: DATE: 27 Apr 98 TIME: 1738

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 Silica Sand QUANTITY: 9.5/50-lb bags

BENTONITE SEAL: TYPE: 3/8" QTR 30 Bentonite Pellets QUANTITY: 3 buckets

GROUT: TYPE: Bentonite / Portland Type I Cement QUANTITY: 1.5/94 lb bags

lb. Portland Type I Cement + 5 lbs bentonite ~ 10 gal H_2O

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: —

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Bottom cap placed on top of rock (bucket bottom)

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: PVC Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Manufactured Flush Threaded

CENTRALIZERS DESIGN AND COMPOSITION: NA

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4"x4" box COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

NA

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [X] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [X] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [ ] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: NA

RECORDED BY: Brad Baker (Signature & Date)

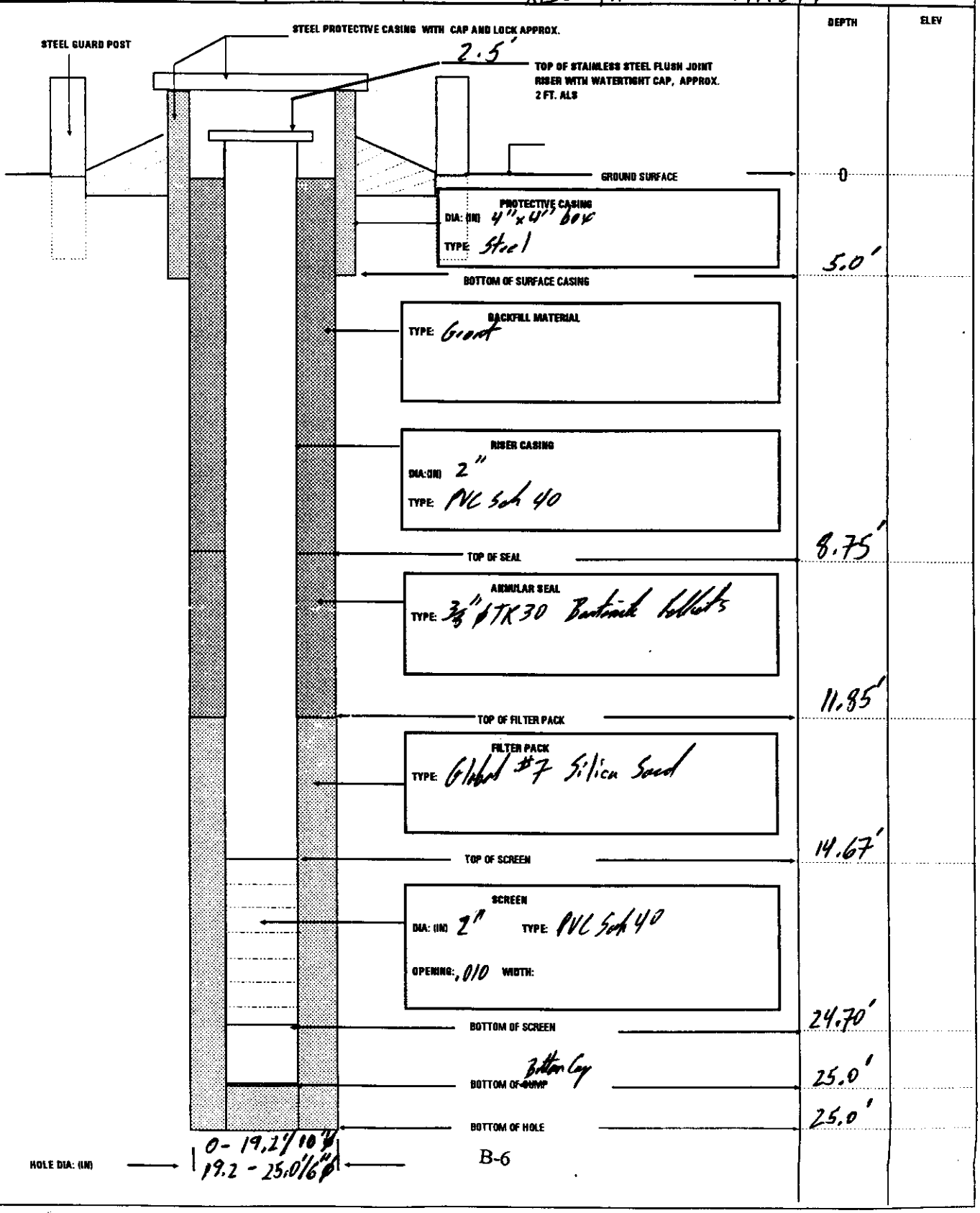
QA CHECK BY: Matt Haley 6-2-98 (Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKGmw-008 **BEGIN:** 26 Apr 98 **END:** 27 Apr 98

COORDINATES: N: 56954.231 E: 2372741.076 **REFERENCE POINT:** Top of Riser Pipe **ELEVATION:** 970.397 MSL



Bottom Cap

MONITORING WELL INSTALLATION LOG HOLE NUMBER: BKG mw-010

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: B. Bell

SHEET 1 OF 1

MONITORING WELL ID: BKG mw-010

INSTALLATION START: DATE: 29 Apr 98 TIME: 1050

INSTALLATION FINISH: DATE: ~~4 May 98~~ 5 May 98 TIME: 0930

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 Silica Sand QUANTITY: 10/50-lb bags

BENTONITE SEAL: TYPE: 3/8" Ø TR30 Bentonite Pellets QUANTITY: 3 buckets

GROUT: TYPE: Portland Type I, bentonite QUANTITY: 2/94-lb bags

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: —

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 Silica Sand

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: PVC Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Manufactured Flush Threaded

CENTRALIZERS DESIGN AND COMPOSITION: NA

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4"x4" box COMPOSITION: steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

NA

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [✓] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [✓] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [ ] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: 0 gal

RECORDED BY: [signature] 5 May 98 / 4 May 98 (Signature & Date)

QA CHECK BY: [signature] 6-2-98 (Signature & Date)

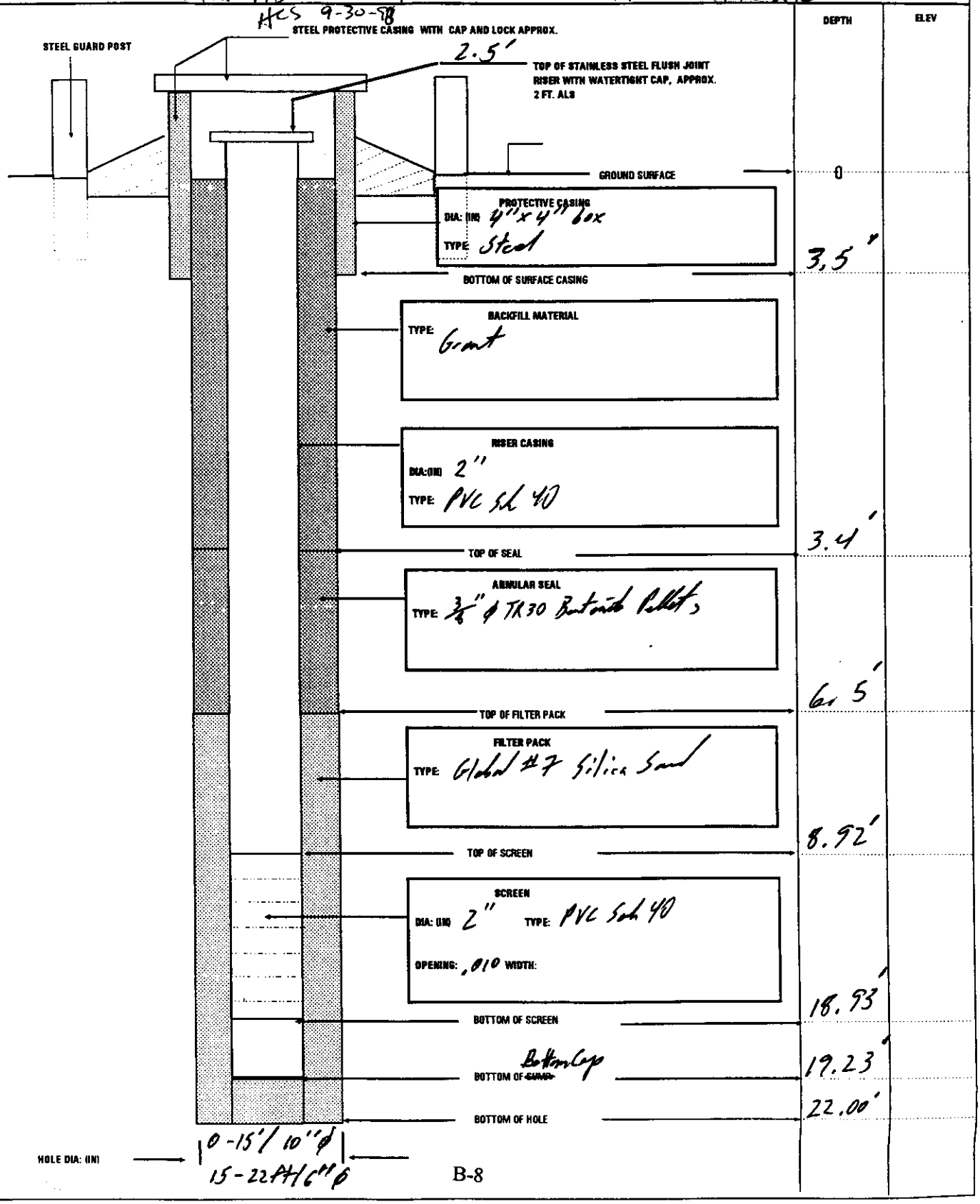
MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKG mw-010 **BEGIN:** 28 Apr 98 **END:** 4 May 98

COORDINATES: N: 565540.706 E: 237372.945 HCS 9-30-98

REFERENCE POINT: Top of Riser Pipe **ELEVATION:** 1006.293 MSL



MONITORING WELL INSTALLATION LOG HOLE NUMBER: BKGmw-016

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Bud Baker

SHEET 1 OF 1

MONITORING WELL ID: BKGmw-016

INSTALLATION START: DATE: 5 May 98 TIME: 1400

INSTALLATION FINISH: DATE: 5 May 98 TIME: 1615

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 Silica Sand QUANTITY: 5 / 50-lb bags

BENTONITE SEAL: TYPE: 3/8" ϕ TR30 Bentonite Pellets QUANTITY: 1 bucket

GROUT: TYPE: Portland Type I / bentonite QUANTITY: 2 / 94-lb bags

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: —

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 Silica Sand

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Manufactured flush threaded

CENTRALIZERS DESIGN AND COMPOSITION: NA

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4"x4" box COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

NA

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [✓] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [✓] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [✓] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: 0 gal

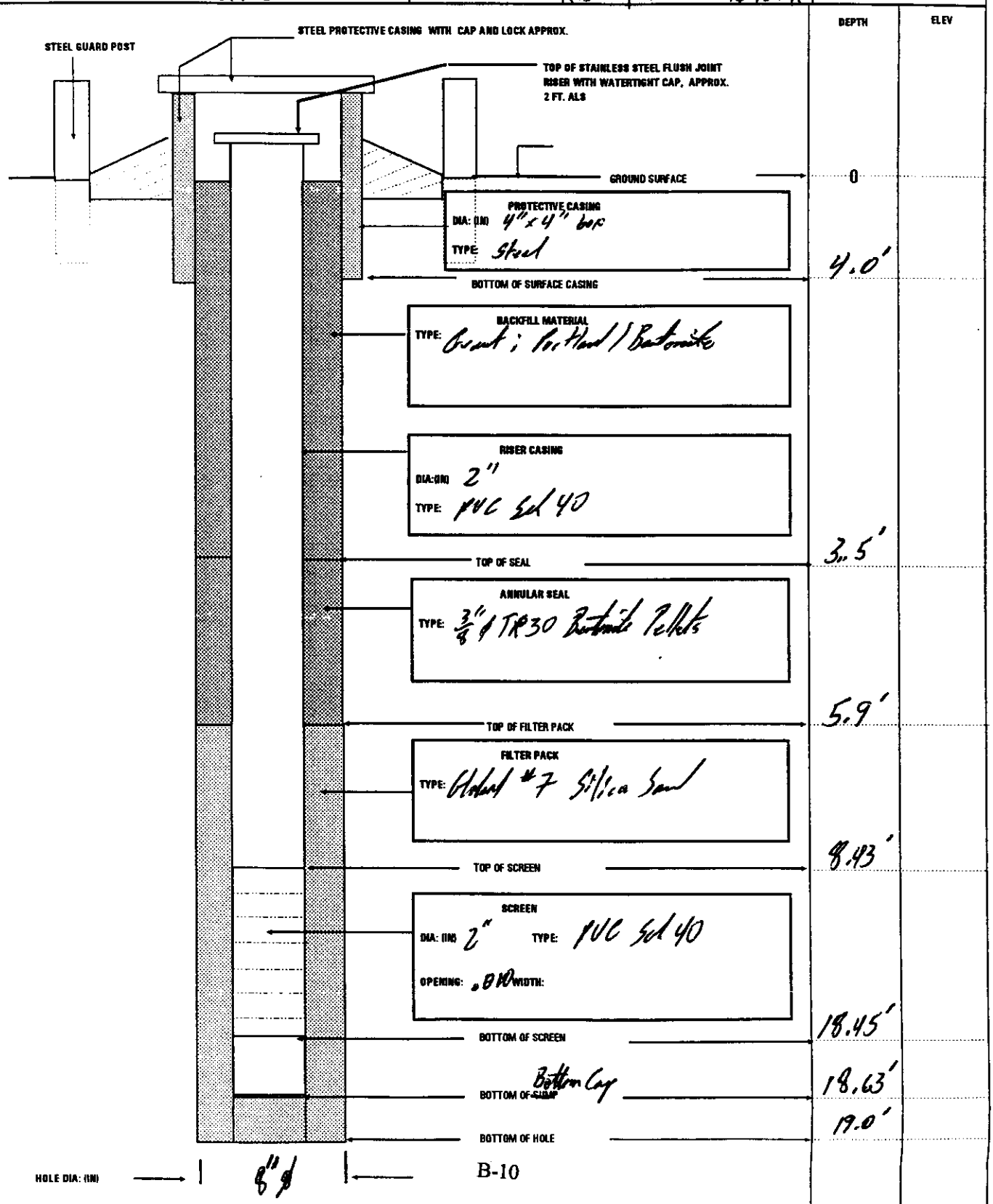
RECORDED BY: [signature] 5 May 98
(Signature & Date)

QA CHECK BY: [signature] 6-2-98
(Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKGmw-016	**BEGIN:** 5 May 98	**END:** 5 May 98
COORDINATES: N: 553983.501 E: 2342407.875	**REFERENCE POINT:** Top of Riser Pipe **ELEVATION:** 1098.419 MSL	



MONITORING WELL INSTALLATION LOG HOLE NUMBER: BKGmw-005

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Brad Baker

SHEET 1 OF 1

MONITORING WELL ID: BKGmw-005

INSTALLATION START: DATE: 4 May 96 TIME: 1625

INSTALLATION FINISH: DATE: 5 May 96 TIME: 1049

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 Silica Sand QUANTITY: 5 / 50-lb bags

BENTONITE SEAL: TYPE: 3/8" Baroid 30 Bentonite Pellets QUANTITY: 2 buckets

GROUT: TYPE: Portland Type I, Industrial QUANTITY: 2 / 94-lb bags

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: —

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 Silica Sand

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Manufactured Flush Threaded

CENTRALIZERS DESIGN AND COMPOSITION: NA

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4"x4" box COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

NA

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [✓] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [✓] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [✓] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: 0 gal.

RECORDED BY: [signature] 5 May 96 (Signature & Date)

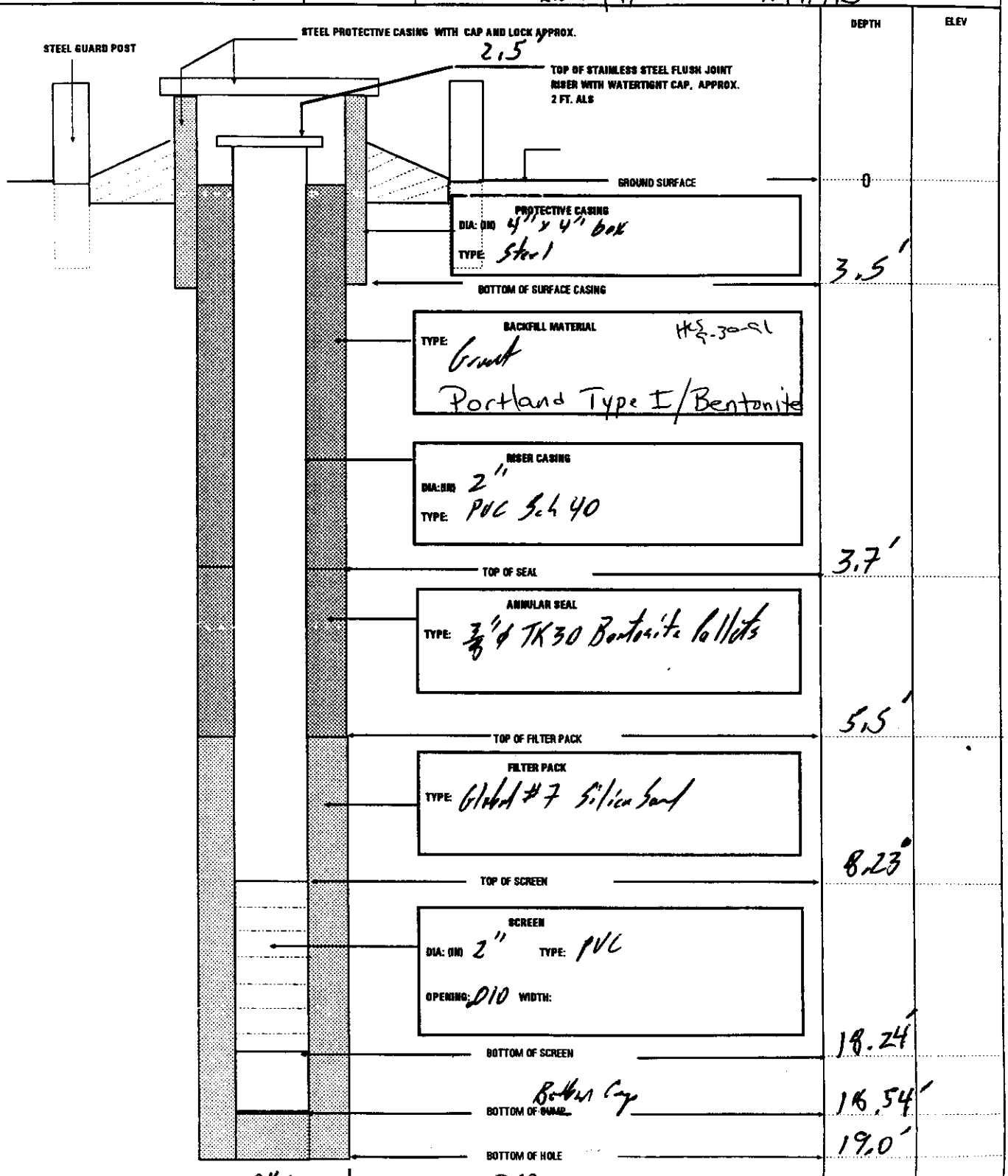
QA CHECK BY: [signature] 6-2-98 (Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKGmw-005 **BEGIN:** 4 May 96 **END:** 5 May 96

COORDINATES: N: 562288.445 E: 234085.864 **REFERENCE POINT:** Top of Riser Pipe **ELEVATION:** MSL 1149.443



MONITORING WELL INSTALLATION LOG HOLE NUMBER: BKGmw-017

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Brad Baker

SHEET 1 OF 1

MONITORING WELL ID: BKGmw-017

INSTALLATION START: DATE: 6 May 98 TIME: 1350

INSTALLATION FINISH: DATE: 6 May 98 TIME: 1700

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 Silica Sand QUANTITY: 7/50-lb bags

BENTONITE SEAL: TYPE: 3/8" Ø TR30 Bentonite Pellets QUANTITY: 2 buckets

GROUT: TYPE: Portland Type I Cement/Bentonite QUANTITY: 3/94-lb bags

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: —

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 Silica Sand

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Manufactured Flush threaded

CENTRALIZERS DESIGN AND COMPOSITION: N/A

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4"x4" box COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

Drillers over ran filter pack placement - flushed back annulus; ~20 gal H2O used

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [✓] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [✓] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [✓] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: ~20 gal

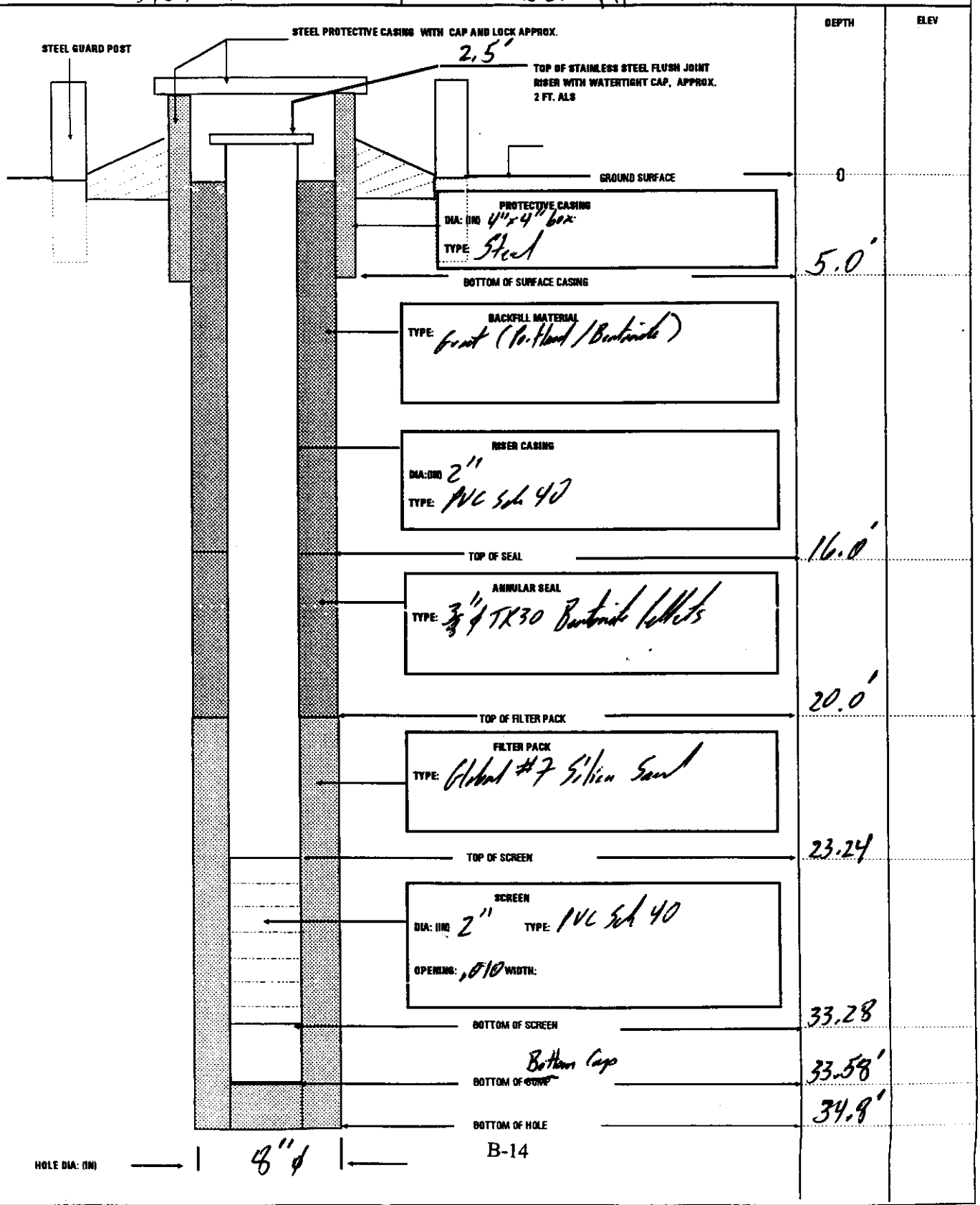
RECORDED BY: [signature] 6 May 98 (Signature & Date)

QA CHECK BY: [signature] (Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKGMW-017	**BEGIN:** 6 May 98	**END:** 6 May 98
COORDINATES: N: 562452.004 E: 234611 5.351	**REFERENCE POINT:** top of Riser Pipe **ELEVATION:** 1132.58 MSL	



MONITORING WELL INSTALLATION LOG HOLE NUMBER: BKGmw-019

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Heather Smith

SHEET 1 OF 1

MONITORING WELL ID: BKGmw-019

INSTALLATION START: DATE: 5-7-98 TIME: 1300

INSTALLATION FINISH: DATE: 5-7-98 TIME: 1700

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 Silica Sand QUANTITY: 6½ 50 lb bags

BENTONITE SEAL: TYPE: 3/8" dia. TR30 Bentonite Pellets QUANTITY: 1 5 gal bucket

GROUT: TYPE: Portland Type 1/ Bentonite QUANTITY: 3,94 lb bags Portland ~9 lbs Bentonite ~25 gal. H_2O

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010" SLOT CONFIGURATION: horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: —

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Schedule 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 ~~8#~~ #5-7 Silica Sand

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Schedule 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: manufactured flush threaded

CENTRALIZERS DESIGN AND COMPOSITION: n/a

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4"x4" box COMPOSITION: steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

HS 9-29-98

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [X] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [X] NO [ ]

Is deformation or bending of the installed well screen and casing mininized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [X] NO [ ]

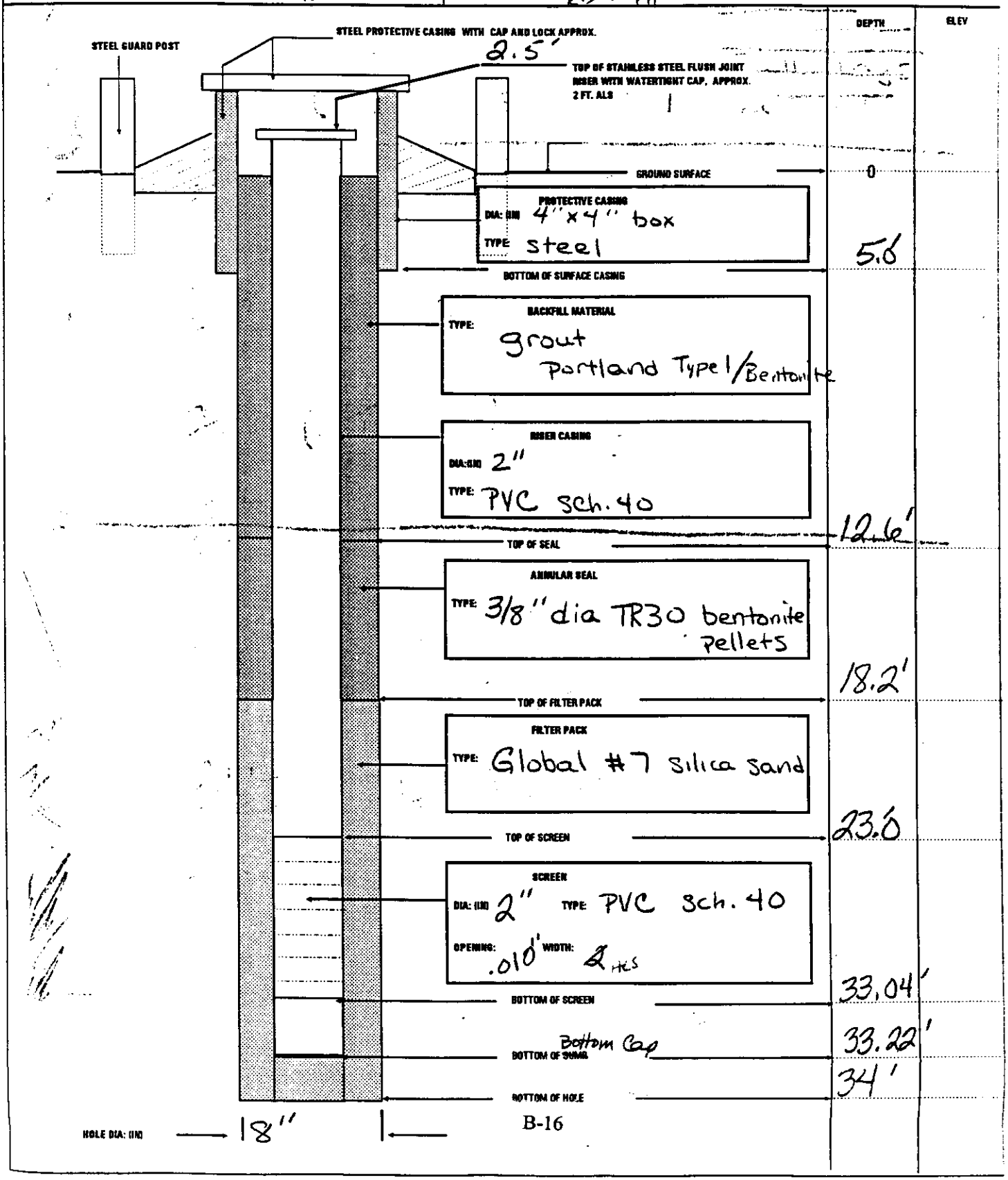
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: NA

RECORDED BY: Heather Smith 5-7-98 (Signature & Date) QA CHECK BY: Matt [illegible] 6-2-98 (Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKGmw-019	**BEGIN:** 5-7-98	**END:** 5-7-98
COORDINATES: N: 559864.549 E: 2349882.142	**REFERENCE POINT:** TOP of Riser Pipe **ELEVATION:** 1108.24 MSL	



MONITORING WELL INSTALLATION LOG **HOLE NUMBER:** BKGmw-021

PROJECT: Phase II RI @ WBG and Background Investigation **INSPECTOR:** Heather Smith

SHEET 1 **OF** 1

MONITORING WELL ID: BKGmw-021

INSTALLATION START: DATE: 5-8-98 TIME: 1055

INSTALLATION FINISH: DATE: 5-9-98 TIME: 1405

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 Silica Sand QUANTITY: 5½ 50lb bags

BENTONITE SEAL: TYPE: 3/8" dia. TR30 Bentonite Pellets QUANTITY: 1½ 5 gal bucket

GROUT: TYPE: Portland Type I/Bentonite QUANTITY: 1 1/94-lb bag Portland Type I, bentonite

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010" SLOT CONFIGURATION: horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: ———

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch. 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 Silica Sand

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch. 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: N/a

CENTRALIZERS DESIGN AND COMPOSITION: ———

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4"x4" COMPOSITION: steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

N/S

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [X] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [X] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [X] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: 10 gal

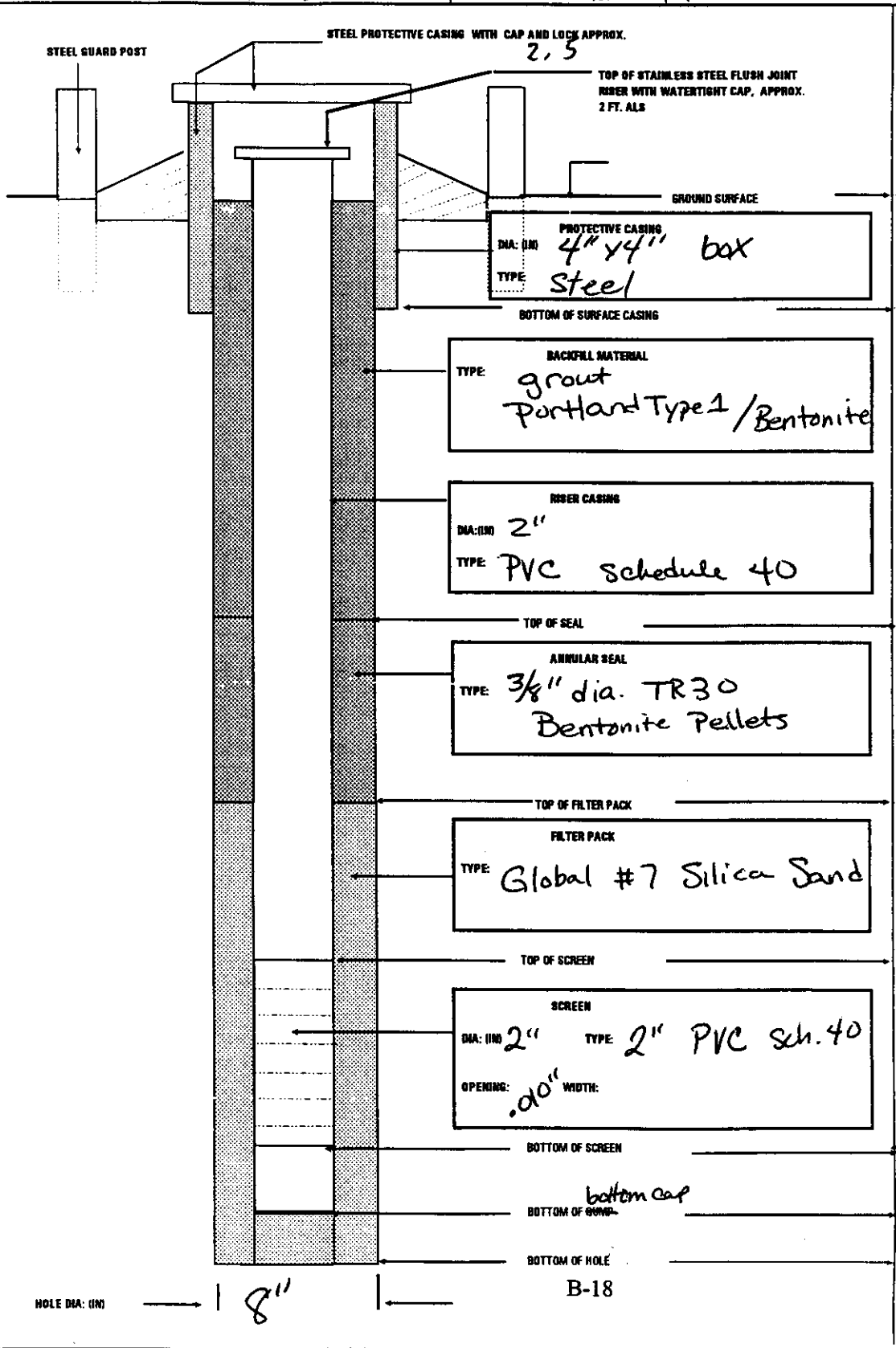
RECORDED BY: Heather L Smith 5-8-98 QA CHECK BY: Matt Doherty 6-2-98

(Signature & Date) (Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKGmw-021	**BEGIN:** 1055	**END:** 1405	
COORDINATES: N: 571016.748 E: 2367622.953	**REFERENCE POINT:** top of Riser Pipe	**ELEVATION:** 972.159 MSL	



MONITORING WELL INSTALLATION LOG HOLE NUMBER: BKG Mw-20

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: M. Osborn

SHEET 1 OF 1

MONITORING WELL ID: BKG/Mw-20

INSTALLATION START: DATE: 5-7-98 TIME: 1340

INSTALLATION FINISH: DATE: 5-7-98 TIME: 1530

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Quartz #7 QUANTITY: 7½ 50 lb bags

BENTONITE SEAL: TYPE: Pel-Plug 3/8" Pellets QUANTITY: 1 5 gallon bucket.

GROUT: TYPE: Portland type I w/ 5% Bent. Powder QUANTITY: 20 gallons

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: —

OUTSIDE DIAMETER: 2" + 5/16" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC HKS 9-29-98

MANUFACTURER: Global Drilling Suppliers

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Cap (2') Sch 40 PVC HKS 9-29-98

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2 5/16" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Global

JOINT DESIGN AND COMPOSITION: Threaded PVC

CENTRALIZERS DESIGN AND COMPOSITION: —

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4" square COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

HKS 9-29-98

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [✓] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [✓] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [✓] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: 0 gal — NA

RECORDED BY: _____ (Signature & Date)

QA CHECK BY: Heather L Smith 9-29-98 (Signature & Date)

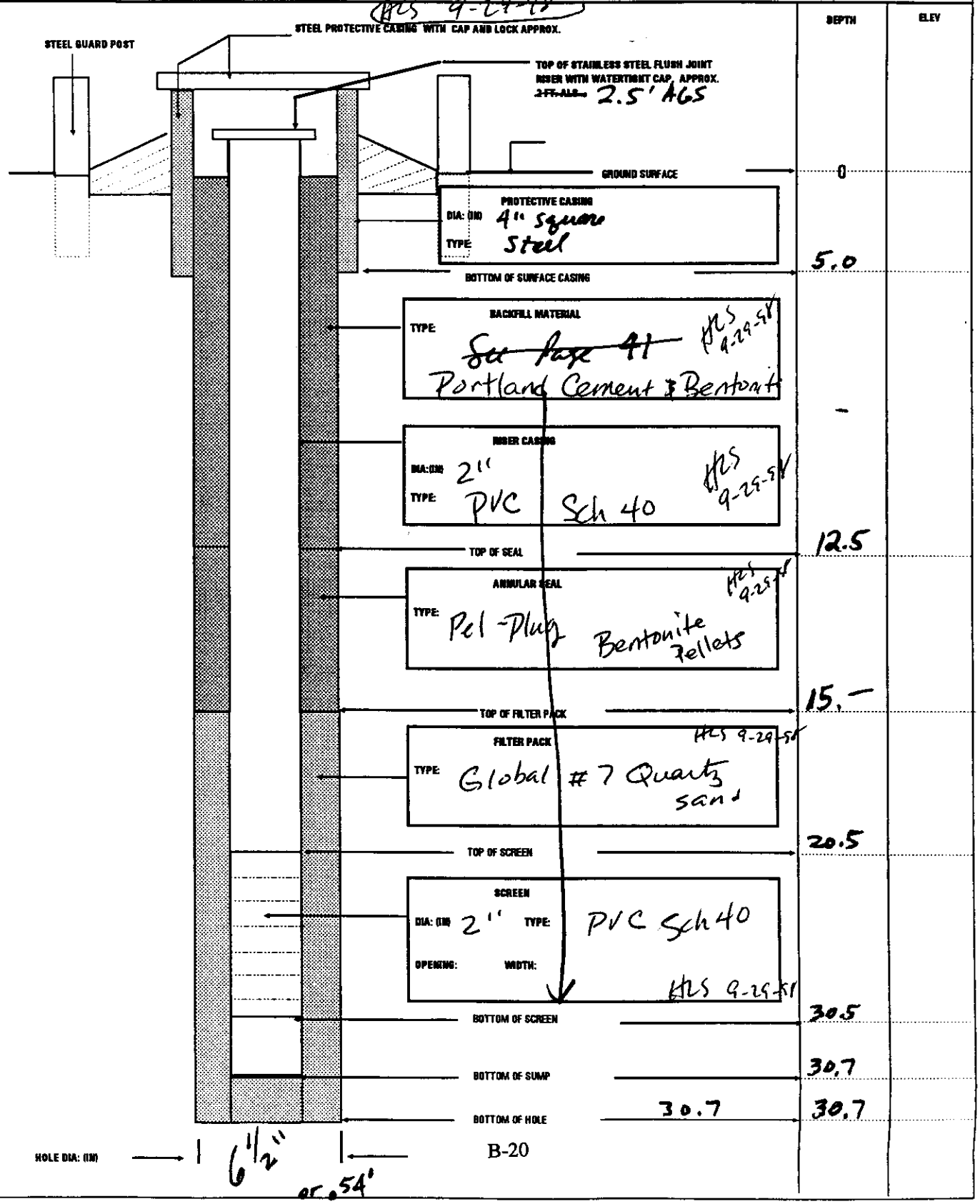
MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKGMW-20 **BEGIN:** 5-7-98 @ 1340 **END:** 1530

COORDINATES: N: 558756.241 E: 2357856 **REFERENCE POINT:** Top of Riser Pipe **ELEVATION:** 1065.001 MSL

HLS 9-29-98



MONITORING WELL INSTALLATION LOG HOLE NUMBER: BKG MW-8

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Matt Otley

SHEET 1 OF 1

MONITORING WELL ID: BKG MW-8

INSTALLATION START: DATE: 5-6-98 TIME: 16:00

INSTALLATION FINISH: DATE: 5-7-98 TIME: 0830

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Quartz #7 QUANTITY: 8 - 50 lb. bags

BENTONITE SEAL: TYPE: Pel-Plug 3/8" Bent. Pellets QUANTITY: 1 5 gal bucket

GROUT: TYPE: Cement/Bentonite 5% Portland Type I QUANTITY: 15 Sacks

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: ———

OUTSIDE DIAMETER: 2" + 5/16" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Sch. 40 COMPOSITION: PVC

MANUFACTURER: Global Drilling Suppliers

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: n/a

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2" + 5/16" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Global Drilling Suppliers

JOINT DESIGN AND COMPOSITION: Threaded PVC

CENTRALIZERS DESIGN AND COMPOSITION: ———

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4" Square COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

HCS 9-29-98

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [X] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [X] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [X] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: ———

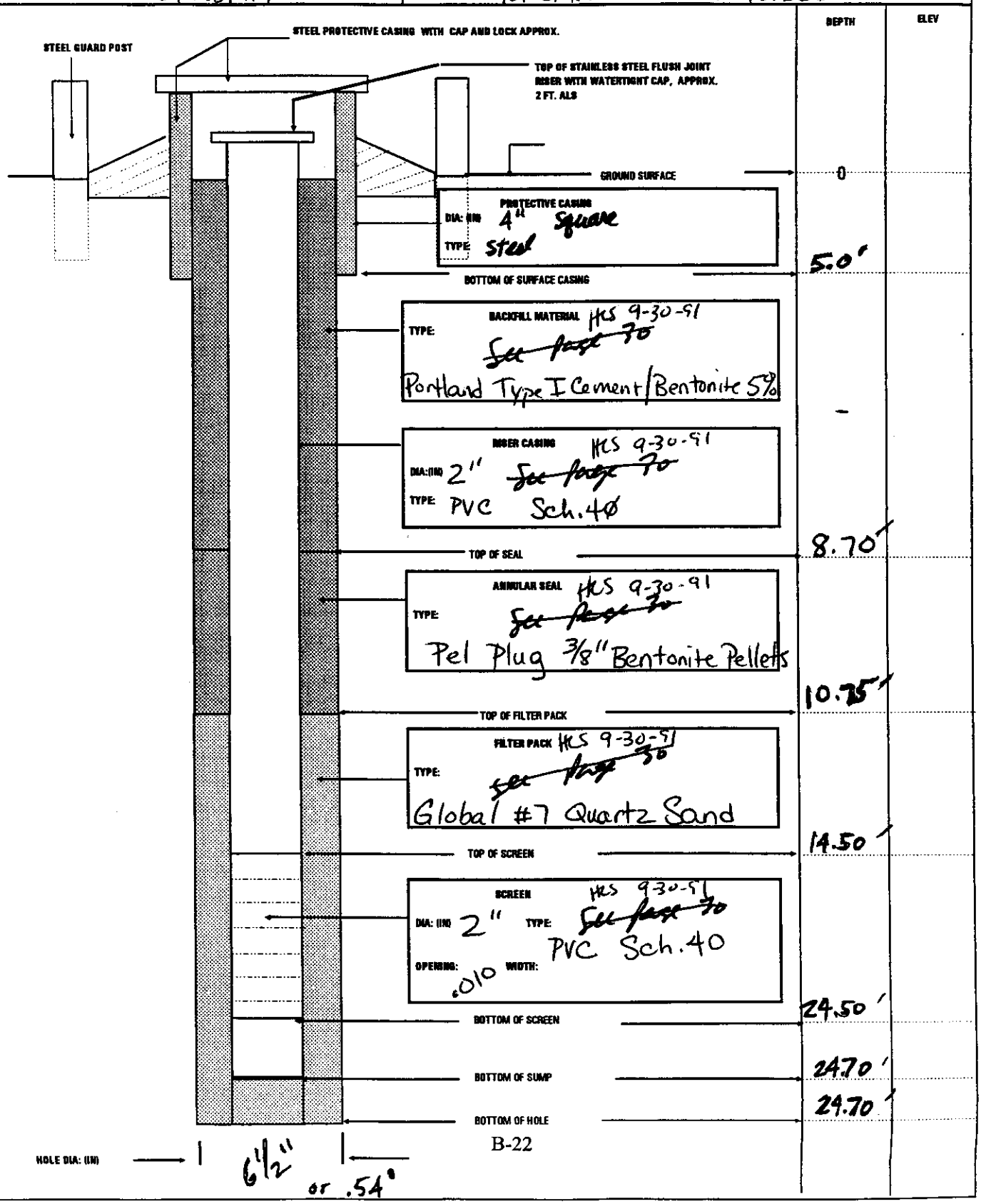
RECORDED BY: Matt Otley 5-6-98 (Signature & Date)

QA CHECK BY: Heather L Smith 9-29-98 (Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKGMW-18	**BEGIN:** 5-6-98 1600	**END:** 5-7-98 0830	
COORDINATES: N: 570873.349 E: 2354993.909	**REFERENCE POINT:** TOP of Riser Pip	**ELEVATION:** MSL 1043.060	



MONITORING WELL INSTALLATION LOG HOLE NUMBER: BKGMW15

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Matt Ok

SHEET 1 OF 1

MONITORING WELL ID: BKGMW15

INSTALLATION START: DATE: 5-6-98 TIME: 10:00

INSTALLATION FINISH: DATE: 5-6-98 TIME: 13:00

ANNULAR SPACE MATERIALS INVENTORY: Global Drilling Suppliers

GRANULAR FILTER PACK: TYPE: Quartz #7 (3/8") QUANTITY: 12- 50 lb bags

BENTONITE SEAL: TYPE: Pel-Plug Bentonite Pellets QUANTITY: 1- 5 gallon bucket.

GROUT: TYPE: Cement/Bentonite (5%) QUANTITY: ____

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010" SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: ____

OUTSIDE DIAMETER: 2" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Global Drilling Suppliers

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: #7 Quartz Sand

DESCRIPTION OF WELL CASING: MS 9-29-98

OUTSIDE DIAMETER: 2 5/16" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Global

JOINT DESIGN AND COMPOSITION: Threaded

CENTRALIZERS DESIGN AND COMPOSITION: ____

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4" Square COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

MS 9-29-98

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [✓] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [✓] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [✓] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: ____

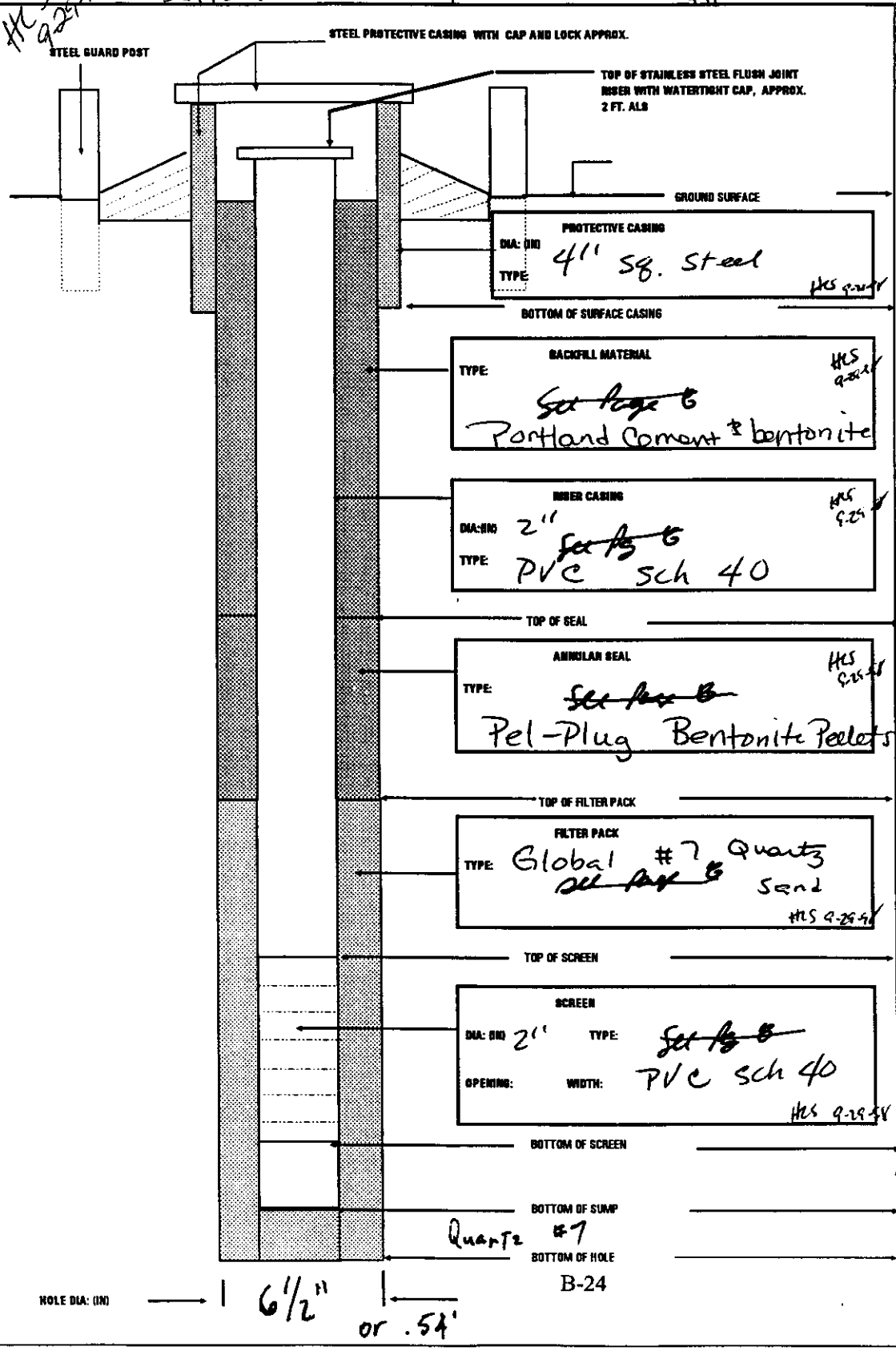
RECORDED BY: Matt Ok (Signature & Date)

QA CHECK BY: Heather L Smith 9-29-98 (Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation HLS 9-28-98 **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKGmw-15	**BEGIN:** 5-6-98 1000	**END:** 5-6-98 1300	
COORDINATES: N: 569339.868 E: 236482 HLS 9-28-98	**REFERENCE POINT:** Top of Riser Pipe	**ELEVATION:** 1037.897 MSL	



MONITORING WELL INSTALLATION LOG HOLE NUMBER BG MW-13

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Matt Boley

SHEET 1 OF 1

MONITORING WELL ID: BG MW-13

INSTALLATION START: DATE: 4-24-98 TIME: 1640

INSTALLATION FINISH: DATE: 4-25-98 TIME: 0900

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global # 7 QUANTITY: 6-50 lb bags

BENTONITE SEAL: TYPE: Pel Plug Pellets QUANTITY: 1-5 Gallon bucket

GROUT: TYPE: Portland Cement Type I QUANTITY: 14 gallons
4% Bentonite (Powder), Premium Gel

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal HLS 9-29-98

TOTAL OPEN AREA PER FOOT OF SCREEN: —

OUTSIDE DIAMETER: 2" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Sch. 40 COMPOSITION: PVC

MANUFACTURER: Global

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: NA

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Global

JOINT DESIGN AND COMPOSITION: Threaded

CENTRALIZERS DESIGN AND COMPOSITION: —

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4" square COMPOSITION: Steal

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

HLS 9-29-98

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [X] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [X] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [X] NO [ ]

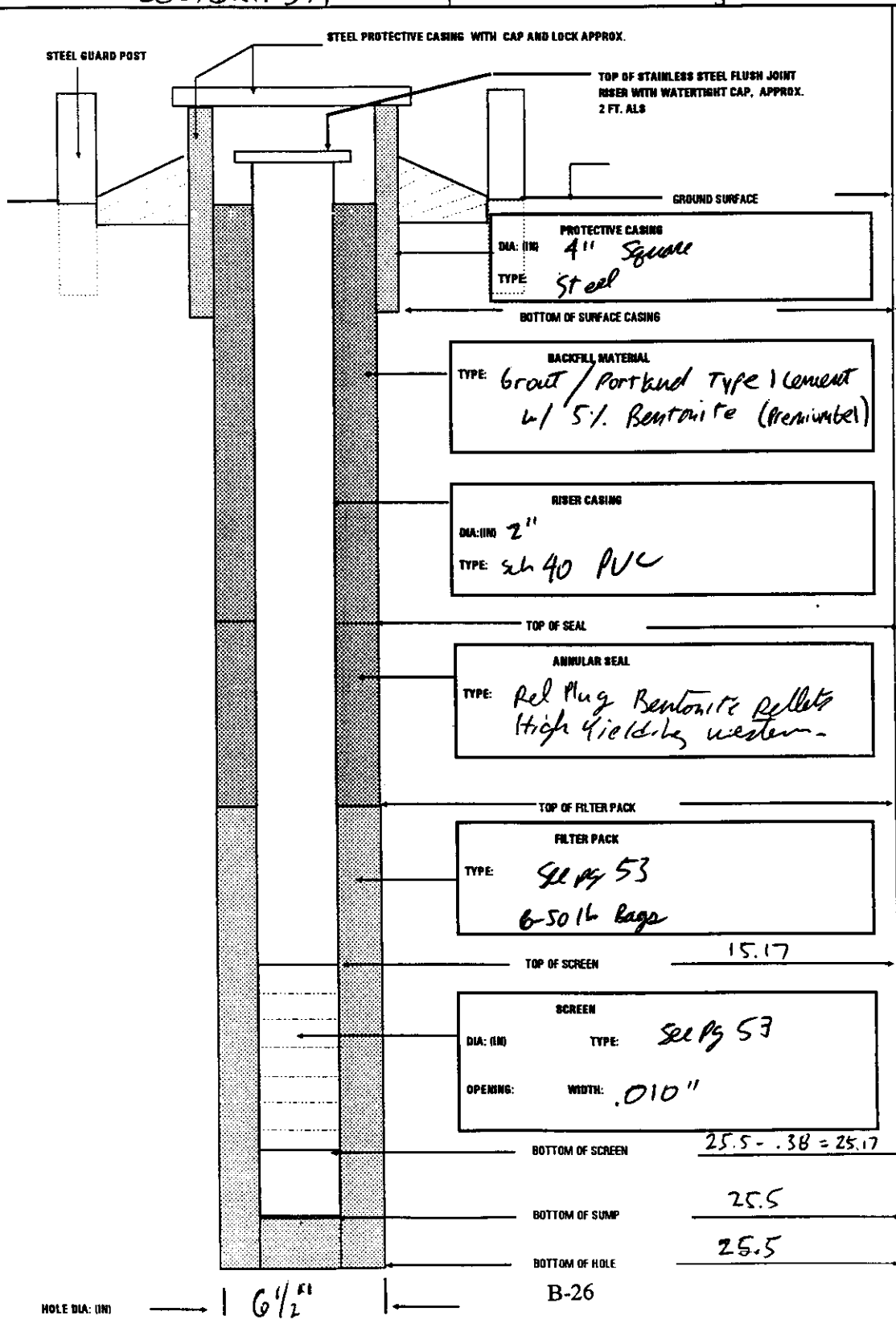
QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: NA

RECORDED BY: Matt Boley 4-25-98 (Signature & Date) QA CHECK BY: K L Dominic 4.25.98 (Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKGMW-13	**BEGIN:** 4/24/98	**END:** 4-25-98
COORDINATES: N: 558269.158 E: 2261627.394	**REFERENCE POINT:** TOP of Riser Casing	**ELEVATION:** 986.84 MSL



MONITORING WELL INSTALLATION LOG HOLE NUMBER: BKGMW-12

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Matt Oxley

SHEET 1 OF 1

MONITORING WELL ID: BKGMW-12

INSTALLATION START: DATE: 4-26-98 TIME: 09:00

INSTALLATION FINISH: DATE: 4-26-98 TIME: 10:00

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Quartz #7 QUANTITY: 6 MTO 11-50lb bags

BENTONITE SEAL: TYPE: Pel-Plug Western Pellets QUANTITY: 1- 5 gallon bucket

GROUT: TYPE: Portland Type I QUANTITY: 30-35 gallons

DESCRIPTION OF WELL SCREEN: w/ 5% Premium Bentonite Powder

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: —

OUTSIDE DIAMETER: 2"+5/16" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Schd 40 COMPOSITION: PVC

MANUFACTURER: Global

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: —

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2"+5/16" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Schd 40 COMPOSITION: PVC

MANUFACTURER: Global

JOINT DESIGN AND COMPOSITION: Threaded and flush MTO PVC

CENTRALIZERS DESIGN AND COMPOSITION: —

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4" Square COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

HLS 9.29.98

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [X] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [X] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [X] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: NA

RECORDED BY: Matt Oxley 4-26-98 (Signature & Date)

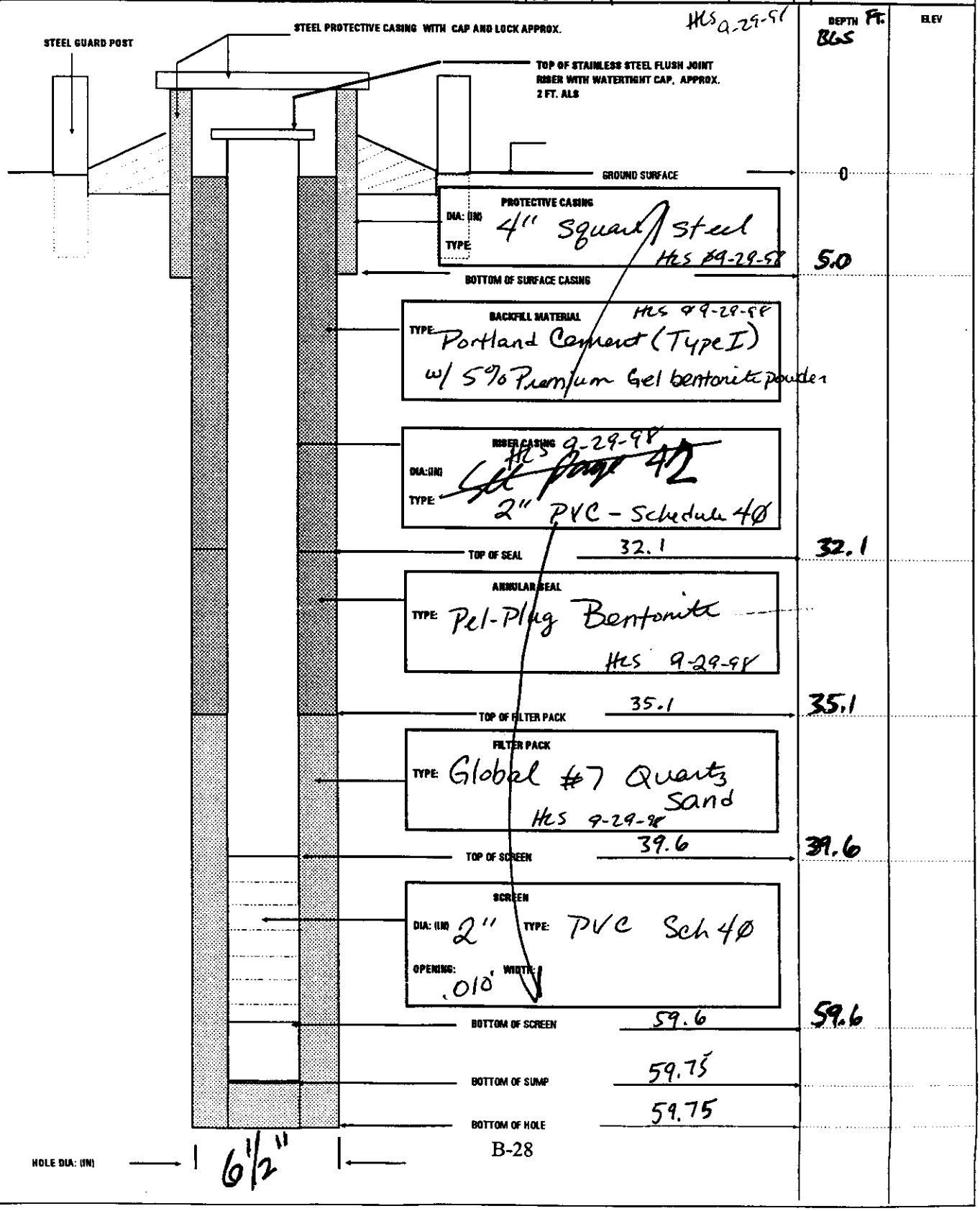
QA CHECK BY: Heather L Smith 9-30-98 (Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation HCS 9-29-98 DELIVERY ORDER NO: 0060

WELL NUMBER: BKGMW-12 BEGIN: 4-26-98 0900 END: 4-26-98 1000

COORDINATES: N: 563918.862 E: 2367795.226 REFERENCE POINT: Top of Riser Pipe ELEVATION: 997.574 MSL



MONITORING WELL INSTALLATION LOG HOLE NUMBER: BKG MW-4

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Matt Daley

SHEET 1 OF 1

MONITORING WELL ID: BKG MW-4

INSTALLATION START: DATE: 4-28-98 TIME: 1140

INSTALLATION FINISH: DATE: 4-28-98 TIME: 1350

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Quartz #7 QUANTITY: 6 - 50lb Bags

BENTONITE SEAL: TYPE: Pel-Plug Pellets Bent. QUANTITY: 1 - 5 gallon bucket

GROUT: TYPE: Portland TYPE I w/ 5% Bent. Powder QUANTITY: 7 Gallons

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: —

OUTSIDE DIAMETER: 2" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Global Drilling Suppliers

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Natural Fill/Sand From Formation

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Global Drilling Suppliers

JOINT DESIGN AND COMPOSITION: Threaded

CENTRALIZERS DESIGN AND COMPOSITION: —

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4" Square COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

HLS 9-29-98

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [X] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [X] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [X] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: —

RECORDED BY: Matt Daley 4-28-98
(Signature & Date)

QA CHECK BY: Heather L Smith 9-29-98
(Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKGMW004	**BEGIN:** 6298 11:40	**END:** 1400
COORDINATES: N: 569464.743 E: 2368852.973	**REFERENCE POINT:** top of Riser Pipe **ELEVATION:** 965.160 MSL	

HCS 9-29-98

STEEL PROTECTIVE CASING WITH CAP AND LOCK APPROX.

STEEL GUARD POST

TOP OF STAINLESS STEEL FLUSH JOINT RISER WITH WATERTIGHT CAP, APPROX. 2 FT. AGS 2.45'

GROUND SURFACE — 0

PROTECTIVE CASING
DIA: (IN) 4" square
TYPE: Steel HCS 9-29-98

BOTTOM OF SURFACE CASING — 3.5'

BACKFILL MATERIAL
TYPE: Portland Cement & Bentonite HCS 9-29-98

RISER CASING
DIA: (IN) 2"
TYPE: PVC - schedule 40

TOP OF SEAL — 4.00 — 4.00

ANNULAR SEAL
TYPE: ~~Hole Plug~~ HCS 9-29-98 Pel-Plug Bentonite

7.00 — 7.00

TOP OF FILTER PACK

FILTER PACK HCS 9-29-98
TYPE: Global #7 Quartz Sand

TOP OF SCREEN — 9.17 — 9.17

SCREEN
DIA: (IN) 2" TYPE: PVC Sch. 40
OPENING: 010 WIDTH:
HCS 9-29-98

BOTTOM OF SCREEN — 19.17 — 19.17

BOTTOM OF SUMP — 19.52 — 19.52 (19.97)

BOTTOM OF HOLE — 19.52

HOLE DIA: (IN) 6 1/2"

DEPTH	ELEV
0	
3.5'	
4.00	4.00
7.00	7.00
9.17	9.17
19.17	19.17
19.52	19.52 (19.97)

MONITORING WELL INSTALLATION LOG HOLE NUMBER: BKG MW-6

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Matt Orr

SHEET 1 OF 1

MONITORING WELL ID: BKGMW-6

INSTALLATION START: DATE: 9-27-98 TIME: 1355

INSTALLATION FINISH: DATE: 9-27-98 TIME: 1545

ANNULAR SPACE MATERIALS INVENTORY: Global

GRANULAR FILTER PACK: TYPE: Quartz Sand QUANTITY: 6.5 50 lb bags

BENTONITE SEAL: TYPE: Pel Plug / Pellets Western Bent. QUANTITY: 1 - 5 gallon bucket

GROUT: TYPE: portland Cement / Bentonite powder 5% QUANTITY: 15 gallons

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: —

OUTSIDE DIAMETER: 2" + 5/16" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Global

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: —

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2" + 5/16" NOMINAL INSIDE DIAMETER: 2"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Global

JOINT DESIGN AND COMPOSITION: Threaded / PVC

CENTRALIZERS DESIGN AND COMPOSITION: —

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4" Square COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

9-29-98

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [X] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [X] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [X] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: ~~Matt Orr~~ MTO 4.27.98 0 gallons

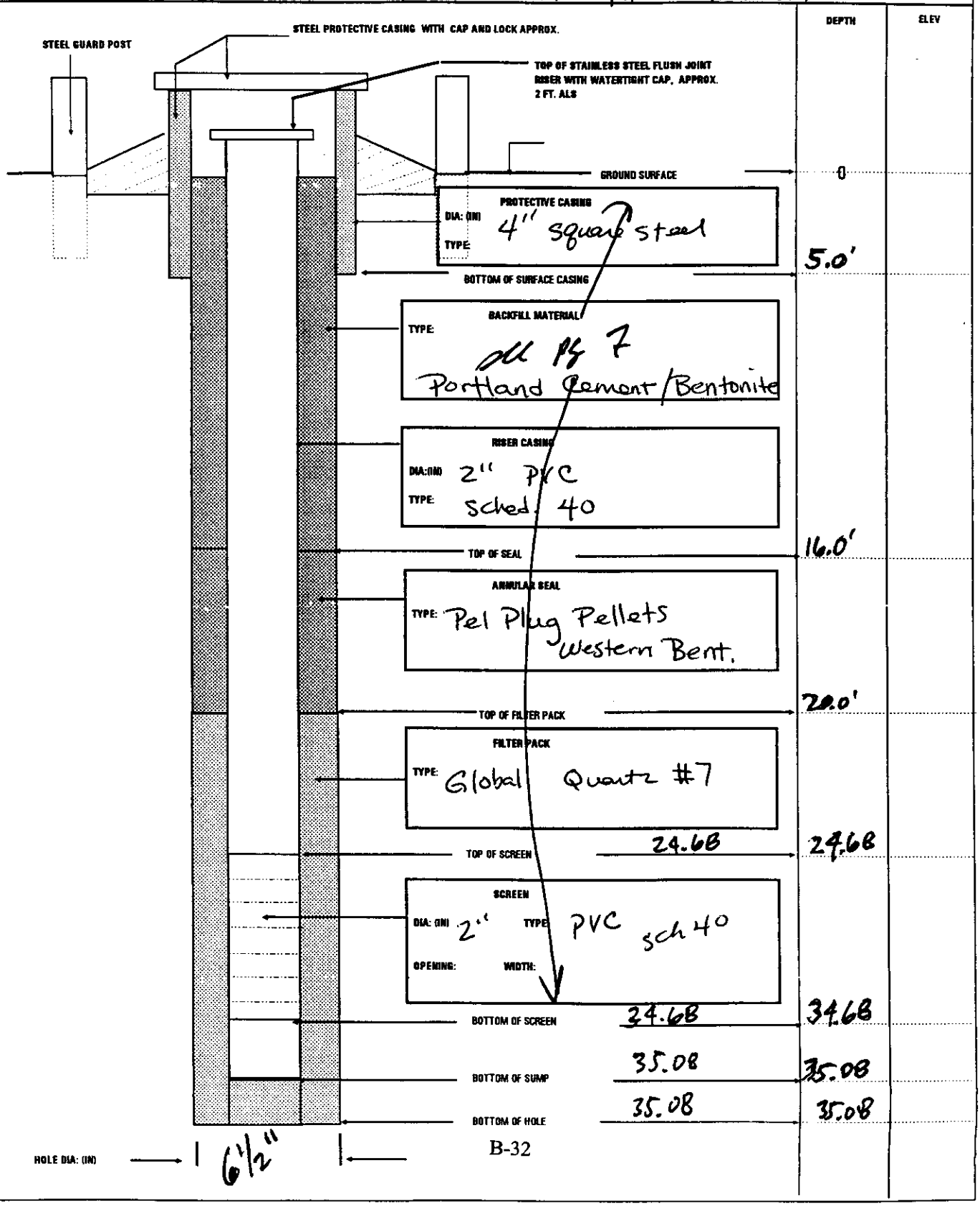
RECORDED BY: Matt Orr (Signature & Date)

QA CHECK BY: Heather L Smith 9-29-98 (Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: BKGmw-0006	**BEGIN:** 4-27-98	**END:** 4-27-98
COORDINATES: N: 571910.470 E: 2358643.961	**REFERENCE POINT:** TOP of Riser Pipe **ELEVATION:** 1026.380 MSL	



MONITORING WELL INSTALLATION LOG HOLE NUMBER: WBG mw-009

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: B. Baker

SHEET 1 OF 1

MONITORING WELL ID: WBG mw-009

INSTALLATION START: DATE: 23 Apr 99 TIME: 0746

INSTALLATION FINISH: DATE: 23 Apr 99 TIME: 1200

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 silica sand QUANTITY: 7/50-lb bags

BENTONITE SEAL: TYPE: 3/8" @ TR30 Bentonite Pellets QUANTITY: 1.5 buckets

GROUT: TYPE: Bentonite/Cement QUANTITY: 1/94-lb bag

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: ———

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 silica sand

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Manufactured flush threaded

CENTRALIZERS DESIGN AND COMPOSITION: NA

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4"x4" box COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

~~23 Apr 99~~ NA, Well slipped down hole 0.5 ft - extra PVC casing added for 2.5 stickup

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [✓] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [✓] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [✓] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: NA/ 0 gal

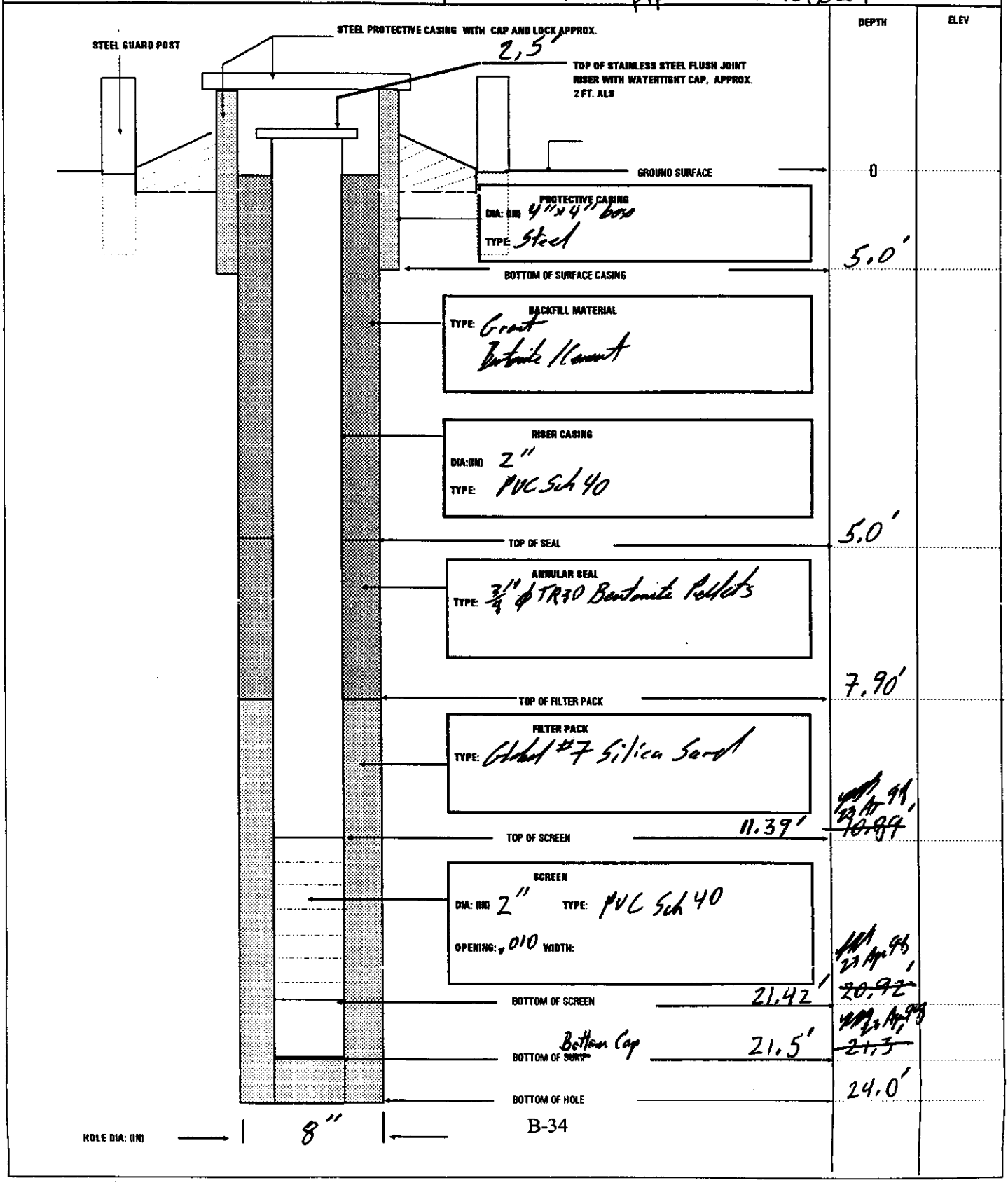
RECORDED BY: [signature] 23 Apr 99
(Signature & Date)

QA CHECK BY: K Dominic 4.26.99
(Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: WBG mw - 909	**BEGIN:** 22 Apr 94	**END:** 23 Apr 94
COORDINATES: N: 561603.5350 E: 235759.2040	**REFERENCE POINT:** Top of Riser Pipe **ELEVATION:** 1045.829 MSL	



MONITORING WELL INSTALLATION LOG HOLE NUMBER: WBGmw-008

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Brad Baker

SHEET 1 OF 1

MONITORING WELL ID: WBGmw-008

INSTALLATION START: DATE: 23 Apr 98 TIME: 1545

INSTALLATION FINISH: DATE: 23 Apr 98 TIME: 1730

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 Silica Sand QUANTITY: 4.25/50-lb bags

BENTONITE SEAL: TYPE: 3/8" ϕ TR30 Bentonite Pellets QUANTITY: 1.25 buckets

GROUT: TYPE: Bentonite/Cement QUANTITY: 1/94-lb bag

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: ———

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: NA - well set on bottom of borehole

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Manufactured Flush Threaded

CENTRALIZERS DESIGN AND COMPOSITION: NA

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4"x4" box COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

HLS 9-29-98

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [✓] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [✓] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [✓] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: NA Ogw

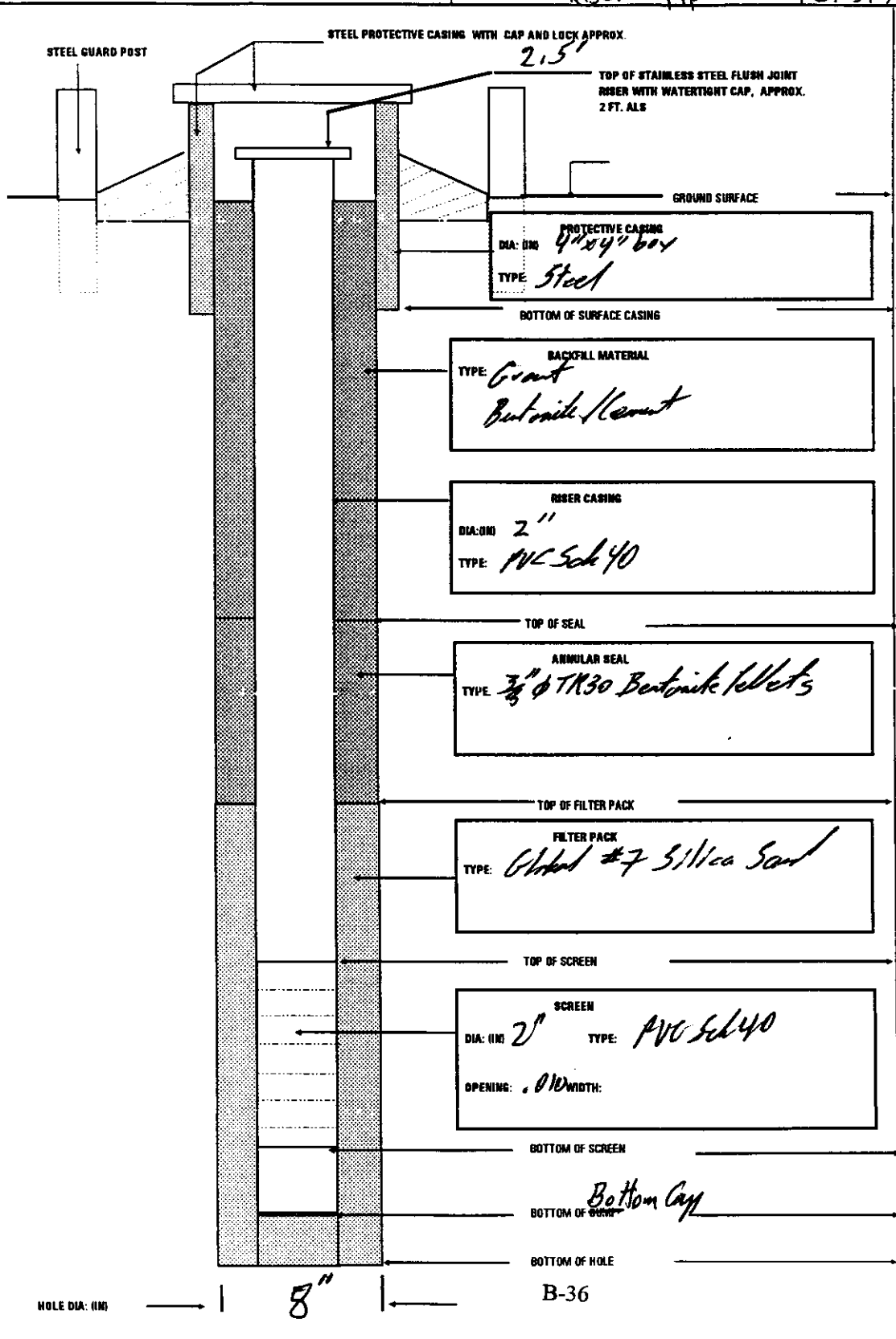
RECORDED BY: [signature] 23 Apr 98 (Signature & Date)

QA CHECK BY: L Dominick 4-26-98 (Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: WBG mw-008	**BEGIN:** 23 Apr 98	**END:** 23 Apr 98	
COORDINATES: N: 562016.3496 E: 2359700.5730	**REFERENCE POINT:** Top of Riser Pipe	**ELEVATION:** 1005.709	**MSL**



MONITORING WELL INSTALLATION LOG HOLE NUMBER: WBGmw-097

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: [illegible]

SHEET 1 OF 1

MONITORING WELL ID: WBGmw-097

INSTALLATION START: DATE: 23 Apr 98 TIME: 1312

INSTALLATION FINISH: DATE: 24 Apr 98 TIME: 1450

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 Silica Sand QUANTITY: 5 / 50-lb bags

BENTONITE SEAL: TYPE: 3/8" ϕ TR30 Bentonite Pellets QUANTITY: 1.5 buckets

GROUT: TYPE: Bentonite / Cement QUANTITY: 1.5 / 94-lb bags

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: ———

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 Silica Sand

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Manufactured flush thread

CENTRALIZERS DESIGN AND COMPOSITION: NA

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4"x4" box COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

NA

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [✓] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [✓] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [✓] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: NA Gal

RECORDED BY: [signature] 24 Apr 98
(Signature & Date)

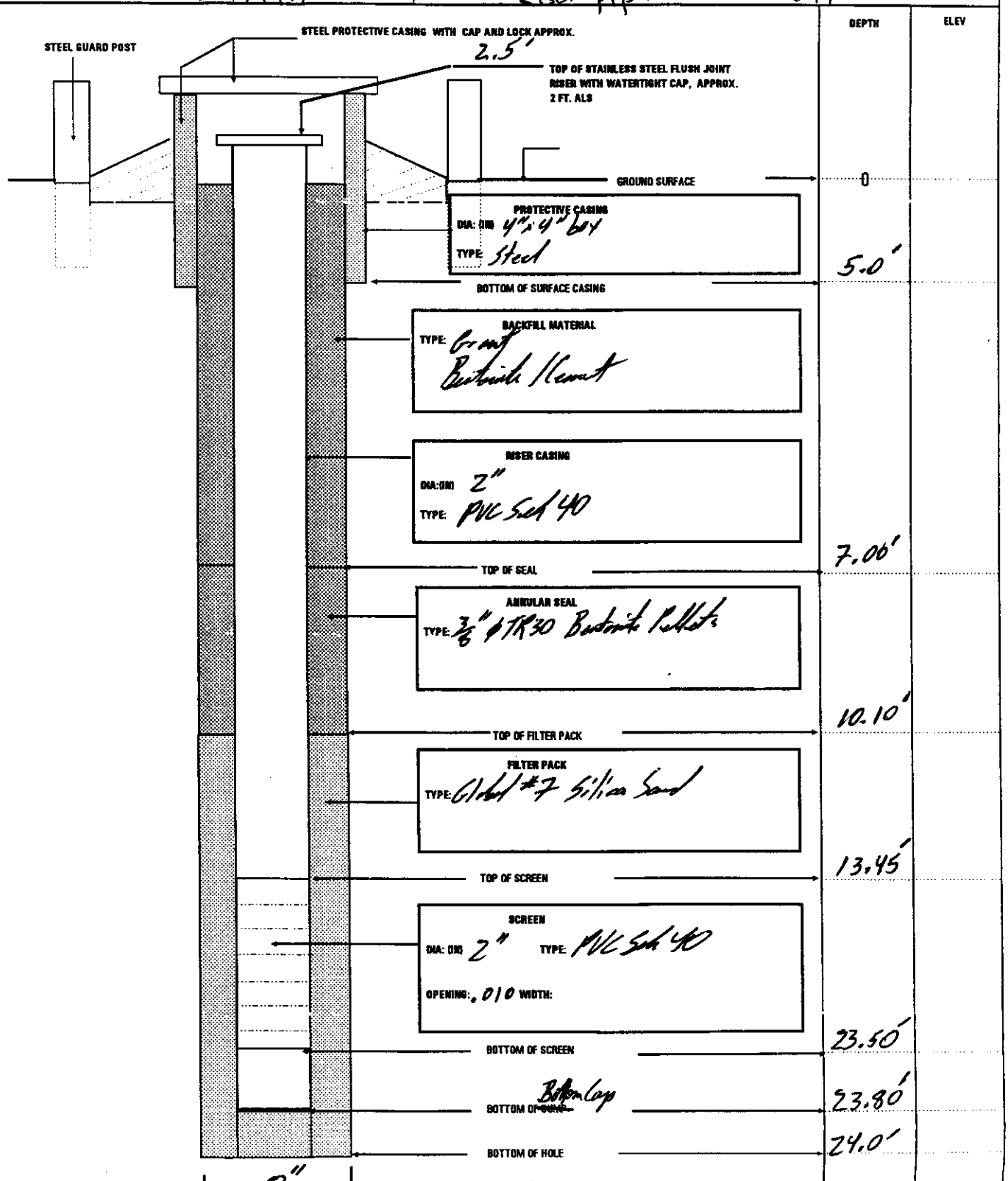
QA CHECK BY: [signature] 4.26.98
(Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: WBGmw-07 **BEGIN:** 23 Apr 96 **END:** 24 Apr 96

COORDINATES: N: 562479.865 E: 236042.441 **REFERENCE POINT:** TOP of Riser Pipe **ELEVATION:** 998.097 MSL



MONITORING WELL INSTALLATION LOG HOLE NUMBER: WBGmw-006

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: Bill Baker

SHEET 1 OF 1

MONITORING WELL ID: WBGmw-006

INSTALLATION START: DATE: 24 Apr 96 TIME: 1620

INSTALLATION FINISH: DATE: 25 Apr 96 TIME: 1020

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 Silica Sand QUANTITY: 7/50-lb bags

BENTONITE SEAL: TYPE: 3/8" ϕ TR30 Bentonite Pellets QUANTITY: 1.5 buckets

GROUT: TYPE: Bentonite Cement QUANTITY: 1/94-lb bag

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horizontal

TOTAL OPEN AREA PER FOOT OF SCREEN: ———

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 Silica Sand

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Manufactured flush threaded

CENTRALIZERS DESIGN AND COMPOSITION: N/A

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 9"x 4" box COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

Heaving sands in side augers ~4.0 ft; flush w/ H2O (~20 gal) to 1.1 ft heaves - result open borehole to TD of 19.0 ft

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [✓] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [✓] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [✓] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: 20 gal

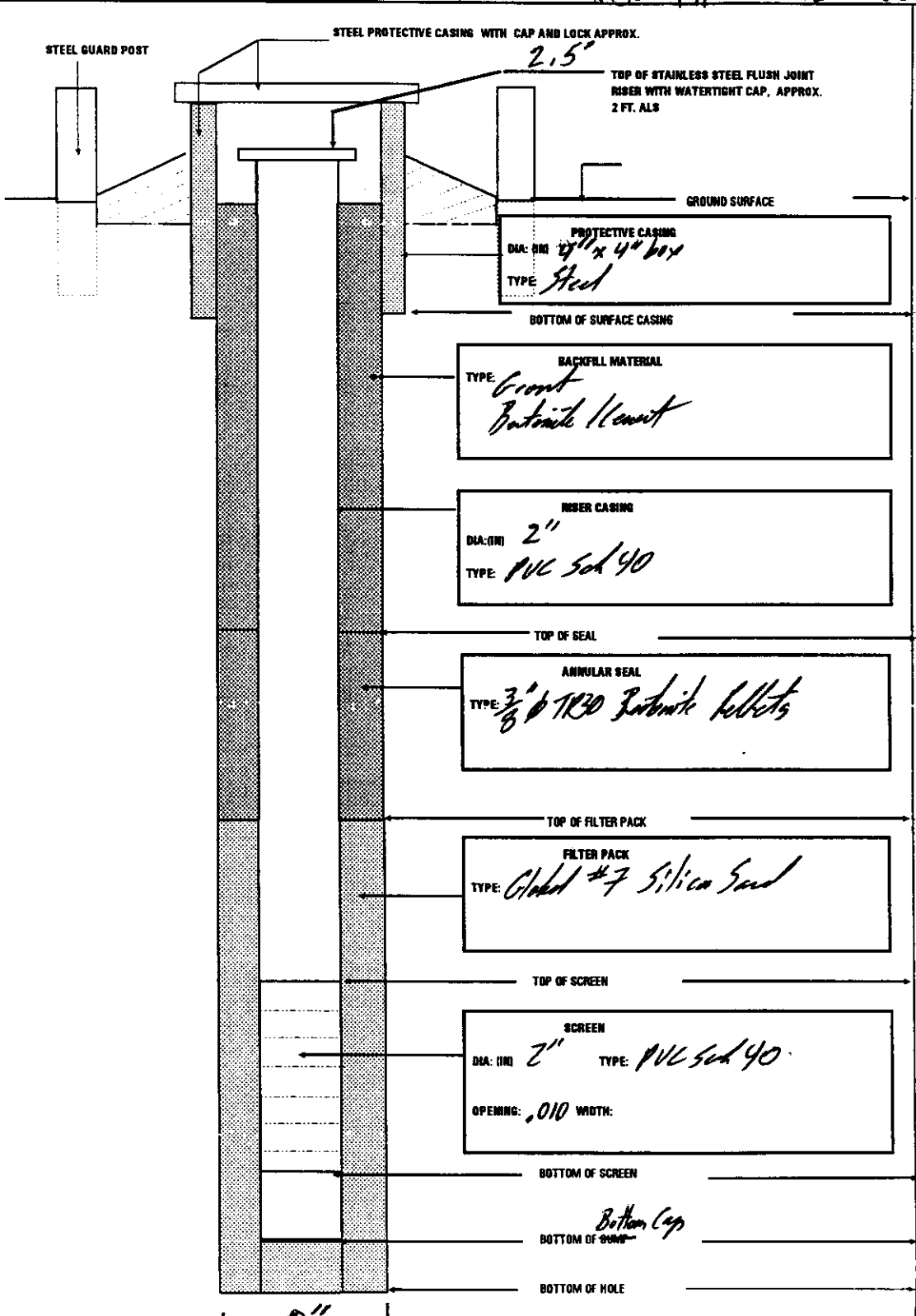
RECORDED BY: [signature] 25 Apr 96 QA CHECK BY: K Dominic 4.26.96

(Signature & Date) (Signature & Date)

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: WBGmw-096	**BEGIN:** 24 Apr 96	**END:** 25 Apr 96
COORDINATES: N: 563098.8676 E: 2359087.7930	**REFERENCE POINT:** Top of Riser Pipe **ELEVATION:** 1012.15 MSL	



MONITORING WELL INSTALLATION LOG HOLE NUMBER: WBG mw-005

PROJECT: Phase II RI @ WBG and Background Investigation INSPECTOR: [illegible]

SHEET 1 OF 1

MONITORING WELL ID: WBG mw-005

INSTALLATION START: DATE: 22 Apr 98 TIME: 0855

INSTALLATION FINISH: DATE: 22 Apr 98 TIME: 1530

ANNULAR SPACE MATERIALS INVENTORY:

GRANULAR FILTER PACK: TYPE: Global #7 Silica Sand QUANTITY: 6½ / 50-lb bags

BENTONITE SEAL: TYPE: 3/8" ϕ TR30 Bentonite Pellets QUANTITY: 1.25 bucket #s

GROUT: TYPE: Cement/Bentonite QUANTITY: 1/5 16 bag

DESCRIPTION OF WELL SCREEN:

SLOT SIZE (inches): .010 SLOT CONFIGURATION: Horz.

TOTAL OPEN AREA PER FOOT OF SCREEN: ———

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

TYPE OF MATERIAL BETWEEN BOTTOM OF BORING AND SCREEN: Global #7 Silica Sand

DESCRIPTION OF WELL CASING:

OUTSIDE DIAMETER: 2.3" NOMINAL INSIDE DIAMETER: 2.0"

SCHEDULE/THICKNESS: Sch 40 COMPOSITION: PVC

MANUFACTURER: Johnson

JOINT DESIGN AND COMPOSITION: Manufactured Flush Threaded

CENTRALIZERS DESIGN AND COMPOSITION: NA

DESCRIPTION OF PROTECTIVE CASING:

NOMINAL INSIDE DIAMETER: 4"x4" Box COMPOSITION: Steel

SPECIAL PROBLEMS ENCOUNTERED DURING WELL CONSTRUCTION AND THEIR RESOLUTION:

NA

Was all well screen and casing material used for construction free of foreign matter (e.g., adhesive tape, labels, soil, grease, etc.)? YES [✓] NO [ ]

Was all well screen and casing material used for construction free of unsecured couplings, ruptures, and other physical breakage and/or defects? YES [✓] NO [ ]

Is deformation or bending of the installed well screen and casing minimized to the point of allowing the insertion and retrieval of a 1.0-inch bailer throughout the entire length of the completed well? YES [✓] NO [ ]

QUANTITY OF APPROVED WATER USED FOR FILTER PACK ENPLACEMENT: NA

RECORDED BY: [signature] 22 Apr 98 (Signature & Date)

QA CHECK BY: [signature] 4.26.98 (Signature & Date)

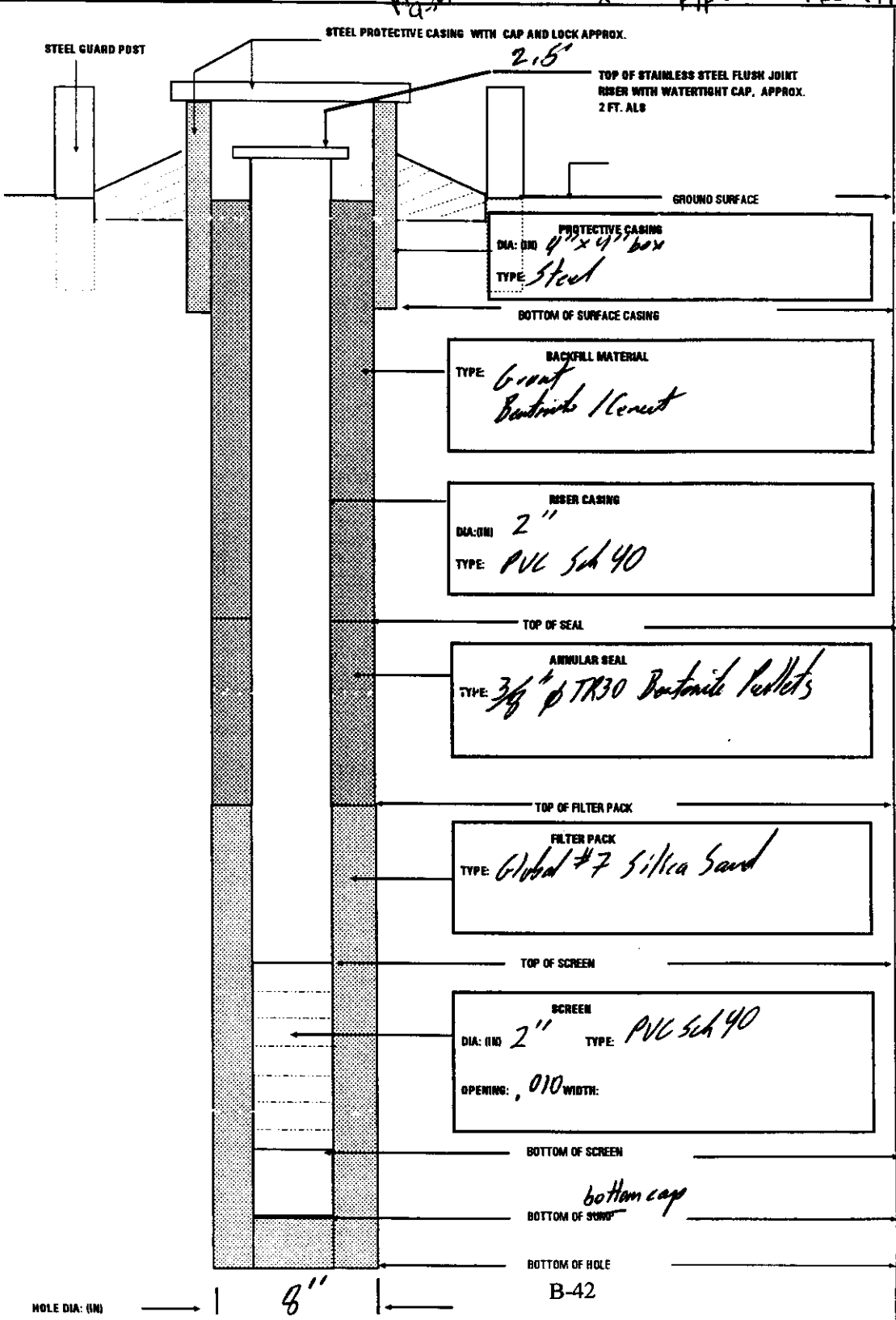
E

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER: WBG mw-005 **BEGIN:** 22 Apr 96 **END:** 22 Apr 96

COORDINATES: N: 563037.1716 E: 2357163.5480 **REFERENCE POINT:** Top of Riser Pipe **ELEVATION:** 1052.198 MSL



WELL DEVELOPMENT FORMS

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

Date: 5/12/98 Time: 1351

Well Number and Location: BKGmw-021

Development Crew: Martha Clough
Heather Smith

Driller (if applicable): N/a

Water Levels / Time: Initial: 13.3' / 1351 May 98 Pumping: ____ / ____

Final: 12.69' / 1240 12 May 98

Total Well Depth: Initial: ~~21~~ 21.54 FT BTOC Final: ~~21~~ 21.54 FT BTOC

Date and Time: Begin: 1351 / 12 May 98 Completed: 1655 / 12 May 98

Development Method(S): bailer (teflon disposable)

Total Quantity of Water Removed: ~48 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	308007	12 May 98
Specific Conductivity	↓	12 May 98
pH		12 May 98
Turbidity		12 May 98

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NUMBER AND LOCATION: BKGmw-021 1 well volume = 7.4 gal

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
12 May 98	1434	Ø	11.3	1.13	6.89	999	Ø	Ø	initial bail
	1505	8 gal	10.5	1.06	7.04	999	8	1	
	1532	8 gal	10.6	1.11	7.03	447	16	2	
	1600	8 gal	10.6	1.07	7.07	602	24	3	
	1635	8 gal	10.4	1.12	6.99	774	32	4	
	1722	8 gal	10.8	1.02	7.02	112	40	5	
✓	~~1640~~ 1840 MTO 06-01-98	8 gal	10.9	1.08	6.89	3	48	6	final reading

B-46

RECORDED BY: Heather L Smith 5-12-98
(Signature and Date)

QA CHECK BY: Matt O'Brien 06-01-98
(Signature and Date)

DATA RECORDED BY:
REMARKS:
DATA CHECK RES
(1) CK - 24 HR CLOC
ET - ELASPED TI
COLUMN
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FILE STRUCT
STORAGE LOCA
BKGmw-21
DATA LOGGER TEST NO.
SLUG DIMENSIO
TEST METHOD
TEST INTERVA
HEIGHT OF WAT
DEPTH TO WA
TOTAL WELL
SCREEN OR OPE
REFERENCE POI
WATER LEVEL
TRANSDUCER
DATA LOGGE
EQUIPMENT
LOCATION:
WELL NO:
PROJE

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0080**

Date: 12 May 98 Time: 0900

Well Number and Location: BKGmw-019

Development Crew: Brad Bahr

Hunter Smith 12May98 Mike Klidzejs

Driller (if applicable): N/A

Water Levels / Time: Initial: 16.64' TOC 1303 Pumping: / 1402

Final: 16.77' / 13May98 1326

Total Well Depth: Initial: 34.35' TOC FT BTOC Final: FT BTOC

Date and Time: Begin: 12May98 / Completed: /

Development Method(S): Bailer / Pump

Total Quantity of Water Removed: 165 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	51009	12May98
Specific Conductivity	↓	↓
pH		
Turbidity		

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE _____ OF _____

WELL NUMBER AND LOCATION: BKGmw-019

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
12 May 98	1312	—	—	—	—	—	—	—	Surge+well w/ bailer
	1315	<1	15.6	15.4*	9.44	311*	<1	<1	*Suspect reading; H2O v. cloudy/muddy
	1352	15	16.1	14.3*	7.10	311*	15	1	1 well Volume = 15.1 gal
	1415	15	11.8	0.620	7.15	-10*	30	2	Resumed to pump 1402 hrs
	1427	15	10.8	0.589	7.01	-10*	45	3	
	1441	15	10.9	0.639	7.25	498	60	4	1432hr H2O level @ 21.58ft TOC appears stable 1.5-2.0 gal/min
	1453	15	10.9	0.640	7.26	230	75	5	
	1503	15	11.2	0.633	7.33	346	90	6	
	1518	15	11.0	0.635	7.35	154	105	7	
	1532	15	11.0	0.636	7.34	138	120	8	
	1546	15	11.1	0.626	7.32	110	135	9	
	1559	15	11.2	0.628	7.31	112	150	10	
	16	15	11.3	0.621	7.30	108	165	11	

RECORDED BY: _____ 12 May 98
(Signature and Date)

QA CHECK BY: _____ 6.2.98
(Signature and Date)

B-48

PROJECT NO: LOCATION: WELL NO: EQUIPMENT TYPE DATA LOGGER TRANSDUCER WATER LEVEL INDICATOR REFERENCE POINT SCREEN OR OPEN HOLE TOTAL WELL DEPTH DEPTH TO WATER HEIGHT OF WATER TEST INTERVAL TEST METHOD PUMP DIMENSIONS DATA LOGGER TEST NO. B-48 STORAGE LOCATION FILE STRUCTURE COLUMN COLUMN COLUMN DATA CHECK RESULTS REMARKS: DATA RECORDED BY

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

Date: 11 May 94 Time: 1358

Well Number and Location: BKG mw-017

Development Crew: Brad Bak.-
Mike Klidzejs

Driller (if applicable): NA

Note: PID screen 0.0 ppm

Water Levels / Time: Initial: 15.08' / 1359 Pumping: /

Final: /

Total Well Depth: Initial: 33.28' FT BTOC Final: FT BTOC

Date and Time: Begin: / Completed: /

Development Method(S): Bailer, Submersible Pump.

Total Quantity of Water Removed: 170 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	308007	11 May 94
Specific Conductivity	↓	11 May 94
pH	↓	11 May 94
Turbidity	↓	11 May 94

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE 1 OF _____

WELL NUMBER AND LOCATION: BKGmw-017

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
									Bailing
11 May 98	1414	<1	12.3	0.723	7.89	551*	<1	0	w24 of silt on bottom of well *Suspect Reading
	1430	6	11.3	0.793	7.30	999	6	—	14.23 gal = 1 well volume
	1527	~15	11.6	0.762	7.25	999	~15	1	
	1610	14	11.7	0.750	7.25	999	~~28~~ 29 gals	1 1/2	
	1635	—	—	—	—	—	34	2 + 5gal	At 34 gal vacuum began using submersible pump 1635hr
	1648	14	12.1	.767	7.15	104*	44	3	H_2O level @ 32.4 ft BTOC during pumping
B-50	1716	14	11.9	.761	7.25	999	58	4	
	1747	14	11.8	.758	7.16	645	72	5	Began containing H_2O in previously used phase I Drum
	1814	14	12.0	.761	~~7.21~~ 7.50 11 May 98	413	86	6	Original pH reading Equipment malf prior to stabilization
	1831	10	11.6	.763	7.13	378	96	6.66	
13 May 98	0907	4	12.1	.705	6.79	999	100	7	13 May 98 H_2O level 16.13 ft TOC Resumed purging
	0930	~14	11.9	.822	7.09	267	114	8	
	0955	14	12.1	.796	7.12	216	128	9	
	1021	14	12.2	.770	7.24	179	142	10	
	1050	14	12.3	.756	7.26	234	156	11	
	11	14	12.2	.749	7.19	80	170	12	

RECORDED BY: _____ 13 May 98
(Signature and Date)

QA CHECK BY: Mark O'Leary 6-2-98
(Signature and Date)

PROJECT NO: | WELL NO: | LOCATION: | EQUIPMENT T | DATA LOGGE | TRANSDUCER | WATER LEVEL | REFERENCE PO | SCREEN OR OPI | TOTAL WELL | DEPTH TO WA | HEIGHT OF WA | TEST INTERV | TEST METHOD | SLUG DIMENSI | DATA LOGGER TEST NO. | STORAGE LO | FILE STRU | COLUMN | COLUMN | COLUMN | DATA CHECK R | (1) CK - 24 HR CL ET - ELASPED | REMARKS: | DATA RECORDED

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

Date: 05/10/98 Time: 1245

Well Number and Location: BKGmw-005

Development Crew: Brad Baker
Heather Smith

Driller (if applicable): n/a

Water Levels / Time: Initial: 10.14' TOC / 1235 Pumping: ~1+ gal / min.

Final: /

Total Well Depth: Initial: 21.09' FT BTOC Final: FT BTOC

Date and Time: Begin: 1245, 10 May 98 Completed: /

Development Method(S): bailer 1" x 3' teflon
pump

Total Quantity of Water Removed: gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	HACH SN5150	10 May 98
Specific Conductivity	SN5150	10 May 98
pH	SN5150	10 May 98
Turbidity	SN 5150	10 May 98
	*Used Horiba water checker #-10 from HACH	

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE 1 OF ____

WELL NUMBER AND LOCATION: BKGmw-005

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
10 May 98	1300	<1	13.5°C	.523	7.09	999	<1	Ø	1 bailer full
10 May 98	1345	~9	11.7°C	.530	7.05	999	~9	~1	using bailer Very Silty
10 May 98	1420	~9	12.5°C	.542	7.07	999	~18	~2	used pump
10 May 98	1545	~8	14.9°C	.560	7.12	999	~26	~3	used pump- pumps dry/ recharge etc.
10 May 98	1647	~9	13.1°C	.569	7.30	999	~35	~4	pump
11 May 98	1735	~9	11.6°C	.522	6.94	999	~44	~5	pump
11 May 98 B-52	0925	~9	10.7°C	.541	6.47	999	~48	~5½	1st samp. of the day
11 May 98	0904	~10	10.8°C	.583	6.78	999	~58	~7	pump.
11 May 98	0938	~11	10.1°C	.577	6.94	999	~69	~8	used pump
11 May 98	1027	~9	10.6°C	.573	6.98	999	~78	~9	pump
11 May 98	1050	~8	10.2°C	.565	7.08	999	~86	~10	pump
11 May 98	1140	~9	10.1°C	.566	7.03	420	~95	~11	pump
12 May 98	1659	<1	16.2	17.5*	6.64	-10*	~96	~11+	Bailing H2O level initial 10.64 ft TOC
12 May 98	1730	9	13.8	0.482	7.22	304*	~105	12	Bailed dry V. Cloudy *Suspect Reading
05-13-98	843	9	10.2	.578	6.64	999	114	13	
	1130	27	10.4	.511	7.15	999	141	16	
05-13-98	1148	9	10.2	.529	7.23	999	150	17	
	1203	9	10.1	.505	7.21	999	159	18	

RECORDED BY: Heather Smith and Matt Oxley (Signature and Date) 06-01-98 added comes from Field notes

QA CHECK BY: Matt Oxley 6-2-98 (Signature and Date)

* READINGS SUSPECT

BKGmw-005

(1235) 10.14 water level TOC - 1245 10May98

20.81 + .28 = 21.09' Total depth.

Silt obvious in this one.

21.09
-10.14
10.95

$V_c = 3.142 (R_c^{\wedge 2}) \cdot H_c$

$3.142 (.08)^2 \cdot$ ~~H~~ 10.95

$V_c = .22019$

$V_c = .22$

$V_f = 3.142 [R_f^2 - R_o^2] * H_c * .3$

$= 3.142 \times [.111 - .009] \times 10.01 \times .3$

$V_f = 3.142 (.102)\ 10.01 \times 3$

$V_f = .9624$

Radius of filterpack
4" = .333'

$V_t = (V_c + V_f)$ (7.48 gal/cu. ft)

(.22 + .96) (7.48 gal/cu. ft)

(1.18) (7.48)

8.8264 gal

~ 9 gal per well volume.

BKGmw-005
Well Development

1240 begin surging (w/ bailer)
1300 1st sample - (initial w/ bailer)
1345 2nd sample - (used bailer for 1 well volume)
water very silty
Switched to pump
1420 ~~Switched~~ 3rd sample (from pump)
1425 Well has pumped dry -
Stopped letting recharge - Seems to be recharging slowly.
1445 Water level up to 10.04' begin pumping again. - Water still very thick, milky & silty
1455 well dry again
1505 Water table up to 10.33' - start pump again
1510 Well dry again - will take reading on next fill this will be at ~ 25 gallons in the drum.
1515 Water level @ 12.25 rising fairly quickly -
1522 Water level @ 10.3'
1533 Water level @ 10.11' resume pumping.
1545 Take Sample #4 - about 25-26 gallons of H_2O now in the 55 gal. drum.
1555 The bottom 1 ft. of water in this well seems to be recharging fairly fast (in comparison to earlier time frame. - Down to ~6" in well - stop pump.
1610 resume pumping.

1620 Well dry again - water still seems very very cloudy & silty

1635 Start pumping again - water level @ 10.16' btoc - ≈ 30 gal. of H_2O in 55 gal drum.

1647 Take sample #5 - water looks clearer the bottom of the well seems to be keeping ~ 1 foot of water in it as we pump.

It takes ~15 minutes for the well to recharge after we stop pumping.

1703 Stop pumping → allow recharge -

1718 resume pumping - wc 10.1' - surging top of water column w/ pump washes out cloudy water - As pump runs in shorter column on bottom of well - water clears - top development is still necessary.

1735 final reading - Well purged except for constant bottom 1 foot of water that now refills the well as fast as it is pumped out.

1743 Secured for evening - Will resume activities tomorrow.

11 May 98 BKGmw-005 Well Development

0815	Arrive on site set up
0825	begin pumping
0827	take initial sample ~~for~~ for the day
0829	well dry - wait for recharge -
0850	Pumped Dry - changed drums @ end - 55 gallons now contained from well.
0900	begin pumping — take sample.
0920	pumped dry - wait for recharge
0926	begin pumping again currently ~ 65 gallons of discharged water in the drums. - Water comming out of well still very cloudy - yellowish-brown.
0938	Well dry again
0951	resume pumping we have recovered ~ 75 gal. still very silty
1006	Dry again
1015	resume pumping -
1027	Sample
1035	Well dry
1045	Sample
1055	Well dry
1105	resume pumpin - looks like its clearing up ☺
1140	Sample - turbidity 420 - much better (started 3rd drum.)

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0080**

Date: 12 May 96 Time: 0905

Well Number and Location: BKGmw-016

Development Crew: Brad Baker

Mike Klidzejs

Driller (if applicable): NA

Water Levels / Time: Initial: 5.54' TOC | 0909 Pumping: 7.95' TOC | 1010

Final: ~~5.90' | 13 May 96 1106~~ 5.74 ft TOC 1338 / 13 May 96

Total Well Depth: Initial: ~~20.0~~ 21.0 FT BTOC Final: 21.05 FT BTOC

Date and Time: Begin: 12 May 96 | 0910 Completed: 12 May 96 | 1106

Development Method(S): Bailer / Surge

Total Quantity of Water Removed: ~ 110 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	511009	12 May 96
Specific Conductivity	↓	↓
pH		
Turbidity		

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

MW 5-26-98

PAGE _____ OF _____

WELL NUMBER AND LOCATION: BKGmw ~~-19~~ 016

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
12 May 98	0913	<1	12.1	0.236	7.26	308*	<1	—	Bailer * Sampled Reading Well Vol = 12.47gal
	0940	~12.5	10.8	0.248	7.08	295*	~12.5	1	H_2O v. cloudy
	1006	12.5	11.2	0.219	6.84	-10*	25.0	2	Converted to submersible pump Readings taken while pumping
	1017	12.5	11.0	0.252	7.11	593	~37.5	3	NOTE: WELL PRODUCING ~2-2½ GAL/MIN W/ FAIRLY STEADY COL
	1028	~33	11.1	0.255	7.15	246	~70	6+ **	
	1037	12.5+	10.8	0.260	7.13	134	~82	7+	** Pump cont. runs while taking reading - can't keep up pre-set level
B-58	1045	12.5	10.7	0.265	7.12	72	94	8	
	1054	12.5	10.7	0.272	7.13	63	106.5	9	
	1100	12.5	10.8	0.269	7.12	53	119	10	

RECORDED BY: _____ 12 May 98
(Signature and Date)

QA CHECK BY: _____ 6-2-98
(Signature and Date)

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

Date: 5/12/98 Time: ~14:00

Well Number and Location: BKGmw - 010

Development Crew: Heather Smith
Matt Obloy

Driller (if applicable): /

Water Levels / Time: Initial: 12.49' / 5/12/98 Pumping: /

Final: 12.67 / FT BTOC on 5/13/98 @ 1256

Total Well Depth: Initial: 22.06' ~~E~~ FT BTOC Final: FT BTOC

Date and Time: Begin: 1400 / 5-12-98 Completed: 1630 / 5/13/98

Development Method(S): bailer / pump

Total Quantity of Water Removed: ~ 32 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	30807	5/12/98
Specific Conductivity	↓	↓
pH		
Turbidity		
	↓	↓

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE 1 OF 1

WELL NUMBER AND LOCATION: BKGmw-010 5-12-98 5.315' gal

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5-12-98	1412	0	12.4	0.182	5.27	999+	0	0	Initial
	1420	~5	11.8	0.211	5.44	999+	~5	~1	
	1429	~6	11.1	0.202	5.26	999+	~11	~2	
	1456	~5	11.2	0.171	5.23	262	~16	~3	
	1537	~5	11.7	0.196	5.30	518	~21	~4	
B-60	1613	~5	11.4	0.200	5.36	225	~26	~5	
	1629	~6	11.5	0.200	5.31	11	~32	~6	Final, Development Complete

RECORDED BY: Matt Obley 6-01-98 (transcribed from field notes)
(Signature and Date)

QA CHECK BY: Matt Obley 6-2-98
(Signature and Date)

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

Date: 8/12 May 98 Time: 10:00

Well Number and Location: BK Gmw -608

Development Crew: Martha Clough, Heather Smith, Matt Obloy

Driller (if applicable): NA

Water Levels / Time: Initial: 13.19' / 1612 Pumping: ____ / ____

Final: 14.15' / 1245 (13 May 98)

Total Well Depth: Initial: 27.45' FT BTOC Final: ____ FT BTOC

Date and Time: Begin: 05-12-98 / 10:00 Completed: 05-12-98 / 11:00

Development Method(S): ____

Total Quantity of Water Removed: 33 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	308007	12 May 98
Specific Conductivity		
pH		
Turbidity		

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE 1 OF 1

WELL NUMBER AND LOCATION: BKGmw-008

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5-12-98	10:00	∅	10.2	.280	6.59	>999	∅	∅	Initial
	10:10	6.5	10.2	.283	6.22	>999	6.5	1	one well volume = 6.5 gallons
	10:20	8.5	10.1	.275	6.51	>999	15.0	2+	
	10:30	5	9.6	.274	6.48	>999	20.0	3+	
	10:40	6	9.6	.276	6.52	>999	26.0	4+	
B-62	10:50	6	10.7	.278	6.74	>999	33.0	5	final; development complete

RECORDED BY: Matt Obley 6-01-98 transcribed from Field notes
(Signature and Date)

QA CHECK BY: Matt Obley 6-2-98
(Signature and Date)

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0080**

Date: 5.9.98 Time: 1510

Well Number and Location: BKG MW-018

Development Crew: Brad Baker
Heather Smith

Driller (if applicable): N/a

Water Levels / Time: Initial: 1510 / 14.65' Pumping: ~1+ gal/minute

Final: /

Total Well Depth: Initial: 27.74 FT BTOC Final: FT BTOC

Date and Time: Begin: 5-9-98 / 1510 Completed: 5-10-98 /

Development Method(S): bailer
pump

Total Quantity of Water Removed: ~185 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	308007 ~~7~~ *HCL	5-9-98
Specific Conductivity	308007	5-9-98
pH	308007	5-9-98
Turbidity	308007	5-9-98

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

Cont'd on Page 54

WELL NUMBER AND LOCATION: BKGmw-018

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5-9-98	1510	N/a	12.8°C	.166	6.34	999	~21	0	brownish yellow very cloudy Surged well w/ bailer
5-9-98	1550	~5	14°C	.126	6.25	999	~5	1	Still very cloudy
5-9-98	1600	~5	12.6°C	.125	6.32	999	~10	2	pump used
5-9-98	1605	~5	12.7°C	.124	6.03	999	~15	3	pump used
5-9-98	1610	~5	12.5°C	.128	6.02	999	~20	4	pump used.
5-9-98	1615	~20	12.6°C	.133	6.36	999	~40	8	pumping faster
5-9-98	1618	~25	12.2°C	.135	6.25	999	~45	9	pump used.
5-9-98	1622	~5	11.7°C	.139	6.28	999	~50	10	pump used.
5-9-98	1626	~5	12.2°C	.143	6.42	999	~55	11	Pump used
5-9-98	1630	~5	12.2°C	.140	6.34	999	~60	12	Pump used
5-9-98	1635	~5	12.2°C	.157	6.33	999	~65	13	pump used
5-9-98	1640	~5	12.4°C	.163	6.47	999	~70	14	pump used
5-9-98	1645	~5	11.9°C	.150	6.54	999	~75	15	pump used
5-9-98	1652	~5	12.1	.157	6.42	320	~80	16	pump used
5-9-98	1700	~5	11.8	.178	6.55	999	~85	17	pump used
5-9-98	1708	~5	11.9	.165	6.48	338	~90	18	looking much clearer

See Pg 54

RECORDED BY: Heather L Smith 5-9-98
(Signature and Date)

QA CHECK BY: Matt Abbey 6-1-98
(Signature and Date)

9 May 98

Well Development of BKGmw-018
Ravenna Arsenal Phase II RI
installed monitoring well @ 1615 HT on 9 May 98
started development @ 1510 on 9 May 98

Initial static water level before well development
14.29'

Total depth of well (from top of casing to bottom of well) 27.3'

Length of well screen: 10'

No standing sediment inside well during development.

The water in the well initally was a very cloudy yellowish brown - Milky consistancy - after ~ 85 gallons the water began to look a little clearer but was still yellowish-brown, w/ a turbidity reading of 999.

The pump we used was pumping ~ 1 gal/minute
We also used a 1" x 3' teflon bailer.
Both the pump & the bailer were used to surge the well during development.

10 May 98 -

Recheck of yesterdays eqn.

Vc = Volume of casing ft³

$Vc = 3.142(Rc^2) * Hc$

Rc = radius of casing

1" = .08

Hc = ht of water in casing

13.09'

$3.142 \quad .0068 \quad * \quad 13.09'$

$.2796$

$Vf \quad 3.142 [Rc^2 - Ro^2] * Hc + .3$

Rf - radius of formation

$Rc^2 - .09^2$

$3.142 [.0081 - .009] * 10.00 + .3$

$3.142 [.053 \quad - \quad 3.$

$.499$

$Vt = (.2796 + .499)(7.48 \text{ gal/cu. ft})$

$Vt = 7.465$ gal

have already taken 1½ well volumes on 9 May 98

TE	TIME	GALLONS REMOVED	[illegible]	CONDUCTIVITY	[illegible]	[illegible]	GALLONS	VOLUME
1-98	1712	~5	12.4°C	.193	6.56	445	95	19
98	1715	~5	11.3°C	.192	6.62	327	100	20
1-98	1718	~5	10.5°C	.196	6.60	290	105	21
1-98	1721	~5	10.7°C	.190	6.62	243	110	22
10-98	0935	~10	11.2°C	.168	5.92	999	120	* ~16
10-98	0950	~10	11.1°C	.132	6.10	105	130	~17
10-98	1000	~10	10.8°C	.148	6.36	100	140	~19
10-98	1007	~10	10.9°C	.172	6.51	83	150	~20
10-98	1013	~8	10.9°C	.186	6.55	20	158	~21
10-98	1020	~8	10.2	.187	6.55	3	164	~22
10-98	1027	~10	9.9	.192	6.55	3	174	~23
10-98	1035	~10	9.9	.192	6.5	3	184	~24

B-67

* well volume is ~8 gal not 10 gal

ptly. cloudy
~65°F looks like it will be a nice day

Arrive 10 May 98 0915 water level 14.76'

0920 Surge well w/ pump & bailer

0925 Begin pumping into 3rd 55 gal drum

Was incorrect yesterday w/ calculation of ~5 gal. per well volume. In actuality well volume is ev. 7.5 gal. (still got ~1½ well volumes yesterday, just took readings more often than needed). Today we will try to reflect ev. 7-8 gal.

After ~10 min. of surging water is back to cloudy yellowish brown - Still, much clearer than start yesterday - Upper 2-3' cleared after ~5-7 min. Clouds back up as surge lower.

1005 - Measurements are beginning to stabilize water is clear to eye - My judgement w/ the pump seems to be closer to ~10 gal rather than ~8 gal.

1030 Water turbidity @ 3 - Much clearer!

At a pumping rate of ~1 gal/minute a constant amount of ~7 feet of water remains in the well.

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0080**

Date: 5/10/98 Time: 1150

Well Number and Location: BKGmw-0004 Paris-Wyndham & Smalley Roads

Development Crew: LAURA OBLOY

MARTHA LOUGH

Driller (if applicable): NA

Water Levels / Time: Initial: 12.25' / 1154 Pumping: 13.39 / 1226

Final: ~~22~~ / (MO 5.10.98)

Total Well Depth: Initial: 22.14 FT BTOC Final: _____ FT BTOC

Date and Time: Begin: 5.10.98 / 1200 Completed: 5.10.98 / 1233

Development Method(S): pump & surge using whale pump.

Total Quantity of Water Removed: 44 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	HORIBA 511009	5.10.98
Specific Conductivity		
pH		
Turbidity		

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

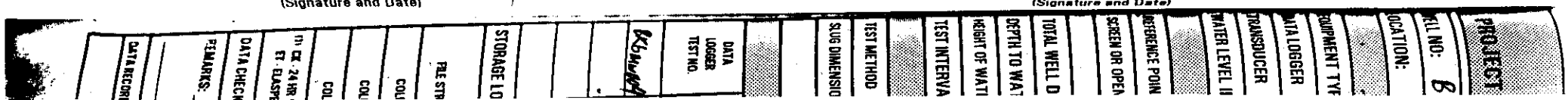
PAGE 1 OF 1

WELL NUMBER AND LOCATION: BWGMW-004

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (~~µMHOS/CM~~) mS/cm	pH (Standard Units)	TURBIDITY NTUs	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5.10.98	1207	1	12.8	0.270	6.32	7999	1	< 1	beginning development
	1210	5.5	11.6	0.218	6.26	7999	5.5	1	tannish brown appears to be clearing.
	1214	11	11.3	0.198	6.25	7999	11	2	still cloudy
	1217	17	11.0	0.199	6.06	7999	17	+ 3	
	1220	22	11.0	0.195	5.95	398	22	4	clearing
B-70	1223	28	10.9	0.198	5.84	384	28	5	
	1227	33	10.8	0.198	5.77	275	33	6	
	1230	39	10.8	0.184	5.72	171	39	7	
	1233	44	10.8	0.185	5.72	5	44	8	development complete
						(MW 5 10 98			

RECORDED BY: Laura M. Olsen 10 May 98
(Signature and Date)

QA CHECK BY: Matt Riley 6-2-98
(Signature and Date)



WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

Date: 5/10/98 Time: 1407

Well Number and Location: BKGmw-006

Development Crew: M. Clough
M. Klidzejs

Driller (if applicable): NA

1 well volume = 8.6 gal

Water Levels / Time: Initial: 20.97 / 1408 ~~Pumping~~ BAILING: 22.02* / 1654
Final: 21.38 / 1754 5/13/98 WATER LEVEL RISING RAPIDLY

Total Well Depth: Initial: 37.36 FT BTOC Final: 37.69 FT BTOC

Date and Time: Begin: 5/10/98 / 1415 Completed: 5/10/98 / 1718

Development Method(S): 1L Teflon Bailer

Total Quantity of Water Removed: 55 gals NOTE: GOOD RECOVERY

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	511009	5/10/98
Specific Conductivity		
pH		
Turbidity		

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE 1 OF 1

WELL NUMBER AND LOCATION: BKGMW-006

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5/10/98	1417	.25	11.2	Ø.398	6.60	>999	.25	1	
	1442	9	11.Ø	Ø.419	6.53	>999	9	1	
	1509	18	10.9	Ø.413	6.55	>999	18	2	
	1534	27	10.8	Ø.391	6.63	>999	27	3	
B-72	1558	36	10.7	0.403	6.62	810	36	4	
	1630	45	10.9	Ø.385	6.76	912	45	5	
	1700	54	10.8	0.395	6.82	625	54	6	
D	1718	55	10.5	0.397	6.80	240	55	6+	Relatively Clear
	Development Complete								

RECORDED BY: Sandra L Clough 5/10/98
(Signature and Date)

QA CHECK BY: [signature] 6-2-98
(Signature and Date)

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0080**

Date: 5/8/98 Time: 1400

Well Number and Location: BKGMW-012

Development Crew: Martha Clough

1 well volume = 18.8 5 volumes = 94 gal

Driller (if applicable): Tim Boehmer

Water Levels / Time: Initial: 6.26 / 1404 Pumping: NR /

Final: 7.12 / 1309 5/13/98

Total Well Depth: Initial: 62.52 FT BTOC Final: 62.52 FT BTOC

Date and Time: Begin: 5/8/98 / 1412 Completed: 5/9/98 / 1220

Development Method(S): Submersible Whale Pump

Total Quantity of Water Removed: 104 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION	
Temperature	511009	5/8/98	5/9/98
Specific Conductivity			
pH			
Turbidity			

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE 1 OF 1

WELL NUMBER AND LOCATION: BKGMW-412

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5/8/98	1412	1	11.8	0.502	8.08	>999	1	1/8	
	1444	12	12.5	0.383	8.19	>999	13	1	Black Silt
	1635	40	12.8	0.344	8.13	>999	40	+2	Cleaning
	1650	55	NR				55	+2.5	EOD
5/9/98	0944	64	12.4	0.327	8.05	>999	64	+3	
	0958	72	12.3	0.347	8.03	526	72	4	Cleaning
B-74	1220	~~94~~ 104	12.8	0.328	8.03	977	104	+5	
	Development Complete								

5/8/98

RECORDED BY: [signature] 5/8/98
(Signature and Date)

QA CHECK BY: [signature] 6-2-98
(Signature and Date)

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

Date: 5/8/98 Time: 1030

Well Number and Location: BKGMW-013

Development Crew: Martha Clough

1 well volume = 13.2 gal 5 volumes = 66 gal

Driller (if applicable): Tim Buehmer

Water Levels / Time: Initial: 11.80 / 1033 Pumping: 12.61 / 1303

Final: ~~7.12 / 130~~ 12.06 1318 5/13/98 mc

Total Well Depth: Initial: 28.06 FT BTOC Final: 28.06 FT BTOC

Date and Time: Begin: 5/8/98 / 1038 Completed: 5/8/98 / 1317

Development Method(S): Surge with 1L capicity bailer, Submersible whale Pump

Total Quantity of Water Removed: 78 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	511049	5/8/98
Specific Conductivity		
pH		
Turbidity		

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE 1 OF 1

WELL NUMBER AND LOCATION: BKGnw-013

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5/98	1039	0	11.2	0.445	8.87	17 NTU	0	0	Reddish Greyish brown silt
	1245	13	12.4	0.462	7.41	>999	13	1	Pumping
	1251	26	11.7	0.464	7.38	874	26	2	Cloudy
	1256	39	11.8	0.466	7.40	>999	39	3	
	1305	52	11.6	0.458	7.38	>999	52	4	Clearing
B-76	1312	66	11.7	0.459	7.38	178	66	5	Clear
	1317	78	11.5	0.459	7.39	10	78	+5	Clear
	Development Completed								

RECORDED BY: Marshall Clough 5/98
(Signature and Date)

QA CHECK BY: Matt Obley 6-2-98
(Signature and Date)

DATA RECORD | REMARKS | DATA CHECK | CK 24 HR ET ELAPSE | CC | CC | CC | FILE S | STORAGE | DATA LOGGER TEST NO. | SLUG DIME | TEST METH | TEST INTE | HEIGHT OF | DEPTH TO | TOTAL WE | SCREEN CO | REFERENC | WATER LE | TRANSDU | DATA LOG | EQUIPMEN | LOCATIO | WELL NO | PRO

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation DELIVERY ORDER NO: 0060

Date: 5/11/98 Time: 0909

Well Number and Location: BKGMW-020 GeorgeRd

Development Crew: Laura Obloy

Martha Clough

Driller (if applicable): NA

Water Levels / Time: Initial: 7.12' / 0913 Pumping: DRY /

Final: /

Total Well Depth: Initial: 33.08 FT BTOC Final: FT BTOC

Date and Time: Begin: 5-11-98 / 0924 Completed: 5-11-98 / 1155

Development Method(S): pump & surge w/ whale pump.

Total Quantity of Water Removed: 52 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	HORIBA 5110099	5-11-98
Specific Conductivity		
pH		
Turbidity		

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0080

WELL NUMBER AND LOCATION: BKGMW-020

PAGE 1 OF 1

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY ~~uMHOS/CM~~ mS/cm	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5.11.98	0924	0	12.8°	0.553	6.80	>999	0	<1	beginning development
	0929	10	11.6	0.538	7.14	>999	10	1	grayish brown
	0935	20	11.4	0.581	7.33	>999	20	2	
	1023	32	11.3	0.363	6.81	>999	32	+3	clearing
LMO 5.11.98	~~1126~~ 1106	42	11.6	0.354	6.82	294	42	+4	
A	1155	52	11.5	0.351	6.81	120	52	5	development completed.
B-78									

RECORDED BY: Laura M. Oblay
(Signature and Date)

QA CHECK BY: Matt Oblay 6-3-98
(Signature and Date)

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0080**

Date: 5/9/98 Time: 1623

Well Number and Location: BKGmw-015

Development Crew: L. Ohley, M. Clough, M. Ohley, H. Smith

Driller (if applicable): NA

Water Levels / Time: Initial: 23.36' / 1628 Pumping: Dry /

Final: /

Total Well Depth: Initial: 52.81 FT BTOC Final: FT BTOC

Date and Time: Begin: 5.9.98 / 1637 Completed: 5.18.98 / 0945

Development Method(S): Bail and Surge w/ 1L Teflon Bailer

Total Quantity of Water Removed: 40 gals

Note * Development called on 5/12/98 - H_2O level consistently 48 ft BTOC after initial H_2O level.

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	HORIBA S11449	5/9/98
Specific Conductivity		
pH		
Turbidity		

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation

DELIVERY ORDER NO: 0060

PAGE 1 OF 1

WELL NUMBER AND LOCATION: BKGmw-015 Smeller Rd

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY ~~(µMHOS/CM)~~ mS/cm	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5-9-98	1639	1	13.1	0.343	7.57	>999	1	<1	Initial
↓	1720	16	12.5	0.333	7.39	>999	16	1	dark grey, extremely turbid
5-11-98	0844	30	11.5	0.330	7.55	>999	30	2	
5-18-98	0930	40	12.9	0.371	7.12	>999	40	+2	Development Complete

B-80

RECORDED BY: Cynthia P Clough 5/9/98
(Signature and Date)

QA CHECK BY: Matt Alley 6-3-98
(Signature and Date)

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

Date: 5/6/98 Time: 1300

Well Number and Location: WBGmw-005, WBG

Development Crew: Martha Clough

Driller (if applicable): Tim Boehmer, Bowser Morner

Water Levels / Time: Initial: 4.12'BGS / 1310 Pumping: Pumped Dry /

Final: /

Total Well Depth: Initial: 21.08 FT BTOC Final: FT BTOC

Date and Time: Begin: 1315 / 5/6/98 Completed: 5/8/98 / 1013

Development Method(S): Bailer / Submersible Pump

Total Quantity of Water Removed: 60 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	511009	5/6/98 5/7/98 5/8/98
Specific Conductivity	511009	
pH	511009	
Turbidity	511009	

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE 1 OF 1

WELL NUMBER AND LOCATION: WBGmw-005

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5/6/98	1328	0	13.1	0.711	7.42	360	0	0	Grey S.I.T
	1434	12	11.9	0.728	7.52	528	12	1	
	1506	18	11.6	0.702	7.48	407	18	1.5	
↓	1727	23	NR	~	~	→	23	1.9	End of Day
5/7/98	0835	24	11.7	0.761	7.04	>999	24	2	27, 31, 35
	1254	36	12.0	0.719	7.30	>999	36	3	39, 43, 47
B-82	1612	48	12.0	0.686	7.35	7999	48	4	51
↓	1658	NR	~	~	~	→	54.5	+4	End of DAY
5/8/98	0916	55	11.9	0.639	~~7.42~~ 7.44	10	55	+4	Clean
↓	1013	66	11.8	0.682	7.28	50	66	5	Development Complete
	DEVELOPMENT COMPLETE								

RECORDED BY: Jennifer Clough 5/6/98
(Signature and Date)

QA CHECK BY: Matt Oblog 6-2-98
(Signature and Date)

DATA RECORDED
REMARKS:
DATA CHECKED
(1) CK - 24 HR C
ET - ELASPED
COLL
COLL
COLL
FILE ST
STORAGE L
DATA LOGGER TEST NO.
SLUG DIMEN
TEST METH
TEST INTER
HEIGHT OF W
DEPTH TO
TOTAL WEL
SCREEN OR
REFERENCE
WATER LE
TRANSDUC
DATA LOG
EQUIPMEN
LOCATIO
WELL NO:
PROJ

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0080**

Date: 5/6/98 Time: 1400

Well Number and Location: WBGmw-006, Winkle Peck Burning Ground

Development Crew: M. Clough - SAIC

Driller (if applicable): Tim Buehmer - BM

Water Levels / Time: Initial: 4.27 / 1402 Pumping: Pumped dry /

Final: /

Total Well Depth: Initial: 19.96 FT BTOC Final: 20.22 FT BTOC

Date and Time: Begin: 5/6/98 / 1405 Completed: 5/7/98 / 1406

Development Method(S): Surge with bailer, Submersible Whale Pump

Total Quantity of Water Removed: 72 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	511409	5/6/98 | 5/7/98
Specific Conductivity		
pH		
Turbidity		

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE 1 OF 1

WELL NUMBER AND LOCATION: WBGMW-006 / RVAAP-LAG

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5/6/98	1412	3	11.4	Ø.389	7.82	622	3	.25	Rinsing
	1441	15	11.Ø	Ø.392	7.85	>999	15	1.25	
	1459	3Ø	16.9	Ø.386	7.85	>999	3Ø	2.5	
	154Ø	36	11.5	Ø.378	7.84	>999	36	3	
	1707	48	11.8	Ø.379	7.8Ø	992	48	4	Pump Clearing
	1727								Express Pump
B-84	1734	58	12Ø	Ø.379	7.84	123	58	~4.8	Clearing
5/7/98	0847	61	11.1	Ø.431	7.37	5Ø1	61	+5	
	1406	72	11.7	Ø.429	7.47	264	72	6	
	Development Complete per John Jent - USACE								

RECORDED BY: Marcia P Deegan 5/7/98
(Signature and Date)

QA CHECK BY: Matt Abley 6-2-98
(Signature and Date)

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

Date: 5/7/98 Time: 0855

Well Number and Location: ~~MW~~ WBGMW-47 ; RVAAP WBG

Development Crew: M. Clough

Driller (if applicable): T. Boehmer

Water Levels / Time: Initial: 15.38 / 0855 Pumping: 16.18 / 1105

Final: /

Total Well Depth: Initial: 26.50 FT BTOC Final: 26.56 FT BTOC

Date and Time: Begin: 5/7/98 / 0857 Completed: 5/7/98 / 1120

Development Method(S): Surge with PVC Bailer

Total Quantity of Water Removed: 50 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	511049	5/7/98
Specific Conductivity		
pH		
Turbidity		

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE 1 OF 1

WELL NUMBER AND LOCATION: WBGmw 047

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY (µMHOS/CM)	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5/7/98	0907	2	11.2	0.346	7.54	>999	2	.2	
	0919	10	10.5	0.295	7.73	>999	14	1	
	0954	20	11.9	0.270	7.63	>999	20	2	Begin Pumping
	1100	30	11.1	0.282	7.59	>999	30	3	Clearing
B-86	1111	40	11.3	0.287	7.49	61	40	4	Clear !!!
	1120	50	11.1	0.287	7.51	22	50	5	Clear, Development Complete
	Development Complete								

RECORDED BY: Maudie Clough 5/7/98
(Signature and Date)

QA CHECK BY: Matt Asley 6-2-98
(Signature and Date)

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation DELIVERY ORDER NO: 0080

Date: 5/7/9 Time: 1300

Well Number and Location: WBGmw-008

Development Crew: M. Clough - SAIC

Driller (if applicable): Tim Boehmer - BM

Water Levels / Time: Initial: 12.98 / 1301 Pumping: Bailed dry /

Final: /

Total Well Depth: Initial: 20.90 FT BTOC Final: FT BTOC

Date and Time: Begin: 5/7/98 / 1303 Completed: /

Development Method(S): Surge with Bailer

Total Quantity of Water Removed: 36 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	511009	5/7/98 5/6/98
Specific Conductivity		
pH		
Turbidity		

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE 1 OF 1

WELL NUMBER AND LOCATION: WBGMW-40B

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY ~~(uMHOS/CM)~~ mS/cm	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5/7/98	1305	1	10.9	0.601	7.46	>999	1	1/7	8, Brown Silt
"	1534	8	12.3	0.569	7.47	>999	8	+1	11, 13.5
"	1705	16	11.6	0.559	7.46	>999	16	+2	End of Day
5/8/98	1054	21	11.3	0.547	7.55	>999	21	5	23.5, 21 Clearing
"	1557	31	11.4	0.561	7.50	964	31	+4	23.5, 26, 28.5, 31, 33.5
"	1741	34	11.4	0.517	7.59	>999	34	+4.5	End of Day
5/9/98	0910	36	11.4	0.500	7.52	750	36	5	Development Complete

B-88

RECORDED BY: Martha C Clarke 5/7/98
(Signature and Date)

QA CHECK BY: Matt Oblog 6-2-98
(Signature and Date)

WELL DEVELOPMENT FORM

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0080**

Date: 5/7/98 Time: 1335

Well Number and Location: WBGmw-009

Development Crew: M. Clough - SAIC

Driller (if applicable): T. Boehmer - BM

Water Levels / Time: Initial: 10.92 / 1329 Pumping: Pumped dry / _____

Final: _____ / _____

Total Well Depth: Initial: 24.34 FT BTOC Final: _____ FT BTOC

Date and Time: Begin: 5/7/98 / 1344 Completed: _____ / _____

Development Method(S): Surge w/ Teflon Bailer (TL)

Total Quantity of Water Removed: 60 gals

FIELD MEASUREMENT	SERIAL NUMBER	DATE OF LAST CALIBRATION
Temperature	511009	5/7/98 / 5/8/98
Specific Conductivity		
pH		
Turbidity		

WELL DEVELOPMENT RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

PAGE 1 OF 1

WELL NUMBER AND LOCATION: WBGMW-049

DATE	TIME	GALLONS REMOVED	TEMP(C)	SPECIFIC CONDUCTIVITY ~~(µMHOS/CM)~~ MS/CM	pH (Standard Units)	TURBIDITY	TOTAL GALLONS REMOVED	WELL VOLUMES REMOVED	COMMENTS
5/7/98	1343	1	11.7	0.330	6.94	>999	1	~1/2	7
"	1542	12	12.0	0.419	7.25	>999	12	1	Pumping
"	1713	17	NR	———	———	→	17	1.5	End of Day
5/8/98	1336	24	10.7	0.351	7.34	7999	24	2	
B-90	~~1557~~	———	10.9	———	———	———	———	———	Check 5/8/98
B-90	1709	34	NR	———	———	→	34	+2	End of Day
~~5-9-98~~	0850	42	11.3	0.285	6.52	>999	42	+3	
5-9-98	1240	48	11.1°	0.311	7.32	7999	59	+4	
5-9-98	1435	60	11.2°	0.325	7.31	~~7999~~ 127 NTU 04-98	60	5	5 Well Volumes Removed

RECORDED BY: Pamela P Clough 5/7/98
(Signature and Date)

QA CHECK BY: [signature] 6-2-98
(Signature and Date)

SLUG TEST RECORDS

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NO: BKGmw-004	DATE STARTED: 5-20-98	DATE COMPLETED: 5-26-98
LOCATION: RVAAP	RECORDED BY: Matt Gale	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	~~IN-SITU HERMIT~~ TROLL	~~1000 C~~			
TRANSDUCER	IN SITU	~~PXD-260~~	00971		
WATER LEVEL IND.					

PRETEST DATA 11-23-98

REFERENCE POINT	Riser Pipe	REFERENCE POINT ELEVATION	965.16	RISER CASING I.D. (IN.)	2"
SCREEN OR OPEN HOLE I.D.(IN.)	2"			DIAMETER OF BOREHOLE (IF SCREENED)	6½"

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	22.42		TOP OF FILTER PACK	9.45	
DEPTH TO WATER	12.59		TOP OF SCREEN OR OPEN HOLE	12.07	
HEIGHT OF WATER COLUMN	9.83		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD	SLUG IN (FALLING HEAD)	SLUG OUT (RISING HEAD) ☐		
SLUG DIMENSIONS			SLUG VOL(GAL)	SLUG DEPTH(FT)

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP)	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
BKGmw004	BKGmw-004	5-20	5-20				12.55	12.59	9.83	9.83

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME H - HEIGHT OF WATER ABOVE TRANSDUCER E - WATER LEVEL ELEVATION O - OTHER
ET - ELASPED TIME FT BRP - DEPTH TO WATER P - PRESSURE (EXPLAIN IN REMARKS)

DATA CHECK RESULTS:

REMARKS: Graph looks good / H2O in well screen

DATA RECORDED BY Matt Gale	DATE	QA CHECK BY	DATE
			11-23-98

21.61 37.39 + 7.6

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

WELL NO: BKGmw-12	DATE STARTED: 5-20	DATE COMPLETED: 5-20
LOCATION: RVAAP	RECORDED BY: Mark Owens	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN SITU HERMIT	~~1000C~~	00971		
TRANSDUCER	IN-SITU	PXD-260			
WATER LEVEL IND.					

PRETEST DATA

REFERENCE POINT	TOC	REFERENCE POINT ELEVATION	997.57	RISER CASING I.D. (IN.)	2"
SCREEN OR OPEN HOLE I.D.(IN.)	2"	DIAMETER OF BOREHOLE (IF SCREENED)		6 1/2"	

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	62.42		TOP OF FILTER PACK	37.6	
DEPTH TO WATER	7.76'		TOP OF SCREEN OR OPEN HOLE	42.1	
HEIGHT OF WATER COLUMN	54.66		SCREEN LENGTH	20'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD — SLUG IN (FALLING HEAD) — SLUG OUT (RISING HEAD) ☐

SLUG DIMENSIONS	1 5/16" x 4'	SLUG VOL(GAL)	SLUG DEPTH(FT)

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP)	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
BKGmw 012		5/20	5/20			50.'	7.40'	?	24'	29'

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME H - HEIGHT OF WATER ABOVE TRANSDUCER E - WATER LEVEL ELEVATION O - OTHER
ET - ELASPED TIME FT BRP - DEPTH TO WATER P - PRESSURE (EXPLAIN IN REMARKS)

DATA CHECK RESULTS: Graph looks Good

REMARKS: Test went on for a little too long because we lost Battery Power to computer

DATA RECORDED BY	DATE 5/20	QA CHECK BY	DATE
		J Smith	11-23-98

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

WELL NO: BK6MW013	DATE STARTED: 5-20-98	DATE COMPLETED: 5-20-98
LOCATION: RVAAP	RECORDED BY: Matt O&L	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	~~IN-SITU~~ HERMIT TROll	~~1000 C~~			
TRANSDUCER	~~IN-SITU~~ TROll	~~PXD-260~~ SP4000	00971		11/95
WATER LEVEL IND.					

PRETEST DATA

REFERENCE POINT T.O.C.	REFERENCE POINT ELEVATION 986.59	RISER CASING I.D. (IN.) 2"
SCREEN OR OPEN HOLE I.D.(IN.) 2"	DIAMETER OF BOREHOLE (IF SCREENED) 6 1/2"	

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	~~28.00~~ 28.15		TOP OF FILTER PACK	~~17.73~~ 13.56	
DEPTH TO WATER	~~11.80~~ 12.19		TOP OF SCREEN OR OPEN HOLE	17.73	
HEIGHT OF WATER COLUMN	15.96		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

~~TEST~~ METHODS SUMMARY

TEST METHOD SLUG IN (FALLING HEAD) (SLUG OUT (RISING HEAD)) ☐

SLUG DIMENSIONS	1 5/16" x 4'	SLUG VOL(GAL)	SLUG DEPTH(FT)

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER BTM (FT BRP)	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
BK6MW013	(2)	5-20-98	5-20-98			26.65	12.21	12.21	15.96	
	Linear / Log									
C:\winsitu\	BK6MW13A – Linear									
C:\winsitu\	BK6MW13B – ~~Log~~ Logarithmic									

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A				X	X	Ran Linear and (2) Log
COLUMN B						Scale Runs since well
COLUMN C						Recovered so quickly

(1) CK - 24 HR CLOCK TIME H - HEIGHT OF WATER ABOVE TRANSDUCER E - WATER LEVEL ELEVATION O - OTHER
ET - ELASPED TIME FT BRP - DEPTH TO WATER P - PRESSURE (EXPLAIN IN REMARKS)

DATA CHECK RESULTS:

REMARKS: well Recovered very fast so Ran Linear as well as Log Time Scale.

DATA RECORDED BY Matt O&L	DATE 5/20	QA CHECK BY HSmith	DATE 11-23-98

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NO: BKGMW0021	DATE STARTED: 5-20	DATE COMPLETED: 5-20
LOCATION: RVAAP	RECORDED BY: Matt Odor	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN-SITU HERMIT Mall	~~1000-8~~ SP4000	00971		
TRANSDUCER	IN SITU	~~PXD-260~~			
WATER LEVEL IND.					

PRETEST DATA

REFERENCE POINT	TOC	REFERENCE POINT ELEVATION	972.16	RISER CASING I.D. (IN.)	2"
SCREEN OR OPEN HOLE I.D.(IN.)	2"	DIAMETER OF BOREHOLE (IF SCREENED)	8"		

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	21.57		TOP OF FILTER PACK	~~TF 8~~ 8.3	
DEPTH TO WATER	12.89		TOP OF SCREEN OR OPEN HOLE	11.10'	
HEIGHT OF WATER COLUMN	8.68		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD: SLUG IN (FALLING HEAD) ☐ SLUG OUT (RISING HEAD) ☐

SLUG DIMENSIONS	SLUG VOL(GAL)	SLUG DEPTH(FT)
1 5/16" ϕ x 4.0' long		

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY)		DATE (HH:MM:SS)		DEPTH TO TRANSDUCER (FT BRP)	DEPTH TO WATER (FT BRP)		HEIGHT OF WATER COLUMN (FT)	
		BEGIN	END	BEGIN	END		BEGIN	END	BEGIN	END
BKGMW021	BKGMW021	5-20	5-20			19.5	12.89	12.89	8.68	8.68

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL		COMMENTS
				LOG SCALE	ARITH. SCALE	
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME H - HEIGHT OF WATER ABOVE TRANSDUCER E - WATER LEVEL ELEVATION O - OTHER
ET - ELASPED TIME FT BRP - DEPTH TO WATER P - PRESSURE (EXPLAIN IN REMARKS)

DATA CHECK RESULTS: Graph looks good

REMARKS:

DATA RECORDED BY	DATE	QA CHECK BY	DATE
Matt Odor	5-20	H. Smith	11-23-98

3A

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

WELL NO: BKGmw019	DATE STARTED: 5/21	DATE COMPLETED: 5/21
LOCATION: RVAAP	RECORDED BY: Matt Oglesby	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN-SITU/HERMIT TROLL	~~1000C~~ SP4000	00971		
TRANSDUCER	IN-SITU	~~PXD-260~~ SP4000			
WATER LEVEL IND.					

PRETEST DATA

REFERENCE POINT	TOC	REFERENCE POINT ELEVATION	1108.24	RISER CASING I.D. (IN.)	2"
SCREEN OR OPEN HOLE I.D.(IN.)	2"	DIAMETER OF BOREHOLE (IF SCREENED)	8"		

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	35.89		TOP OF FILTER PACK	20.7	
DEPTH TO WATER	17.48		TOP OF SCREEN OR OPEN HOLE	25.5	
HEIGHT OF WATER COLUMN	18.41		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD — SLUG IN (FALLING HEAD) — SLUG OUT (RISING HEAD) ☐

SLUG DIMENSIONS	1 5/16" x 4.0' long	SLUG VOL(GAL)	SLUG DEPTH(FT)

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP) BTM	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
BKGmw019		5/21	5/21			34'	See above; fully equilibr.			

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME; ET - ELASPED TIME; H HEIGHT OF WATER ABOVE TRANSDUCER; FT BRP - DEPTH TO WATER; E - WATER LEVEL ELEVATION; P - PRESSURE; O - OTHER (EXPLAIN IN REMARKS)

DATA CHECK RESULTS:

REMARKS: Ran test twice got ~ 10' of displacement both times; very fast recovering well. Ran test 3 times; over 10' of disc. ??

DATA RECORDED BY	DATE	QA CHECK BY	DATE
Matt Oglesby	5/21	J Smith	1-23-98

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

WELL NO: BKGMW017	DATE STARTED: 5/21	DATE COMPLETED: 5/21
LOCATION: RI/AAP	RECORDED BY: Matt Oglesby	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN-SITU HERMIT TROLL	1000 C SP4000	00971		
TRANSDUCER	IN-SITU	PXD-260	/		
WATER LEVEL IND.					

PRETEST DATA

REFERENCE POINT	T.O.C.	REFERENCE POINT ELEVATION	1132.80	RISER CASING I.D. (IN.)	2"
SCREEN OR OPEN HOLE I.D.(IN.)	2"	DIAMETER OF BOREHOLE (IF SCREENED)	8"		

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	36.15		TOP OF FILTER PACK	22.5	
DEPTH TO WATER	16.88		TOP OF SCREEN OR OPEN HOLE	25.74	
HEIGHT OF WATER COLUMN	19.5'		SCREEN LENGTH	10'	
TEST INTERVAL TYPE.					

TEST METHODS SUMMARY

TEST METHOD SLUG IN (FALLING HEAD) SLUG OUT (RISING HEAD) ☐

SLUG DIMENSIONS	SLUG VOL(GAL)	SLUG DEPTH(FT)
1 15/16" ϕ x 4.0 long		

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP)	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
	BKGMW017					Bottom 35'	~16.6	16.9	19'	19'
									See data	

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME H - HEIGHT OF WATER ABOVE TRANSDUCER E - WATER LEVEL ELEVATION O - OTHER
ET - ELASPED TIME FT BRP - DEPTH TO WATER P - PRESSURE (EXPLAIN IN REMARKS)

DATA CHECK RESULTS:

REMARKS:

DATA RECORDED BY	DATE	QA CHECK BY	DATE
Matt Oglesby	5/21	H. Smith	11-23-98

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

WELL NO: BK6mw005	DATE STARTED: 5/21	DATE COMPLETED: 5/21
LOCATION: RVAAP	RECORDED BY: Matt Ob	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN-SITU HERMIT	1000 SP400	00971		
TRANSDUCER	IN SITU	PRO 260			
WATER LEVEL IND.					

PRETEST DATA

REFERENCE POINT	T.O.C.	REFERENCE POINT ELEVATION	1149.44	RISER CASING I.D. (IN.)	2"
SCREEN OR OPEN HOLE I.D.(IN.)	2"	DIAMETER OF BOREHOLE (IF SCREENED)	8"		

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	21.11		TOP OF FILTER PACK	8.0	
DEPTH TO WATER	12.03		TOP OF SCREEN OR OPEN HOLE	10.7	
HEIGHT OF WATER COLUMN	9.08		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD — SLUG IN (FALLING HEAD) — SLUG OUT (RISING HEAD) ☐

SLUG DIMENSIONS		SLUG VOL(GAL)	SLUG DEPTH(FT)

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP)	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
	BK6mw005	5/21	5/21			Bottom 20'	12.'	12'	9'	5'

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL: LOG SCALE	TEST TIME INTERVAL: ARITH. SCALE	COMMENTS
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME H - HEIGHT OF WATER ABOVE TRANSDUCER E - WATER LEVEL ELEVATION O - OTHER
ET - ELASPED TIME FT BRP - DEPTH TO WATER P - PRESSURE (EXPLAIN IN REMARKS)

DATA CHECK RESULTS: Graph looks good

REMARKS:

DATA RECORDED BY: Matt Ob	DATE: 5/21	QA CHECK BY: H Smith	DATE: 11/23/98

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

WELL NO: BKGRWG16	DATE STARTED: 5/21	DATE COMPLETED: 5/21
LOCATION: RVAAP	RECORDED BY: [signature]	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	~~IN-SITU~~ HERMIT - Rold	~~1800~~ SE400	0097		
TRANSDUCER	~~IN-SITU~~	~~PXD-260~~ SE400	0097		
WATER LEVEL IND.					

PRETEST DATA HC 11-23-98

REFERENCE POINT	T.O.C.	REFERENCE POINT ELEVATION	1098.42	RISER CASING I.D. (IN.)	2"
SCREEN OR OPEN HOLE I.D.(IN.)	2"	DIAMETER OF BOREHOLE (IF SCREENED)	8"		

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	21.~~68~~46		TOP OF FILTER PACK	8.5	
DEPTH TO WATER	6.56		TOP OF SCREEN OR OPEN HOLE	11.5	
HEIGHT OF WATER COLUMN	~~15.12~~ 14.90		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD — SLUG IN (FALLING HEAD) — SLUG OUT (~~RISING HEAD~~) ☐

SLUG DIMENSIONS	SLUG VOL(GAL)	SLUG DEPTH(FT)
1 5/16" x 4' long		

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP)	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
	BKGRWG16						falling	dyn. l.	see above	

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME; ET - ELASPED TIME; H - HEIGHT OF WATER ABOVE TRANSDUCER; FT BRP - DEPTH TO WATER; E - WATER LEVEL ELEVATION; P - PRESSURE; O - OTHER (EXPLAIN IN REMARKS)

DATA CHECK RESULTS:

REMARKS: Graph looks Good; over 1.0' of displacement

Ran test 3 times; still over 10' of disc.? Something Amiss

DATA RECORDED BY		DATE	QA CHECK BY	DATE
[signature]	B-100	5/21	[signature]	11-23-98

SLUG TEST RECORD

21-86 ~~Pit~~ A

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NO: BKG 10	DATE STARTED: 5/20/98	DATE COMPLETED: 5/20/98
LOCATION: LUAAP	RECORDED BY: Mitch Olson	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN-SITU HERMIT ~~Troll~~	~~1000 C~~ SP4000	009711		
TRANSDUCER	IN SITU	~~PXD-260~~			
WATER LEVEL IND.					

PRETEST DATA

REFERENCE POINT	TOC	REFERENCE POINT ELEVATION	1006.29	RISER CASING I.D. (IN.)	2"
SCREEN OR OPEN HOLE I.D.(IN.)	2"	DIAMETER OF BOREHOLE (IF SCREENED)	0-15' = 10" 15'-22' = 6"		

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	22.19		TOP OF FILTER PACK	9.0'	
DEPTH TO WATER	13.45		TOP OF SCREEN OR OPEN HOLE	11.5	
HEIGHT OF WATER COLUMN	8.69		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD — SLUG IN (FALLING HEAD) — SLUG OUT (RISING HEAD) ☐

SLUG DIMENSIONS	SLUG VOL(GAL)	SLUG DEPTH(FT)
1 5/16" ϕ x 4'		

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP)	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
BKGAW010							All above, fully			
							Equil. breached			

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME; ET - ELASPED TIME; H - HEIGHT OF WATER ABOVE TRANSDUCER; FT BRP - DEPTH TO WATER; L - WATER LEVEL ELEVATION; P - PRESSURE; G - OTHER (EXPLAIN IN REMARKS)

DATA CHECK RESULTS:

REMARKS: Graph looks good w/ W.L. Below Top of Sand Pack.

DATA RECORDED BY: Mitch Olson DATE: 5/26

QA CHECK BY: J Smith DATE: 11-23-98

27.35 - 14.70 = 12.65 ft

SLUG TEST RECORD

27.63 - 14.70 = 12.93 ft

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NO: BKGMW008	DATE STARTED: 5-20	DATE COMPLETED: 5/20	
LOCATION: RIAAP	RECORDED BY: M. Dolby		

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN-SITU HERMIT	1000 C	00971		
TRANSDUCER	IN SITU	PXD-260 SP4000			
WATER LEVEL IND.					

PRETEST DATA

MS 11-23-98

REFERENCE POINT: T.O.C.	REFERENCE POINT ELEVATION: 1005.71	RISER CASING I.D. (IN.): 2"	
SCREEN OR OPEN HOLE I.D.(IN.): 2"	DIAMETER OF BOREHOLE (IF SCREENED): Ø - 19½' = 10" ; 19½' - 25.0' = 6"		

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	14.70		TOP OF FILTER PACK	14.35	
DEPTH TO WATER	27.63		TOP OF SCREEN OR OPEN HOLE	17.17	
HEIGHT OF WATER COLUMN	12.93		SCREEN LENGTH		
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD	SLUG IN (FALLING HEAD)	SLUG OUT (RISING HEAD) ☐		
SLUG DIMENSIONS	1 5/16" x 4.0' long		SLUG VOL(GAL)	SLUG DEPTH(FT)

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP) BTM	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
BKGMW-008		5/20	5/20			26'	14.62	14.62	13'	13'

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME H - HEIGHT OF WATER ABOVE TRANSDUCER E - WATER LEVEL ELEVATION O - OTHER
ET - ELASPED TIME FT BRP - DEPTH TO WATER P - PRESSURE (EXPLAIN IN REMARKS)

DATA CHECK RESULTS: Graph looks good

REMARKS:

DATA RECORDED BY	DATE	QA CHECK BY	DATE
	5/20	H Smith	11-23-98

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO: 0060**

WELL NO: BKGmw006	DATE STARTED: 5/21	DATE COMPLETED: 5/21
LOCATION: RVAAP	RECORDED BY: Matt Ozley	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN SITU/ERMIT	1000 C	0471		
TRANSDUCER	IN SITU	PXD-260			
WATER LEVEL IND.					

PRETEST DATA

REFERENCE POINT: TOC	REFERENCE POINT ELEVATION: 1026.38	RISER CASING I.D. (IN.): 2"
SCREEN OR OPEN HOLE I.D.(IN.): 2"	DIAMETER OF BOREHOLE OF SCREENED: 6¼"	

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	37.67		TOP OF FILTER PACK		
DEPTH TO WATER	21.61		TOP OF SCREEN OR OPEN HOLE		
HEIGHT OF WATER COLUMN	16.06		SCREEN LENGTH		
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD — SLUG IN (FALLING HEAD) — SLUG OUT (RISING HEAD) ☐

SLUG DIMENSIONS		SLUG VOL(GAL)	SLUG DEPTH(FT)

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP) Bottom	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
BKGmw006		5/21	5/21			35'	21.61	21.61	16'	16'

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME; ET - ELASPED TIME; H - HEIGHT OF WATER ABOVE TRANSDUCER; FT BRP - DEPTH TO WATER; E - WATER LEVEL ELEVATION; P - PRESSURE; O - OTHER (EXPLAIN IN REMARKS)

DATA CHECK RESULTS: Graph looks good

REMARKS:

DATA RECORDED BY	DATE	QA CHECK BY	DATE
		H Smith	11-23-98

28-42 22

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NO: BKGMW01B	DATE STARTED: 5/21	DATE COMPLETED: 5/21	
LOCATION: RVAAP	RECORDED BY: Matt Otley		

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	INSTUHERMIT Hall	1000C SP4000	00971		
TRANSDUCER	IN SITU	PXD 260 SP4000			
WATER LEVEL IND.					

PRETEST DATA

REFERENCE POINT: TOC	REFERENCE POINT ELEVATION: 1043.96	RISER CASING I.D. (IN.): 2"
SCREEN OR OPEN HOLE I.D.(IN.): 2"	DIAMETER OF BOREHOLE (IF SCREENED): 6 1/2"	

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	~~28.90~~ 27.70		TOP OF FILTER PACK	13.75	
DEPTH TO WATER	14.97		TOP OF SCREEN OR OPEN HOLE	17.5	
HEIGHT OF WATER COLUMN	12.73		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD	SLUG IN (FALLING HEAD)	SLUG OUT (RISING HEAD) ☐		
SLUG DIMENSIONS			SLUG VOL(GAL)	SLUG DEPTH(FT)

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP)	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
BKGMW01B		5/21	5/21				14.9	14.9		

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME H - HEIGHT OF WATER ABOVE TRANSDUCER E - WATER LEVEL ELEVATION O - OTHER
ET - ELASPED TIME FT BRP - DEPTH TO WATER P - PRESSURE (EXPLAIN IN REMARKS)

DATA CHECK RESULTS: Graph looks good - over 1.0' of displacement

REMARKS:

DATA RECORDED BY	DATE	QA CHECK BY	DATE
Matt Otley		H Smith	11-23-99

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NO: BKGMW020	DATE STARTED: 05-19-98	DATE COMPLETED: 05-19-98
LOCATION: BKGMW-020 N. of George / Newton Falls	RECORDED BY:	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	~~IN-SITU HERMIT~~	1000 C			
TRANSDUCER	IN SITU TROLL	~~PED260~~ SP-4000	00971		11/95
WATER LEVEL IND.	Solinst				

PRETEST DATA

REFERENCE POINT: TOC	REFERENCE POINT ELEVATION: 1065.00	RISER CASING I.D. (IN.): 2"	
SCREEN OR OPEN HOLE I.D.(IN.): 2"	DIAMETER OF BOREHOLE (IF SCREENED): 6½"		

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH: 33.15	~~33.15~~ Bato		TOP OF FILTER PACK	17.45	
DEPTH TO WATER	8.28		TOP OF SCREEN OR OPEN HOLE	22.95	
HEIGHT OF WATER COLUMN	~25'		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD: SLUG IN (FALLING HEAD) — SLUG OUT (RISING HEAD) ☐

SLUG DIMENSIONS	SLUG VOL(GAL)	SLUG DEPTH(FT)
15/8" Ø and 4.0' long		

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP) Bottom	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
BKGMW020	BKGMW020	05-19-98	05-19-98			31.0	8.28	8.28	~25	~25

STORAGE LOCATION OF DATA: 1) C:\winsitu\BKGMW020 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL: LOG SCALE	TEST TIME INTERVAL: ARITH. SCALE	COMMENTS
COLUMN A		Binary			x	Winsitu Software Program
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME H - HEIGHT OF WATER ABOVE TRANSDUCER E - WATER LEVEL ELEVATION O - OTHER
ET - ELASPED TIME FT BRP - DEPTH TO WATER P - PRESSURE (EXPLAIN IN REMARKS)

DATA CHECK RESULTS:

REMARKS:

DATA RECORDED BY	DATE	QA CHECK BY	DATE
		H Smyth	11-23-98

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0001

WELL NO: (5) WBG	DATE STARTED: 5/26/98	DATE COMPLETED: ?	
LOCATION: RVAAP	RECORDED BY: M. Oblon		

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN-SITU ~~HERMIT~~ Troll	~~1000e~~ sp4000	00971		
TRANSDUCER	IN SITU	~~PXD-200~~ L			
WATER LEVEL IND.					

PRETEST DATA HLS 10-1-98

REFERENCE POINT	TOC	REFERENCE POINT ELEVATION	1052.28	RISER CASING I.D. (IN.)	2"
SCREEN OR OPEN HOLE I.D.(IN.)	2"	DIAMETER OF BOREHOLE (IF SCREENED)	8"		

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	21.28		TOP OF FILTER PACK	9.1	
DEPTH TO WATER	5.61		TOP OF SCREEN OR OPEN HOLE	10.8	
HEIGHT OF WATER COLUMN	15.67		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD	SLUG IN (FALLING HEAD)	SLUG OUT (RISING HEAD) ☐		
SLUG DIMENSIONS	15/16" x 4.0' SS		SLUG VOL(GAL)	SLUG DEPTH(FT)

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP)	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
	WBGMW005					Bottom 20'			15.67	15.67

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL: LOG SCALE	TEST TIME INTERVAL: ARITH. SCALE	COMMENTS
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME; ET - ELASPED TIME; H - HEIGHT OF WATER ABOVE TRANSDUCER; FT BRP - DEPTH TO WATER; E - WATER LEVEL ELEVATION; P - PRESSURE; O - OTHER (EXPLAIN IN REMARKS)

DATA CHECK RESULTS: Looks Good

REMARKS:

DATA RECORDED BY	DATE	QA CHECK BY	DATE
M. Oblon	5/26	J. Smith	11-23-98

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NO: 6 WBG	DATE STARTED: 5/26/98	DATE COMPLETED:	
LOCATION: RUARK	RECORDED BY:		

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN-SITU/HERMIT TROLL	~~1000 C~~ SE400	00471		
TRANSDUCER	IN SITU	~~PXD-200~~			
WATER LEVEL IND.					

PRETEST DATA

HCSQ-30-98

REFERENCE POINT: Top of Casing	REFERENCE POINT ELEVATION: 1012.16	RISER CASING I.D. (IN.): 2"	
SCREEN OR OPEN HOLE I.D.(IN.): 2"		DIAMETER OF BOREHOLE (IF SCREENED): 8"	

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	20.32		TOP OF FILTER PACK	7.6	
DEPTH TO WATER	7.55		TOP OF SCREEN OR OPEN HOLE	10.05	
HEIGHT OF WATER COLUMN	12.77		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD: SLUG IN (FALLING HEAD) ☐ SLUG OUT (RISING HEAD) ☐

SLUG DIMENSIONS	SLUG VOL(GAL)	SLUG DEPTH(FT)
15/16" x 4'		

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP)	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
	wbgmw006						Sll. Above		Full equil.	

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL: LOG SCALE	TEST TIME INTERVAL: ARITH. SCALE	COMMENTS
COLUMN A					✓	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME; ET - ELASPED TIME; H - HEIGHT OF WATER ABOVE TRANSDUCER; FT BRP - DEPTH TO WATER; E - WATER LEVEL ELEVATION; P - PRESSURE; O - OTHER (EXPLAIN IN REMARKS)

DATA CHECK RESULTS: OK

REMARKS:

DATA RECORDED BY	DATE	QA CHECK BY	DATE
	5/26	J Smith	1-23-98

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NO:	WBG 7	DATE STARTED:	5-26-98	DATE COMPLETED: →
LOCATION:	RVAAP	RECORDED BY:	M O	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN-SITU HERMIT TROLL	~~1000~~ SP1000	00971		
TRANSDUCER	IN SITU	~~PXD-260~~			
WATER LEVEL IND.					

PRETEST DATA

HCS 9-30-98

REFERENCE POINT	TOC	REFERENCE POINT ELEVATION	998.09	RISER CASING I.D. (IN.)	2"
SCREEN OR OPEN HOLE I.D.(IN.)	2"	DIAMETER OF BOREHOLE (IF SCREENED)	8"		

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	26.56		TOP OF FILTER PACK	12.6	
DEPTH TO WATER	16.12		TOP OF SCREEN OR OPEN HOLE	15.95	
HEIGHT OF WATER COLUMN	10.44		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD	SLUG IN (FALLING HEAD)	SLUG OUT (RISING HEAD) ☐		
SLUG DIMENSIONS	15/16" ϕ x 4.0' long		SLUG VOL(GAL)	SLUG DEPTH(FT)

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP)	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
WBGMW007							Fully equil		see above	
							Numbers			

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A					L	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME; ET - ELASPED TIME; H - HEIGHT OF WATER ABOVE TRANSDUCER; FT BRP - DEPTH TO WATER; E - WATER LEVEL ELEVATION; P - PRESSURE; O - OTHER (EXPLAIN IN REMARKS)

DATA CHECK RESULTS: Graph looks good

REMARKS:

DATA RECORDED BY	MO	DATE	5/26	QA CHECK BY	H Smith	DATE	11-23-98

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 0060

WELL NO: WBG B	DATE STARTED: 5-26-98	DATE COMPLETED: 5-26	
LOCATION: RVAAP	RECORDED BY: Mark Ochs		

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN-SITU/HERMIT — Rock	1000 C SP4000	01342		
TRANSDUCER	IN SITU	PSD-260	1		
WATER LEVEL IND.					

PRETEST DATA

REFERENCE POINT: TOC	REFERENCE POINT ELEVATION: 1005.71	RISER CASING I.D. (IN.): 2"	
SCREEN OR OPEN HOLE I.D.(IN.): 2"	DIAMETER OF BOREHOLE (IF SCREENED): 8"		

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	20.98		TOP OF FILTER PACK	8.5	
DEPTH TO WATER	14.53		TOP OF SCREEN OR OPEN HOLE	10.6	
HEIGHT OF WATER COLUMN	6.45		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD	SLUG IN (FALLING HEAD)	SLUG OUT (RISING HEAD) ☐		
SLUG DIMENSIONS	15/16" ⌀ 2' long		SLUG VOL(GAL)	SLUG DEPTH(FT)

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER ~~(FT BRP)~~ BTOC, PBTOC	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
	WBGmw003	05-26-98	—			20'	SLL	above, fully equilibrated		

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A					X	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME H - HEIGHT OF WATER ABOVE TRANSDUCER E - WATER LEVEL ELEVATION O - OTHER
ET - ELASPED TIME FT BRP - DEPTH TO WATER P - PRESSURE (EXPLAIN IN REMARKS)

DATA CHECK RESULTS: looks good

REMARKS:

DATA RECORDED BY	DATE	QA CHECK BY	DATE
Mark Ochs	5-26-98	HSmith	1-23-98

23.62 TH O

SLUG TEST RECORD

PROJECT NAME: Phase II RI @ WBG and Background Investigation **DELIVERY ORDER NO:** 3060

WELL NO: WBGMW009	DATE STARTED: 05-26-98	DATE COMPLETED: 5-26
LOCATION: RVAAP	RECORDED BY: Heidi Ogle Cory	

EQUIPMENT INFORMATION SUMMARY

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NO.	RANGE (PSI)	LAST CALIB.
DATA LOGGER	IN-SITU HERMIT / TROLL	SP4000	00971		
TRANSDUCER	IN-SITU	160 SP4000			
WATER LEVEL IND.					

PRETEST DATA

REFERENCE POINT	TOC	REFERENCE POINT ELEVATION	1045.03	RISER CASING I.D. (IN.)	2"

SCREEN OR OPEN HOLE I.D.(IN.)	2"	DIAMETER OF BOREHOLE (IF SCREENED)	8"

	FT BRP	MSL		FT BRP	MSL
TOTAL WELL DEPTH	12.51 ↑ 23.90	23.90	TOP OF FILTER PACK	10.4	
DEPTH TO WATER	23.90	12.51	TOP OF SCREEN OR OPEN HOLE	13.89	
HEIGHT OF WATER COLUMN	11.39		SCREEN LENGTH	10'	
TEST INTERVAL TYPE					

TEST METHODS SUMMARY

TEST METHOD — SLUG IN (FALLING HEAD) — SLUG OUT (RISING HEAD) (circled) — ☐

SLUG DIMENSIONS	1 5/16" X 4' long	SLUG VOL(GAL)	SLUG DEPTH(FT)

DATA LOGGER RECORDS

DATA LOGGER TEST NO.	FILE NAME	DATE (MM/DD/YY) BEGIN	DATE (MM/DD/YY) END	DATE (HH:MM:SS) BEGIN	DATE (HH:MM:SS) END	DEPTH TO TRANSDUCER (FT BRP)	DEPTH TO WATER (FT BRP) BEGIN	DEPTH TO WATER (FT BRP) END	HEIGHT OF WATER COLUMN (FT) BEGIN	HEIGHT OF WATER COLUMN (FT) END
	WBGMW009						Fully equilibrated			
							Set above			

STORAGE LOCATION OF DATA: 1) 2)

FILE STRUCTURES	DATA TYPE	FORMAT (1)	UNITS	TEST TIME INTERVAL LOG SCALE	TEST TIME INTERVAL ARITH. SCALE	COMMENTS
COLUMN A					L	
COLUMN B						
COLUMN C						

(1) CK - 24 HR CLOCK TIME; ET - ELASPED TIME; H - HEIGHT OF WATER ABOVE TRANSDUCER; FT BRP - DEPTH TO WATER; E - WATER LEVEL ELEVATION; P - PRESSURE; O - OTHER (EXPLAIN IN REMARKS)

DATA CHECK RESULTS: Look Good

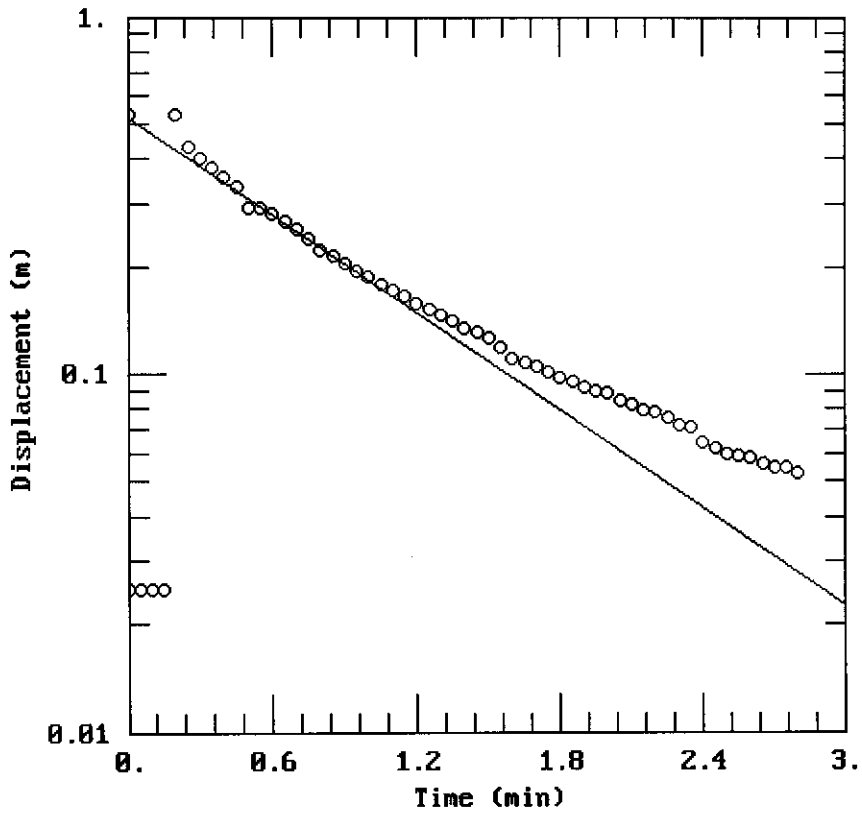
REMARKS:

DATA RECORDED BY	DATE	QA CHECK BY	DATE
M. Ahn	5-26	H Smith	11-23-98

SLUG TESTS SOLUTIONS

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-8218-011

BKGmw-005 Slug Test Solution



DATA SET:
BKGMW05.AQT
10/02/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 0.53 m
r_c= 0.025 m
r_w= 0.102 m
L = 2.77 m
b = 2.77 m
H = 2.77 m

PARAMETER ESTIMATES:
K = 0.002785 cm/sec
y0 = 0.5197 m

AQTESOLV

IN_SITU INC. TROLL
Serial number: 00000971
Unit name: RVAAP

Report generated: 10/01/98 10:55:13
Report from file: C:\MYDOCU~1\RAVENN~1\BKGMW005.BIN

Test name:BKGmw005

Test defined on: 05/21/98 14:47:41
Test started on: 05/21/98 14:48:07
Test stopped on: 05/21/98 14:54:57
Test extracted on: 05/21/98 16:54:23

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 137

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 3.352 Meters H2O

Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O
05/21/98	14:48:07	0.0000	23.91	0.000
05/21/98	14:48:10	0.0500	23.92	0.003
05/21/98	14:48:13	0.1000	23.91	0.005
05/21/98	14:48:16	0.1500	23.90	0.006
05/21/98	14:48:19	0.2000	23.91	0.008
05/21/98	14:48:22	0.2500	23.94	0.009
05/21/98	14:48:25	0.3000	23.94	0.011
05/21/98	14:48:28	0.3500	23.94	0.012
05/21/98	14:48:31	0.4000	23.94	0.013
05/21/98	14:48:34	0.4500	23.93	0.015
05/21/98	14:48:37	0.5000	23.93	0.015
05/21/98	14:48:40	0.5500	23.93	0.016
05/21/98	14:48:43	0.6000	23.92	0.016
05/21/98	14:48:46	0.6500	23.91	0.018
05/21/98	14:48:49	0.7000	23.91	0.018
05/21/98	14:48:52	0.7500	23.91	0.019
05/21/98	14:48:55	0.8000	23.90	0.019
05/21/98	14:48:58	0.8500	23.87	0.020
05/21/98	14:49:01	0.9000	23.85	0.020
05/21/98	14:49:04	0.9500	23.84	0.020
05/21/98	14:49:07	1.0000	23.84	0.020

05/21/98	14:49:10	1.0500	23.83	0.022
05/21/98	14:49:13	1.1000	23.83	0.022
05/21/98	14:49:16	1.1500	23.82	0.022
05/21/98	14:49:19	1.2000	23.82	0.022
05/21/98	14:49:22	1.2500	23.81	0.023
05/21/98	14:49:25	1.3000	23.83	0.023
05/21/98	14:49:28	1.3500	23.85	0.023
05/21/98	14:49:31	1.4000	23.85	0.025
05/21/98	14:49:34	1.4500	23.84	0.025
05/21/98	14:49:37	1.5000	23.84	0.025
05/21/98	14:49:40	1.5500	23.83	0.025
05/21/98	14:49:43	1.6000	23.82	0.025
05/21/98	14:49:46	1.6500	23.82	0.025
05/21/98	14:49:49	1.7000	23.81	0.025
05/21/98	14:49:52	1.7500	23.80	0.026
05/21/98	14:49:55	1.8000	23.75	0.025
05/21/98	14:49:58	1.8500	23.75	0.025
05/21/98	14:50:01	1.9000	23.73	0.023
05/21/98	14:50:04	1.9500	23.73	0.022
05/21/98	14:50:07	2.0000	23.74	0.019
05/21/98	14:50:10	2.0500	23.73	0.020
05/21/98	14:50:13	2.1000	23.72	0.022
05/21/98	14:50:16	2.1500	23.71	0.022
05/21/98	14:50:19	2.2000	23.73	0.022
05/21/98	14:50:22	2.2500	23.75	0.022
05/21/98	14:50:25	2.3000	23.75	0.023
05/21/98	14:50:28	2.3500	23.74	0.023
05/21/98	14:50:31	2.4000	23.73	0.023
05/21/98	14:50:34	2.4500	23.73	0.023
05/21/98	14:50:37	2.5000	23.73	0.023
05/21/98	14:50:40	2.5500	23.72	0.023
05/21/98	14:50:43	2.6000	23.71	0.025
05/21/98	14:50:46	2.6500	23.71	0.023
05/21/98	14:50:49	2.7000	23.71	0.023
05/21/98	14:50:52	2.7500	23.65	0.025
05/21/98	14:50:55	2.8000	23.65	0.025
05/21/98	14:50:58	2.8500	23.64	0.023
05/21/98	14:51:01	2.9000	23.64	0.025
05/21/98	14:51:04	2.9500	23.63	0.020
05/21/98	14:51:07	3.0000	23.64	0.019
05/21/98	14:51:10	3.0500	23.63	0.020
05/21/98	14:51:13	3.1000	23.62	0.020
05/21/98	14:51:16	3.1500	23.62	0.020
05/21/98	14:51:19	3.2000	23.65	0.020
05/21/98	14:51:22	3.2500	23.65	0.022
05/21/98	14:51:25	3.3000	23.65	0.022
05/21/98	14:51:28	3.3500	23.65	0.020
05/21/98	14:51:31	3.4000	23.64	0.022
05/21/98	14:51:34	3.4500	23.64	0.022
05/21/98	14:51:37	3.5000	23.64	0.022
05/21/98	14:51:40	3.5500	23.63	0.022
05/21/98	14:51:43	3.6000	23.62	0.022
05/21/98	14:51:46	3.6500	23.62	0.023
05/21/98	14:51:49	3.7000	23.62	0.023
05/21/98	14:51:52	3.7500	23.62	0.023
05/21/98	14:51:55	3.8000	23.59	0.023

05/21/98	14:51:58	3.8500	23.56	0.023
05/21/98	14:52:01	3.9000	23.56	0.023
05/21/98	14:52:04	3.9500	23.55	0.025
05/21/98	14:52:07	4.0000	23.55	0.025
05/21/98	14:52:10	4.0500	23.55	0.025
05/21/98	14:52:13	4.1000	23.54	0.025
05/21/98	14:52:16	4.1500	23.53	0.025
05/21/98	14:52:19	4.2000	23.53	0.530
05/21/98	14:52:22	4.2500	23.53	0.431
05/21/98	14:52:25	4.3000	23.52	0.402
05/21/98	14:52:28	4.3500	23.53	0.377
05/21/98	14:52:31	4.4000	23.53	0.355
05/21/98	14:52:34	4.4500	23.56	0.334
05/21/98	14:52:37	4.5000	23.55	0.291
05/21/98	14:52:40	4.5500	23.56	0.292
05/21/98	14:52:43	4.6000	23.55	0.280
05/21/98	14:52:46	4.6500	23.54	0.266
05/21/98	14:52:49	4.7000	23.53	0.253
05/21/98	14:52:52	4.7500	23.52	0.238
05/21/98	14:52:55	4.8000	23.52	0.221
05/21/98	14:52:58	4.8500	23.52	0.213
05/21/98	14:53:01	4.9000	23.48	0.203
05/21/98	14:53:04	4.9500	23.46	0.195
05/21/98	14:53:07	5.0000	23.45	0.187
05/21/98	14:53:10	5.0500	23.45	0.179
05/21/98	14:53:13	5.1000	23.45	0.172
05/21/98	14:53:16	5.1500	23.44	0.165
05/21/98	14:53:19	5.2000	23.44	0.157
05/21/98	14:53:22	5.2500	23.43	0.152
05/21/98	14:53:25	5.3000	23.43	0.146
05/21/98	14:53:28	5.3500	23.43	0.141
05/21/98	14:53:31	5.4000	23.42	0.135
05/21/98	14:53:34	5.4500	23.44	0.131
05/21/98	14:53:37	5.5000	23.45	0.127
05/21/98	14:53:40	5.5500	23.45	0.119
05/21/98	14:53:43	5.6000	23.44	0.110
05/21/98	14:53:46	5.6500	23.45	0.108
05/21/98	14:53:49	5.7000	23.44	0.105
05/21/98	14:53:52	5.7500	23.44	0.101
05/21/98	14:53:55	5.8000	23.43	0.098
05/21/98	14:53:58	5.8500	23.43	0.095
05/21/98	14:54:01	5.9000	23.43	0.092
05/21/98	14:54:04	5.9500	23.41	0.089
05/21/98	14:54:07	6.0000	23.36	0.088
05/21/98	14:54:10	6.0500	23.36	0.084
05/21/98	14:54:13	6.1000	23.36	0.082
05/21/98	14:54:16	6.1500	23.36	0.079
05/21/98	14:54:19	6.2000	23.35	0.078
05/21/98	14:54:22	6.2500	23.35	0.075
05/21/98	14:54:25	6.3000	23.35	0.072
05/21/98	14:54:28	6.3500	23.34	0.071
05/21/98	14:54:31	6.4000	23.33	0.064
05/21/98	14:54:34	6.4500	23.33	0.062
05/21/98	14:54:37	6.5000	23.33	0.060
05/21/98	14:54:40	6.5500	23.35	0.059
05/21/98	14:54:43	6.6000	23.36	0.058

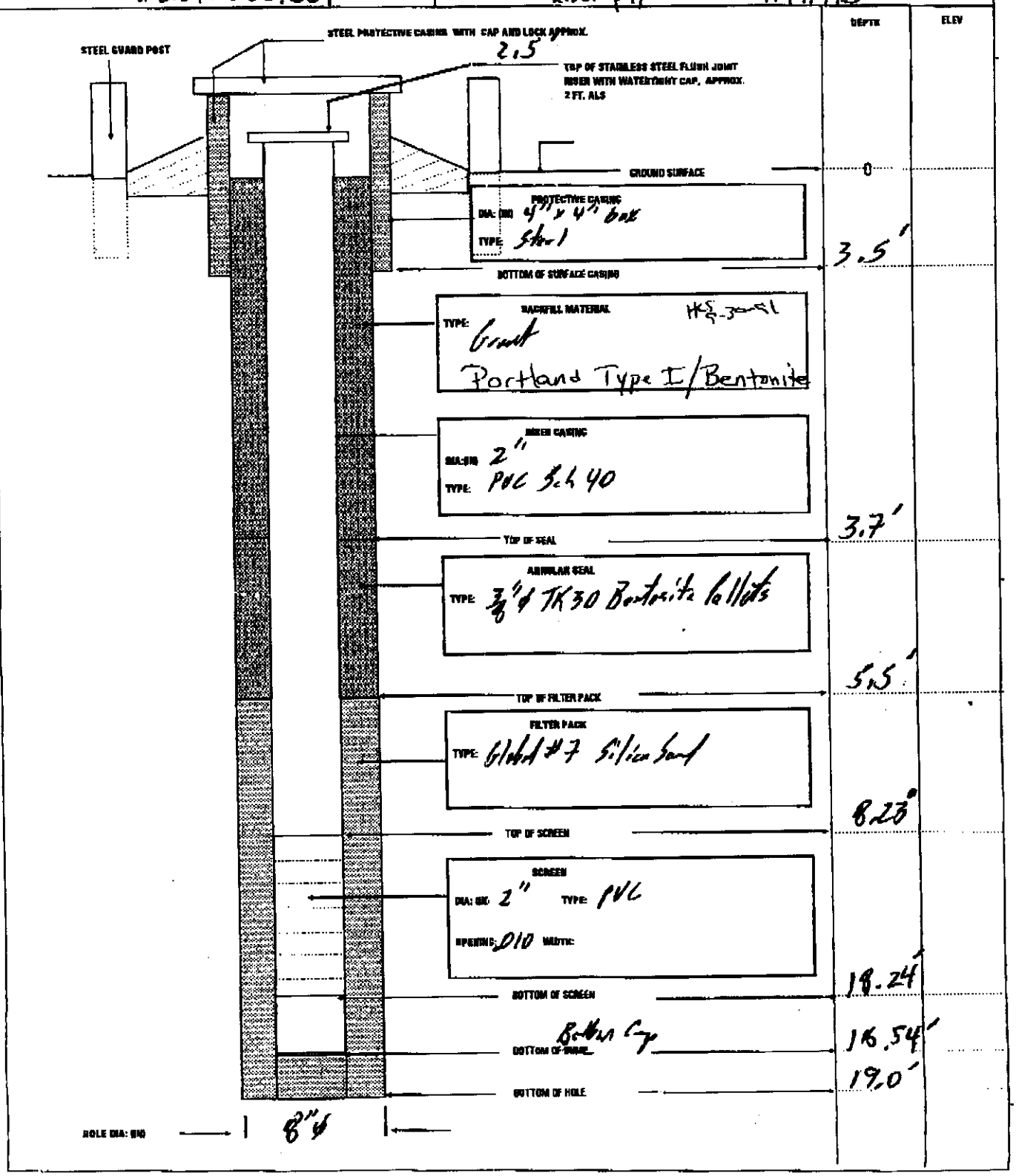
05/21/98	14:54:46	6.6500	23.36	0.056
05/21/98	14:54:49	6.7000	23.36	0.055
05/21/98	14:54:52	6.7500	23.35	0.055
05/21/98	14:54:55	6.8000	23.35	0.053

MONITORING WELL

PROJECT NAME: [illegible] DELIVERY ORDER NO: 0069

WELL NUMBER: BKGMW-005 BEGIN: 4 May 96 END: 5 May 96

COORDINATES: N: 562988.445 E: 2340835.864 REFERENCE POINT: Top of Riser Pipe ELEVATION: 1149.443 MSL



Phase II RI at WBG and Background Investigation | INSPECTOR Brad Beck | SHEET

DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
1–2	Silty SAND; sand ~ 50%, silt ~ 40%, granules ~ 10%; Mod Yellowish Brown; subrounded; poorly sorted; low plasticity; moist dense (SM)	PID - 0 ppm LEL - 0% O_2 - 20.8%	NA	BKG814	(1430 hr) - 1-3 ft Blow Count 8-9-9-14 Sample collected w/ 2" ϕ 2 ft length Split Spoon 75% recovery
3–4	SAME AS ABOVE note: 7-8 ft (1535 hr.) processed analytical sample	PID - 0 ppm LEL - 0% O_2 - 20.8%	NA	BK 0815 (7/8 ft)	- 3-4 ft collected w/ 2" ϕ split spoon blows: 13-16 - Converted to 4" ϕ continuous split barrel 5 ft length (4-9 ft - 80% recovery) - Wet cutting present @ 10 ft bls
5–6					
7				NA	- Saturated cutting present @ 11 ft bls.
7–8	SAND; sand ~ 75%, silt ~ 15%, granules ~ 10%; Mod Yellowish Brown; mod sorted; subrounded; soft, wet; non plastic; (SP) Interbedded Sandy silt 9-11 ft	PID - 0 ppm LEL - 0% O_2 - 20.8%	NA	BK 0815 (7-8 ft)	- Tagged H_2O @ 8.3 ft bls (1514 hrs) - 3" ϕ Shelby Tube (25% recovery) collected 12-14 ft bls - H_2O tagged @ 7.6 ft bls (1546 hrs)
12	note: 25% recovery Shelby Tube 12-14 ft bls	PID - 0 ppm LEL - 0% O_2 - 20.8%	✓	NA	(9-12 ft run, 100% recovery)
14	SAND; sand: med ~ 70%, silt ~ 15%, granule 15%; Mod Yellowish Brown; med sorted; subrounded; soft; wet; non plastic (SP)	PID - 0 ppm LEL - 0% O_2 - 20.8%	NA	NA	- 1615 hr. H_2O @ 7.30 ft bls - 14-19 ft run 25% recovery
19	TD = 19.0 ft bls				

PROJECT Phase II RI at Winklepeck Burning Ground and Background Investigation | ELEV. 1149.443 | HOLE NO. BKG mw-005

N562288.445 E2340835.864

BKGmw005

Test date = 5-21-98

initial displacement = 0.53 m

Radius of Casing = .025 m

Radius of BH = 0.102 m

Saturated Thickness = go with 10

Screen length = 12 including Sand pack

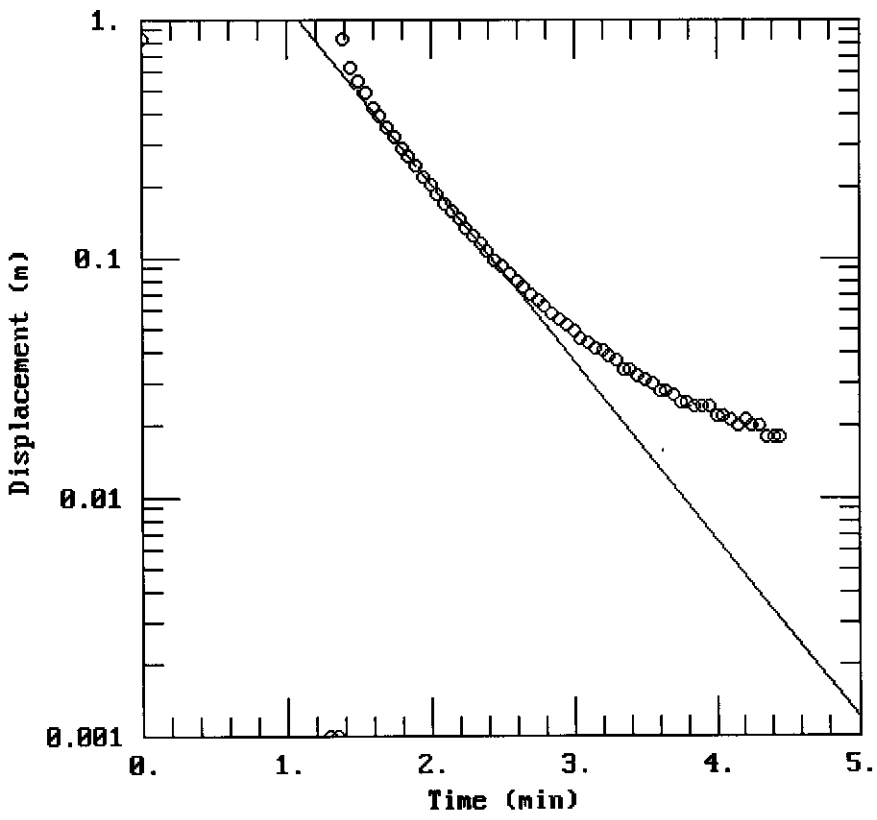
Static height = 9.08

Gravel Pack Porosity = 0.3

Bower and Rice unconf.

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-8218-011

BKGmw-006 Slug Test Solution



DATA SET:
BKGMW6.AQT
10/04/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 0.818 m
r_c= 0.025 m
r_w= 0.0762 m
L = 4.29 m
b = 4.9 m
H = 4.9 m

PARAMETER ESTIMATES:
K = 0.0006643 cm/sec
y0 = 6.573 m

AQTESOLV

IN_SITU INC. TROLL
Serial number: 00000971
Unit name: RVAAP

Report generated: 10/01/98 10:50:56
Report from file: C:\MYDOCU~1\RAVENN~1\BKGMW006.BIN

Test name: BKGmw-006

Test defined on: 05/21/98 08:38:10
Test started on: 05/21/98 08:39:57
Test stopped on: 05/21/98 08:44:27
Test extracted on: 05/21/98 16:51:52

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 90

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 4.289 Meters H2O

Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O
05/21/98	08:39:57	0.0000	10.93	0.000
05/21/98	08:40:00	0.0500	10.93	0.000
05/21/98	08:40:03	0.1000	10.93	0.000
05/21/98	08:40:06	0.1500	10.91	0.000
05/21/98	08:40:09	0.2000	10.90	0.000
05/21/98	08:40:12	0.2500	10.89	0.000
05/21/98	08:40:15	0.3000	10.88	0.000
05/21/98	08:40:18	0.3500	10.87	0.000
05/21/98	08:40:21	0.4000	10.87	0.000
05/21/98	08:40:24	0.4500	10.85	0.000
05/21/98	08:40:27	0.5000	10.85	0.000
05/21/98	08:40:30	0.5500	10.84	0.000
05/21/98	08:40:33	0.6000	10.83	0.000
05/21/98	08:40:36	0.6500	10.82	0.000
05/21/98	08:40:39	0.7000	10.81	0.000
05/21/98	08:40:42	0.7500	10.80	0.000
05/21/98	08:40:45	0.8000	10.79	0.000
05/21/98	08:40:48	0.8500	10.78	0.000
05/21/98	08:40:51	0.9000	10.78	0.000
05/21/98	08:40:54	0.9500	10.76	0.000
05/21/98	08:40:57	1.0000	10.76	0.000

05/21/98	08:41:00	1.0500	10.74	0.000
05/21/98	08:41:03	1.1000	10.74	0.000
05/21/98	08:41:06	1.1500	10.73	0.000
05/21/98	08:41:09	1.2000	10.71	0.000
05/21/98	08:41:12	1.2500	10.71	0.000
05/21/98	08:41:15	1.3000	10.70	0.001
05/21/98	08:41:18	1.3500	10.70	0.001
05/21/98	08:41:21	1.4000	10.69	0.818
05/21/98	08:41:24	1.4500	10.68	0.623
05/21/98	08:41:27	1.5000	10.67	0.553
05/21/98	08:41:30	1.5500	10.67	0.496
05/21/98	08:41:33	1.6000	10.65	0.427
05/21/98	08:41:36	1.6500	10.65	0.392
05/21/98	08:41:39	1.7000	10.64	0.354
05/21/98	08:41:42	1.7500	10.64	0.321
05/21/98	08:41:45	1.8000	10.63	0.291
05/21/98	08:41:48	1.8500	10.62	0.266
05/21/98	08:41:51	1.9000	10.61	0.243
05/21/98	08:41:54	1.9500	10.61	0.220
05/21/98	08:41:57	2.0000	10.59	0.202
05/21/98	08:42:00	2.0500	10.59	0.186
05/21/98	08:42:03	2.1000	10.58	0.170
05/21/98	08:42:06	2.1500	10.57	0.156
05/21/98	08:42:09	2.2000	10.57	0.146
05/21/98	08:42:12	2.2500	10.56	0.134
05/21/98	08:42:15	2.3000	10.55	0.124
05/21/98	08:42:18	2.3500	10.55	0.115
05/21/98	08:42:21	2.4000	10.54	0.106
05/21/98	08:42:24	2.4500	10.53	0.098
05/21/98	08:42:27	2.5000	10.53	0.092
05/21/98	08:42:30	2.5500	10.52	0.086
05/21/98	08:42:33	2.6000	10.51	0.080
05/21/98	08:42:36	2.6500	10.50	0.075
05/21/98	08:42:39	2.7000	10.50	0.070
05/21/98	08:42:42	2.7500	10.49	0.066
05/21/98	08:42:45	2.8000	10.49	0.062
05/21/98	08:42:48	2.8500	10.48	0.058
05/21/98	08:42:51	2.9000	10.48	0.055
05/21/98	08:42:54	2.9500	10.47	0.052
05/21/98	08:42:57	3.0000	10.52	0.049
05/21/98	08:43:00	3.0500	10.49	0.046
05/21/98	08:43:03	3.1000	10.48	0.044
05/21/98	08:43:06	3.1500	10.47	0.042
05/21/98	08:43:09	3.2000	10.47	0.041
05/21/98	08:43:12	3.2500	10.48	0.039
05/21/98	08:43:15	3.3000	10.49	0.037
05/21/98	08:43:18	3.3500	10.48	0.034
05/21/98	08:43:21	3.4000	10.47	0.034
05/21/98	08:43:24	3.4500	10.46	0.032
05/21/98	08:43:27	3.5000	10.44	0.031
05/21/98	08:43:30	3.5500	10.44	0.030
05/21/98	08:43:33	3.6000	10.44	0.028
05/21/98	08:43:36	3.6500	10.46	0.028
05/21/98	08:43:39	3.7000	10.47	0.027
05/21/98	08:43:42	3.7500	10.45	0.025
05/21/98	08:43:45	3.8000	10.44	0.025

05/21/98	08:43:48	3.8500	10.43	0.024
05/21/98	08:43:51	3.9000	10.42	0.024
05/21/98	08:43:54	3.9500	10.41	0.024
05/21/98	08:43:57	4.0000	10.40	0.022
05/21/98	08:44:00	4.0500	10.40	0.022
05/21/98	08:44:03	4.1000	10.39	0.021
05/21/98	08:44:06	4.1500	10.38	0.020
05/21/98	08:44:09	4.2000	10.38	0.021
05/21/98	08:44:12	4.2500	10.37	0.020
05/21/98	08:44:15	4.3000	10.37	0.020
05/21/98	08:44:18	4.3500	10.36	0.018
05/21/98	08:44:21	4.4000	10.35	0.018
05/21/98	08:44:24	4.4500	10.35	0.018

PROJECT Phase II RI at WBG and Background Investigation | INSPECTOR M. OBLOY | SHEET

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0	TOP SOIL, Dark Gray, Silt, moist, Roots, etc.				
	1	Clayey SILT (ML), Brown, Moist, soft, Low Plasticity	0.0 ppm			
	2	Sandy Gravel w/ silt, and clay (GW-GM), loose, moist, Brown				
	3	↓ increasing clay content to clayey sand				
	4	weathered SANDSTONE, mixed w/ clay/silt paleosoil top 6"				
	5	competent SS, Sharon Conglomerate		5'-15' Core Box # MW6-1		25'-33' Core Box # MW6-3
	6	TAN; Very well Sorted F. Sand, <1% - Subr. Predom Quartz Strong Cementation 10-20% Medium Sand				
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					BoB at 35'
	16			15-25' Core Box # MW6-2		
	17					
	18					
	19					
	20					

B-125

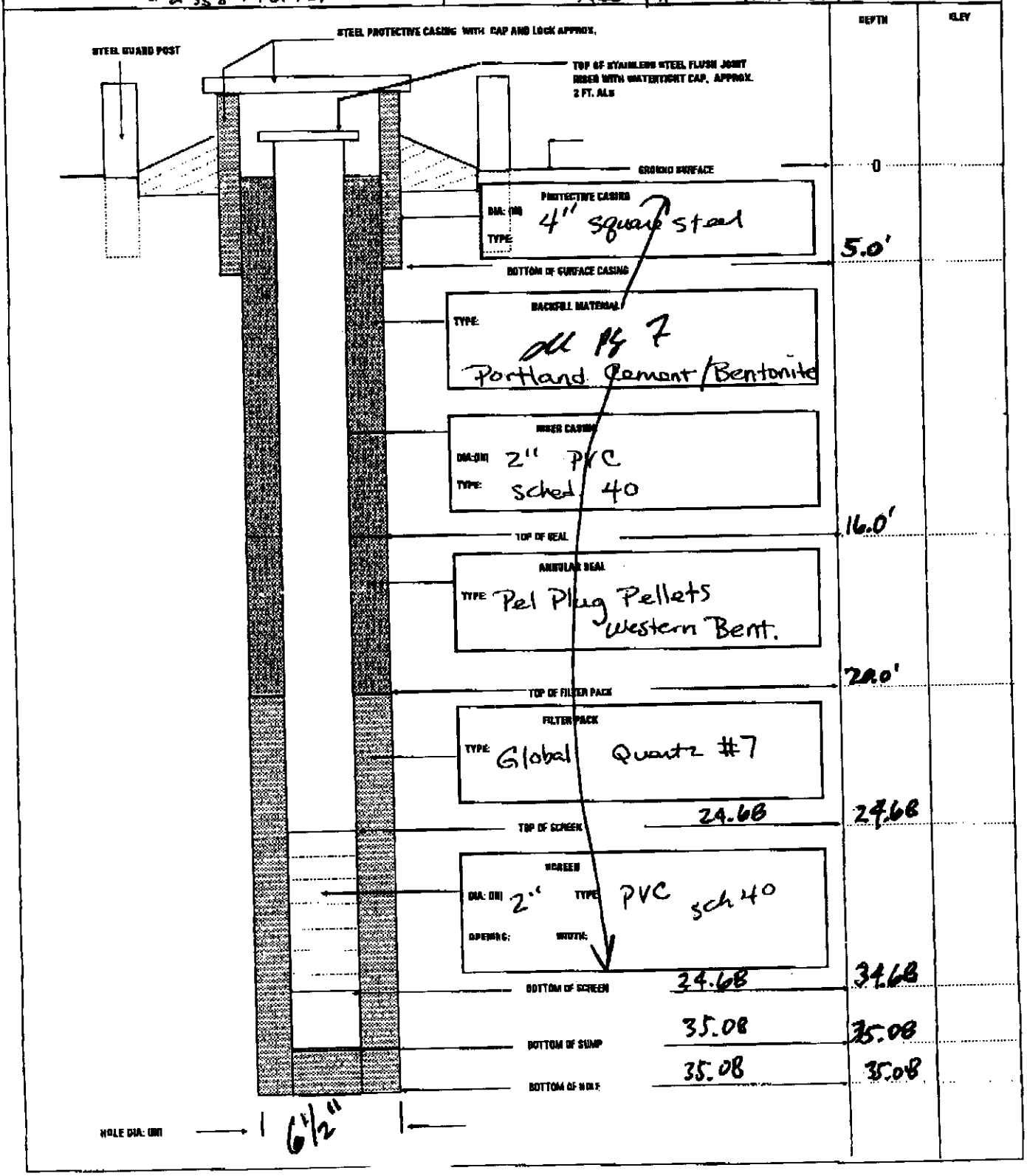
PROJECT Phase II RI at Winklepeck Burning Ground and Background Investigation | HOLE NO BKGM-MW06

N 571910.470 E 2358643.961 ELEV. 1026.380

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation DELIVERY ORDER NO: 0006

WELL NUMBER: BKGmw-0006		BEGIN: 4-27-98	END: 4-27-98
COORDINATES: N: 571910.470 E: 2358643.961		REFERENCE POINT: Top of Riser Pipe	ELEVATION: 1026.380 MSL



35.8

BKbmw006 – (05-21-98)

Water Column = (37.67 - 21.61) = 16.06

Initial Displacement = 0.818m

Radius of Csg = ~~0.153m~~ 0.025 m

Radius of BH = .0762 m

Sat. Thickness = 16.06' x 4.90m

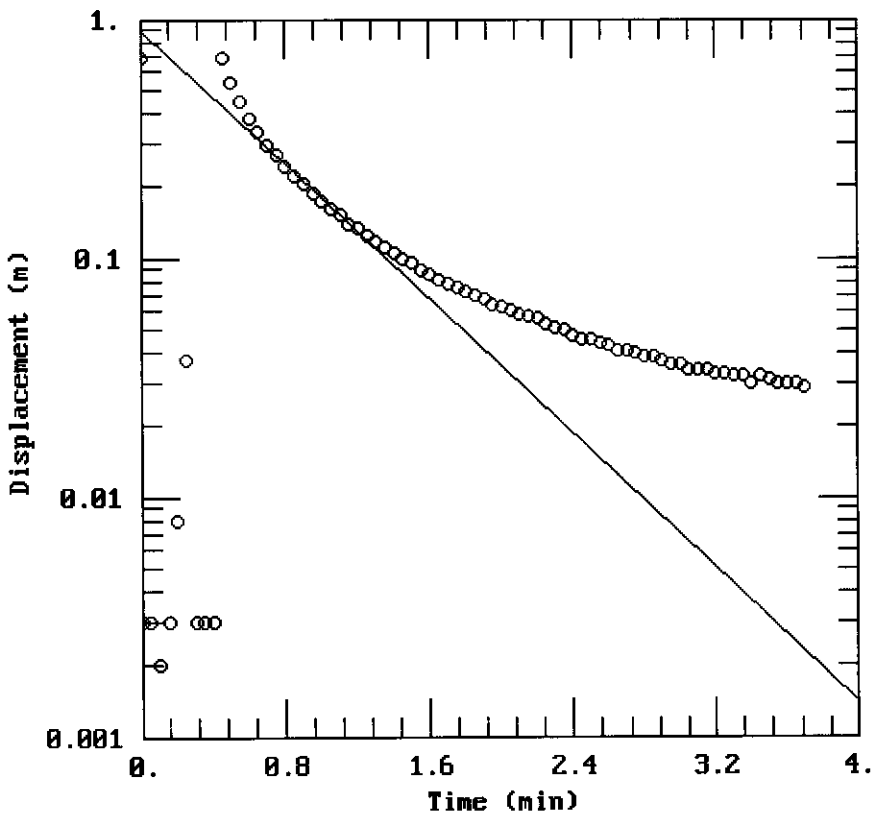
Screen L = 14.08' = 4.29 m

Static H = 16.06' 4.90m

Gravel Pack = ϕ

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-8218-011

BKGmw-008 Slug Test Solution



DATA SET:
BKGMW8.AQT
10/04/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 0.685 m
r_c= 0.025 m
r_w= 0.0762 m
L = 3.94 m
b = 3.94 m
H = 3.94 m

PARAMETER ESTIMATES:
K = 0.0006452 cm/sec
y0 = 0.893 m

AQTESOLV

27.63
14.7 -
12.93

BKGmw000 water column = 27.63 - 14.7 = 12.93'

Test date = 05-20-98

Displacement = 685 ml

r of casing = 0.025m

r of Bit = 0 0762 m

Sat Rick = 12.93 X .3048 = 3.94

Screen = 4.00m

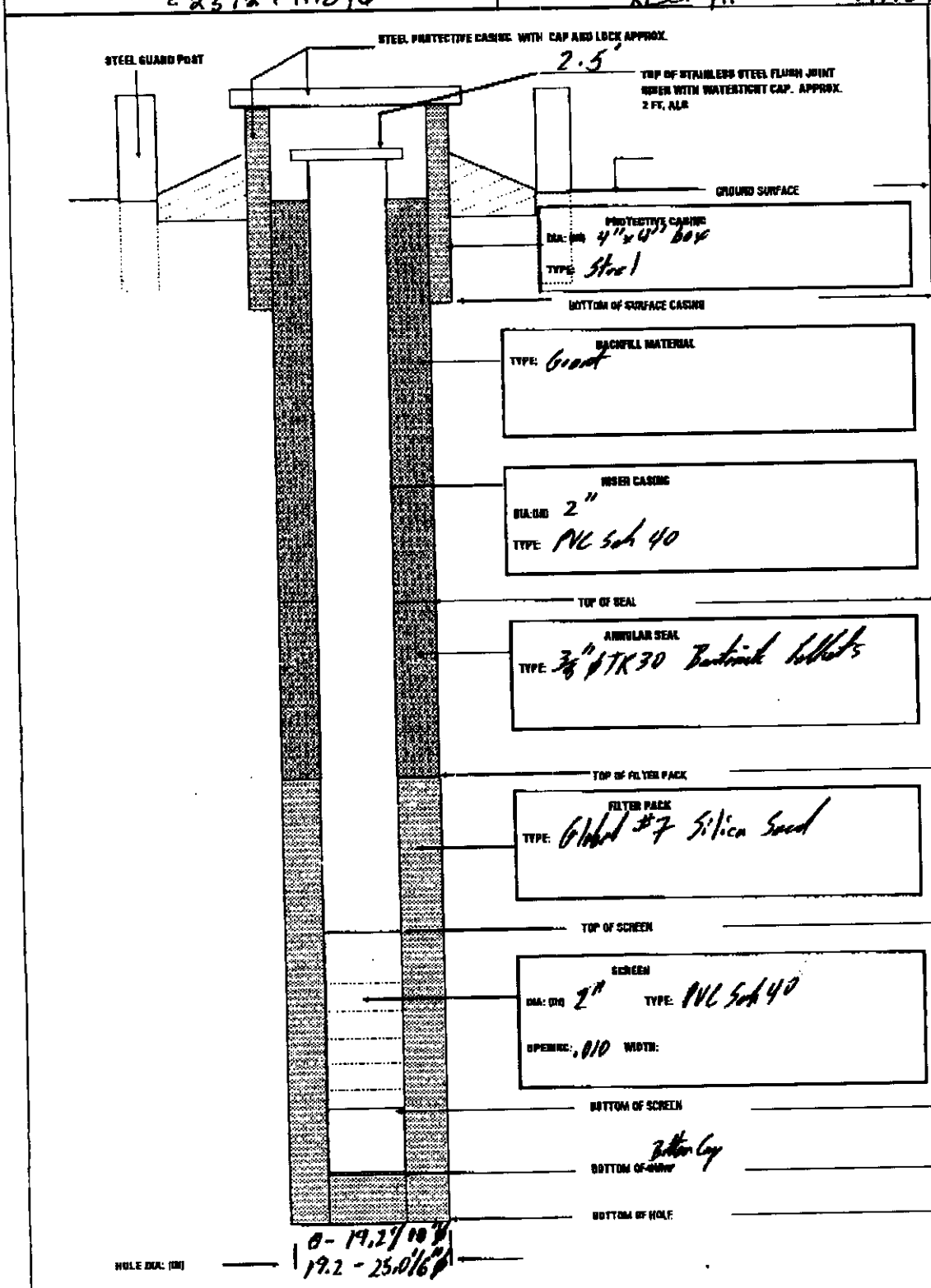
Sand Pack porosity = 0

Bonter and Rice

MONITORING WELL

PROJECT NAME: Phase II RI @ NBG and Background Investigation — DELIVERY ORDER NO: 0006

WELL NUMBER: BKGmw-008	BEGIN: 26 Apr 98	END: 27 Apr 98	
COORDINATES: N: 56954.231 E: 2372741.076	REFERENCE POINT: Top of Riser Pipe	ELEVATION: 976.397 MSL	



12.93

4 25.00 − 11.85 = 13.15

4 25.00 − 12.93 = 12.07

PROJECT Phase II RI at WBG and Background Investigation | INSPECTOR Brad Baker | BKG mw-10 0 | SHEET 1

ELEV (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
	1 2 3 4	Silty CLAY; sand: v. fine ~10%, silt ~30%, clay ~60%; Reddish Brown variegated med Gray; subrounded; poorly sorted; med plasticity; soft; moist (CL)	PID-0 ppm LEL-0% O_2-21%	NA	1-3 ft BK0926 0925 hrs.	Augered 1.0 ft bls Split spoon 2" Ø from 1-3 ft bls - 100% recovery 3-4 ft sampled w/ 2" Ø split spoon 100% recovery
	5 10	Clayey Silt; sand: v. fine, clay ~40%, silt ~50%; Lt brownish yellow, w/ variegated gray clay; slightly fissile; Hard; poorly sorted; subrounded; moist low plasticity (ML) 9-9.5 ft SAME AS ABOVE w/ large Dk Reddish Brown Sandstone frag present.	PID-0 ppm LEL-0% O_2-21%	NA	6-7 ft BK0821 0920 hrs	4-10 ft sampled w/ 4" Ø decon split barrels 4-9 ft run 100% recovery Attempted 9-12 ft run rock encountered @ 10 ft bls 9-10 ft drilled 0.5 ft recovered, (50%)
	18.5	Cuttings appear as Med Reddish Brown Sandstone	PID-0 ppm LEL-0% O_2-21%	NA	NA	Continued drilling rk w/ HSA's, ~~used split barrel but no recovery~~ 26 Apr 98 Competent / hard rk encountered @ 18.5 ft bls. Saturated cuttings present @ 17 ft bls. 0950 H_2O @ 18.2' bls 1122 H_2O @ 16.5' bls
	19.2 25.0	SANDSTONE; Med Reddish Brown banded light gray; quartz sand: coarse w/ gradational changes ranging from fine to granular grain sizes, hard, mod-well silica cementation; bedding ~105° from vertical; mod-low weathering; subangular; permeability: low-mod primary mod-high secondary; fractured and Fe-stained section @ 21.6-22.0 ft.	PID-0 ppm LEL-0% O_2-21%	NA Core Box #1	(0830 hrs)	27 Apr 98 H_2O tagged @ 11.0 ft bls TD hole soft fag @ 17.5' bls Converting to 6¼" ID HSA's to ream hole to hard rk. Reamed hole to 19 ft bls. 1390 Tagged H_2O @ 10.10 ft bls Cored from 19.2 ft to 25.0 ft bls. @ 20.0 ft more H_2O present up hole and cuttings turned dk. gray, 1356 Coring complete @ 25.0 ft bls
		TD = 25.0' bls				

PROJECT Phase II RI at Winklepeck Burning Ground and Background Investigation | N 56954.231 E 2372741.876 EL. 970.397 | HOLE NO. BKG mw-08S

IN_SITU INC. TROLL
Serial number: 00000971
Unit name: RVAAP

Report generated: 10/01/98 10:58:44
Report from file: C:\MYDOCU~1\RAVENN~1\BKGMW008.BIN

Test name:BKGmw-008

Test defined on: 05/20/98 10:57:23
Test started on: 05/20/98 10:58:05
Test stopped on: 05/20/98 11:04:18
Test extracted on: 05/21/98 16:54:49

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 125

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 3.482 Meters H2O

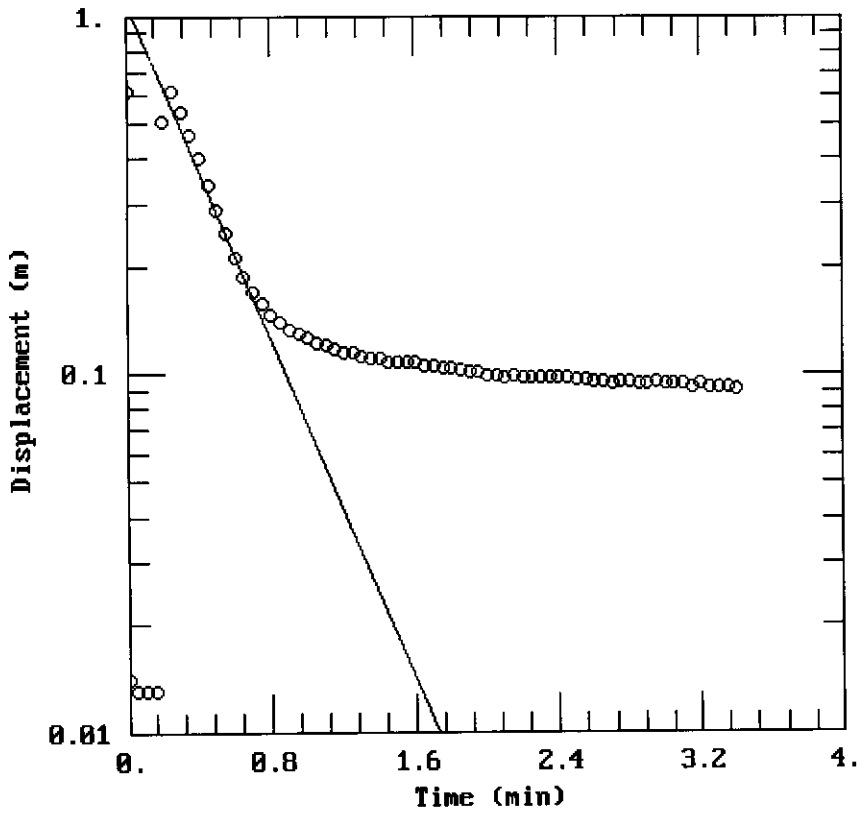
Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O
05/20/98	10:58:05	0.0000	12.37	0.000
05/20/98	10:58:08	0.0500	12.35	-0.002
05/20/98	10:58:11	0.1000	12.33	-0.002
05/20/98	10:58:14	0.1500	12.30	-0.002
05/20/98	10:58:17	0.2000	12.29	-0.001
05/20/98	10:58:20	0.2500	12.26	-0.002
05/20/98	10:58:23	0.3000	12.25	-0.001
05/20/98	10:58:26	0.3500	12.23	-0.001
05/20/98	10:58:29	0.4000	12.21	-0.001
05/20/98	10:58:32	0.4500	12.20	-0.001
05/20/98	10:58:35	0.5000	12.18	-0.001
05/20/98	10:58:38	0.5500	12.17	-0.001
05/20/98	10:58:41	0.6000	12.15	-0.001
05/20/98	10:58:44	0.6500	12.14	0.001
05/20/98	10:58:47	0.7000	12.13	0.001
05/20/98	10:58:50	0.7500	12.12	0.001
05/20/98	10:58:53	0.8000	12.11	0.001
05/20/98	10:58:56	0.8500	12.10	0.001
05/20/98	10:58:59	0.9000	12.08	0.001
05/20/98	10:59:02	0.9500	12.08	0.001
05/20/98	10:59:05	1.0000	12.07	0.001

05/20/98	10:59:08	1.0500	12.06	0.001
05/20/98	10:59:11	1.1000	12.05	0.001
05/20/98	10:59:14	1.1500	12.05	0.001
05/20/98	10:59:17	1.2000	12.03	0.002
05/20/98	10:59:20	1.2500	12.03	0.001
05/20/98	10:59:23	1.3000	12.02	0.001
05/20/98	10:59:26	1.3500	12.02	0.002
05/20/98	10:59:29	1.4000	12.01	0.001
05/20/98	10:59:32	1.4500	12.01	0.002
05/20/98	10:59:35	1.5000	12.01	0.002
05/20/98	10:59:38	1.5500	12.00	0.003
05/20/98	10:59:41	1.6000	12.04	0.004
05/20/98	10:59:44	1.6500	12.03	0.002
05/20/98	10:59:47	1.7000	12.02	0.002
05/20/98	10:59:50	1.7500	12.02	0.002
05/20/98	10:59:53	1.8000	12.02	0.002
05/20/98	10:59:56	1.8500	12.02	0.002
05/20/98	10:59:59	1.9000	12.05	0.004
05/20/98	11:00:02	1.9500	12.03	0.002
05/20/98	11:00:05	2.0000	12.03	0.002
05/20/98	11:00:08	2.0500	12.02	0.002
05/20/98	11:00:11	2.1000	12.02	0.002
05/20/98	11:00:14	2.1500	12.02	0.002
05/20/98	11:00:17	2.2000	12.01	0.002
05/20/98	11:00:20	2.2500	12.01	0.004
05/20/98	11:00:23	2.3000	12.00	0.003
05/20/98	11:00:26	2.3500	12.00	0.002
05/20/98	11:00:29	2.4000	12.00	0.003
05/20/98	11:00:32	2.4500	12.00	0.002
05/20/98	11:00:35	2.5000	12.00	0.003
05/20/98	11:00:38	2.5500	12.00	0.003
05/20/98	11:00:41	2.6000	12.00	0.002
05/20/98	11:00:44	2.6500	12.00	0.003
05/20/98	11:00:47	2.7000	11.99	-0.008
05/20/98	11:00:50	2.7500	11.99	0.037
05/20/98	11:00:53	2.8000	11.99	0.003
05/20/98	11:00:56	2.8500	11.99	0.003
05/20/98	11:00:59	2.9000	11.99	0.003
05/20/98	11:01:02	2.9500	11.99	0.685
05/20/98	11:01:05	3.0000	11.99	0.543
05/20/98	11:01:08	3.0500	11.99	0.451
05/20/98	11:01:11	3.1000	11.99	0.377
05/20/98	11:01:14	3.1500	11.99	0.332
05/20/98	11:01:17	3.2000	11.99	0.296
05/20/98	11:01:20	3.2500	11.98	0.266
05/20/98	11:01:23	3.3000	11.97	0.240
05/20/98	11:01:26	3.3500	11.97	0.219
05/20/98	11:01:29	3.4000	11.97	0.202
05/20/98	11:01:32	3.4500	11.97	0.186
05/20/98	11:01:35	3.5000	11.96	0.172
05/20/98	11:01:38	3.5500	11.96	0.161
05/20/98	11:01:41	3.6000	11.95	0.150
05/20/98	11:01:44	3.6500	11.95	0.139
05/20/98	11:01:47	3.7000	11.94	0.132
05/20/98	11:01:50	3.7500	11.94	0.124
05/20/98	11:01:53	3.8000	11.93	0.117

05/20/98	11:01:56	3.8500	11.93	0.110
05/20/98	11:01:59	3.9000	11.93	0.104
05/20/98	11:02:02	3.9500	11.92	0.099
05/20/98	11:02:05	4.0000	11.91	0.095
05/20/98	11:02:08	4.0500	11.91	0.089
05/20/98	11:02:11	4.1000	11.91	0.085
05/20/98	11:02:14	4.1500	11.91	0.081
05/20/98	11:02:17	4.2000	11.90	0.078
05/20/98	11:02:20	4.2500	11.90	0.075
05/20/98	11:02:23	4.3000	11.90	0.072
05/20/98	11:02:26	4.3500	11.89	0.070
05/20/98	11:02:29	4.4000	11.88	0.067
05/20/98	11:02:32	4.4500	11.88	0.064
05/20/98	11:02:35	4.5000	11.88	0.063
05/20/98	11:02:38	4.5500	11.88	0.060
05/20/98	11:02:41	4.6000	11.88	0.058
05/20/98	11:02:44	4.6500	11.92	0.057
05/20/98	11:02:47	4.7000	11.91	0.056
05/20/98	11:02:50	4.7500	11.90	0.053
05/20/98	11:02:53	4.8000	11.89	0.051
05/20/98	11:02:56	4.8500	11.88	0.050
05/20/98	11:02:59	4.9000	11.88	0.047
05/20/98	11:03:02	4.9500	11.87	0.046
05/20/98	11:03:05	5.0000	11.87	0.046
05/20/98	11:03:08	5.0500	11.87	0.044
05/20/98	11:03:11	5.1000	11.86	0.043
05/20/98	11:03:14	5.1500	11.86	0.041
05/20/98	11:03:17	5.2000	11.85	0.041
05/20/98	11:03:20	5.2500	11.85	0.040
05/20/98	11:03:23	5.3000	11.85	0.039
05/20/98	11:03:26	5.3500	11.84	0.039
05/20/98	11:03:29	5.4000	11.84	0.037
05/20/98	11:03:32	5.4500	11.84	0.036
05/20/98	11:03:35	5.5000	11.83	0.036
05/20/98	11:03:38	5.5500	11.82	0.034
05/20/98	11:03:41	5.6000	11.82	0.034
05/20/98	11:03:44	5.6500	11.82	0.034
05/20/98	11:03:47	5.7000	11.82	0.033
05/20/98	11:03:50	5.7500	11.81	0.033
05/20/98	11:03:53	5.8000	11.81	0.032
05/20/98	11:03:56	5.8500	11.80	0.032
05/20/98	11:03:59	5.9000	11.80	0.030
05/20/98	11:04:02	5.9500	11.82	0.032
05/20/98	11:04:05	6.0000	11.84	0.031
05/20/98	11:04:08	6.0500	11.83	0.030
05/20/98	11:04:11	6.1000	11.82	0.030
05/20/98	11:04:14	6.1500	11.81	0.030
05/20/98	11:04:17	6.2000	11.80	0.029

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-8218-011

BKGmw-010 Slug Test Solution



DATA SET:
BKGMW10.AQT
10/05/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 0.617 m
r_c= 0.025 m
r_w= 0.0762 m
L = 2.65 m
b = 2.65 m
H = 2.65 m

PARAMETER ESTIMATES:
K = 0.005041 cm/sec
y0 = 1.105 m

AQTESOLV

PROJECT NAME: Phase II RI @ WBG and Background Investigation — **DELIVERY ORDER NO:** 0009

WELL NUMBER: BKGmw-010		**BEGIN:** 28 Apr 98 & 28 Apr 98	**END:** 4 May 98 & 5 May 98
COORDINATES:	N: 565540.706 E: 2371372.945 HCS 9-30-98	**REFERENCE POINT:** Top of Riser Pipe	**ELEVATION:** 1006.293 MSL

	DEPTH	ELEV
STEEL PROTECTIVE CASING WITH CAP AND LOCK APPROX. 2.5'		
STEEL GUARD POST		
TOP OF STAINLESS STEEL FLUSH JOINT CASING WITH WATERTIGHT CAP, APPROX. 2 FT. AGS		
GROUND SURFACE	0	
PROTECTIVE CASING DIA: (in) 4"x4" box TYPE: Steel	3.5'	
BOTTOM OF SURFACE CASING		
BACKFILL MATERIAL TYPE: Grout		
RISER CASING DIA: (in) 2" TYPE: PVC Sch 40	3.4'	
TOP OF SEAL		
ANNULAR SEAL TYPE: 3/8" ϕ TR30 Bentonite Pellets	6.5'	
TOP OF FILTER PACK		
FILTER PACK TYPE: Global #7 Silica Sand	8.92'	
TOP OF SCREEN		
SCREEN DIA: (in) 2" TYPE: PVC Sch 40 OPENING: .010 width	18.93'	
BOTTOM OF SCREEN		
BOTTOM CAP BOTTOM OF CASING	19.23'	
BOTTOM OF HOLE	22.00'	
HOLE DIA: (in) 0-15'/10"ϕ 15-22'/6"ϕ		

11.1
14.23
8.69
10.54

Phase II RI at WBG and Background Investigation | INSPECTOR Brad Bohr | SHEET 1

DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
1	Clayey SILT; clay ~ 40%, silt ~ 60%, lt tan variegated, med gray; poorly sorted; subrounded; low plasticity; firm; moist; (ML	PID 0 ppm LEL 0% O_2 - 20.8%	NA	BK0824 (1050 hr) 1-2 ft	0-1 ft - Large SS rk frags present along w/ 1-3" type soils Collected 1-3 ft split spoon for lab analysis 1050 hr 50% recovery (1 ft)
3	Sandy SILT; sand ~ 30% med grained; clay ~ 20%, silt ~ 40%; granules ~ 10%; mod yellowish brown; subround; poorly sorted; low plasticity; firm; moist (ML)	PID 0 ppm LEL - 0% O_2 - 20.6%	NA	BK0825 (1110 hr) 3-4 ft	3-4 ft collect w/ split spoon; ~~4" split barrel used from 4 - 294 ft~~ 100% recovery. On rk @ 4 ft bls - cuttings appear as though rk is lt yellowish brown sandstone however augers can cut the stone - rig chatter throughout auger advancement (4½" ID HSAs). Cannot advance using inner split-barrel. To core in soft sandstone w/ little H2O usage most likely will cause sandstone to gum up drill bit. Advanced augers to 15 ft bls. were rk. became v. hard / well cemented. (1200 hrs) Converted to air rotary. 6¼" ID HSA's to 15 ft bls (1500 hrs). Saturated cuttings present w/ auger string @ 12 ft bls. Note: Prior to reaming w/ 6¼" ID HSAs H2O tagged @ 9.3 ft bls (1425 hrs)
4		PID 0 ppm LEL - 0% O_2 - 20.8%	NA	NA	
15	15.0 - 16.7 ft Sandstone; fine grained; well cemented; mod yellowish brown hard 16.7 - 17.2 ft Shale; mod gray; fissile; friable 17.2 - 18.0 ft - Sandstone; fine grained, well cemented; mod yellowish brown, hard 18.0 - 18.4 ft - Shale, mod gray, fissle, friable 18.4 - 19.5 ft Sandstone, fine grained, mod cemented, lt gray, dense. 19.5 - 20.0 ft - Shale - med gray, fissle; friable.	PID - 0 ppm LEL - 0% O_2 - 20.8%	NA Core Box #1	NA	Cored 15.0 - 20.0 ft 100% recovery Reamed hole w/ 6" ϕ tri-cone roller b.t. 1720 Tagged bottom of reamed hole @ 20.0 ft bls No H2O detected, 4 May 99 Upon cleaning hole tagged bottom @ 22.0 ft
22	TD = 22.0 ft				

PROJECT Phase II RI at Winklepeck Burning Ground and Background Investigation ELEV. 1006.293
N 565540.706 E 2371372.945

HOLE NO BKGmw-01S

IN_SITU INC. TROLL
Serial number: 00000971
Unit name: RVAAP

Report generated: 10/01/98 11:00:20
Report from file: C:\MYDOCU~1\RAVENN~1\BKGMW010.BIN

Test name:BKGmw010

Test defined on: 05/20/98 14:24:27
Test started on: 05/20/98 14:25:21
Test stopped on: 05/20/98 14:31:48
Test extracted on: 05/21/98 16:55:16

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 129

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 2.654 Meters H2O

Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O
05/20/98	14:25:21	0.0000	12.78	0.000
05/20/98	14:25:24	0.0500	12.75	-0.001
05/20/98	14:25:27	0.1000	12.73	0.000
05/20/98	14:25:30	0.1500	12.69	0.000
05/20/98	14:25:33	0.2000	12.66	0.000
05/20/98	14:25:36	0.2500	12.63	0.000
05/20/98	14:25:39	0.3000	12.61	0.000
05/20/98	14:25:42	0.3500	12.58	0.000
05/20/98	14:25:45	0.4000	12.55	0.001
05/20/98	14:25:48	0.4500	12.52	0.001
05/20/98	14:25:51	0.5000	12.50	0.002
05/20/98	14:25:54	0.5500	12.47	0.002
05/20/98	14:25:57	0.6000	12.46	0.002
05/20/98	14:26:00	0.6500	12.46	0.005
05/20/98	14:26:03	0.7000	12.43	0.002
05/20/98	14:26:06	0.7500	12.40	0.004
05/20/98	14:26:09	0.8000	12.37	0.004
05/20/98	14:26:12	0.8500	12.34	0.004
05/20/98	14:26:15	0.9000	12.32	0.004
05/20/98	14:26:18	0.9500	12.29	0.005
05/20/98	14:26:21	1.0000	12.27	0.005

05/20/98	14:26:24	1.0500	12.24	0.006
05/20/98	14:26:27	1.1000	12.22	0.005
05/20/98	14:26:30	1.1500	12.20	0.006
05/20/98	14:26:33	1.2000	12.18	0.007
05/20/98	14:26:36	1.2500	12.15	0.007
05/20/98	14:26:39	1.3000	12.13	0.007
05/20/98	14:26:42	1.3500	12.11	0.007
05/20/98	14:26:45	1.4000	12.09	0.008
05/20/98	14:26:48	1.4500	12.07	0.008
05/20/98	14:26:51	1.5000	12.05	0.007
05/20/98	14:26:54	1.5500	12.03	0.008
05/20/98	14:26:57	1.6000	12.01	0.008
05/20/98	14:27:00	1.6500	11.99	0.008
05/20/98	14:27:03	1.7000	11.97	0.008
05/20/98	14:27:06	1.7500	11.95	0.010
05/20/98	14:27:09	1.8000	11.93	0.008
05/20/98	14:27:12	1.8500	11.91	0.010
05/20/98	14:27:15	1.9000	11.90	0.010
05/20/98	14:27:18	1.9500	11.87	0.009
05/20/98	14:27:21	2.0000	11.85	0.009
05/20/98	14:27:24	2.0500	11.84	0.009
05/20/98	14:27:27	2.1000	11.82	0.011
05/20/98	14:27:30	2.1500	11.80	0.011
05/20/98	14:27:33	2.2000	11.79	0.011
05/20/98	14:27:36	2.2500	11.77	0.011
05/20/98	14:27:39	2.3000	11.75	0.011
05/20/98	14:27:42	2.3500	11.74	0.012
05/20/98	14:27:45	2.4000	11.71	0.012
05/20/98	14:27:48	2.4500	11.70	0.012
05/20/98	14:27:51	2.5000	11.69	0.012
05/20/98	14:27:54	2.5500	11.67	0.012
05/20/98	14:27:57	2.6000	11.65	0.012
05/20/98	14:28:00	2.6500	11.64	0.013
05/20/98	14:28:03	2.7000	11.62	0.013
05/20/98	14:28:06	2.7500	11.61	0.013
05/20/98	14:28:09	2.8000	11.59	0.015
05/20/98	14:28:12	2.8500	11.58	0.015
05/20/98	14:28:15	2.9000	11.56	0.013
05/20/98	14:28:18	2.9500	11.55	0.013
05/20/98	14:28:21	3.0000	11.53	0.014
05/20/98	14:28:24	3.0500	11.52	0.013
05/20/98	14:28:27	3.1000	11.50	0.013
05/20/98	14:28:30	3.1500	11.49	0.013
05/20/98	14:28:33	3.2000	11.47	0.508
05/20/98	14:28:36	3.2500	11.46	0.617
05/20/98	14:28:39	3.3000	11.44	0.536
05/20/98	14:28:42	3.3500	11.43	0.463
05/20/98	14:28:45	3.4000	11.41	0.399
05/20/98	14:28:48	3.4500	11.40	0.339
05/20/98	14:28:51	3.5000	11.39	0.289
05/20/98	14:28:54	3.5500	11.38	0.247
05/20/98	14:28:57	3.6000	11.37	0.212
05/20/98	14:29:00	3.6500	11.35	0.188
05/20/98	14:29:03	3.7000	11.34	0.169
05/20/98	14:29:06	3.7500	11.32	0.157
05/20/98	14:29:09	3.8000	11.31	0.146

05/20/98	14:29:12	3.8500	11.29	0.139
05/20/98	14:29:15	3.9000	11.29	0.133
05/20/98	14:29:18	3.9500	11.28	0.129
05/20/98	14:29:21	4.0000	11.30	0.127
05/20/98	14:29:24	4.0500	11.29	0.122
05/20/98	14:29:27	4.1000	11.27	0.120
05/20/98	14:29:30	4.1500	11.26	0.117
05/20/98	14:29:33	4.2000	11.24	0.115
05/20/98	14:29:36	4.2500	11.22	0.114
05/20/98	14:29:39	4.3000	11.21	0.112
05/20/98	14:29:42	4.3500	11.20	0.111
05/20/98	14:29:45	4.4000	11.19	0.110
05/20/98	14:29:48	4.4500	11.17	0.108
05/20/98	14:29:51	4.5000	11.17	0.108
05/20/98	14:29:54	4.5500	11.16	0.107
05/20/98	14:29:57	4.6000	11.18	0.107
05/20/98	14:30:00	4.6500	11.17	0.105
05/20/98	14:30:03	4.7000	11.15	0.105
05/20/98	14:30:06	4.7500	11.13	0.104
05/20/98	14:30:09	4.8000	11.12	0.104
05/20/98	14:30:12	4.8500	11.11	0.103
05/20/98	14:30:15	4.9000	11.09	0.101
05/20/98	14:30:18	4.9500	11.09	0.101
05/20/98	14:30:21	5.0000	11.07	0.099
05/20/98	14:30:24	5.0500	11.06	0.099
05/20/98	14:30:27	5.1000	11.05	0.098
05/20/98	14:30:30	5.1500	11.03	0.099
05/20/98	14:30:33	5.2000	11.03	0.098
05/20/98	14:30:36	5.2500	11.02	0.098
05/20/98	14:30:39	5.3000	11.00	0.098
05/20/98	14:30:42	5.3500	11.00	0.098
05/20/98	14:30:45	5.4000	11.00	0.098
05/20/98	14:30:48	5.4500	11.03	0.098
05/20/98	14:30:51	5.5000	11.00	0.096
05/20/98	14:30:54	5.5500	10.99	0.096
05/20/98	14:30:57	5.6000	10.97	0.095
05/20/98	14:31:00	5.6500	10.96	0.095
05/20/98	14:31:03	5.7000	10.95	0.094
05/20/98	14:31:06	5.7500	10.94	0.095
05/20/98	14:31:09	5.8000	10.93	0.095
05/20/98	14:31:12	5.8500	10.92	0.094
05/20/98	14:31:15	5.9000	10.91	0.094
05/20/98	14:31:18	5.9500	10.90	0.095
05/20/98	14:31:21	6.0000	10.89	0.094
05/20/98	14:31:24	6.0500	10.88	0.094
05/20/98	14:31:27	6.1000	10.87	0.094
05/20/98	14:31:30	6.1500	10.86	0.092
05/20/98	14:31:33	6.2000	10.87	0.094
05/20/98	14:31:36	6.2500	10.89	0.092
05/20/98	14:31:39	6.3000	10.87	0.092
05/20/98	14:31:42	6.3500	10.85	0.092
05/20/98	14:31:45	6.4000	10.84	0.091

22.14
13.45
8.69

BKbmw010

Test date = 5/20/98

initial Displacement = .617 m

well casing r = 0.025

Bit r = 0.0762

Sat thickness = 8.69 X .3048 = 2.65

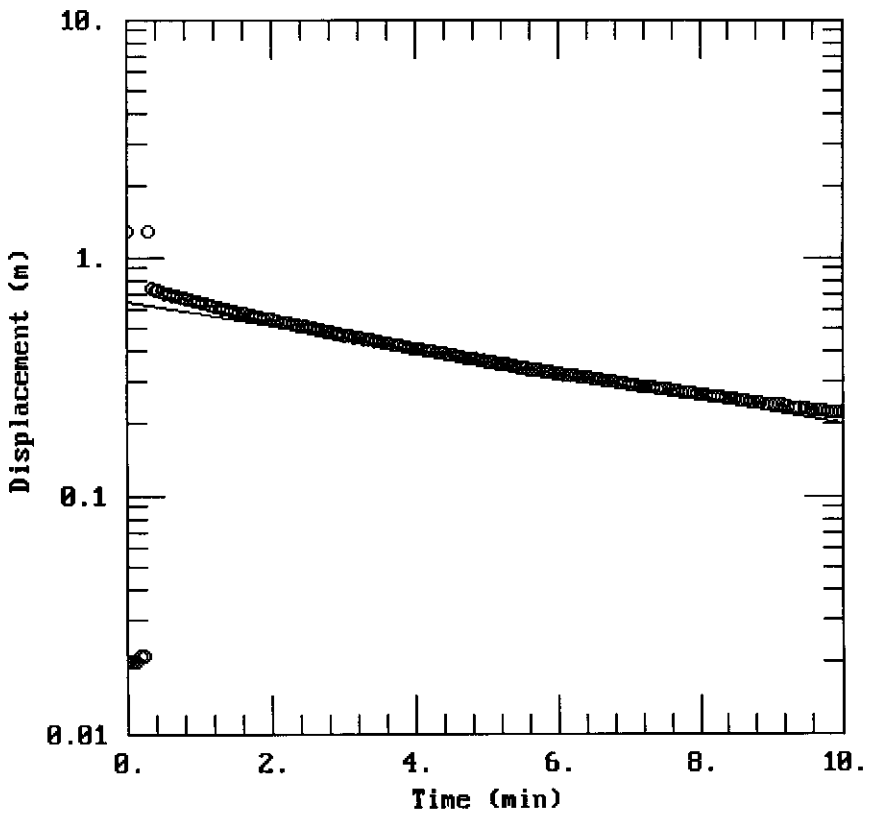
Screen length = 8.69 2.65 m

Static height = 8.69 2.65 m

Gravel pack Porosity = 0.3

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-0513-04-8218-011

BKGmw-012 Slug Test Solution



DATA SET:
BKGMW12.AQT
10/05/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

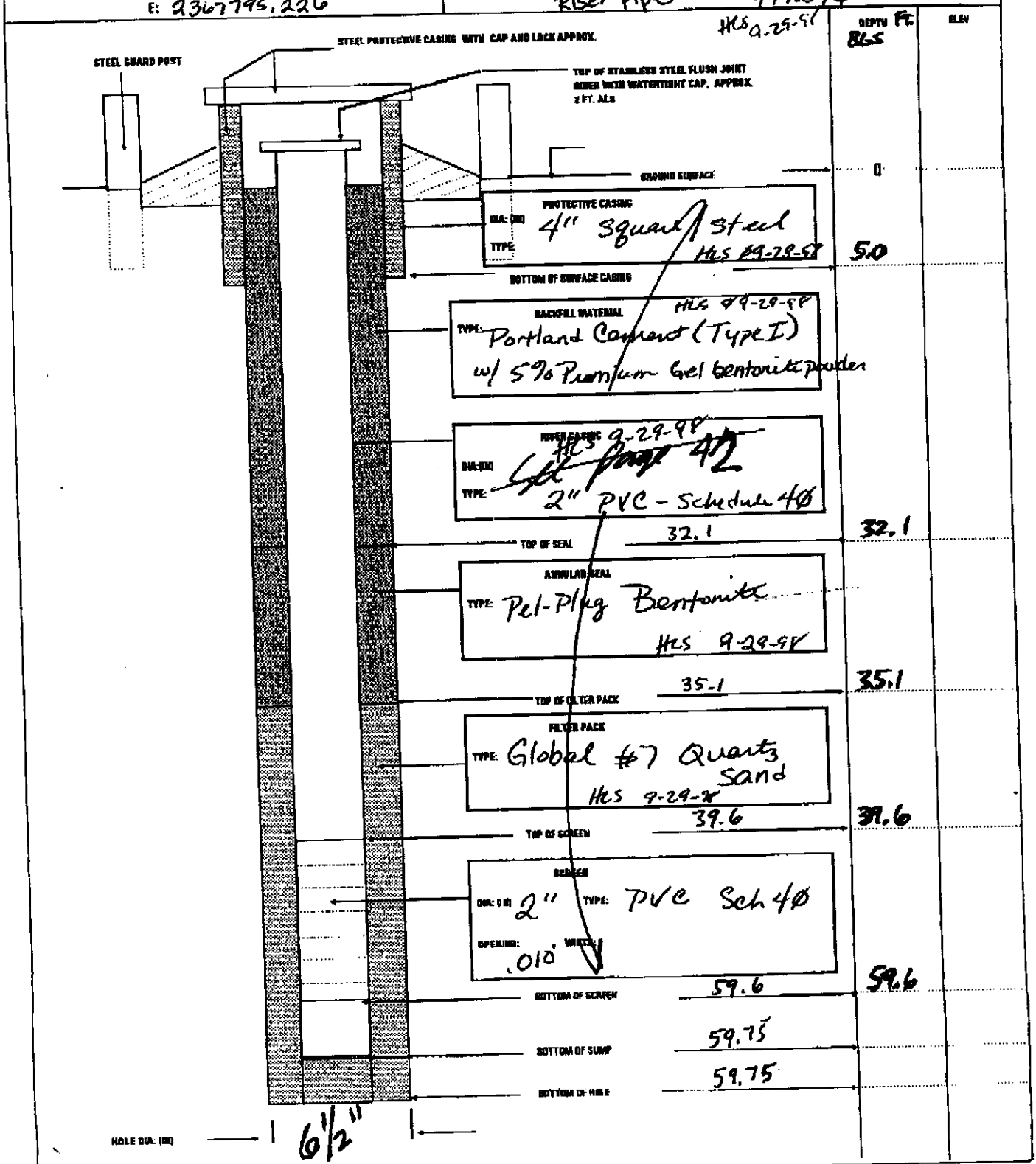
TEST DATA:
H0= 1.284 m
r_c= 0.025 m
r_w= 0.0762 m
L = 7.47 m
b = 15.85 m
H = 15.85 m

PARAMETER ESTIMATES:
K = 3.322E-05 cm/sec
y0 = 0.653 m

AQTESOLV

PROJECT NAME: [illegible]

WELL NUMBER: BKGMW-12	BEGIN: 4-26-98 0900	END: 4-26-98 1000
COORDINATES: N: 563918.862 E: 2367795.226	REFERENCE POINT: Top of Riser Pipe ELEVATION: 997.574 MSL	



HTRW DRILLING LOG

BKG MW-12

Phase II RI at WBG and Background Investigation | INSPECTOR | SHEET 1 of 2

DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
1	Topsoil Silty Sand (SM); V. DK Grayish Brown; Silt and Fine F. Sand Moist, loose, Roots	0 ppm			
	↓ some gravel				
2	Clay and Silt (CL); Yell. Brn Firm, Slightly Moist; low Plasticity			(2-3') BKGB28 Geo	
3	- Moist, Soft, Geotech Collected Med. Plasticity				
4					
5	↓ Hard dry Silt / F. Sand (ML) Yell. Brn w/ Fe Staining				
6					Very Hard Drilling 5'-15'
7	↓ Layering Apparent Mostly DK Gray Silt w/ Small LT Brown F. Sand Stringers				
8					
9	Extremely Weathered Shale/Siltstone Sharon Shale?)				
10	10:40 Collect 5'-15' Core				
11					Core down to 17' Switch Bits on Lead Core
12					
13					
14	Shale; Black or DK gray coming up in Powder and Competent Pieces; Maybe Being Broken up by Rig Action				
15					
16					
17	Black Shale ↓				
18					
19					
20					

B-144

PROJECT Phase II RI at Winklepeck Burning Ground and Background Investigation
N 563918.862 E 2367795.226 ELEV. 997.574

HOLE NO BKG MW-12

HTRW DRILLING LOG

Phase II RI at WBG and Background Investigation | INSPECTOR [illegible] | SHEET 2 of 2

DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
41	DK gray shale cont'd.				
42					
43					
44					
45					
46					
47					
48					
49					
50					
51					
52					
53					
54					
55					
56					
57					Dark gray but slightly lighter in color.
58					
59					
60			B-145		BOB at 60'

PROJECT Phase II RI at Winklepeck Burning Ground and Background Investigation
N 563918.862 E 2367795.226 ELEV. 997.574

HOLE NO BKG MW-17

IN_SITU INC. TROLL
Serial number: 00000971
Unit name: RVAAP

Report generated: 10/01/98 11:01:34
Report from file: C:\MYDOCU~1\RAVENN~1\BKGMW012.BIN

Test name:BKGmw-012

Test defined on: 05/20/98 14:56:52
Test started on: 05/20/98 15:11:19
Test stopped on: 05/20/98 16:10:18
Test extracted on: 05/21/98 16:50:36

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 1180

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 15.558 Meters H2O

Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O
05/20/98	15:11:19	0.0000	10.64	0.000
05/20/98	15:11:22	0.0500	10.65	0.001
05/20/98	15:11:25	0.1000	10.65	0.000
05/20/98	15:11:28	0.1500	10.67	0.001
05/20/98	15:11:31	0.2000	10.65	0.001
05/20/98	15:11:34	0.2500	10.67	0.001
05/20/98	15:11:37	0.3000	10.67	0.003
05/20/98	15:11:40	0.3500	10.67	0.003
05/20/98	15:11:43	0.4000	10.67	0.003
05/20/98	15:11:46	0.4500	10.67	0.004
05/20/98	15:11:49	0.5000	10.71	0.004
05/20/98	15:11:52	0.5500	10.71	0.004
05/20/98	15:11:55	0.6000	10.70	0.004
05/20/98	15:11:58	0.6500	10.70	0.004
05/20/98	15:12:01	0.7000	10.70	0.004
05/20/98	15:12:04	0.7500	10.70	0.004
05/20/98	15:12:07	0.8000	10.70	0.006
05/20/98	15:12:10	0.8500	10.70	0.006
05/20/98	15:12:13	0.9000	10.70	0.006
05/20/98	15:12:16	0.9500	10.70	0.007
05/20/98	15:12:19	1.0000	10.70	0.007

05/20/98	15:12:22	1.0500	10.70	0.007
05/20/98	15:12:25	1.1000	10.70	0.007
05/20/98	15:12:28	1.1500	10.70	0.007
05/20/98	15:12:31	1.2000	10.70	0.008
05/20/98	15:12:34	1.2500	10.70	0.008
05/20/98	15:12:37	1.3000	10.70	0.008
05/20/98	15:12:40	1.3500	10.70	0.010
05/20/98	15:12:43	1.4000	10.70	0.010
05/20/98	15:12:46	1.4500	10.70	0.010
05/20/98	15:12:49	1.5000	10.70	0.004
05/20/98	15:12:52	1.5500	10.70	0.010
05/20/98	15:12:55	1.6000	10.70	0.010
05/20/98	15:12:58	1.6500	10.70	0.010
05/20/98	15:13:01	1.7000	10.70	0.010
05/20/98	15:13:04	1.7500	10.71	0.010
05/20/98	15:13:07	1.8000	10.70	0.010
05/20/98	15:13:10	1.8500	10.70	0.010
05/20/98	15:13:13	1.9000	10.71	0.010
05/20/98	15:13:16	1.9500	10.71	0.011
05/20/98	15:13:19	2.0000	10.71	0.011
05/20/98	15:13:22	2.0500	10.70	0.011
05/20/98	15:13:25	2.1000	10.71	0.011
05/20/98	15:13:28	2.1500	10.71	0.011
05/20/98	15:13:31	2.2000	10.71	0.011
05/20/98	15:13:34	2.2500	10.71	0.011
05/20/98	15:13:37	2.3000	10.71	0.011
05/20/98	15:13:40	2.3500	10.71	0.011
05/20/98	15:13:43	2.4000	10.71	0.013
05/20/98	15:13:46	2.4500	10.71	0.013
05/20/98	15:13:49	2.5000	10.71	0.013
05/20/98	15:13:52	2.5500	10.71	0.013
05/20/98	15:13:55	2.6000	10.71	0.013
05/20/98	15:13:58	2.6500	10.71	0.003
05/20/98	15:14:01	2.7000	10.71	0.008
05/20/98	15:14:04	2.7500	10.71	0.010
05/20/98	15:14:07	2.8000	10.71	0.010
05/20/98	15:14:10	2.8500	10.72	0.011
05/20/98	15:14:13	2.9000	10.72	0.004
05/20/98	15:14:16	2.9500	10.72	0.015
05/20/98	15:14:19	3.0000	10.72	0.015
05/20/98	15:14:22	3.0500	10.72	0.015
05/20/98	15:14:25	3.1000	10.72	0.015
05/20/98	15:14:28	3.1500	10.73	0.015
05/20/98	15:14:31	3.2000	10.72	0.017
05/20/98	15:14:34	3.2500	10.72	0.017
05/20/98	15:14:37	3.3000	10.73	0.015
05/20/98	15:14:40	3.3500	10.73	0.017
05/20/98	15:14:43	3.4000	10.73	0.017
05/20/98	15:14:46	3.4500	10.73	0.017
05/20/98	15:14:49	3.5000	10.73	0.018
05/20/98	15:14:52	3.5500	10.74	0.018
05/20/98	15:14:55	3.6000	10.74	0.018
05/20/98	15:14:58	3.6500	10.76	0.020
05/20/98	15:15:01	3.7000	10.78	0.020
05/20/98	15:15:04	3.7500	10.77	0.020
05/20/98	15:15:07	3.8000	10.77	0.020

05/20/98	15:15:10	3.8500	10.76	0.020
05/20/98	15:15:13	3.9000	10.76	0.020
05/20/98	15:15:16	3.9500	10.76	0.018
05/20/98	15:15:19	4.0000	10.76	0.020
05/20/98	15:15:22	4.0500	10.76	0.020
05/20/98	15:15:25	4.1000	10.76	0.020
05/20/98	15:15:28	4.1500	10.76	0.020
05/20/98	15:15:31	4.2000	10.76	0.021
05/20/98	15:15:34	4.2500	10.76	0.021
05/20/98	15:15:37	4.3000	10.76	1.284
05/20/98	15:15:40	4.3500	10.76	0.733
05/20/98	15:15:43	4.4000	10.76	0.731
05/20/98	15:15:46	4.4500	10.76	0.719
05/20/98	15:15:49	4.5000	10.76	0.709
05/20/98	15:15:52	4.5500	10.76	0.702
05/20/98	15:15:55	4.6000	10.76	0.695
05/20/98	15:15:58	4.6500	10.76	0.686
05/20/98	15:16:01	4.7000	10.76	0.681
05/20/98	15:16:04	4.7500	10.76	0.674
05/20/98	15:16:07	4.8000	10.76	0.669
05/20/98	15:16:10	4.8500	10.77	0.662
05/20/98	15:16:13	4.9000	10.76	0.655
05/20/98	15:16:16	4.9500	10.76	0.649
05/20/98	15:16:19	5.0000	10.77	0.643
05/20/98	15:16:22	5.0500	10.76	0.636
05/20/98	15:16:25	5.1000	10.76	0.632
05/20/98	15:16:28	5.1500	10.76	0.625
05/20/98	15:16:31	5.2000	10.76	0.621
05/20/98	15:16:34	5.2500	10.77	0.615
05/20/98	15:16:37	5.3000	10.76	0.610
05/20/98	15:16:40	5.3500	10.78	0.605
05/20/98	15:16:43	5.4000	10.78	0.600
05/20/98	15:16:46	5.4500	10.78	0.596
05/20/98	15:16:49	5.5000	10.78	0.590
05/20/98	15:16:52	5.5500	10.78	0.584
05/20/98	15:16:55	5.6000	10.78	0.581
05/20/98	15:16:58	5.6500	10.80	0.576
05/20/98	15:17:01	5.7000	10.79	0.572
05/20/98	15:17:04	5.7500	10.79	0.566
05/20/98	15:17:07	5.8000	10.79	0.562
05/20/98	15:17:10	5.8500	10.79	0.558
05/20/98	15:17:13	5.9000	10.80	0.553
05/20/98	15:17:16	5.9500	10.81	0.549
05/20/98	15:17:19	6.0000	10.80	0.545
05/20/98	15:17:22	6.0500	10.80	0.541
05/20/98	15:17:25	6.1000	10.79	0.536
05/20/98	15:17:28	6.1500	10.82	0.532
05/20/98	15:17:31	6.2000	10.82	0.529
05/20/98	15:17:34	6.2500	10.82	0.525
05/20/98	15:17:37	6.3000	10.81	0.521
05/20/98	15:17:40	6.3500	10.82	0.517
05/20/98	15:17:43	6.4000	10.83	0.513
05/20/98	15:17:46	6.4500	10.83	0.508
05/20/98	15:17:49	6.5000	10.82	0.506
05/20/98	15:17:52	6.5500	10.84	0.501
05/20/98	15:17:55	6.6000	10.84	0.497

05/20/98	15:17:58	6.6500	10.84	0.494	
05/20/98	15:18:01	6.7000	10.85	0.490	
05/20/98	15:18:04	6.7500	10.85	0.487	
05/20/98	15:18:07	6.8000	10.84	0.484	
05/20/98	15:18:10	6.8500	10.84	0.480	
05/20/98	15:18:13	6.9000	10.84	0.476	
05/20/98	15:18:16	6.9500	10.84	0.473	
05/20/98	15:18:19	7.0000	10.84	0.469	
05/20/98	15:18:22	7.0500	10.84	0.466	
05/20/98	15:18:25	7.1000	10.85	0.463	
05/20/98	15:18:28	7.1500	10.85	0.461	
05/20/98	15:18:31	7.2000	10.84	0.456	
05/20/98	15:18:34	7.2500	10.84	0.453	
05/20/98	15:18:37	7.3000	10.84	0.451	
05/20/98	15:18:40	7.3500	10.84	0.446	
05/20/98	15:18:43	7.4000	10.84	0.445	
05/20/98	15:18:46	7.4500	10.84	0.441	
05/20/98	15:18:49	7.5000	10.84	0.438	
05/20/98	15:18:52	7.5500	10.84	0.435	
05/20/98	15:18:55	7.6000	10.84	0.432	
05/20/98	15:18:58	7.6500	10.84	0.430	
05/20/98	15:19:01	7.7000	10.84	0.427	
05/20/98	15:19:04	7.7500	10.84	0.424	
05/20/98	15:19:07	7.8000	10.84	0.421	
05/20/98	15:19:10	7.8500	10.83	0.418	
05/20/98	15:19:13	7.9000	10.84	0.416	
05/20/98	15:19:16	7.9500	10.84	0.413	
05/20/98	15:19:19	8.0000	10.84	0.410	
05/20/98	15:19:22	8.0500	10.86	0.408	
05/20/98	15:19:25	8.1000	10.87	0.406	
05/20/98	15:19:28	8.1500	10.87	0.404	
05/20/98	15:19:31	8.2000	10.89	0.401	
05/20/98	15:19:34	8.2500	10.91	0.399	
05/20/98	15:19:37	8.3000	10.89	0.397	
05/20/98	15:19:40	8.3500	10.89	0.392	
05/20/98	15:19:43	8.4000	10.88	0.391	
05/20/98	15:19:46	8.4500	10.88	0.388	
05/20/98	15:19:49	8.5000	10.87	0.385	
05/20/98	15:19:52	8.5500	10.88	0.384	
05/20/98	15:19:55	8.6000	10.91	0.381	
05/20/98	15:19:58	8.6500	10.93	0.380	
05/20/98	15:20:01	8.7000	10.92	0.375	
05/20/98	15:20:04	8.7500	10.91	0.374	
05/20/98	15:20:07	8.8000	10.91	0.371	
05/20/98	15:20:10	8.8500	10.90	0.370	
05/20/98	15:20:13	8.9000	10.90	0.367	
05/20/98	15:20:16	8.9500	10.90	0.364	
05/20/98	15:20:19	9.0000	10.89	0.361	
05/20/98	15:20:22	9.0500	10.89	0.360	
05/20/98	15:20:25	9.1000	10.89	0.359	
05/20/98	15:20:28	9.1500	10.89	0.356	
05/20/98	15:20:31	9.2000	10.89	0.354	
05/20/98	15:20:34	9.2500	10.89	0.352	
05/20/98	15:20:37	9.3000	10.89	0.350	B-149
05/20/98	15:20:40	9.3500	10.89	0.347	
05/20/98	15:20:43	9.4000	10.89	0.346	

05/20/98	15:20:46	9.4500	10.88	0.343
05/20/98	15:20:49	9.5000	10.88	0.342
05/20/98	15:20:52	9.5500	10.88	0.340
05/20/98	15:20:55	9.6000	10.88	0.337
05/20/98	15:20:58	9.6500	10.88	0.336
05/20/98	15:21:01	9.7000	10.88	0.333
05/20/98	15:21:04	9.7500	10.88	0.332
05/20/98	15:21:07	9.8000	10.88	0.330
05/20/98	15:21:10	9.8500	10.88	0.328
05/20/98	15:21:13	9.9000	10.88	0.326
05/20/98	15:21:16	9.9500	10.88	0.325
05/20/98	15:21:19	10.0000	10.88	0.322
05/20/98	15:21:22	10.0500	10.88	0.321
05/20/98	15:21:25	10.1000	10.88	0.319
05/20/98	15:21:28	10.1500	10.88	0.318
05/20/98	15:21:31	10.2000	10.88	0.316
05/20/98	15:21:34	10.2500	10.87	0.314
05/20/98	15:21:37	10.3000	10.88	0.312
05/20/98	15:21:40	10.3500	10.90	0.311
05/20/98	15:21:43	10.4000	10.93	0.311
05/20/98	15:21:46	10.4500	10.92	0.308
05/20/98	15:21:49	10.5000	10.91	0.307
05/20/98	15:21:52	10.5500	10.91	0.305
05/20/98	15:21:55	10.6000	10.91	0.302
05/20/98	15:21:58	10.6500	10.91	0.301
05/20/98	15:22:01	10.7000	10.91	0.300
05/20/98	15:22:04	10.7500	10.90	0.298
05/20/98	15:22:07	10.8000	10.90	0.297
05/20/98	15:22:10	10.8500	10.90	0.294
05/20/98	15:22:13	10.9000	10.90	0.294
05/20/98	15:22:16	10.9500	10.89	0.292
05/20/98	15:22:19	11.0000	10.89	0.290
05/20/98	15:22:22	11.0500	10.89	0.288
05/20/98	15:22:25	11.1000	10.89	0.287
05/20/98	15:22:28	11.1500	10.89	0.285
05/20/98	15:22:31	11.2000	10.89	0.284
05/20/98	15:22:34	11.2500	10.89	0.283
05/20/98	15:22:37	11.3000	10.89	0.283
05/20/98	15:22:40	11.3500	10.90	0.281
05/20/98	15:22:43	11.4000	10.92	0.280
05/20/98	15:22:46	11.4500	10.95	0.278
05/20/98	15:22:49	11.5000	10.94	0.276
05/20/98	15:22:52	11.5500	10.93	0.276
05/20/98	15:22:55	11.6000	10.93	0.274
05/20/98	15:22:58	11.6500	10.93	0.273
05/20/98	15:23:01	11.7000	10.92	0.271
05/20/98	15:23:04	11.7500	10.92	0.270
05/20/98	15:23:07	11.8000	10.92	0.269
05/20/98	15:23:10	11.8500	10.92	0.267
05/20/98	15:23:13	11.9000	10.91	0.266
05/20/98	15:23:16	11.9500	10.91	0.264
05/20/98	15:23:19	12.0000	10.91	0.263
05/20/98	15:23:22	12.0500	10.91	0.262
05/20/98	15:23:25	12.1000	10.91	0.262
05/20/98	15:23:28	12.1500	10.90	0.260
05/20/98	15:23:31	12.2000	10.91	0.257

05/20/98	15:23:34	12.2500	10.91	0.256
05/20/98	15:23:37	12.3000	10.91	0.256
05/20/98	15:23:40	12.3500	10.91	0.255
05/20/98	15:23:43	12.4000	10.91	0.253
05/20/98	15:23:46	12.4500	10.90	0.252
05/20/98	15:23:49	12.5000	10.90	0.252
05/20/98	15:23:52	12.5500	10.90	0.250
05/20/98	15:23:55	12.6000	10.90	0.249
05/20/98	15:23:58	12.6500	10.90	0.247
05/20/98	15:24:01	12.7000	10.90	0.246
05/20/98	15:24:04	12.7500	10.89	0.246
05/20/98	15:24:07	12.8000	10.90	0.245
05/20/98	15:24:10	12.8500	10.89	0.243
05/20/98	15:24:13	12.9000	10.89	0.242
05/20/98	15:24:16	12.9500	10.89	0.242
05/20/98	15:24:19	13.0000	10.89	0.240
05/20/98	15:24:22	13.0500	10.89	0.239
05/20/98	15:24:25	13.1000	10.89	0.239
05/20/98	15:24:28	13.1500	10.89	0.238
05/20/98	15:24:31	13.2000	10.89	0.236
05/20/98	15:24:34	13.2500	10.89	0.236
05/20/98	15:24:37	13.3000	10.89	0.233
05/20/98	15:24:40	13.3500	10.88	0.233
05/20/98	15:24:43	13.4000	10.89	0.232
05/20/98	15:24:46	13.4500	10.88	0.231
05/20/98	15:24:49	13.5000	10.89	0.231
05/20/98	15:24:52	13.5500	10.88	0.229
05/20/98	15:24:55	13.6000	10.88	0.228
05/20/98	15:24:58	13.6500	10.88	0.228
05/20/98	15:25:01	13.7000	10.88	0.226
05/20/98	15:25:04	13.7500	10.88	0.225
05/20/98	15:25:07	13.8000	10.88	0.224
05/20/98	15:25:10	13.8500	10.88	0.224
05/20/98	15:25:13	13.9000	10.88	0.224
05/20/98	15:25:16	13.9500	10.88	0.222
05/20/98	15:25:19	14.0000	10.88	0.221
05/20/98	15:25:22	14.0500	10.88	0.219
05/20/98	15:25:25	14.1000	10.88	0.219
05/20/98	15:25:28	14.1500	10.88	0.218
05/20/98	15:25:31	14.2000	10.88	0.218
05/20/98	15:25:34	14.2500	10.88	0.217
05/20/98	15:25:37	14.3000	10.88	0.217
05/20/98	15:25:40	14.3500	10.88	0.215
05/20/98	15:25:43	14.4000	10.88	0.214
05/20/98	15:25:46	14.4500	10.87	0.214
05/20/98	15:25:49	14.5000	10.87	0.212
05/20/98	15:25:52	14.5500	10.87	0.212
05/20/98	15:25:55	14.6000	10.87	0.211
05/20/98	15:25:58	14.6500	10.87	0.210
05/20/98	15:26:01	14.7000	10.87	0.210
05/20/98	15:26:04	14.7500	10.87	0.210
05/20/98	15:26:07	14.8000	10.87	0.208
05/20/98	15:26:10	14.8500	10.87	0.207
05/20/98	15:26:13	14.9000	10.87	0.207
05/20/98	15:26:16	14.9500	10.87	0.207
05/20/98	15:26:19	15.0000	10.87	0.205

05/20/98	15:26:22	15.0500	10.87	0.205
05/20/98	15:26:25	15.1000	10.87	0.204
05/20/98	15:26:28	15.1500	10.87	0.204
05/20/98	15:26:31	15.2000	10.86	0.202
05/20/98	15:26:34	15.2500	10.86	0.202
05/20/98	15:26:37	15.3000	10.86	0.201
05/20/98	15:26:40	15.3500	10.86	0.201
05/20/98	15:26:43	15.4000	10.86	0.200
05/20/98	15:26:46	15.4500	10.86	0.200
05/20/98	15:26:49	15.5000	10.86	0.198
05/20/98	15:26:52	15.5500	10.86	0.198
05/20/98	15:26:55	15.6000	10.85	0.197
05/20/98	15:26:58	15.6500	10.86	0.197
05/20/98	15:27:01	15.7000	10.85	0.195
05/20/98	15:27:04	15.7500	10.85	0.195
05/20/98	15:27:07	15.8000	10.85	0.195
05/20/98	15:27:10	15.8500	10.85	0.194
05/20/98	15:27:13	15.9000	10.85	0.193
05/20/98	15:27:16	15.9500	10.85	0.193
05/20/98	15:27:19	16.0000	10.85	0.191
05/20/98	15:27:22	16.0500	10.85	0.191
05/20/98	15:27:25	16.1000	10.85	0.191
05/20/98	15:27:28	16.1500	10.85	0.190
05/20/98	15:27:31	16.2000	10.85	0.190
05/20/98	15:27:34	16.2500	10.85	0.188
05/20/98	15:27:37	16.3000	10.85	0.188
05/20/98	15:27:40	16.3500	10.85	0.188
05/20/98	15:27:43	16.4000	10.85	0.187
05/20/98	15:27:46	16.4500	10.84	0.187
05/20/98	15:27:49	16.5000	10.84	0.186
05/20/98	15:27:52	16.5500	10.84	0.186
05/20/98	15:27:55	16.6000	10.84	0.186
05/20/98	15:27:58	16.6500	10.84	0.184
05/20/98	15:28:01	16.7000	10.84	0.184
05/20/98	15:28:04	16.7500	10.84	0.183
05/20/98	15:28:07	16.8000	10.84	0.183
05/20/98	15:28:10	16.8500	10.84	0.183
05/20/98	15:28:13	16.9000	10.84	0.181
05/20/98	15:28:16	16.9500	10.84	0.181
05/20/98	15:28:19	17.0000	10.84	0.181
05/20/98	15:28:22	17.0500	10.84	0.181
05/20/98	15:28:25	17.1000	10.84	0.180
05/20/98	15:28:28	17.1500	10.83	0.180
05/20/98	15:28:31	17.2000	10.83	0.179
05/20/98	15:28:34	17.2500	10.83	0.179
05/20/98	15:28:37	17.3000	10.83	0.177
05/20/98	15:28:40	17.3500	10.83	0.177
05/20/98	15:28:43	17.4000	10.82	0.177
05/20/98	15:28:46	17.4500	10.82	0.176
05/20/98	15:28:49	17.5000	10.82	0.176
05/20/98	15:28:52	17.5500	10.82	0.176
05/20/98	15:28:55	17.6000	10.82	0.174
05/20/98	15:28:58	17.6500	10.82	0.174
05/20/98	15:29:01	17.7000	10.82	0.174
05/20/98	15:29:04	17.7500	10.82	0.173
05/20/98	15:29:07	17.8000	10.82	0.173

05/20/98	15:29:10	17.8500	10.82	0.173
05/20/98	15:29:13	17.9000	10.82	0.173
05/20/98	15:29:16	17.9500	10.82	0.172
05/20/98	15:29:19	18.0000	10.82	0.172
05/20/98	15:29:22	18.0500	10.81	0.170
05/20/98	15:29:25	18.1000	10.81	0.170
05/20/98	15:29:28	18.1500	10.81	0.170
05/20/98	15:29:31	18.2000	10.81	0.170
05/20/98	15:29:34	18.2500	10.81	0.169
05/20/98	15:29:37	18.3000	10.81	0.169
05/20/98	15:29:40	18.3500	10.81	0.167
05/20/98	15:29:43	18.4000	10.80	0.167
05/20/98	15:29:46	18.4500	10.81	0.167
05/20/98	15:29:49	18.5000	10.80	0.167
05/20/98	15:29:52	18.5500	10.80	0.166
05/20/98	15:29:55	18.6000	10.80	0.166
05/20/98	15:29:58	18.6500	10.80	0.166
05/20/98	15:30:01	18.7000	10.80	0.166
05/20/98	15:30:04	18.7500	10.80	0.166
05/20/98	15:30:07	18.8000	10.80	0.165
05/20/98	15:30:10	18.8500	10.80	0.165
05/20/98	15:30:13	18.9000	10.80	0.165
05/20/98	15:30:16	18.9500	10.80	0.165
05/20/98	15:30:19	19.0000	10.80	0.165
05/20/98	15:30:22	19.0500	10.80	0.163
05/20/98	15:30:25	19.1000	10.80	0.162
05/20/98	15:30:28	19.1500	10.80	0.162
05/20/98	15:30:31	19.2000	10.80	0.162
05/20/98	15:30:34	19.2500	10.79	0.160
05/20/98	15:30:37	19.3000	10.79	0.160
05/20/98	15:30:40	19.3500	10.79	0.160
05/20/98	15:30:43	19.4000	10.79	0.160
05/20/98	15:30:46	19.4500	10.79	0.160
05/20/98	15:30:49	19.5000	10.79	0.159
05/20/98	15:30:52	19.5500	10.79	0.159
05/20/98	15:30:55	19.6000	10.79	0.159
05/20/98	15:30:58	19.6500	10.79	0.157
05/20/98	15:31:01	19.7000	10.79	0.157
05/20/98	15:31:04	19.7500	10.79	0.156
05/20/98	15:31:07	19.8000	10.79	0.156
05/20/98	15:31:10	19.8500	10.79	0.157
05/20/98	15:31:13	19.9000	10.79	0.156
05/20/98	15:31:16	19.9500	10.79	0.156
05/20/98	15:31:19	20.0000	10.79	0.156
05/20/98	15:31:22	20.0500	10.78	0.155
05/20/98	15:31:25	20.1000	10.79	0.155
05/20/98	15:31:28	20.1500	10.78	0.155
05/20/98	15:31:31	20.2000	10.78	0.155
05/20/98	15:31:34	20.2500	10.78	0.153
05/20/98	15:31:37	20.3000	10.78	0.153
05/20/98	15:31:40	20.3500	10.78	0.153
05/20/98	15:31:43	20.4000	10.78	0.153
05/20/98	15:31:46	20.4500	10.78	0.153
05/20/98	15:31:49	20.5000	10.78	0.152
05/20/98	15:31:52	20.5500	10.78	0.152
05/20/98	15:31:55	20.6000	10.78	0.152

05/20/98	15:31:58	20.6500	10.78	0.152
05/20/98	15:32:01	20.7000	10.78	0.150
05/20/98	15:32:04	20.7500	10.78	0.150
05/20/98	15:32:07	20.8000	10.78	0.150
05/20/98	15:32:10	20.8500	10.78	0.150
05/20/98	15:32:13	20.9000	10.78	0.150
05/20/98	15:32:16	20.9500	10.77	0.150
05/20/98	15:32:19	21.0000	10.76	0.149
05/20/98	15:32:22	21.0500	10.77	0.149
05/20/98	15:32:25	21.1000	10.77	0.149
05/20/98	15:32:28	21.1500	10.77	0.148
05/20/98	15:32:31	21.2000	10.77	0.148
05/20/98	15:32:34	21.2500	10.77	0.148
05/20/98	15:32:37	21.3000	10.76	0.148
05/20/98	15:32:40	21.3500	10.76	0.148
05/20/98	15:32:43	21.4000	10.76	0.148
05/20/98	15:32:46	21.4500	10.76	0.148
05/20/98	15:32:49	21.5000	10.76	0.148
05/20/98	15:32:52	21.5500	10.76	0.146
05/20/98	15:32:55	21.6000	10.76	0.146
05/20/98	15:32:58	21.6500	10.76	0.146
05/20/98	15:33:01	21.7000	10.76	0.146
05/20/98	15:33:04	21.7500	10.76	0.145
05/20/98	15:33:07	21.8000	10.76	0.145
05/20/98	15:33:10	21.8500	10.76	0.145
05/20/98	15:33:13	21.9000	10.76	0.145
05/20/98	15:33:16	21.9500	10.76	0.145
05/20/98	15:33:19	22.0000	10.76	0.145
05/20/98	15:33:22	22.0500	10.76	0.143
05/20/98	15:33:25	22.1000	10.76	0.143
05/20/98	15:33:28	22.1500	10.76	0.143
05/20/98	15:33:31	22.2000	10.76	0.143
05/20/98	15:33:34	22.2500	10.75	0.142
05/20/98	15:33:37	22.3000	10.75	0.143
05/20/98	15:33:40	22.3500	10.76	0.142
05/20/98	15:33:43	22.4000	10.75	0.142
05/20/98	15:33:46	22.4500	10.75	0.142
05/20/98	15:33:49	22.5000	10.75	0.142
05/20/98	15:33:52	22.5500	10.75	0.142
05/20/98	15:33:55	22.6000	10.75	0.142
05/20/98	15:33:58	22.6500	10.75	0.142
05/20/98	15:34:01	22.7000	10.75	0.141
05/20/98	15:34:04	22.7500	10.75	0.141
05/20/98	15:34:07	22.8000	10.74	0.141
05/20/98	15:34:10	22.8500	10.75	0.139
05/20/98	15:34:13	22.9000	10.75	0.141
05/20/98	15:34:16	22.9500	10.74	0.139
05/20/98	15:34:19	23.0000	10.74	0.139
05/20/98	15:34:22	23.0500	10.74	0.139
05/20/98	15:34:25	23.1000	10.74	0.139
05/20/98	15:34:28	23.1500	10.74	0.139
05/20/98	15:34:31	23.2000	10.74	0.139
05/20/98	15:34:34	23.2500	10.74	0.138
05/20/98	15:34:37	23.3000	10.74	0.138
05/20/98	15:34:40	23.3500	10.74	0.138
05/20/98	15:34:43	23.4000	10.74	0.138

05/20/98	15:34:46	23.4500	10.74	0.136
05/20/98	15:34:49	23.5000	10.74	0.136
05/20/98	15:34:52	23.5500	10.74	0.136
05/20/98	15:34:55	23.6000	10.74	0.136
05/20/98	15:34:58	23.6500	10.74	0.136
05/20/98	15:35:01	23.7000	10.74	0.136
05/20/98	15:35:04	23.7500	10.74	0.136
05/20/98	15:35:07	23.8000	10.74	0.136
05/20/98	15:35:10	23.8500	10.74	0.135
05/20/98	15:35:13	23.9000	10.74	0.135
05/20/98	15:35:16	23.9500	10.74	0.135
05/20/98	15:35:19	24.0000	10.74	0.135
05/20/98	15:35:22	24.0500	10.74	0.135
05/20/98	15:35:25	24.1000	10.74	0.135
05/20/98	15:35:28	24.1500	10.73	0.135
05/20/98	15:35:31	24.2000	10.74	0.135
05/20/98	15:35:34	24.2500	10.73	0.134
05/20/98	15:35:37	24.3000	10.74	0.135
05/20/98	15:35:40	24.3500	10.73	0.134
05/20/98	15:35:43	24.4000	10.73	0.134
05/20/98	15:35:46	24.4500	10.74	0.134
05/20/98	15:35:49	24.5000	10.73	0.134
05/20/98	15:35:52	24.5500	10.73	0.134
05/20/98	15:35:55	24.6000	10.73	0.134
05/20/98	15:35:58	24.6500	10.73	0.134
05/20/98	15:36:01	24.7000	10.73	0.132
05/20/98	15:36:04	24.7500	10.73	0.132
05/20/98	15:36:07	24.8000	10.73	0.132
05/20/98	15:36:10	24.8500	10.73	0.132
05/20/98	15:36:13	24.9000	10.73	0.131
05/20/98	15:36:16	24.9500	10.73	0.131
05/20/98	15:36:19	25.0000	10.73	0.131
05/20/98	15:36:22	25.0500	10.73	0.131
05/20/98	15:36:25	25.1000	10.73	0.131
05/20/98	15:36:28	25.1500	10.73	0.131
05/20/98	15:36:31	25.2000	10.73	0.132
05/20/98	15:36:34	25.2500	10.73	0.131
05/20/98	15:36:37	25.3000	10.73	0.129
05/20/98	15:36:40	25.3500	10.73	0.131
05/20/98	15:36:43	25.4000	10.73	0.131
05/20/98	15:36:46	25.4500	10.73	0.129
05/20/98	15:36:49	25.5000	10.73	0.129
05/20/98	15:36:52	25.5500	10.73	0.129
05/20/98	15:36:55	25.6000	10.73	0.129
05/20/98	15:36:58	25.6500	10.73	0.129
05/20/98	15:37:01	25.7000	10.73	0.129
05/20/98	15:37:04	25.7500	10.73	0.129
05/20/98	15:37:07	25.8000	10.73	0.128
05/20/98	15:37:10	25.8500	10.73	0.129
05/20/98	15:37:13	25.9000	10.73	0.129
05/20/98	15:37:16	25.9500	10.73	0.128
05/20/98	15:37:19	26.0000	10.73	0.129
05/20/98	15:37:22	26.0500	10.73	0.128
05/20/98	15:37:25	26.1000	10.73	0.128
05/20/98	15:37:28	26.1500	10.73	0.128
05/20/98	15:37:31	26.2000	10.73	0.128

05/20/98	15:37:34	26.2500	10.73	0.128	
05/20/98	15:37:37	26.3000	10.73	0.128	
05/20/98	15:37:40	26.3500	10.73	0.128	
05/20/98	15:37:43	26.4000	10.73	0.128	
05/20/98	15:37:46	26.4500	10.73	0.128	
05/20/98	15:37:49	26.5000	10.72	0.128	
05/20/98	15:37:52	26.5500	10.72	0.127	
05/20/98	15:37:55	26.6000	10.72	0.128	
05/20/98	15:37:58	26.6500	10.72	0.127	
05/20/98	15:38:01	26.7000	10.72	0.127	
05/20/98	15:38:04	26.7500	10.72	0.127	
05/20/98	15:38:07	26.8000	10.72	0.127	
05/20/98	15:38:10	26.8500	10.72	0.127	
05/20/98	15:38:13	26.9000	10.72	0.127	
05/20/98	15:38:16	26.9500	10.72	0.127	
05/20/98	15:38:19	27.0000	10.72	0.127	
05/20/98	15:38:22	27.0500	10.72	0.125	
05/20/98	15:38:25	27.1000	10.72	0.125	
05/20/98	15:38:28	27.1500	10.72	0.125	
05/20/98	15:38:31	27.2000	10.72	0.125	
05/20/98	15:38:34	27.2500	10.72	0.125	
05/20/98	15:38:37	27.3000	10.72	0.125	
05/20/98	15:38:40	27.3500	10.72	0.125	
05/20/98	15:38:43	27.4000	10.72	0.125	
05/20/98	15:38:46	27.4500	10.71	0.125	
05/20/98	15:38:49	27.5000	10.72	0.125	
05/20/98	15:38:52	27.5500	10.71	0.125	
05/20/98	15:38:55	27.6000	10.72	0.125	
05/20/98	15:38:58	27.6500	10.71	0.125	
05/20/98	15:39:01	27.7000	10.72	0.125	
05/20/98	15:39:04	27.7500	10.71	0.124	
05/20/98	15:39:07	27.8000	10.71	0.124	
05/20/98	15:39:10	27.8500	10.71	0.124	
05/20/98	15:39:13	27.9000	10.72	0.124	
05/20/98	15:39:16	27.9500	10.71	0.124	
05/20/98	15:39:19	28.0000	10.71	0.124	
05/20/98	15:39:22	28.0500	10.71	0.124	
05/20/98	15:39:25	28.1000	10.71	0.124	
05/20/98	15:39:28	28.1500	10.71	0.124	
05/20/98	15:39:31	28.2000	10.71	0.122	
05/20/98	15:39:34	28.2500	10.71	0.124	
05/20/98	15:39:37	28.3000	10.71	0.124	
05/20/98	15:39:40	28.3500	10.71	0.122	
05/20/98	15:39:43	28.4000	10.71	0.122	
05/20/98	15:39:46	28.4500	10.71	0.122	
05/20/98	15:39:49	28.5000	10.71	0.122	
05/20/98	15:39:52	28.5500	10.71	0.122	
05/20/98	15:39:55	28.6000	10.71	0.122	
05/20/98	15:39:58	28.6500	10.71	0.122	
05/20/98	15:40:01	28.7000	10.71	0.122	
05/20/98	15:40:04	28.7500	10.71	0.122	
05/20/98	15:40:07	28.8000	10.71	0.122	
05/20/98	15:40:10	28.8500	10.71	0.122	
05/20/98	15:40:13	28.9000	10.71	0.122	B-156
05/20/98	15:40:16	28.9500	10.71	0.122	
05/20/98	15:40:19	29.0000	10.71	0.121	

05/20/98	15:40:22	29.0500	10.71	0.121
05/20/98	15:40:25	29.1000	10.71	0.121
05/20/98	15:40:28	29.1500	10.71	0.121
05/20/98	15:40:31	29.2000	10.71	0.121
05/20/98	15:40:34	29.2500	10.71	0.121
05/20/98	15:40:37	29.3000	10.71	0.121
05/20/98	15:40:40	29.3500	10.71	0.121
05/20/98	15:40:43	29.4000	10.71	0.121
05/20/98	15:40:46	29.4500	10.71	0.121
05/20/98	15:40:49	29.5000	10.71	0.121
05/20/98	15:40:52	29.5500	10.71	0.121
05/20/98	15:40:55	29.6000	10.71	0.121
05/20/98	15:40:58	29.6500	10.71	0.121
05/20/98	15:41:01	29.7000	10.71	0.121
05/20/98	15:41:04	29.7500	10.71	0.120
05/20/98	15:41:07	29.8000	10.71	0.121
05/20/98	15:41:10	29.8500	10.71	0.120
05/20/98	15:41:13	29.9000	10.71	0.121
05/20/98	15:41:16	29.9500	10.71	0.120
05/20/98	15:41:19	30.0000	10.71	0.120
05/20/98	15:41:22	30.0500	10.71	0.120
05/20/98	15:41:25	30.1000	10.71	0.120
05/20/98	15:41:28	30.1500	10.71	0.120
05/20/98	15:41:31	30.2000	10.70	0.120
05/20/98	15:41:34	30.2500	10.71	0.120
05/20/98	15:41:37	30.3000	10.71	0.120
05/20/98	15:41:40	30.3500	10.71	0.120
05/20/98	15:41:43	30.4000	10.71	0.120
05/20/98	15:41:46	30.4500	10.71	0.120
05/20/98	15:41:49	30.5000	10.71	0.120
05/20/98	15:41:52	30.5500	10.70	0.120
05/20/98	15:41:55	30.6000	10.70	0.118
05/20/98	15:41:58	30.6500	10.71	0.120
05/20/98	15:42:01	30.7000	10.71	0.120
05/20/98	15:42:04	30.7500	10.70	0.118
05/20/98	15:42:07	30.8000	10.71	0.118
05/20/98	15:42:10	30.8500	10.71	0.118
05/20/98	15:42:13	30.9000	10.71	0.118
05/20/98	15:42:16	30.9500	10.71	0.118
05/20/98	15:42:19	31.0000	10.70	0.118
05/20/98	15:42:22	31.0500	10.71	0.118
05/20/98	15:42:25	31.1000	10.71	0.118
05/20/98	15:42:28	31.1500	10.70	0.118
05/20/98	15:42:31	31.2000	10.71	0.118
05/20/98	15:42:34	31.2500	10.70	0.118
05/20/98	15:42:37	31.3000	10.70	0.118
05/20/98	15:42:40	31.3500	10.70	0.118
05/20/98	15:42:43	31.4000	10.70	0.118
05/20/98	15:42:46	31.4500	10.70	0.117
05/20/98	15:42:49	31.5000	10.70	0.117
05/20/98	15:42:52	31.5500	10.70	0.118
05/20/98	15:42:55	31.6000	10.70	0.117
05/20/98	15:42:58	31.6500	10.71	0.117
05/20/98	15:43:01	31.7000	10.70	0.117
05/20/98	15:43:04	31.7500	10.71	0.117
05/20/98	15:43:07	31.8000	10.70	0.117

05/20/98	15:43:10	31.8500	10.70	0.117
05/20/98	15:43:13	31.9000	10.70	0.117
05/20/98	15:43:16	31.9500	10.70	0.115
05/20/98	15:43:19	32.0000	10.70	0.117
05/20/98	15:43:22	32.0500	10.70	0.117
05/20/98	15:43:25	32.1000	10.70	0.117
05/20/98	15:43:28	32.1500	10.70	0.115
05/20/98	15:43:31	32.2000	10.70	0.115
05/20/98	15:43:34	32.2500	10.70	0.117
05/20/98	15:43:37	32.3000	10.70	0.117
05/20/98	15:43:40	32.3500	10.70	0.115
05/20/98	15:43:43	32.4000	10.70	0.115
05/20/98	15:43:46	32.4500	10.70	0.117
05/20/98	15:43:49	32.5000	10.70	0.117
05/20/98	15:43:52	32.5500	10.70	0.115
05/20/98	15:43:55	32.6000	10.70	0.114
05/20/98	15:43:58	32.6500	10.70	0.115
05/20/98	15:44:01	32.7000	10.70	0.115
05/20/98	15:44:04	32.7500	10.70	0.115
05/20/98	15:44:07	32.8000	10.70	0.115
05/20/98	15:44:10	32.8500	10.70	0.115
05/20/98	15:44:13	32.9000	10.70	0.115
05/20/98	15:44:16	32.9500	10.70	0.115
05/20/98	15:44:19	33.0000	10.70	0.115
05/20/98	15:44:22	33.0500	10.70	0.115
05/20/98	15:44:25	33.1000	10.70	0.115
05/20/98	15:44:28	33.1500	10.70	0.115
05/20/98	15:44:31	33.2000	10.70	0.115
05/20/98	15:44:34	33.2500	10.70	0.115
05/20/98	15:44:37	33.3000	10.70	0.115
05/20/98	15:44:40	33.3500	10.70	0.115
05/20/98	15:44:43	33.4000	10.70	0.114
05/20/98	15:44:46	33.4500	10.70	0.115
05/20/98	15:44:49	33.5000	10.70	0.114
05/20/98	15:44:52	33.5500	10.70	0.115
05/20/98	15:44:55	33.6000	10.70	0.114
05/20/98	15:44:58	33.6500	10.70	0.114
05/20/98	15:45:01	33.7000	10.70	0.114
05/20/98	15:45:04	33.7500	10.70	0.114
05/20/98	15:45:07	33.8000	10.70	0.114
05/20/98	15:45:10	33.8500	10.70	0.114
05/20/98	15:45:13	33.9000	10.70	0.114
05/20/98	15:45:16	33.9500	10.70	0.114
05/20/98	15:45:19	34.0000	10.70	0.114
05/20/98	15:45:22	34.0500	10.70	0.114
05/20/98	15:45:25	34.1000	10.70	0.114
05/20/98	15:45:28	34.1500	10.70	0.114
05/20/98	15:45:31	34.2000	10.70	0.114
05/20/98	15:45:34	34.2500	10.70	0.112
05/20/98	15:45:37	34.3000	10.70	0.114
05/20/98	15:45:40	34.3500	10.70	0.114
05/20/98	15:45:43	34.4000	10.70	0.114
05/20/98	15:45:46	34.4500	10.70	0.114
05/20/98	15:45:49	34.5000	10.70	0.112
05/20/98	15:45:52	34.5500	10.70	0.112
05/20/98	15:45:55	34.6000	10.70	0.112

05/20/98	15:45:58	34.6500	10.70	0.112
05/20/98	15:46:01	34.7000	10.70	0.112
05/20/98	15:46:04	34.7500	10.70	0.114
05/20/98	15:46:07	34.8000	10.70	0.112
05/20/98	15:46:10	34.8500	10.70	0.112
05/20/98	15:46:13	34.9000	10.70	0.112
05/20/98	15:46:16	34.9500	10.70	0.112
05/20/98	15:46:19	35.0000	10.70	0.112
05/20/98	15:46:22	35.0500	10.70	0.112
05/20/98	15:46:25	35.1000	10.70	0.112
05/20/98	15:46:28	35.1500	10.70	0.112
05/20/98	15:46:31	35.2000	10.70	0.112
05/20/98	15:46:34	35.2500	10.69	0.112
05/20/98	15:46:37	35.3000	10.70	0.112
05/20/98	15:46:40	35.3500	10.70	0.112
05/20/98	15:46:43	35.4000	10.70	0.112
05/20/98	15:46:46	35.4500	10.70	0.112
05/20/98	15:46:49	35.5000	10.70	0.112
05/20/98	15:46:52	35.5500	10.70	0.112
05/20/98	15:46:55	35.6000	10.70	0.112
05/20/98	15:46:58	35.6500	10.70	0.112
05/20/98	15:47:01	35.7000	10.70	0.112
05/20/98	15:47:04	35.7500	10.70	0.111
05/20/98	15:47:07	35.8000	10.70	0.111
05/20/98	15:47:10	35.8500	10.69	0.112
05/20/98	15:47:13	35.9000	10.70	0.112
05/20/98	15:47:16	35.9500	10.70	0.112
05/20/98	15:47:19	36.0000	10.70	0.111
05/20/98	15:47:22	36.0500	10.70	0.112
05/20/98	15:47:25	36.1000	10.70	0.111
05/20/98	15:47:28	36.1500	10.69	0.111
05/20/98	15:47:31	36.2000	10.69	0.111
05/20/98	15:47:34	36.2500	10.70	0.111
05/20/98	15:47:37	36.3000	10.70	0.111
05/20/98	15:47:40	36.3500	10.69	0.111
05/20/98	15:47:43	36.4000	10.70	0.111
05/20/98	15:47:46	36.4500	10.70	0.111
05/20/98	15:47:49	36.5000	10.69	0.111
05/20/98	15:47:52	36.5500	10.70	0.111
05/20/98	15:47:55	36.6000	10.70	0.111
05/20/98	15:47:58	36.6500	10.69	0.111
05/20/98	15:48:01	36.7000	10.69	0.111
05/20/98	15:48:04	36.7500	10.69	0.111
05/20/98	15:48:07	36.8000	10.69	0.111
05/20/98	15:48:10	36.8500	10.70	0.111
05/20/98	15:48:13	36.9000	10.70	0.111
05/20/98	15:48:16	36.9500	10.70	0.111
05/20/98	15:48:19	37.0000	10.70	0.112
05/20/98	15:48:22	37.0500	10.70	0.111
05/20/98	15:48:25	37.1000	10.70	0.111
05/20/98	15:48:28	37.1500	10.69	0.111
05/20/98	15:48:31	37.2000	10.69	0.111
05/20/98	15:48:34	37.2500	10.69	0.111
05/20/98	15:48:37	37.3000	10.69	0.110
05/20/98	15:48:40	37.3500	10.70	0.110
05/20/98	15:48:43	37.4000	10.69	0.111

05/20/98	15:48:46	37.4500	10.69	0.111
05/20/98	15:48:49	37.5000	10.70	0.111
05/20/98	15:48:52	37.5500	10.69	0.111
05/20/98	15:48:55	37.6000	10.69	0.111
05/20/98	15:48:58	37.6500	10.69	0.110
05/20/98	15:49:01	37.7000	10.70	0.111
05/20/98	15:49:04	37.7500	10.69	0.110
05/20/98	15:49:07	37.8000	10.69	0.110
05/20/98	15:49:10	37.8500	10.69	0.110
05/20/98	15:49:13	37.9000	10.69	0.110
05/20/98	15:49:16	37.9500	10.69	0.110
05/20/98	15:49:19	38.0000	10.69	0.110
05/20/98	15:49:22	38.0500	10.69	0.110
05/20/98	15:49:25	38.1000	10.69	0.110
05/20/98	15:49:28	38.1500	10.69	0.110
05/20/98	15:49:31	38.2000	10.69	0.110
05/20/98	15:49:34	38.2500	10.69	0.110
05/20/98	15:49:37	38.3000	10.69	0.110
05/20/98	15:49:40	38.3500	10.69	0.110
05/20/98	15:49:43	38.4000	10.69	0.110
05/20/98	15:49:46	38.4500	10.69	0.110
05/20/98	15:49:49	38.5000	10.69	0.110
05/20/98	15:49:52	38.5500	10.69	0.110
05/20/98	15:49:55	38.6000	10.69	0.110
05/20/98	15:49:58	38.6500	10.69	0.110
05/20/98	15:50:01	38.7000	10.69	0.110
05/20/98	15:50:04	38.7500	10.69	0.110
05/20/98	15:50:07	38.8000	10.69	0.110
05/20/98	15:50:10	38.8500	10.69	0.110
05/20/98	15:50:13	38.9000	10.69	0.110
05/20/98	15:50:16	38.9500	10.69	0.110
05/20/98	15:50:19	39.0000	10.70	0.110
05/20/98	15:50:22	39.0500	10.69	0.110
05/20/98	15:50:25	39.1000	10.69	0.110
05/20/98	15:50:28	39.1500	10.69	0.110
05/20/98	15:50:31	39.2000	10.69	0.108
05/20/98	15:50:34	39.2500	10.69	0.110
05/20/98	15:50:37	39.3000	10.69	0.110
05/20/98	15:50:40	39.3500	10.69	0.108
05/20/98	15:50:43	39.4000	10.69	0.108
05/20/98	15:50:46	39.4500	10.69	0.108
05/20/98	15:50:49	39.5000	10.69	0.108
05/20/98	15:50:52	39.5500	10.69	0.110
05/20/98	15:50:55	39.6000	10.69	0.110
05/20/98	15:50:58	39.6500	10.69	0.108
05/20/98	15:51:01	39.7000	10.69	0.108
05/20/98	15:51:04	39.7500	10.69	0.108
05/20/98	15:51:07	39.8000	10.69	0.108
05/20/98	15:51:10	39.8500	10.69	0.108
05/20/98	15:51:13	39.9000	10.69	0.108
05/20/98	15:51:16	39.9500	10.69	0.108
05/20/98	15:51:19	40.0000	10.69	0.108
05/20/98	15:51:22	40.0500	10.69	0.108
05/20/98	15:51:25	40.1000	10.69	0.108
05/20/98	15:51:28	40.1500	10.69	0.108
05/20/98	15:51:31	40.2000	10.69	0.108

05/20/98	15:51:34	40.2500	10.69	0.108	
05/20/98	15:51:37	40.3000	10.69	0.108	
05/20/98	15:51:40	40.3500	10.69	0.108	
05/20/98	15:51:43	40.4000	10.69	0.108	
05/20/98	15:51:46	40.4500	10.69	0.108	
05/20/98	15:51:49	40.5000	10.69	0.108	
05/20/98	15:51:52	40.5500	10.69	0.107	
05/20/98	15:51:55	40.6000	10.69	0.108	
05/20/98	15:51:58	40.6500	10.69	0.108	
05/20/98	15:52:01	40.7000	10.68	0.108	
05/20/98	15:52:04	40.7500	10.69	0.108	
05/20/98	15:52:07	40.8000	10.68	0.108	
05/20/98	15:52:10	40.8500	10.68	0.108	
05/20/98	15:52:13	40.9000	10.69	0.108	
05/20/98	15:52:16	40.9500	10.69	0.108	
05/20/98	15:52:19	41.0000	10.68	0.108	
05/20/98	15:52:22	41.0500	10.68	0.108	
05/20/98	15:52:25	41.1000	10.69	0.108	
05/20/98	15:52:28	41.1500	10.68	0.108	
05/20/98	15:52:31	41.2000	10.68	0.107	
05/20/98	15:52:34	41.2500	10.69	0.108	
05/20/98	15:52:37	41.3000	10.68	0.108	
05/20/98	15:52:40	41.3500	10.69	0.108	
05/20/98	15:52:43	41.4000	10.68	0.108	
05/20/98	15:52:46	41.4500	10.69	0.108	
05/20/98	15:52:49	41.5000	10.68	0.108	
05/20/98	15:52:52	41.5500	10.69	0.108	
05/20/98	15:52:55	41.6000	10.68	0.108	
05/20/98	15:52:58	41.6500	10.68	0.108	
05/20/98	15:53:01	41.7000	10.69	0.108	
05/20/98	15:53:04	41.7500	10.68	0.108	
05/20/98	15:53:07	41.8000	10.69	0.108	
05/20/98	15:53:10	41.8500	10.68	0.108	
05/20/98	15:53:13	41.9000	10.68	0.108	
05/20/98	15:53:16	41.9500	10.68	0.108	
05/20/98	15:53:19	42.0000	10.68	0.108	
05/20/98	15:53:22	42.0500	10.69	0.107	
05/20/98	15:53:25	42.1000	10.69	0.108	
05/20/98	15:53:28	42.1500	10.68	0.108	
05/20/98	15:53:31	42.2000	10.68	0.108	
05/20/98	15:53:34	42.2500	10.68	0.108	
05/20/98	15:53:37	42.3000	10.69	0.107	
05/20/98	15:53:40	42.3500	10.69	0.107	
05/20/98	15:53:43	42.4000	10.68	0.108	
05/20/98	15:53:46	42.4500	10.68	0.107	
05/20/98	15:53:49	42.5000	10.69	0.107	
05/20/98	15:53:52	42.5500	10.68	0.108	
05/20/98	15:53:55	42.6000	10.68	0.108	
05/20/98	15:53:58	42.6500	10.68	0.107	
05/20/98	15:54:01	42.7000	10.68	0.107	
05/20/98	15:54:04	42.7500	10.68	0.107	
05/20/98	15:54:07	42.8000	10.68	0.107	
05/20/98	15:54:10	42.8500	10.68	0.107	B-161
05/20/98	15:54:13	42.9000	10.68	0.107	
05/20/98	15:54:16	42.9500	10.68	0.107	
05/20/98	15:54:19	43.0000	10.68	0.107	

05/20/98	15:54:22	43.0500	10.68	0.107	
05/20/98	15:54:25	43.1000	10.69	0.107	
05/20/98	15:54:28	43.1500	10.68	0.107	
05/20/98	15:54:31	43.2000	10.68	0.108	
05/20/98	15:54:34	43.2500	10.68	0.107	
05/20/98	15:54:37	43.3000	10.68	0.107	
05/20/98	15:54:40	43.3500	10.68	0.107	
05/20/98	15:54:43	43.4000	10.68	0.107	
05/20/98	15:54:46	43.4500	10.68	0.107	
05/20/98	15:54:49	43.5000	10.68	0.107	
05/20/98	15:54:52	43.5500	10.68	0.107	
05/20/98	15:54:55	43.6000	10.68	0.107	
05/20/98	15:54:58	43.6500	10.68	0.107	
05/20/98	15:55:01	43.7000	10.68	0.107	
05/20/98	15:55:04	43.7500	10.68	0.107	
05/20/98	15:55:07	43.8000	10.68	0.107	
05/20/98	15:55:10	43.8500	10.68	0.107	
05/20/98	15:55:13	43.9000	10.68	0.107	
05/20/98	15:55:16	43.9500	10.68	0.107	
05/20/98	15:55:19	44.0000	10.68	0.107	
05/20/98	15:55:22	44.0500	10.68	0.107	
05/20/98	15:55:25	44.1000	10.68	0.107	
05/20/98	15:55:28	44.1500	10.68	0.107	
05/20/98	15:55:31	44.2000	10.68	0.107	
05/20/98	15:55:34	44.2500	10.68	0.107	
05/20/98	15:55:37	44.3000	10.68	0.107	
05/20/98	15:55:40	44.3500	10.68	0.105	
05/20/98	15:55:43	44.4000	10.68	0.105	
05/20/98	15:55:46	44.4500	10.68	0.107	
05/20/98	15:55:49	44.5000	10.68	0.105	
05/20/98	15:55:52	44.5500	10.68	0.107	
05/20/98	15:55:55	44.6000	10.68	0.107	
05/20/98	15:55:58	44.6500	10.68	0.107	
05/20/98	15:56:01	44.7000	10.68	0.105	
05/20/98	15:56:04	44.7500	10.68	0.105	
05/20/98	15:56:07	44.8000	10.68	0.107	
05/20/98	15:56:10	44.8500	10.68	0.107	
05/20/98	15:56:13	44.9000	10.68	0.107	
05/20/98	15:56:16	44.9500	10.68	0.107	
05/20/98	15:56:19	45.0000	10.68	0.105	
05/20/98	15:56:22	45.0500	10.68	0.107	
05/20/98	15:56:25	45.1000	10.68	0.107	
05/20/98	15:56:28	45.1500	10.68	0.107	
05/20/98	15:56:31	45.2000	10.68	0.107	
05/20/98	15:56:34	45.2500	10.68	0.105	
05/20/98	15:56:37	45.3000	10.68	0.107	
05/20/98	15:56:40	45.3500	10.68	0.105	
05/20/98	15:56:43	45.4000	10.68	0.105	
05/20/98	15:56:46	45.4500	10.68	0.105	
05/20/98	15:56:49	45.5000	10.68	0.105	
05/20/98	15:56:52	45.5500	10.68	0.105	
05/20/98	15:56:55	45.6000	10.68	0.105	
05/20/98	15:56:58	45.6500	10.68	0.107	
05/20/98	15:57:01	45.7000	10.68	0.107	B-162
05/20/98	15:57:04	45.7500	10.68	0.105	
05/20/98	15:57:07	45.8000	10.68	0.105	

05/20/98	15:57:10	45.8500	10.68	0.105
05/20/98	15:57:13	45.9000	10.68	0.107
05/20/98	15:57:16	45.9500	10.68	0.105
05/20/98	15:57:19	46.0000	10.68	0.105
05/20/98	15:57:22	46.0500	10.68	0.105
05/20/98	15:57:25	46.1000	10.68	0.105
05/20/98	15:57:28	46.1500	10.68	0.105
05/20/98	15:57:31	46.2000	10.68	0.105
05/20/98	15:57:34	46.2500	10.68	0.105
05/20/98	15:57:37	46.3000	10.68	0.105
05/20/98	15:57:40	46.3500	10.68	0.105
05/20/98	15:57:43	46.4000	10.68	0.105
05/20/98	15:57:46	46.4500	10.68	0.105
05/20/98	15:57:49	46.5000	10.68	0.105
05/20/98	15:57:52	46.5500	10.68	0.105
05/20/98	15:57:55	46.6000	10.68	0.105
05/20/98	15:57:58	46.6500	10.68	0.105
05/20/98	15:58:01	46.7000	10.68	0.107
05/20/98	15:58:04	46.7500	10.68	0.105
05/20/98	15:58:07	46.8000	10.68	0.105
05/20/98	15:58:10	46.8500	10.68	0.105
05/20/98	15:58:13	46.9000	10.68	0.105
05/20/98	15:58:16	46.9500	10.68	0.105
05/20/98	15:58:19	47.0000	10.68	0.105
05/20/98	15:58:22	47.0500	10.68	0.105
05/20/98	15:58:25	47.1000	10.68	0.105
05/20/98	15:58:28	47.1500	10.68	0.105
05/20/98	15:58:31	47.2000	10.68	0.105
05/20/98	15:58:34	47.2500	10.68	0.105
05/20/98	15:58:37	47.3000	10.68	0.105
05/20/98	15:58:40	47.3500	10.68	0.105
05/20/98	15:58:43	47.4000	10.68	0.105
05/20/98	15:58:46	47.4500	10.68	0.105
05/20/98	15:58:49	47.5000	10.68	0.105
05/20/98	15:58:52	47.5500	10.68	0.105
05/20/98	15:58:55	47.6000	10.68	0.105
05/20/98	15:58:58	47.6500	10.68	0.105
05/20/98	15:59:01	47.7000	10.68	0.105
05/20/98	15:59:04	47.7500	10.68	0.105
05/20/98	15:59:07	47.8000	10.68	0.105
05/20/98	15:59:10	47.8500	10.68	0.105
05/20/98	15:59:13	47.9000	10.68	0.105
05/20/98	15:59:16	47.9500	10.68	0.105
05/20/98	15:59:19	48.0000	10.68	0.105
05/20/98	15:59:22	48.0500	10.68	0.104
05/20/98	15:59:25	48.1000	10.68	0.105
05/20/98	15:59:28	48.1500	10.68	0.105
05/20/98	15:59:31	48.2000	10.68	0.105
05/20/98	15:59:34	48.2500	10.68	0.105
05/20/98	15:59:37	48.3000	10.68	0.105
05/20/98	15:59:40	48.3500	10.68	0.105
05/20/98	15:59:43	48.4000	10.68	0.105
05/20/98	15:59:46	48.4500	10.68	0.105
05/20/98	15:59:49	48.5000	10.68	0.105
05/20/98	15:59:52	48.5500	10.68	0.105
05/20/98	15:59:55	48.6000	10.68	0.105

05/20/98	15:59:58	48.6500	10.68	0.105
05/20/98	16:00:01	48.7000	10.68	0.105
05/20/98	16:00:04	48.7500	10.68	0.105
05/20/98	16:00:07	48.8000	10.68	0.105
05/20/98	16:00:10	48.8500	10.68	0.105
05/20/98	16:00:13	48.9000	10.68	0.105
05/20/98	16:00:16	48.9500	10.68	0.104
05/20/98	16:00:19	49.0000	10.68	0.105
05/20/98	16:00:22	49.0500	10.68	0.105
05/20/98	16:00:25	49.1000	10.68	0.105
05/20/98	16:00:28	49.1500	10.68	0.105
05/20/98	16:00:31	49.2000	10.68	0.104
05/20/98	16:00:34	49.2500	10.68	0.105
05/20/98	16:00:37	49.3000	10.68	0.105
05/20/98	16:00:40	49.3500	10.68	0.105
05/20/98	16:00:43	49.4000	10.68	0.105
05/20/98	16:00:46	49.4500	10.68	0.105
05/20/98	16:00:49	49.5000	10.68	0.105
05/20/98	16:00:52	49.5500	10.68	0.105
05/20/98	16:00:55	49.6000	10.68	0.104
05/20/98	16:00:58	49.6500	10.68	0.105
05/20/98	16:01:01	49.7000	10.68	0.104
05/20/98	16:01:04	49.7500	10.68	0.105
05/20/98	16:01:07	49.8000	10.68	0.104
05/20/98	16:01:10	49.8500	10.68	0.105
05/20/98	16:01:13	49.9000	10.68	0.105
05/20/98	16:01:16	49.9500	10.68	0.104
05/20/98	16:01:19	50.0000	10.68	0.104
05/20/98	16:01:22	50.0500	10.68	0.105
05/20/98	16:01:25	50.1000	10.68	0.104
05/20/98	16:01:28	50.1500	10.68	0.104
05/20/98	16:01:31	50.2000	10.68	0.104
05/20/98	16:01:34	50.2500	10.68	0.105
05/20/98	16:01:37	50.3000	10.68	0.104
05/20/98	16:01:40	50.3500	10.68	0.105
05/20/98	16:01:43	50.4000	10.68	0.105
05/20/98	16:01:46	50.4500	10.68	0.104
05/20/98	16:01:49	50.5000	10.68	0.105
05/20/98	16:01:52	50.5500	10.68	0.105
05/20/98	16:01:55	50.6000	10.68	0.104
05/20/98	16:01:58	50.6500	10.68	0.104
05/20/98	16:02:01	50.7000	10.68	0.105
05/20/98	16:02:04	50.7500	10.68	0.104
05/20/98	16:02:07	50.8000	10.68	0.105
05/20/98	16:02:10	50.8500	10.68	0.105
05/20/98	16:02:13	50.9000	10.68	0.105
05/20/98	16:02:16	50.9500	10.68	0.104
05/20/98	16:02:19	51.0000	10.68	0.105
05/20/98	16:02:22	51.0500	10.68	0.105
05/20/98	16:02:25	51.1000	10.68	0.104
05/20/98	16:02:28	51.1500	10.68	0.104
05/20/98	16:02:31	51.2000	10.68	0.104
05/20/98	16:02:34	51.2500	10.68	0.104
05/20/98	16:02:37	51.3000	10.68	0.104
05/20/98	16:02:40	51.3500	10.68	0.105
05/20/98	16:02:43	51.4000	10.68	0.105

05/20/98	16:02:46	51.4500	10.68	0.104
05/20/98	16:02:49	51.5000	10.68	0.104
05/20/98	16:02:52	51.5500	10.68	0.105
05/20/98	16:02:55	51.6000	10.68	0.105
05/20/98	16:02:58	51.6500	10.68	0.104
05/20/98	16:03:01	51.7000	10.68	0.104
05/20/98	16:03:04	51.7500	10.68	0.104
05/20/98	16:03:07	51.8000	10.68	0.104
05/20/98	16:03:10	51.8500	10.68	0.105
05/20/98	16:03:13	51.9000	10.68	0.104
05/20/98	16:03:16	51.9500	10.68	0.104
05/20/98	16:03:19	52.0000	10.68	0.105
05/20/98	16:03:22	52.0500	10.68	0.104
05/20/98	16:03:25	52.1000	10.68	0.104
05/20/98	16:03:28	52.1500	10.68	0.104
05/20/98	16:03:31	52.2000	10.68	0.104
05/20/98	16:03:34	52.2500	10.68	0.104
05/20/98	16:03:37	52.3000	10.68	0.105
05/20/98	16:03:40	52.3500	10.68	0.104
05/20/98	16:03:43	52.4000	10.68	0.104
05/20/98	16:03:46	52.4500	10.68	0.104
05/20/98	16:03:49	52.5000	10.68	0.104
05/20/98	16:03:52	52.5500	10.68	0.104
05/20/98	16:03:55	52.6000	10.68	0.104
05/20/98	16:03:58	52.6500	10.68	0.104
05/20/98	16:04:01	52.7000	10.68	0.104
05/20/98	16:04:04	52.7500	10.68	0.104
05/20/98	16:04:07	52.8000	10.68	0.104
05/20/98	16:04:10	52.8500	10.68	0.104
05/20/98	16:04:13	52.9000	10.68	0.104
05/20/98	16:04:16	52.9500	10.68	0.104
05/20/98	16:04:19	53.0000	10.68	0.104
05/20/98	16:04:22	53.0500	10.68	0.104
05/20/98	16:04:25	53.1000	10.68	0.104
05/20/98	16:04:28	53.1500	10.68	0.104
05/20/98	16:04:31	53.2000	10.68	0.104
05/20/98	16:04:34	53.2500	10.68	0.104
05/20/98	16:04:37	53.3000	10.68	0.104
05/20/98	16:04:40	53.3500	10.68	0.104
05/20/98	16:04:43	53.4000	10.68	0.104
05/20/98	16:04:46	53.4500	10.68	0.104
05/20/98	16:04:49	53.5000	10.68	0.104
05/20/98	16:04:52	53.5500	10.68	0.104
05/20/98	16:04:55	53.6000	10.68	0.104
05/20/98	16:04:58	53.6500	10.68	0.104
05/20/98	16:05:01	53.7000	10.68	0.104
05/20/98	16:05:04	53.7500	10.68	0.104
05/20/98	16:05:07	53.8000	10.68	0.105
05/20/98	16:05:10	53.8500	10.68	0.104
05/20/98	16:05:13	53.9000	10.68	0.104
05/20/98	16:05:16	53.9500	10.68	0.104
05/20/98	16:05:19	54.0000	10.68	0.104
05/20/98	16:05:22	54.0500	10.68	0.104
05/20/98	16:05:25	54.1000	10.68	0.103
05/20/98	16:05:28	54.1500	10.68	0.104
05/20/98	16:05:31	54.2000	10.68	0.104

05/20/98	16:05:34	54.2500	10.68	0.104
05/20/98	16:05:37	54.3000	10.68	0.104
05/20/98	16:05:40	54.3500	10.68	0.104
05/20/98	16:05:43	54.4000	10.68	0.104
05/20/98	16:05:46	54.4500	10.68	0.104
05/20/98	16:05:49	54.5000	10.68	0.104
05/20/98	16:05:52	54.5500	10.68	0.104
05/20/98	16:05:55	54.6000	10.68	0.104
05/20/98	16:05:58	54.6500	10.68	0.104
05/20/98	16:06:01	54.7000	10.68	0.104
05/20/98	16:06:04	54.7500	10.68	0.104
05/20/98	16:06:07	54.8000	10.68	0.104
05/20/98	16:06:10	54.8500	10.68	0.104
05/20/98	16:06:13	54.9000	10.68	0.104
05/20/98	16:06:16	54.9500	10.68	0.104
05/20/98	16:06:19	55.0000	10.68	0.104
05/20/98	16:06:22	55.0500	10.68	0.104
05/20/98	16:06:25	55.1000	10.68	0.104
05/20/98	16:06:28	55.1500	10.68	0.104
05/20/98	16:06:31	55.2000	10.68	0.104
05/20/98	16:06:34	55.2500	10.68	0.104
05/20/98	16:06:37	55.3000	10.68	0.104
05/20/98	16:06:40	55.3500	10.68	0.104
05/20/98	16:06:43	55.4000	10.68	0.103
05/20/98	16:06:46	55.4500	10.68	0.104
05/20/98	16:06:49	55.5000	10.68	0.104
05/20/98	16:06:52	55.5500	10.68	0.104
05/20/98	16:06:55	55.6000	10.68	0.104
05/20/98	16:06:58	55.6500	10.68	0.104
05/20/98	16:07:01	55.7000	10.68	0.104
05/20/98	16:07:04	55.7500	10.68	0.104
05/20/98	16:07:07	55.8000	10.67	0.104
05/20/98	16:07:10	55.8500	10.68	0.104
05/20/98	16:07:13	55.9000	10.68	0.104
05/20/98	16:07:16	55.9500	10.67	0.104
05/20/98	16:07:19	56.0000	10.68	0.104
05/20/98	16:07:22	56.0500	10.68	0.104
05/20/98	16:07:25	56.1000	10.68	0.104
05/20/98	16:07:28	56.1500	10.68	0.103
05/20/98	16:07:31	56.2000	10.68	0.104
05/20/98	16:07:34	56.2500	10.68	0.103
05/20/98	16:07:37	56.3000	10.68	0.104
05/20/98	16:07:40	56.3500	10.68	0.104
05/20/98	16:07:43	56.4000	10.68	0.103
05/20/98	16:07:46	56.4500	10.67	0.103
05/20/98	16:07:49	56.5000	10.68	0.103
05/20/98	16:07:52	56.5500	10.68	0.103
05/20/98	16:07:55	56.6000	10.68	0.104
05/20/98	16:07:58	56.6500	10.68	0.103
05/20/98	16:08:01	56.7000	10.68	0.104
05/20/98	16:08:04	56.7500	10.68	0.104
05/20/98	16:08:07	56.8000	10.68	0.104
05/20/98	16:08:10	56.8500	10.68	0.104
05/20/98	16:08:13	56.9000	10.68	0.103
05/20/98	16:08:16	56.9500	10.68	0.104
05/20/98	16:08:19	57.0000	10.68	0.104

05/20/98	16:08:22	57.0500	10.68	0.104
05/20/98	16:08:25	57.1000	10.68	0.104
05/20/98	16:08:28	57.1500	10.67	0.103
05/20/98	16:08:31	57.2000	10.68	0.103
05/20/98	16:08:34	57.2500	10.68	0.103
05/20/98	16:08:37	57.3000	10.68	0.103
05/20/98	16:08:40	57.3500	10.68	0.103
05/20/98	16:08:43	57.4000	10.68	0.103
05/20/98	16:08:46	57.4500	10.68	0.103
05/20/98	16:08:49	57.5000	10.68	0.103
05/20/98	16:08:52	57.5500	10.68	0.103
05/20/98	16:08:55	57.6000	10.67	0.104
05/20/98	16:08:58	57.6500	10.68	0.103
05/20/98	16:09:01	57.7000	10.68	0.103
05/20/98	16:09:04	57.7500	10.68	0.104
05/20/98	16:09:07	57.8000	10.68	0.103
05/20/98	16:09:10	57.8500	10.68	0.103
05/20/98	16:09:13	57.9000	10.68	0.103
05/20/98	16:09:16	57.9500	10.68	0.103
05/20/98	16:09:19	58.0000	10.68	0.103
05/20/98	16:09:22	58.0500	10.68	0.103
05/20/98	16:09:25	58.1000	10.68	0.103
05/20/98	16:09:28	58.1500	10.68	0.104
05/20/98	16:09:31	58.2000	10.68	0.103
05/20/98	16:09:34	58.2500	10.68	0.103
05/20/98	16:09:37	58.3000	10.68	0.103
05/20/98	16:09:40	58.3500	10.68	0.103
05/20/98	16:09:43	58.4000	10.68	0.103
05/20/98	16:09:46	58.4500	10.68	0.103
05/20/98	16:09:49	58.5000	10.69	0.104
05/20/98	16:09:52	58.5500	10.71	0.104
05/20/98	16:09:55	58.6000	10.74	0.104
05/20/98	16:09:58	58.6500	10.76	0.104
05/20/98	16:10:01	58.7000	10.78	0.105
05/20/98	16:10:04	58.7500	10.78	0.104
05/20/98	16:10:07	58.8000	10.77	0.104
05/20/98	16:10:10	58.8500	10.76	0.104
05/20/98	16:10:13	58.9000	10.76	0.104
05/20/98	16:10:16	58.9500	10.75	0.103

62.42
-7.76
54.66

BKGMW012 05-20-98

Disp loc. = 1.284 m

well r = 0.025

rBH = 0.0762

scr thick = 52 x .30 48

screen length = ~~15.85m~~ 7.47m = screen l

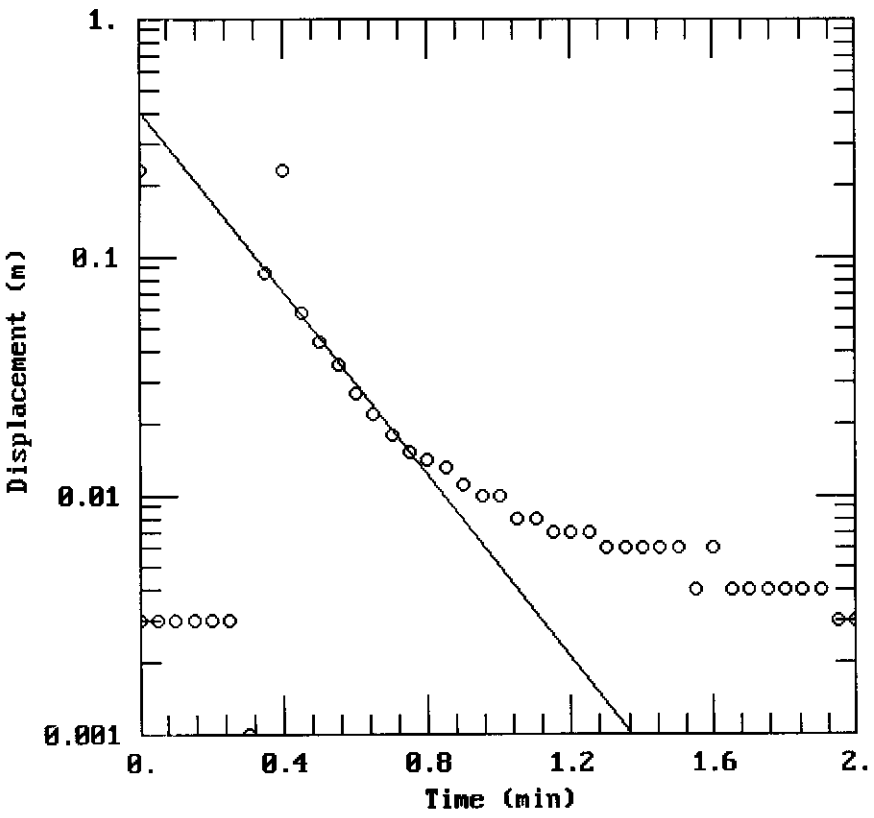
stat. L = 15.85

gravel porosity = 0.0

24.5

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXX-04-8218-011

BKGmw-013 Slug Test Solution



DATA SET:
BKGMW13.AQT
10/05/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 0.232 m
r_c= 0.025 m
r_w= 0.0762 m
L = 4.42 m
b = 4.86 m
H = 4.86 m

PARAMETER ESTIMATES:
K = 0.001648 cm/sec
y0 = 0.41 m

AQTESOLV

Phase II RI at WBG and Background Investigation | INSPECTOR Matt Orbay | SHEET 1 of 2

DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
0.5	Silty Clay (CL); Brown; low-med plasticity; Moist STIFF (2-5) Soft (0-2) Little F. Sand.	0.0 ppm			CLAY (CL): Gray, sl Brown mottles. Little silt, F. Sand; Moist, Firm-Stiff Med-High Plasticity - Medium.
1		0 11			
2				BKG 014 (2-3)	
3	3-5 Slightly Moist				
4					Increase Moist Content Firm
5					H2O at 19.5'
6					Sand, some Gravel (SW) F-M Sand & sub-A some F-C Gravel; WET little Fines; dark gray
7	Almost Dry, Crumbly			BK6014 3-12 + Geotech (7-8)	(GW) Course Gravel Cobble Zone Sub-A - Sub-C gravel wet, some F-C Sand
8					SILT (ML); gray Soft - Firm; Moist - Saturated
9					
10		10 30	B-170		

PROJECT Phase II RI at Winklepeck Burning Ground and Background Investigation
N558269.158 E2361627.394 ELEV. 986.588 | HOLE NO MW-14/13

HTRW DRILLING LOG

Phase II RI at WBG and Background Investigation | INSPECTOR DIBLOY | HOLE NUMBER MW-14/13 | SHEET 2 of 2

DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
31	SILT, Cont'd sand(sp); grayish Brn F. Sand Little M. Sand; Moist (30-31)				13:45 Collect 50-60' Core
32					
33					
34					
35					
36					Silt and Clay Mod Plasticity Low
37					
38	Little - Some clay				
39	Clayey Silt				
40					1430 Collect 60-70' Core
41					
42					
43					
44					
45					
46					
47					
48					less clay, some Sand Moist
49			B-171		
50					BOB @ 70'

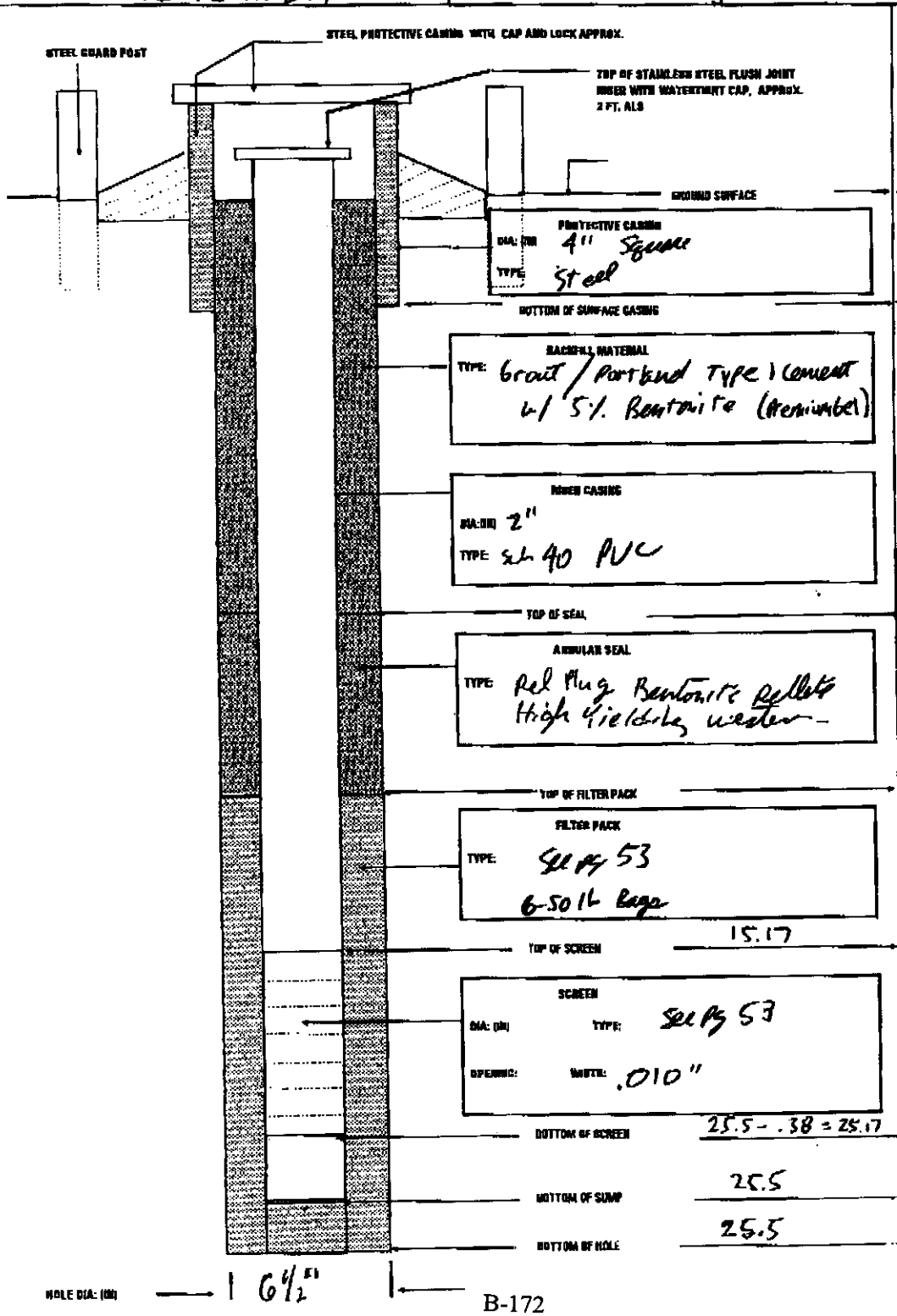
PROJECT Phase II RI at Winklepeck Burning Ground and Background Investigation
N558269.158 E2361627.394 ELEV. 986.588

HOLE NO MW-14/13

5

PROJECT NAME: Phase II RI @ WBG and Background Investigation DELIVERY ORDER NO: 0060

WELL NUMBER: BGMW-13	BEGIN: 4/24/98	END: 4-25-98
COORDINATES: N: 558269.158 E: 2261627.394	REFERENCE POINT: Top of Riser Casing	ELEVATION: 496.84 MSL



IN_SITU INC. TROLL
Serial number: 00000971
Unit name: RVAAP

Report generated: 10/01/98 11:14:17
Report from file: C:\MYDOCU~1\RAVENN~1\BKGMW13A.BIN

Test name:BKGmw-013

Test defined on: 05/20/98 08:27:03
Test started on: 05/20/98 08:27:28
Test stopped on: 05/20/98 08:44:07
Test extracted on: 05/20/98 12:09:10

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 333

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 4.349 Meters H2O

Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O
05/20/98	08:27:28	0.0000	10.61	0.000
05/20/98	08:27:31	0.0500	10.60	0.000
05/20/98	08:27:34	0.1000	10.59	-0.001
05/20/98	08:27:37	0.1500	10.58	0.000
05/20/98	08:27:40	0.2000	10.58	-0.001
05/20/98	08:27:43	0.2500	10.58	-0.001
05/20/98	08:27:46	0.3000	10.58	-0.001
05/20/98	08:27:49	0.3500	10.58	-0.001
05/20/98	08:27:52	0.4000	10.57	-0.001
05/20/98	08:27:55	0.4500	10.57	-0.001
05/20/98	08:27:58	0.5000	10.56	-0.001
05/20/98	08:28:01	0.5500	10.56	-0.001
05/20/98	08:28:04	0.6000	10.56	-0.001
05/20/98	08:28:07	0.6500	10.56	-0.001
05/20/98	08:28:10	0.7000	10.56	-0.001
05/20/98	08:28:13	0.7500	10.56	-0.001
05/20/98	08:28:16	0.8000	10.56	-0.001
05/20/98	08:28:19	0.8500	10.56	-0.001
05/20/98	08:28:22	0.9000	10.57	0.000
05/20/98	08:28:25	0.9500	10.59	-0.001
05/20/98	08:28:28	1.0000	10.59	-0.001

05/20/98	08:28:31	1.0500	10.58	-0.001	
05/20/98	08:28:34	1.1000	10.58	-0.001	
05/20/98	08:28:37	1.1500	10.58	-0.001	
05/20/98	08:28:40	1.2000	10.58	-0.001	
05/20/98	08:28:43	1.2500	10.58	-0.001	
05/20/98	08:28:46	1.3000	10.58	-0.001	
05/20/98	08:28:49	1.3500	10.57	-0.001	
05/20/98	08:28:52	1.4000	10.57	-0.001	
05/20/98	08:28:55	1.4500	10.57	-0.001	
05/20/98	08:28:58	1.5000	10.57	-0.001	
05/20/98	08:29:01	1.5500	10.57	-0.001	
05/20/98	08:29:04	1.6000	10.57	-0.001	
05/20/98	08:29:07	1.6500	10.57	-0.001	
05/20/98	08:29:10	1.7000	10.56	-0.001	
05/20/98	08:29:13	1.7500	10.57	-0.001	
05/20/98	08:29:16	1.8000	10.56	-0.001	
05/20/98	08:29:19	1.8500	10.56	-0.001	
05/20/98	08:29:22	1.9000	10.56	-0.001	
05/20/98	08:29:25	1.9500	10.56	-0.001	
05/20/98	08:29:28	2.0000	10.56	-0.001	
05/20/98	08:29:31	2.0500	10.56	-0.001	
05/20/98	08:29:34	2.1000	10.56	-0.001	
05/20/98	08:29:37	2.1500	10.56	-0.001	
05/20/98	08:29:40	2.2000	10.56	-0.001	
05/20/98	08:29:43	2.2500	10.56	-0.001	
05/20/98	08:29:46	2.3000	10.56	-0.001	
05/20/98	08:29:49	2.3500	10.56	-0.001	
05/20/98	08:29:52	2.4000	10.56	-0.001	
05/20/98	08:29:55	2.4500	10.56	-0.001	
05/20/98	08:29:58	2.5000	10.56	-0.001	
05/20/98	08:30:01	2.5500	10.56	-0.001	
05/20/98	08:30:04	2.6000	10.56	-0.001	
05/20/98	08:30:07	2.6500	10.56	-0.001	
05/20/98	08:30:10	2.7000	10.56	-0.001	
05/20/98	08:30:13	2.7500	10.56	-0.001	
05/20/98	08:30:16	2.8000	10.56	-0.001	
05/20/98	08:30:19	2.8500	10.56	-0.001	
05/20/98	08:30:22	2.9000	10.56	-0.001	
05/20/98	08:30:25	2.9500	10.56	-0.001	
05/20/98	08:30:28	3.0000	10.56	-0.001	
05/20/98	08:30:31	3.0500	10.56	-0.001	
05/20/98	08:30:34	3.1000	10.56	-0.001	
05/20/98	08:30:37	3.1500	10.56	-0.001	
05/20/98	08:30:40	3.2000	10.56	-0.001	
05/20/98	08:30:43	3.2500	10.56	-0.001	
05/20/98	08:30:46	3.3000	10.56	-0.001	
05/20/98	08:30:49	3.3500	10.56	-0.001	
05/20/98	08:30:52	3.4000	10.56	-0.001	
05/20/98	08:30:55	3.4500	10.56	-0.001	
05/20/98	08:30:58	3.5000	10.56	-0.001	
05/20/98	08:31:01	3.5500	10.56	-0.001	
05/20/98	08:31:04	3.6000	10.56	-0.001	
05/20/98	08:31:07	3.6500	10.56	-0.001	B-174
05/20/98	08:31:10	3.7000	10.56	-0.001	
05/20/98	08:31:13	3.7500	10.56	-0.001	
05/20/98	08:31:16	3.8000	10.56	-0.001	

05/20/98	08:31:19	3.8500	10.56	-0.001
05/20/98	08:31:22	3.9000	10.56	-0.001
05/20/98	08:31:25	3.9500	10.56	-0.001
05/20/98	08:31:28	4.0000	10.56	-0.001
05/20/98	08:31:31	4.0500	10.56	-0.001
05/20/98	08:31:34	4.1000	10.56	-0.001
05/20/98	08:31:37	4.1500	10.56	-0.001
05/20/98	08:31:40	4.2000	10.56	-0.001
05/20/98	08:31:43	4.2500	10.56	-0.001
05/20/98	08:31:46	4.3000	10.56	-0.001
05/20/98	08:31:49	4.3500	10.56	-0.001
05/20/98	08:31:52	4.4000	10.56	-0.001
05/20/98	08:31:55	4.4500	10.56	-0.001
05/20/98	08:31:58	4.5000	10.56	-0.001
05/20/98	08:32:01	4.5500	10.56	-0.001
05/20/98	08:32:04	4.6000	10.56	-0.001
05/20/98	08:32:07	4.6500	10.56	-0.001
05/20/98	08:32:10	4.7000	10.56	-0.001
05/20/98	08:32:13	4.7500	10.56	-0.001
05/20/98	08:32:16	4.8000	10.55	-0.001
05/20/98	08:32:19	4.8500	10.55	-0.001
05/20/98	08:32:22	4.9000	10.56	-0.001
05/20/98	08:32:25	4.9500	10.56	-0.001
05/20/98	08:32:28	5.0000	10.55	-0.001
05/20/98	08:32:31	5.0500	10.56	-0.001
05/20/98	08:32:34	5.1000	10.55	-0.001
05/20/98	08:32:37	5.1500	10.56	-0.001
05/20/98	08:32:40	5.2000	10.56	-0.001
05/20/98	08:32:43	5.2500	10.55	-0.001
05/20/98	08:32:46	5.3000	10.55	-0.001
05/20/98	08:32:49	5.3500	10.55	-0.001
05/20/98	08:32:52	5.4000	10.55	-0.001
05/20/98	08:32:55	5.4500	10.55	-0.001
05/20/98	08:32:58	5.5000	10.55	-0.001
05/20/98	08:33:01	5.5500	10.55	-0.001
05/20/98	08:33:04	5.6000	10.55	-0.001
05/20/98	08:33:07	5.6500	10.55	-0.001
05/20/98	08:33:10	5.7000	10.55	-0.001
05/20/98	08:33:13	5.7500	10.55	-0.001
05/20/98	08:33:16	5.8000	10.55	-0.001
05/20/98	08:33:19	5.8500	10.55	-0.001
05/20/98	08:33:22	5.9000	10.55	-0.001
05/20/98	08:33:25	5.9500	10.55	-0.001
05/20/98	08:33:28	6.0000	10.55	-0.001
05/20/98	08:33:31	6.0500	10.55	-0.001
05/20/98	08:33:34	6.1000	10.55	-0.001
05/20/98	08:33:37	6.1500	10.55	-0.001
05/20/98	08:33:40	6.2000	10.55	-0.001
05/20/98	08:33:43	6.2500	10.55	-0.001
05/20/98	08:33:46	6.3000	10.55	-0.001
05/20/98	08:33:49	6.3500	10.55	-0.001
05/20/98	08:33:52	6.4000	10.55	-0.001
05/20/98	08:33:55	6.4500	10.55	-0.001
05/20/98	08:33:58	6.5000	10.55	-0.001
05/20/98	08:34:01	6.5500	10.55	-0.001
05/20/98	08:34:04	6.6000	10.55	-0.001

05/20/98	08:34:07	6.6500	10.55	-0.001
05/20/98	08:34:10	6.7000	10.55	-0.001
05/20/98	08:34:13	6.7500	10.55	-0.001
05/20/98	08:34:16	6.8000	10.55	-0.001
05/20/98	08:34:19	6.8500	10.55	-0.001
05/20/98	08:34:22	6.9000	10.55	-0.001
05/20/98	08:34:25	6.9500	10.55	-0.001
05/20/98	08:34:28	7.0000	10.55	-0.001
05/20/98	08:34:31	7.0500	10.54	-0.001
05/20/98	08:34:34	7.1000	10.55	-0.001
05/20/98	08:34:37	7.1500	10.55	-0.001
05/20/98	08:34:40	7.2000	10.55	-0.001
05/20/98	08:34:43	7.2500	10.54	-0.001
05/20/98	08:34:46	7.3000	10.55	-0.001
05/20/98	08:34:49	7.3500	10.54	-0.001
05/20/98	08:34:52	7.4000	10.55	-0.001
05/20/98	08:34:55	7.4500	10.54	-0.001
05/20/98	08:34:58	7.5000	10.54	-0.001
05/20/98	08:35:01	7.5500	10.54	-0.001
05/20/98	08:35:04	7.6000	10.54	-0.001
05/20/98	08:35:07	7.6500	10.54	-0.001
05/20/98	08:35:10	7.7000	10.54	-0.001
05/20/98	08:35:13	7.7500	10.54	-0.001
05/20/98	08:35:16	7.8000	10.54	-0.001
05/20/98	08:35:19	7.8500	10.54	-0.001
05/20/98	08:35:22	7.9000	10.54	-0.001
05/20/98	08:35:25	7.9500	10.54	-0.001
05/20/98	08:35:28	8.0000	10.54	-0.001
05/20/98	08:35:31	8.0500	10.54	-0.001
05/20/98	08:35:34	8.1000	10.54	-0.001
05/20/98	08:35:37	8.1500	10.54	-0.001
05/20/98	08:35:40	8.2000	10.54	-0.001
05/20/98	08:35:43	8.2500	10.54	-0.001
05/20/98	08:35:46	8.3000	10.54	-0.001
05/20/98	08:35:49	8.3500	10.54	-0.001
05/20/98	08:35:52	8.4000	10.54	-0.001
05/20/98	08:35:55	8.4500	10.54	-0.001
05/20/98	08:35:58	8.5000	10.53	-0.001
05/20/98	08:36:01	8.5500	10.53	-0.001
05/20/98	08:36:04	8.6000	10.53	-0.001
05/20/98	08:36:07	8.6500	10.54	-0.001
05/20/98	08:36:10	8.7000	10.53	-0.001
05/20/98	08:36:13	8.7500	10.53	-0.001
05/20/98	08:36:16	8.8000	10.53	-0.001
05/20/98	08:36:19	8.8500	10.53	-0.001
05/20/98	08:36:22	8.9000	10.53	-0.001
05/20/98	08:36:25	8.9500	10.53	-0.001
05/20/98	08:36:28	9.0000	10.53	-0.001
05/20/98	08:36:31	9.0500	10.53	-0.001
05/20/98	08:36:34	9.1000	10.53	-0.001
05/20/98	08:36:37	9.1500	10.54	-0.001
05/20/98	08:36:40	9.2000	10.53	-0.001
05/20/98	08:36:43	9.2500	10.53	-0.001
05/20/98	08:36:46	9.3000	10.53	-0.001
05/20/98	08:36:49	9.3500	10.53	-0.001
05/20/98	08:36:52	9.4000	10.53	-0.001

05/20/98	08:36:55	9.4500	10.53	-0.001	
05/20/98	08:36:58	9.5000	10.53	-0.001	
05/20/98	08:37:01	9.5500	10.53	-0.001	
05/20/98	08:37:04	9.6000	10.53	-0.001	
05/20/98	08:37:07	9.6500	10.53	-0.001	
05/20/98	08:37:10	9.7000	10.53	-0.001	
05/20/98	08:37:13	9.7500	10.53	-0.001	
05/20/98	08:37:16	9.8000	10.53	-0.001	
05/20/98	08:37:19	9.8500	10.53	-0.001	
05/20/98	08:37:22	9.9000	10.53	-0.001	
05/20/98	08:37:25	9.9500	10.53	-0.001	
05/20/98	08:37:28	10.0000	10.53	-0.001	
05/20/98	08:37:31	10.0500	10.53	-0.001	
05/20/98	08:37:34	10.1000	10.53	-0.001	
05/20/98	08:37:37	10.1500	10.53	-0.001	
05/20/98	08:37:40	10.2000	10.53	0.013	
05/20/98	08:37:43	10.2500	10.53	-0.001	
05/20/98	08:37:46	10.3000	10.53	0.001	
05/20/98	08:37:49	10.3500	10.53	-0.001	
05/20/98	08:37:52	10.4000	10.53	-0.001	
05/20/98	08:37:55	10.4500	10.53	-0.001	
05/20/98	08:37:58	10.5000	10.53	-0.003	
05/20/98	08:38:01	10.5500	10.53	-0.001	
05/20/98	08:38:04	10.6000	10.53	-0.003	
05/20/98	08:38:07	10.6500	10.53	-0.003	
05/20/98	08:38:10	10.7000	10.53	-0.003	
05/20/98	08:38:13	10.7500	10.53	-0.001	
05/20/98	08:38:16	10.8000	10.53	-0.003	
05/20/98	08:38:19	10.8500	10.53	-0.001	
05/20/98	08:38:22	10.9000	10.53	-0.003	
05/20/98	08:38:25	10.9500	10.53	-0.003	
05/20/98	08:38:28	11.0000	10.53	-0.003	
05/20/98	08:38:31	11.0500	10.53	-0.003	
05/20/98	08:38:34	11.1000	10.53	-0.003	
05/20/98	08:38:37	11.1500	10.53	-0.003	
05/20/98	08:38:40	11.2000	10.53	-0.003	
05/20/98	08:38:43	11.2500	10.53	-0.003	
05/20/98	08:38:46	11.3000	10.53	-0.001	
05/20/98	08:38:49	11.3500	10.53	0.086	
05/20/98	08:38:52	11.4000	10.53	0.232	
05/20/98	08:38:55	11.4500	10.53	0.058	
05/20/98	08:38:58	11.5000	10.53	0.044	
05/20/98	08:39:01	11.5500	10.53	0.035	
05/20/98	08:39:04	11.6000	10.53	0.027	
05/20/98	08:39:07	11.6500	10.53	0.022	
05/20/98	08:39:10	11.7000	10.53	0.018	
05/20/98	08:39:13	11.7500	10.53	0.015	
05/20/98	08:39:16	11.8000	10.53	0.014	
05/20/98	08:39:19	11.8500	10.53	0.013	
05/20/98	08:39:22	11.9000	10.53	0.011	
05/20/98	08:39:25	11.9500	10.53	0.010	
05/20/98	08:39:28	12.0000	10.53	0.010	
05/20/98	08:39:31	12.0500	10.52	0.008	B-177
05/20/98	08:39:34	12.1000	10.53	0.008	
05/20/98	08:39:37	12.1500	10.53	0.007	
05/20/98	08:39:40	12.2000	10.53	0.007	

05/20/98	08:39:43	12.2500	10.53	0.007
05/20/98	08:39:46	12.3000	10.53	0.006
05/20/98	08:39:49	12.3500	10.53	0.006
05/20/98	08:39:52	12.4000	10.53	0.006
05/20/98	08:39:55	12.4500	10.53	0.006
05/20/98	08:39:58	12.5000	10.53	0.006
05/20/98	08:40:01	12.5500	10.53	0.004
05/20/98	08:40:04	12.6000	10.53	0.006
05/20/98	08:40:07	12.6500	10.52	0.004
05/20/98	08:40:10	12.7000	10.52	0.004
05/20/98	08:40:13	12.7500	10.52	0.004
05/20/98	08:40:16	12.8000	10.52	0.004
05/20/98	08:40:19	12.8500	10.53	0.004
05/20/98	08:40:22	12.9000	10.52	0.004
05/20/98	08:40:25	12.9500	10.53	0.003
05/20/98	08:40:28	13.0000	10.52	0.003
05/20/98	08:40:31	13.0500	10.52	0.003
05/20/98	08:40:34	13.1000	10.52	0.003
05/20/98	08:40:37	13.1500	10.53	0.003
05/20/98	08:40:40	13.2000	10.52	0.001
05/20/98	08:40:43	13.2500	10.53	0.001
05/20/98	08:40:46	13.3000	10.52	0.001
05/20/98	08:40:49	13.3500	10.52	0.003
05/20/98	08:40:52	13.4000	10.53	0.001
05/20/98	08:40:55	13.4500	10.53	0.001
05/20/98	08:40:58	13.5000	10.53	0.003
05/20/98	08:41:01	13.5500	10.52	0.001
05/20/98	08:41:04	13.6000	10.52	0.001
05/20/98	08:41:07	13.6500	10.52	0.001
05/20/98	08:41:10	13.7000	10.52	0.001
05/20/98	08:41:13	13.7500	10.52	0.001
05/20/98	08:41:16	13.8000	10.52	0.001
05/20/98	08:41:19	13.8500	10.52	0.001
05/20/98	08:41:22	13.9000	10.53	0.001
05/20/98	08:41:25	13.9500	10.53	0.001
05/20/98	08:41:28	14.0000	10.53	0.001
05/20/98	08:41:31	14.0500	10.54	0.001
05/20/98	08:41:34	14.1000	10.57	0.003
05/20/98	08:41:37	14.1500	10.58	0.001
05/20/98	08:41:40	14.2000	10.57	0.001
05/20/98	08:41:43	14.2500	10.56	0.001
05/20/98	08:41:46	14.3000	10.56	0.001
05/20/98	08:41:49	14.3500	10.56	0.001
05/20/98	08:41:52	14.4000	10.56	0.001
05/20/98	08:41:55	14.4500	10.56	0.001
05/20/98	08:41:58	14.5000	10.56	0.001
05/20/98	08:42:01	14.5500	10.56	0.001
05/20/98	08:42:04	14.6000	10.55	0.001
05/20/98	08:42:07	14.6500	10.55	0.000
05/20/98	08:42:10	14.7000	10.55	0.000
05/20/98	08:42:13	14.7500	10.55	0.001
05/20/98	08:42:16	14.8000	10.55	0.001
05/20/98	08:42:19	14.8500	10.55	0.000
05/20/98	08:42:22	14.9000	10.55	0.000
05/20/98	08:42:25	14.9500	10.55	0.001
05/20/98	08:42:28	15.0000	10.55	0.001

05/20/98	08:42:31	15.0500	10.55	0.001
05/20/98	08:42:34	15.1000	10.55	0.000
05/20/98	08:42:37	15.1500	10.55	0.000
05/20/98	08:42:40	15.2000	10.55	0.000
05/20/98	08:42:43	15.2500	10.55	0.000
05/20/98	08:42:46	15.3000	10.55	0.000
05/20/98	08:42:49	15.3500	10.55	0.000
05/20/98	08:42:52	15.4000	10.55	0.000
05/20/98	08:42:55	15.4500	10.55	0.000
05/20/98	08:42:58	15.5000	10.55	0.000
05/20/98	08:43:01	15.5500	10.55	0.000
05/20/98	08:43:04	15.6000	10.55	0.000
05/20/98	08:43:07	15.6500	10.54	0.000
05/20/98	08:43:10	15.7000	10.55	0.000
05/20/98	08:43:13	15.7500	10.55	0.000
05/20/98	08:43:16	15.8000	10.55	0.000
05/20/98	08:43:19	15.8500	10.54	0.000
05/20/98	08:43:22	15.9000	10.54	0.000
05/20/98	08:43:25	15.9500	10.54	0.000
05/20/98	08:43:28	16.0000	10.54	0.000
05/20/98	08:43:31	16.0500	10.55	0.000
05/20/98	08:43:34	16.1000	10.54	0.000
05/20/98	08:43:37	16.1500	10.55	0.000
05/20/98	08:43:40	16.2000	10.55	0.000
05/20/98	08:43:43	16.2500	10.54	0.000
05/20/98	08:43:46	16.3000	10.54	0.000
05/20/98	08:43:49	16.3500	10.54	0.000
05/20/98	08:43:52	16.4000	10.54	0.000
05/20/98	08:43:55	16.4500	10.54	0.000
05/20/98	08:43:58	16.5000	10.54	0.000
05/20/98	08:44:01	16.5500	10.55	0.000
05/20/98	08:44:04	16.6000	10.54	0.000

05-20-88

BKGmw 13

$25\frac{7}{8} \times 5$

12.19

15.96

4.06m

15.96' - 19.5

Discplacement = 0.232m

0.0

25.5

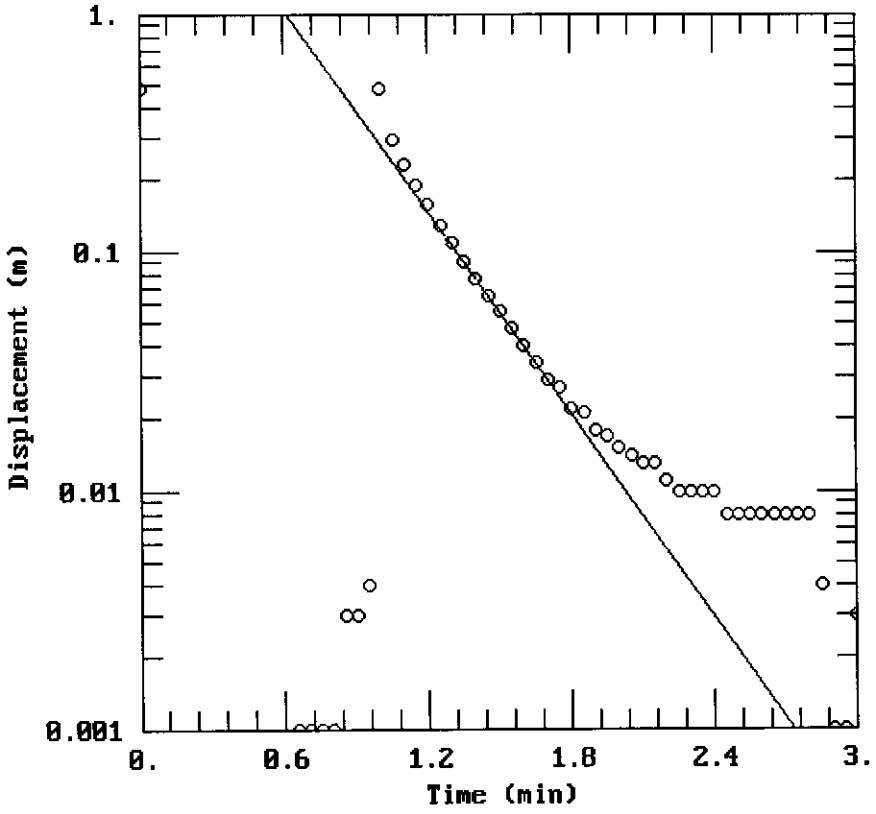
11.0

14.5

4.42

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-8218-011

BKGmw-016 Slug Test Solution



DATA SET:
BKGMW16.AQT
10/05/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 0.485 m
r_c= 0.025 m
r_w= 0.102 m
L = 3.88 m
b = 4.54 m
H = 4.54 m

PARAMETER ESTIMATES:
K = 0.001258 cm/sec
y0 = 7.423 m

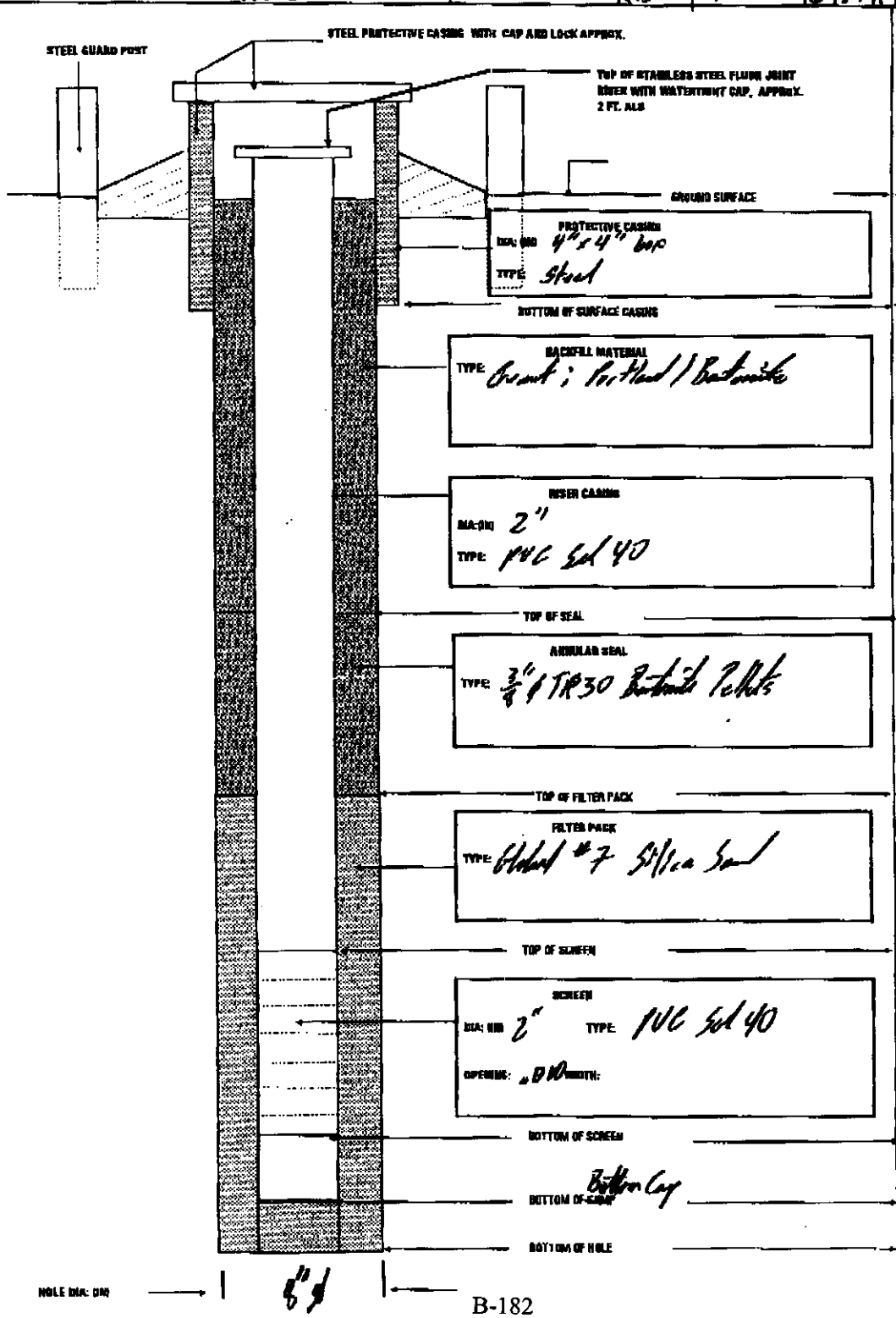
AQTESOLV

6(

MONITORING WELL

PROJECT NAME: Phase II RI/FS of WBG and Background Investigation DELIVERY ORDER NO: 0980

WELL NUMBER: BKGMW-016		BEGIN: 5 May 98	END: 5 May 98
COORDINATES: N: 553983.581 E: 2342467.975		REFERENCE POINT: TOP of Riser Pipe	ELEVATION: 1098.419 MSL



HTRW DRILLING LOG

Phase II RI at WBG and Background Investigation | INSPECTOR Brad Baker | SHEET | BKGmw-016

DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
1	Clayey SILT; clay ~30%, silt ~60%, sand v. fine ~10%; Lt Yellowish Brown w/ variegated grey clay; poorly sorted; subrounded; mod plasticity; firm; moist (ML)	PID - 0 ppm LEL - 0% O_2 - 20.8%	NA	BK#818 1109 hrs	1-3 Ft bls Blows 6-7-9-12 Sample collected w/ 2" ϕ 2 Ft length Split Spoon 80% recovery
3	SAME AS ABOVE	PID - 0 ppm LEL - 0% O_2 - 20.8%	NA	NA	3-4 Ft collected w/ 2" ϕ 2 Ft length split spoon; blows 15-15 Converted to 4" ϕ 5 Ft length continuous split barrel 4-9 Ft run 95% recovery Wet cuttings @ 7 Ft bls Saturated cuttings present @ 10 Ft bls 9-12 Ft run 100% recovery
4.5	SAND; sand: coarse ~80%, granular ~10%, silt ~10%; Med Brown, subrounded; mod sorted; nonplasticity; soft; wet (SP)	PID - 0 ppm LEL - 0% O_2 - 20.8%	NA	BK#819 (1145 hrs) 9.5-9.0 Ft	Shelby Tube 12-14 Ft bls 0% recovery augered to 14 Ft Attempted Shelby Tube 14-16 Ft bls
9.0	Clayey SILT; clay ~25%, silt ~75%; Lt Bluish Grey; poorly sorted; subrounded; high mod-high plasticity; slightly firm; moist (MH)	PID - 0 ppm LEL - 0% O_2 - 20.8%	NA	NA	
12.0	Shelby Tube - No Recovery	PID - 0 ppm LEL - 0% O_2 - 20.8%	NA	NA	12-14 Ft Shelby - 0% recovery granular sand
14	Shelby Tube - 75% Recovery	PID - 0 ppm LEL - 0% O_2 - 20.8%	✓	NA	14-16 Ft Shelby Tube 75% recovery 1218 hr H_2O @ 4.20 Ft bls 1410 hr H_2O @ 2.80 Ft bls
16	SAND; med-fine 85% silt ~15%; Med Grey; well sorted, subrounded; soft; no plasticity; wet (SP)	PID - 0 ppm LEL - 0% O_2 - 20.8%	NA	NA	16-19 Ft run 33.3% recovery
19	19 Ft = TD				

B-183

PROJECT Phase II RI at Winklepeck Burning Ground and Background Investigation N 553983.501 E 2342407.675 ELEV. 1098.419 | HOLE NO BKGmw-016

IN_SITU INC. TROLL
Serial number: 00000971
Unit name: RVAAP

Report generated: 10/01/98 11:02:53
Report from file: C:\MYDOCU~1\RAVENN~1\BKGMW016.BIN

Test name:BKGmw016

Test defined on: 05/21/98 10:37:08
Test started on: 05/21/98 10:37:37
Test stopped on: 05/21/98 10:42:00
Test extracted on: 05/21/98 16:52:46

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 88

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 4.441 Meters H2O

Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O	
05/21/98	10:37:37	0.0000	23.62	0.000	
05/21/98	10:37:40	0.0500	23.62	0.001	
05/21/98	10:37:43	0.1000	23.62	0.003	
05/21/98	10:37:46	0.1500	23.58	0.003	
05/21/98	10:37:49	0.2000	23.56	0.003	
05/21/98	10:37:52	0.2500	23.55	0.004	
05/21/98	10:37:55	0.3000	23.55	0.004	
05/21/98	10:37:58	0.3500	23.55	0.004	
05/21/98	10:38:01	0.4000	23.53	0.000	
05/21/98	10:38:04	0.4500	23.53	-0.001	
05/21/98	10:38:07	0.5000	23.53	0.000	
05/21/98	10:38:10	0.5500	23.52	0.000	
05/21/98	10:38:13	0.6000	23.53	0.000	
05/21/98	10:38:16	0.6500	23.55	0.001	
05/21/98	10:38:19	0.7000	23.56	0.001	
05/21/98	10:38:22	0.7500	23.55	0.001	
05/21/98	10:38:25	0.8000	23.56	0.001	
05/21/98	10:38:28	0.8500	23.55	0.003	B-184
05/21/98	10:38:31	0.9000	23.55	0.003	
05/21/98	10:38:34	0.9500	23.55	0.004	
05/21/98	10:38:37	1.0000	23.54	0.485	

05/21/98	10:38:40	1.0500	23.54	0.292	
05/21/98	10:38:43	1.1000	23.54	0.232	
05/21/98	10:38:46	1.1500	23.53	0.189	
05/21/98	10:38:49	1.2000	23.53	0.156	
05/21/98	10:38:52	1.2500	23.53	0.129	
05/21/98	10:38:55	1.3000	23.52	0.108	
05/21/98	10:38:58	1.3500	23.52	0.091	
05/21/98	10:39:01	1.4000	23.51	0.077	
05/21/98	10:39:04	1.4500	23.47	0.065	
05/21/98	10:39:07	1.5000	23.46	0.056	
05/21/98	10:39:10	1.5500	23.45	0.047	
05/21/98	10:39:13	1.6000	23.45	0.040	
05/21/98	10:39:16	1.6500	23.45	0.034	
05/21/98	10:39:19	1.7000	23.44	0.029	
05/21/98	10:39:22	1.7500	23.44	0.027	
05/21/98	10:39:25	1.8000	23.44	0.022	
05/21/98	10:39:28	1.8500	23.43	0.021	
05/21/98	10:39:31	1.9000	23.43	0.018	
05/21/98	10:39:34	1.9500	23.43	0.017	
05/21/98	10:39:37	2.0000	23.43	0.015	
05/21/98	10:39:40	2.0500	23.45	0.014	
05/21/98	10:39:43	2.1000	23.45	0.013	
05/21/98	10:39:46	2.1500	23.45	0.013	
05/21/98	10:39:49	2.2000	23.45	0.011	
05/21/98	10:39:52	2.2500	23.44	0.010	
05/21/98	10:39:55	2.3000	23.44	0.010	
05/21/98	10:39:58	2.3500	23.44	0.010	
05/21/98	10:40:01	2.4000	23.44	0.010	
05/21/98	10:40:04	2.4500	23.43	0.008	
05/21/98	10:40:07	2.5000	23.43	0.008	
05/21/98	10:40:10	2.5500	23.43	0.008	
05/21/98	10:40:13	2.6000	23.36	0.008	
05/21/98	10:40:16	2.6500	23.36	0.008	
05/21/98	10:40:19	2.7000	23.36	0.008	
05/21/98	10:40:22	2.7500	23.35	0.008	
05/21/98	10:40:25	2.8000	23.35	0.008	
05/21/98	10:40:28	2.8500	23.34	0.004	
05/21/98	10:40:31	2.9000	23.35	0.001	
05/21/98	10:40:34	2.9500	23.33	0.001	
05/21/98	10:40:37	3.0000	23.33	0.003	
05/21/98	10:40:40	3.0500	23.36	-0.001	
05/21/98	10:40:43	3.1000	23.36	-0.004	
05/21/98	10:40:46	3.1500	23.35	-0.010	
05/21/98	10:40:49	3.2000	23.36	-0.007	
05/21/98	10:40:52	3.2500	23.35	-0.007	
05/21/98	10:40:55	3.3000	23.34	-0.010	
05/21/98	10:40:58	3.3500	23.34	-0.013	
05/21/98	10:41:01	3.4000	23.33	-0.011	
05/21/98	10:41:04	3.4500	23.33	-0.010	
05/21/98	10:41:07	3.5000	23.33	-0.010	
05/21/98	10:41:10	3.5500	23.27	-0.014	
05/21/98	10:41:13	3.6000	23.32	-0.014	
05/21/98	10:41:16	3.6500	23.28	-0.013	B-185
05/21/98	10:41:19	3.7000	23.27	-0.011	
05/21/98	10:41:22	3.7500	23.27	-0.010	
05/21/98	10:41:25	3.8000	23.26	-0.008	

05/21/98	10:41:28	3.8500	23.26	-0.010
05/21/98	10:41:31	3.9000	23.25	-0.011
05/21/98	10:41:34	3.9500	23.25	-0.015
05/21/98	10:41:37	4.0000	23.26	-0.013
05/21/98	10:41:40	4.0500	23.25	-0.011
05/21/98	10:41:43	4.1000	23.25	-0.010
05/21/98	10:41:46	4.1500	23.24	-0.010
05/21/98	10:41:49	4.2000	23.24	-0.008
05/21/98	10:41:52	4.2500	23.24	-0.007
05/21/98	10:41:55	4.3000	23.24	-0.006
05/21/98	10:41:58	4.3500	23.24	-0.006

21.46
6.56
14.90 = 4.54 m

MW016

5-21.98

disc = .485 m

casing r = 0.025

4.54 well r = 0.102

Sed thick = 4.54

Screen l = 3.88

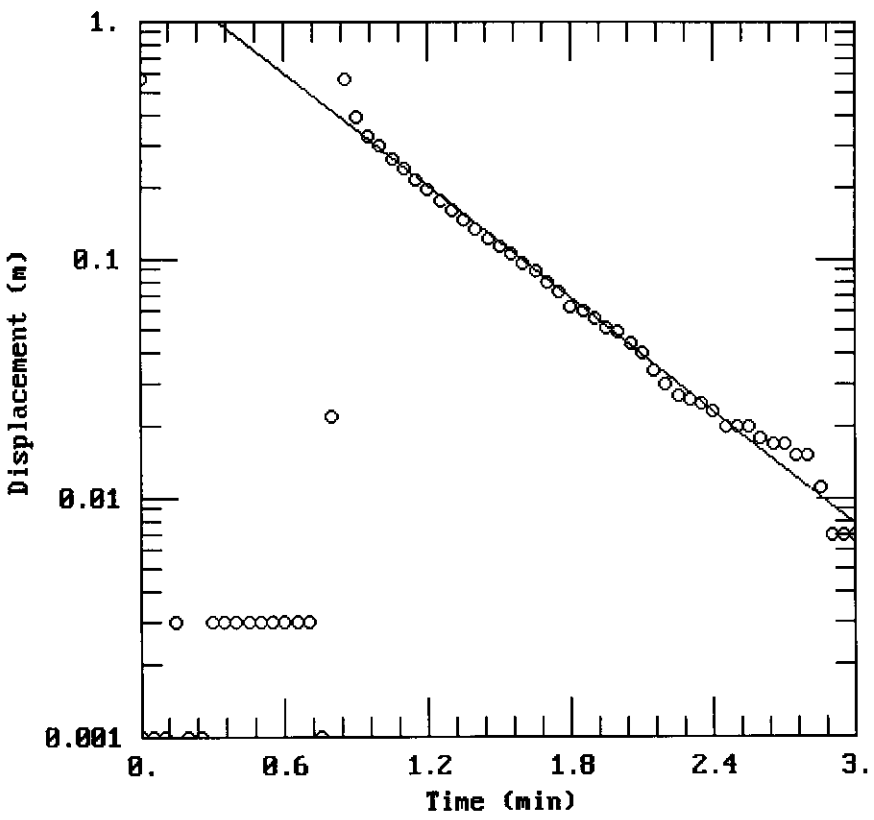
water column = 4.54

Gravel = 0

71
18.63
5.90
12.73
3.88 m

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-8218-011

BKGmw-018 Slug Test Solution



DATA SET:
BKGMW18.AQT
10/05/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 0.569 m
r_c= 0.025 m
r_w= 0.0762 m
L = 3.88 m
b = 3.88 m
H = 3.88 m

PARAMETER ESTIMATES:
K = 0.002555 cm/sec
y0 = 1.799 m

AQTESOLV

IN_SITU INC. TROLL
Serial number: 00000971
Unit name: RVAAP

Report generated: 10/01/98 11:07:17
Report from file: C:\MYDOCU~1\RAVENN~1\BKGMW018.BIN

Test name:BKGmw018

Test defined on: 05/21/98 09:11:26
Test started on: 05/21/98 09:13:34
Test stopped on: 05/21/98 09:17:38
Test extracted on: 05/21/98 16:50:05

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 81

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 3.871 Meters H2O

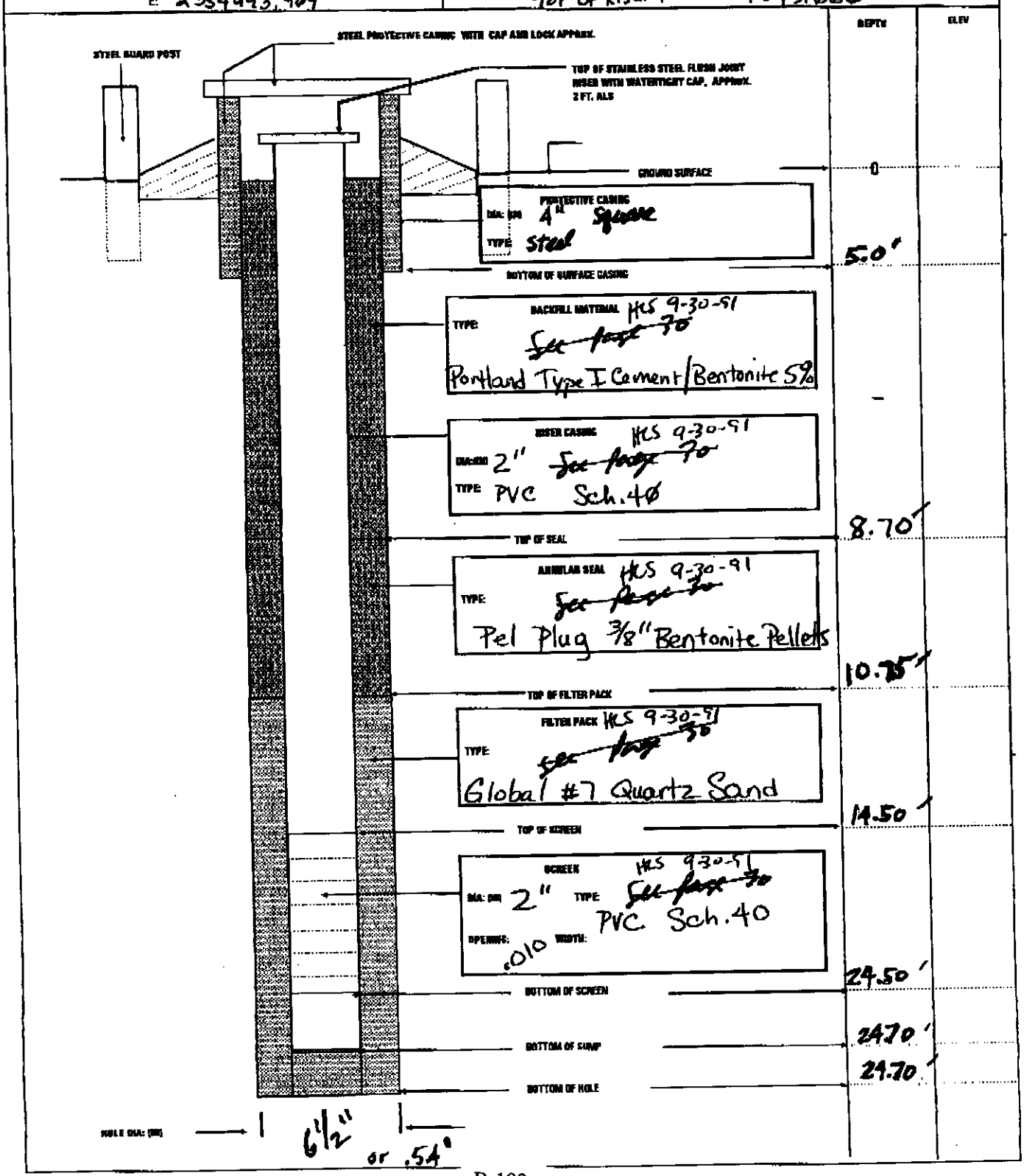
Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O
05/21/98	09:13:34	0.0000	22.40	0.000
05/21/98	09:13:37	0.0500	22.47	0.000
05/21/98	09:13:40	0.1000	22.46	0.000
05/21/98	09:13:43	0.1500	22.46	0.000
05/21/98	09:13:46	0.2000	22.45	0.000
05/21/98	09:13:49	0.2500	22.45	0.000
05/21/98	09:13:52	0.3000	22.45	0.000
05/21/98	09:13:55	0.3500	22.43	0.000
05/21/98	09:13:58	0.4000	22.43	-0.001
05/21/98	09:14:01	0.4500	22.45	-0.001
05/21/98	09:14:04	0.5000	22.42	-0.001
05/21/98	09:14:07	0.5500	22.42	-0.001
05/21/98	09:14:10	0.6000	22.40	-0.001
05/21/98	09:14:13	0.6500	22.42	-0.001
05/21/98	09:14:16	0.7000	22.41	-0.001
05/21/98	09:14:19	0.7500	22.40	-0.001
05/21/98	09:14:22	0.8000	22.40	-0.001
05/21/98	09:14:25	0.8500	22.40	-0.001
05/21/98	09:14:28	0.9000	22.40	-0.001
05/21/98	09:14:31	0.9500	22.40	-0.001
05/21/98	09:14:34	1.0000	22.40	-0.001

05/21/98	09:14:37	1.0500	22.40	-0.001
05/21/98	09:14:40	1.1000	22.40	-0.001
05/21/98	09:14:43	1.1500	22.40	-0.003
05/21/98	09:14:46	1.2000	22.40	-0.001
05/21/98	09:14:49	1.2500	22.40	-0.001
05/21/98	09:14:52	1.3000	22.39	-0.003
05/21/98	09:14:55	1.3500	22.40	-0.003
05/21/98	09:14:58	1.4000	22.40	-0.003
05/21/98	09:15:01	1.4500	22.40	-0.003
05/21/98	09:15:04	1.5000	22.40	-0.003
05/21/98	09:15:07	1.5500	22.40	-0.003
05/21/98	09:15:10	1.6000	22.39	-0.003
05/21/98	09:15:13	1.6500	22.40	-0.003
05/21/98	09:15:16	1.7000	22.39	-0.003
05/21/98	09:15:19	1.7500	22.39	0.001
05/21/98	09:15:22	1.8000	22.40	-0.022
05/21/98	09:15:25	1.8500	22.39	0.569
05/21/98	09:15:28	1.9000	22.39	0.393
05/21/98	09:15:31	1.9500	22.39	0.330
05/21/98	09:15:34	2.0000	22.39	0.297
05/21/98	09:15:37	2.0500	22.39	0.265
05/21/98	09:15:40	2.1000	22.39	0.238
05/21/98	09:15:43	2.1500	22.39	0.214
05/21/98	09:15:46	2.2000	22.39	0.195
05/21/98	09:15:49	2.2500	22.39	0.175
05/21/98	09:15:52	2.3000	22.39	0.160
05/21/98	09:15:55	2.3500	22.39	0.146
05/21/98	09:15:58	2.4000	22.39	0.134
05/21/98	09:16:01	2.4500	22.39	0.122
05/21/98	09:16:04	2.5000	22.38	0.112
05/21/98	09:16:07	2.5500	22.39	0.104
05/21/98	09:16:10	2.6000	22.39	0.096
05/21/98	09:16:13	2.6500	22.38	0.089
05/21/98	09:16:16	2.7000	22.38	0.080
05/21/98	09:16:19	2.7500	22.38	0.072
05/21/98	09:16:22	2.8000	22.38	0.063
05/21/98	09:16:25	2.8500	22.38	0.060
05/21/98	09:16:28	2.9000	22.38	0.056
05/21/98	09:16:31	2.9500	22.38	0.051
05/21/98	09:16:34	3.0000	22.37	0.049
05/21/98	09:16:37	3.0500	22.37	0.044
05/21/98	09:16:40	3.1000	22.39	0.040
05/21/98	09:16:43	3.1500	22.39	0.034
05/21/98	09:16:46	3.2000	22.37	0.030
05/21/98	09:16:49	3.2500	22.36	0.027
05/21/98	09:16:52	3.3000	22.36	0.026
05/21/98	09:16:55	3.3500	22.38	0.025
05/21/98	09:16:58	3.4000	22.39	0.023
05/21/98	09:17:01	3.4500	22.39	0.020
05/21/98	09:17:04	3.5000	22.40	0.020
05/21/98	09:17:07	3.5500	22.40	0.020
05/21/98	09:17:10	3.6000	22.40	0.018
05/21/98	09:17:13	3.6500	22.40	0.017
05/21/98	09:17:16	3.7000	22.40	0.017
05/21/98	09:17:19	3.7500	22.40	0.015
05/21/98	09:17:22	3.8000	22.40	0.015

05/21/98	09:17:25	3.8500	22.39	0.011
05/21/98	09:17:28	3.9000	22.39	0.007
05/21/98	09:17:31	3.9500	22.39	0.007
05/21/98	09:17:34	4.0000	22.39	0.007

PROJECT NAME: [illegible]

WELL NUMBER: BKGMW-18		BEGIN: 5-6-98 1600	END: 5-7-98 0830
COORDINATES: N: 570873.349 E: 2354993.909	REFERENCE POINT: Top of Riser Pipe	ELEVATION: 1043.060 MSL	



HTRW DRILLING LOG

BKGMW-01B

Phase II RI at WBG and Background Investigation	INSPECTOR Mark Ochs	SHEET 1

DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
1	Topsoil DK gray SANDY SILT Roots, wood, etc	0.0 ppm			SANDSTONE cont'd Tannish gray in color
2	SANDY SILT (ML): LT. Brown F-V.F Sand; moist; soft; maybe 5-10% clay				
3	SANDY GRAVEL (GW): F-C Sand and F-C Gravel To 3" Sub% -4; LT. Brn; moist-wet; loose				
4	Weathered Sandstone reddish Brn; V. well sorted				
5	SANDSTONE LT. Brown well sorted; Predom F. grained - M. grained Predom Quartz Reddish Brn streaks in Top 10' of SS X-Sys %; Horizontal Bedding; Thickly Bedded		5-13.5 Core Box # MW1B-1		5-15 core Only 5-11.5 lost Bottom 3.5' Drillers Able to Recover another 2' OD 5-13.5' Core Box # MW1B-1 BOB at 25' BGS
6					
7					
8					
9					
10					
11					
12					
13					
14					
15			15-25 Core Box # MW1B-2		
16					
17					
18					
19					
20					

PROJECT Phase II RI at Winklepeck Burning Ground and Background Investigation
N570873.349 E2354993.909 ELEV. 1043.060

HOLE NO BK6 MW01B

BKbmw017

05/21/98

Limit du

6.16'
27.70
14.92
12.73
3.88m

3.76'
24.70
10.75
13.95
4.25m

BKbmw018

05/21/98

displacement = .569 m

r well = 0.025

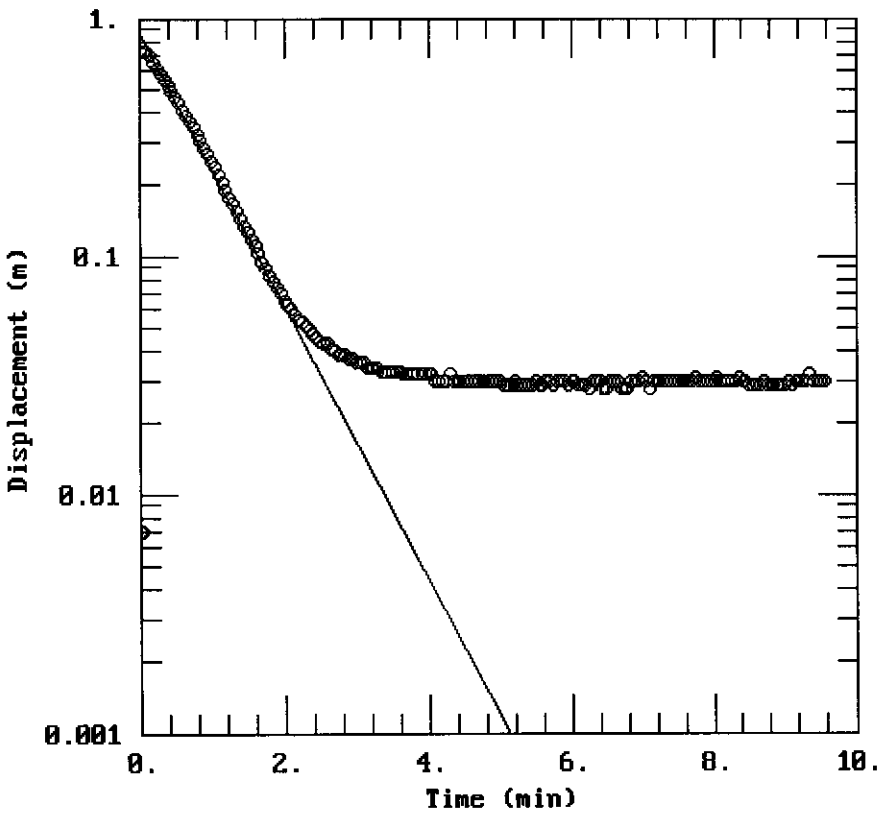
r BH = 0.0762

sat Th, clc =

Gravel
= .30

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-8218-011

BKGmw-021 Slug Test Solution



DATA SET:
BKGMW21.AQT
10/05/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

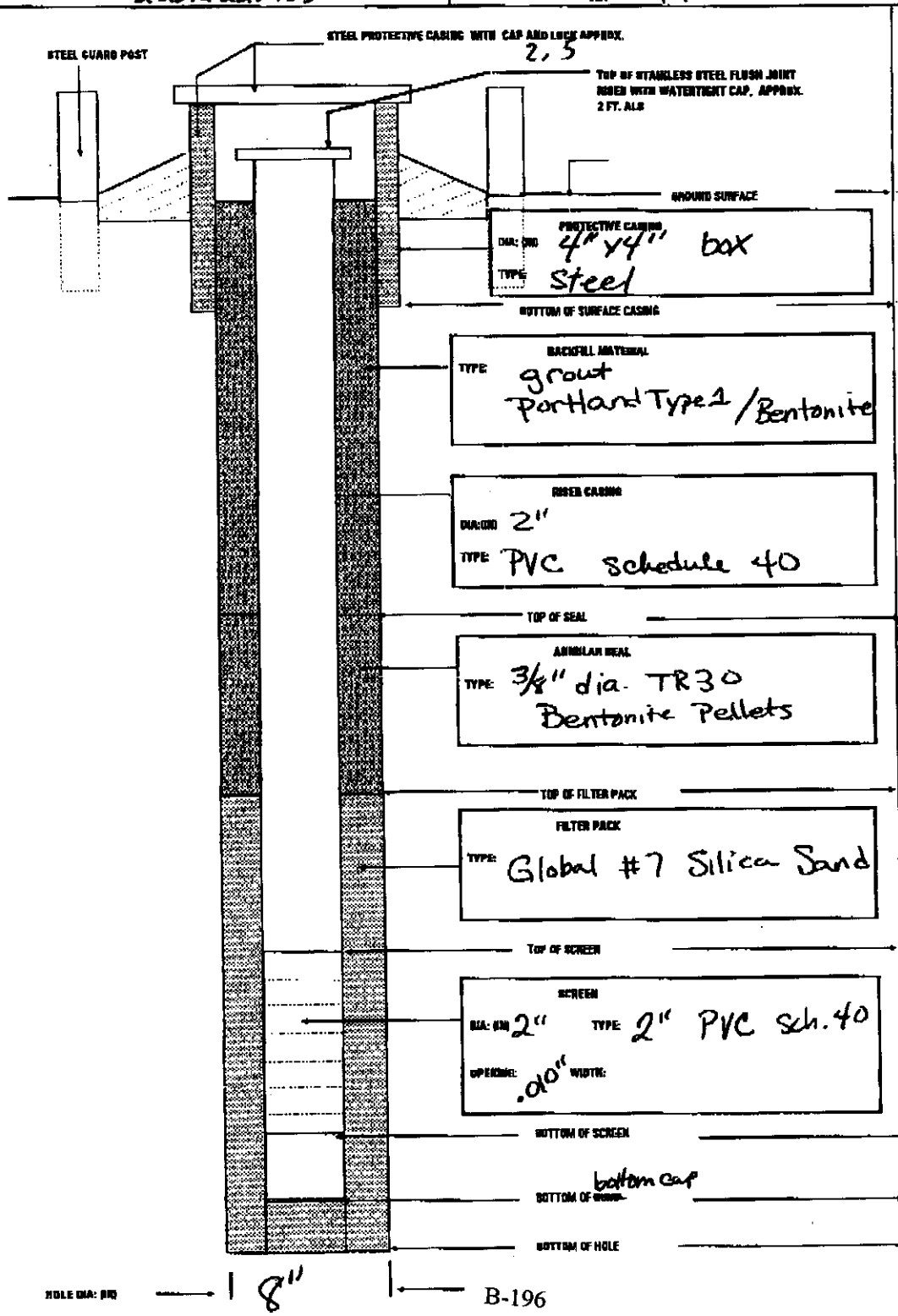
TEST DATA:
H0= 0.73 m
r_c= 0.025 m
r_w= 0.102 m
L = 2.65 m
b = 2.65 m
H = 2.65 m

PARAMETER ESTIMATES:
K = 0.003596 cm/sec
y0 = 0.8499 m

AQTESOLV

PROJECT NAME: Phase II RI @ WBG and Background Investigation DELIVERY ORDER NO.: 0004

WELL NUMBER: BKGmw-021		BEGIN: 1055	END: 1405
COORDINATES: N: 571016.748 E: 2367622.953		REFERENCE POINT: top of Riser pipe	ELEVATION: 972.159 MSL



Phase II RI at WBG and Background Investigation | INSPECTOR H. SMITH | SHEET

DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
0	• Clayey silt, 25% clay, 70% silt, ~5% V. fine sand Hard (ML) Med. yellowish brown w/ "wisp" of lt. grey medium plasticity Moist Poorly sorted.	0% LEL 0 PID 20.7 O2		BK0822 @1'-3'	Blow count for 1'-3' intravel = 9, 6, 12, 14 0 recovery - ck'd top in shoe Stopped at 1 Ft and resampled 50% recovery 3-4' split-spoon blows 16-25 ~50% recovery
4	Slight color change @ to light yellowish brown @ 4' • Core displays fissle characteristics • other characteristics are same as above (till)		2 Geotech Samples taken from 6'-7' and 9'-10'	BK0823 @5'-6'	4'→9' run = ~100% recovery
10	(SP) Poorly graded sand with silt med. grained sand Subangular Moderately → well sorted Sand unit very soft 30-35% silt 65% - 70% Sand	0% LEL 0 PID 20.7 O2	~~Geotech samples from 6'-7' and from 9'-10'~~ HLS 5-8-96	N/a	9'→12' run = ~40% recovery - hit sand @ ~10', the sand did not recover well
12	Shelby tube appears to be sand on both ends.	0% LEL 0 PID 20.7 O2	Shelby tube 12'-14'	N/a	Shelby tube from 12'→14' - 3' of water evident on drill string upon Shelby tube removal 100% recovery appears to be sand on both ends
14	Same sand as above Poorly graded sand w/ silt (SP) med. Subangular grains ~35% silt ~65% sand. Moderately sorted very Soft				Wet cuttings @ 14' Saturated Cuttings @ ~18' bgs Soft drilling to 18' then "Stiffened up" drill string wet ~3½' from bottom upon removal from hole of TD-19' Water level at 17.22'
18'	Sandy clayey silt M. brownish yellow w/ M. grey variations 25% sand 25% clay 50% silt				at ~18' drilled into firmer clay
19	bottom of hole = 19'				

B-197

PROJECT Phase II RI at Winklepeck Burning Ground and Background Investigation N571016.748 E 236722.953 ELEV. 972.159 | HOLE NO BKGMW-021

IN_SITU INC. TROLL
Serial number: 00000971
Unit name: RVAAP

Report generated: 10/01/98 11:12:56
Report from file: C:\MYDOCU~1\RAVENN~1\BKGMW021.BIN

Test name:BKGmw-021

Test defined on: 05/20/98 10:11:58
Test started on: 05/20/98 10:12:21
Test stopped on: 05/20/98 10:24:27
Test extracted on: 05/21/98 16:53:56

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 242

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 2.143 Meters H2O

Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O
05/20/98	10:12:21	0.0000	11.57	0.000
05/20/98	10:12:24	0.0500	11.56	-0.001
05/20/98	10:12:27	0.1000	11.55	0.000
05/20/98	10:12:30	0.1500	11.53	0.000
05/20/98	10:12:33	0.2000	11.53	0.001
05/20/98	10:12:36	0.2500	11.52	0.000
05/20/98	10:12:39	0.3000	11.52	0.000
05/20/98	10:12:42	0.3500	11.51	0.001
05/20/98	10:12:45	0.4000	11.50	0.000
05/20/98	10:12:48	0.4500	11.50	0.000
05/20/98	10:12:51	0.5000	11.50	0.000
05/20/98	10:12:54	0.5500	11.49	0.001
05/20/98	10:12:57	0.6000	11.49	0.001
05/20/98	10:13:00	0.6500	11.49	0.001
05/20/98	10:13:03	0.7000	11.49	0.001
05/20/98	10:13:06	0.7500	11.48	0.001
05/20/98	10:13:09	0.8000	11.48	0.001
05/20/98	10:13:12	0.8500	11.49	0.002
05/20/98	10:13:15	0.9000	11.49	0.002
05/20/98	10:13:18	0.9500	11.53	0.004
05/20/98	10:13:21	1.0000	11.52	0.003

05/20/98	10:13:24	1.0500	11.51	0.003
05/20/98	10:13:27	1.1000	11.50	0.002
05/20/98	10:13:30	1.1500	11.50	0.002
05/20/98	10:13:33	1.2000	11.50	0.002
05/20/98	10:13:36	1.2500	11.50	0.004
05/20/98	10:13:39	1.3000	11.51	0.003
05/20/98	10:13:42	1.3500	11.50	0.002
05/20/98	10:13:45	1.4000	11.51	0.004
05/20/98	10:13:48	1.4500	11.51	0.004
05/20/98	10:13:51	1.5000	11.52	0.004
05/20/98	10:13:54	1.5500	11.52	0.004
05/20/98	10:13:57	1.6000	11.55	0.006
05/20/98	10:14:00	1.6500	11.55	0.004
05/20/98	10:14:03	1.7000	11.55	0.006
05/20/98	10:14:06	1.7500	11.55	0.004
05/20/98	10:14:09	1.8000	11.55	0.006
05/20/98	10:14:12	1.8500	11.55	0.006
05/20/98	10:14:15	1.9000	11.55	0.006
05/20/98	10:14:18	1.9500	11.57	0.007
05/20/98	10:14:21	2.0000	11.59	0.006
05/20/98	10:14:24	2.0500	11.59	0.006
05/20/98	10:14:27	2.1000	11.58	0.007
05/20/98	10:14:30	2.1500	11.58	0.007
05/20/98	10:14:33	2.2000	11.58	0.007
05/20/98	10:14:36	2.2500	11.58	0.006
05/20/98	10:14:39	2.3000	11.59	0.007
05/20/98	10:14:42	2.3500	11.59	0.006
05/20/98	10:14:45	2.4000	11.59	0.060
05/20/98	10:14:48	2.4500	11.59	0.008
05/20/98	10:14:51	2.5000	11.59	0.007
05/20/98	10:14:54	2.5500	11.59	0.007
05/20/98	10:14:57	2.6000	11.59	0.730
05/20/98	10:15:00	2.6500	11.60	0.699
05/20/98	10:15:03	2.7000	11.60	0.651
05/20/98	10:15:06	2.7500	11.61	0.615
05/20/98	10:15:09	2.8000	11.61	0.582
05/20/98	10:15:12	2.8500	11.61	0.552
05/20/98	10:15:15	2.9000	11.61	0.521
05/20/98	10:15:18	2.9500	11.61	0.492
05/20/98	10:15:21	3.0000	11.61	0.464
05/20/98	10:15:24	3.0500	11.62	0.438
05/20/98	10:15:27	3.1000	11.62	0.413
05/20/98	10:15:30	3.1500	11.62	0.388
05/20/98	10:15:33	3.2000	11.62	0.366
05/20/98	10:15:36	3.2500	11.62	0.344
05/20/98	10:15:39	3.3000	11.63	0.323
05/20/98	10:15:42	3.3500	11.63	0.302
05/20/98	10:15:45	3.4000	11.63	0.284
05/20/98	10:15:48	3.4500	11.63	0.266
05/20/98	10:15:51	3.5000	11.64	0.250
05/20/98	10:15:54	3.5500	11.64	0.234
05/20/98	10:15:57	3.6000	11.64	0.218
05/20/98	10:16:00	3.6500	11.64	0.204
05/20/98	10:16:03	3.7000	11.64	0.190
05/20/98	10:16:06	3.7500	11.65	0.177
05/20/98	10:16:09	3.8000	11.65	0.167

05/20/98	10:16:12	3.8500	11.65	0.154
05/20/98	10:16:15	3.9000	11.66	0.144
05/20/98	10:16:18	3.9500	11.66	0.134
05/20/98	10:16:21	4.0000	11.67	0.126
05/20/98	10:16:24	4.0500	11.67	0.117
05/20/98	10:16:27	4.1000	11.67	0.110
05/20/98	10:16:30	4.1500	11.67	0.103
05/20/98	10:16:33	4.2000	11.68	0.094
05/20/98	10:16:36	4.2500	11.68	0.089
05/20/98	10:16:39	4.3000	11.68	0.083
05/20/98	10:16:42	4.3500	11.69	0.078
05/20/98	10:16:45	4.4000	11.69	0.074
05/20/98	10:16:48	4.4500	11.69	0.070
05/20/98	10:16:51	4.5000	11.69	0.065
05/20/98	10:16:54	4.5500	11.69	0.063
05/20/98	10:16:57	4.6000	11.69	0.060
05/20/98	10:17:00	4.6500	11.69	0.057
05/20/98	10:17:03	4.7000	11.70	0.054
05/20/98	10:17:06	4.7500	11.70	0.053
05/20/98	10:17:09	4.8000	11.70	0.051
05/20/98	10:17:12	4.8500	11.70	0.049
05/20/98	10:17:15	4.9000	11.69	0.047
05/20/98	10:17:18	4.9500	11.69	0.046
05/20/98	10:17:21	5.0000	11.70	0.044
05/20/98	10:17:24	5.0500	11.70	0.043
05/20/98	10:17:27	5.1000	11.70	0.043
05/20/98	10:17:30	5.1500	11.69	0.041
05/20/98	10:17:33	5.2000	11.69	0.040
05/20/98	10:17:36	5.2500	11.69	0.039
05/20/98	10:17:39	5.3000	11.70	0.039
05/20/98	10:17:42	5.3500	11.71	0.039
05/20/98	10:17:45	5.4000	11.74	0.037
05/20/98	10:17:48	5.4500	11.73	0.037
05/20/98	10:17:51	5.5000	11.71	0.036
05/20/98	10:17:54	5.5500	11.71	0.036
05/20/98	10:17:57	5.6000	11.71	0.036
05/20/98	10:18:00	5.6500	11.71	0.034
05/20/98	10:18:03	5.7000	11.70	0.034
05/20/98	10:18:06	5.7500	11.70	0.034
05/20/98	10:18:09	5.8000	11.70	0.034
05/20/98	10:18:12	5.8500	11.70	0.033
05/20/98	10:18:15	5.9000	11.69	0.033
05/20/98	10:18:18	5.9500	11.69	0.033
05/20/98	10:18:21	6.0000	11.69	0.033
05/20/98	10:18:24	6.0500	11.68	0.033
05/20/98	10:18:27	6.1000	11.68	0.033
05/20/98	10:18:30	6.1500	11.67	0.032
05/20/98	10:18:33	6.2000	11.67	0.032
05/20/98	10:18:36	6.2500	11.67	0.032
05/20/98	10:18:39	6.3000	11.65	0.032
05/20/98	10:18:42	6.3500	11.65	0.032
05/20/98	10:18:45	6.4000	11.65	0.032
05/20/98	10:18:48	6.4500	11.64	0.032
05/20/98	10:18:51	6.5000	11.64	0.032
05/20/98	10:18:54	6.5500	11.64	0.032
05/20/98	10:18:57	6.6000	11.63	0.030

05/20/98	10:19:00	6.6500	11.62	0.030
05/20/98	10:19:03	6.7000	11.62	0.030
05/20/98	10:19:06	6.7500	11.62	0.030
05/20/98	10:19:09	6.8000	11.61	0.032
05/20/98	10:19:12	6.8500	11.61	0.030
05/20/98	10:19:15	6.9000	11.60	0.030
05/20/98	10:19:18	6.9500	11.60	0.030
05/20/98	10:19:21	7.0000	11.59	0.030
05/20/98	10:19:24	7.0500	11.58	0.030
05/20/98	10:19:27	7.1000	11.58	0.030
05/20/98	10:19:30	7.1500	11.58	0.030
05/20/98	10:19:33	7.2000	11.57	0.030
05/20/98	10:19:36	7.2500	11.56	0.030
05/20/98	10:19:39	7.3000	11.55	0.030
05/20/98	10:19:42	7.3500	11.55	0.030
05/20/98	10:19:45	7.4000	11.54	0.030
05/20/98	10:19:48	7.4500	11.53	0.030
05/20/98	10:19:51	7.5000	11.53	0.030
05/20/98	10:19:54	7.5500	11.52	0.029
05/20/98	10:19:57	7.6000	11.51	0.029
05/20/98	10:20:00	7.6500	11.50	0.029
05/20/98	10:20:03	7.7000	11.50	0.030
05/20/98	10:20:06	7.7500	11.49	0.029
05/20/98	10:20:09	7.8000	11.48	0.029
05/20/98	10:20:12	7.8500	11.47	0.029
05/20/98	10:20:15	7.9000	11.47	0.029
05/20/98	10:20:18	7.9500	11.46	0.029
05/20/98	10:20:21	8.0000	11.45	0.030
05/20/98	10:20:24	8.0500	11.44	0.029
05/20/98	10:20:27	8.1000	11.44	0.029
05/20/98	10:20:30	8.1500	11.43	0.030
05/20/98	10:20:33	8.2000	11.42	0.030
05/20/98	10:20:36	8.2500	11.41	0.029
05/20/98	10:20:39	8.3000	11.41	0.030
05/20/98	10:20:42	8.3500	11.39	0.030
05/20/98	10:20:45	8.4000	11.39	0.030
05/20/98	10:20:48	8.4500	11.38	0.029
05/20/98	10:20:51	8.5000	11.37	0.030
05/20/98	10:20:54	8.5500	11.37	0.030
05/20/98	10:20:57	8.6000	11.36	0.029
05/20/98	10:21:00	8.6500	11.35	0.029
05/20/98	10:21:03	8.7000	11.34	0.029
05/20/98	10:21:06	8.7500	11.34	0.028
05/20/98	10:21:09	8.8000	11.33	0.030
05/20/98	10:21:12	8.8500	11.32	0.030
05/20/98	10:21:15	8.9000	11.31	0.030
05/20/98	10:21:18	8.9500	11.30	0.028
05/20/98	10:21:21	9.0000	11.30	0.028
05/20/98	10:21:24	9.0500	11.29	0.030
05/20/98	10:21:27	9.1000	11.28	0.030
05/20/98	10:21:30	9.1500	11.28	0.030
05/20/98	10:21:33	9.2000	11.27	0.028
05/20/98	10:21:36	9.2500	11.26	0.028
05/20/98	10:21:39	9.3000	11.25	0.028
05/20/98	10:21:42	9.3500	11.24	0.030
05/20/98	10:21:45	9.4000	11.24	0.030

05/20/98	10:21:48	9.4500	11.23	0.030
05/20/98	10:21:51	9.5000	11.22	0.031
05/20/98	10:21:54	9.5500	11.21	0.030
05/20/98	10:21:57	9.6000	11.21	0.028
05/20/98	10:22:00	9.6500	11.20	0.030
05/20/98	10:22:03	9.7000	11.19	0.030
05/20/98	10:22:06	9.7500	11.19	0.030
05/20/98	10:22:09	9.8000	11.18	0.030
05/20/98	10:22:12	9.8500	11.17	0.030
05/20/98	10:22:15	9.9000	11.16	0.030
05/20/98	10:22:18	9.9500	11.15	0.030
05/20/98	10:22:21	10.0000	11.14	0.030
05/20/98	10:22:24	10.0500	11.14	0.030
05/20/98	10:22:27	10.1000	11.13	0.030
05/20/98	10:22:30	10.1500	11.12	0.030
05/20/98	10:22:33	10.2000	11.11	0.030
05/20/98	10:22:36	10.2500	11.11	0.031
05/20/98	10:22:39	10.3000	11.10	0.030
05/20/98	10:22:42	10.3500	11.09	0.030
05/20/98	10:22:45	10.4000	11.08	0.030
05/20/98	10:22:48	10.4500	11.08	0.030
05/20/98	10:22:51	10.5000	11.07	0.030
05/20/98	10:22:54	10.5500	11.06	0.031
05/20/98	10:22:57	10.6000	11.05	0.030
05/20/98	10:23:00	10.6500	11.05	0.030
05/20/98	10:23:03	10.7000	11.04	0.030
05/20/98	10:23:06	10.7500	11.03	0.030
05/20/98	10:23:09	10.8000	11.02	0.030
05/20/98	10:23:12	10.8500	11.02	0.031
05/20/98	10:23:15	10.9000	11.01	0.030
05/20/98	10:23:18	10.9500	11.00	0.030
05/20/98	10:23:21	11.0000	11.00	0.029
05/20/98	10:23:24	11.0500	10.99	0.029
05/20/98	10:23:27	11.1000	10.98	0.029
05/20/98	10:23:30	11.1500	10.97	0.029
05/20/98	10:23:33	11.2000	10.97	0.030
05/20/98	10:23:36	11.2500	10.96	0.029
05/20/98	10:23:39	11.3000	10.95	0.029
05/20/98	10:23:42	11.3500	10.94	0.029
05/20/98	10:23:45	11.4000	10.94	0.029
05/20/98	10:23:48	11.4500	10.93	0.029
05/20/98	10:23:51	11.5000	10.93	0.029
05/20/98	10:23:54	11.5500	10.91	0.030
05/20/98	10:23:57	11.6000	10.91	0.029
05/20/98	10:24:00	11.6500	10.90	0.030
05/20/98	10:24:03	11.7000	10.89	0.030
05/20/98	10:24:06	11.7500	10.89	0.030
05/20/98	10:24:09	11.8000	10.89	0.030
05/20/98	10:24:12	11.8500	10.91	0.032
05/20/98	10:24:15	11.9000	10.92	0.030
05/20/98	10:24:18	11.9500	10.90	0.030
05/20/98	10:24:21	12.0000	10.89	0.030
05/20/98	10:24:24	12.0500	10.88	0.030

20 May 1998

33.15
8.28
24.87

1041
24.57
12.89
8.68
2.65

BKbmw 021

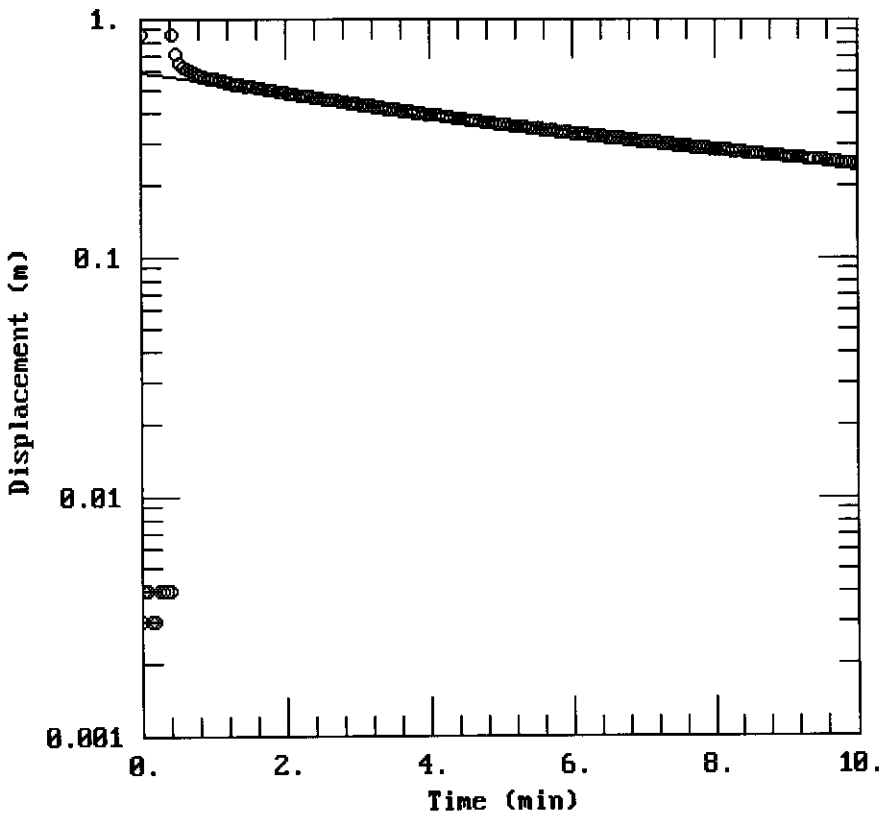
Lisc = .730 m

2.65 m

.30 = Sand Pack

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-0218-011

WBGmw-005 Slug Test Solution



DATA SET:
WBGMW5.AQT
10/05/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 0.857 m
r_c= 0.025 m
r_w= 0.102 m
L = 3.66 m
b = 4.77 m
H = 4.77 m

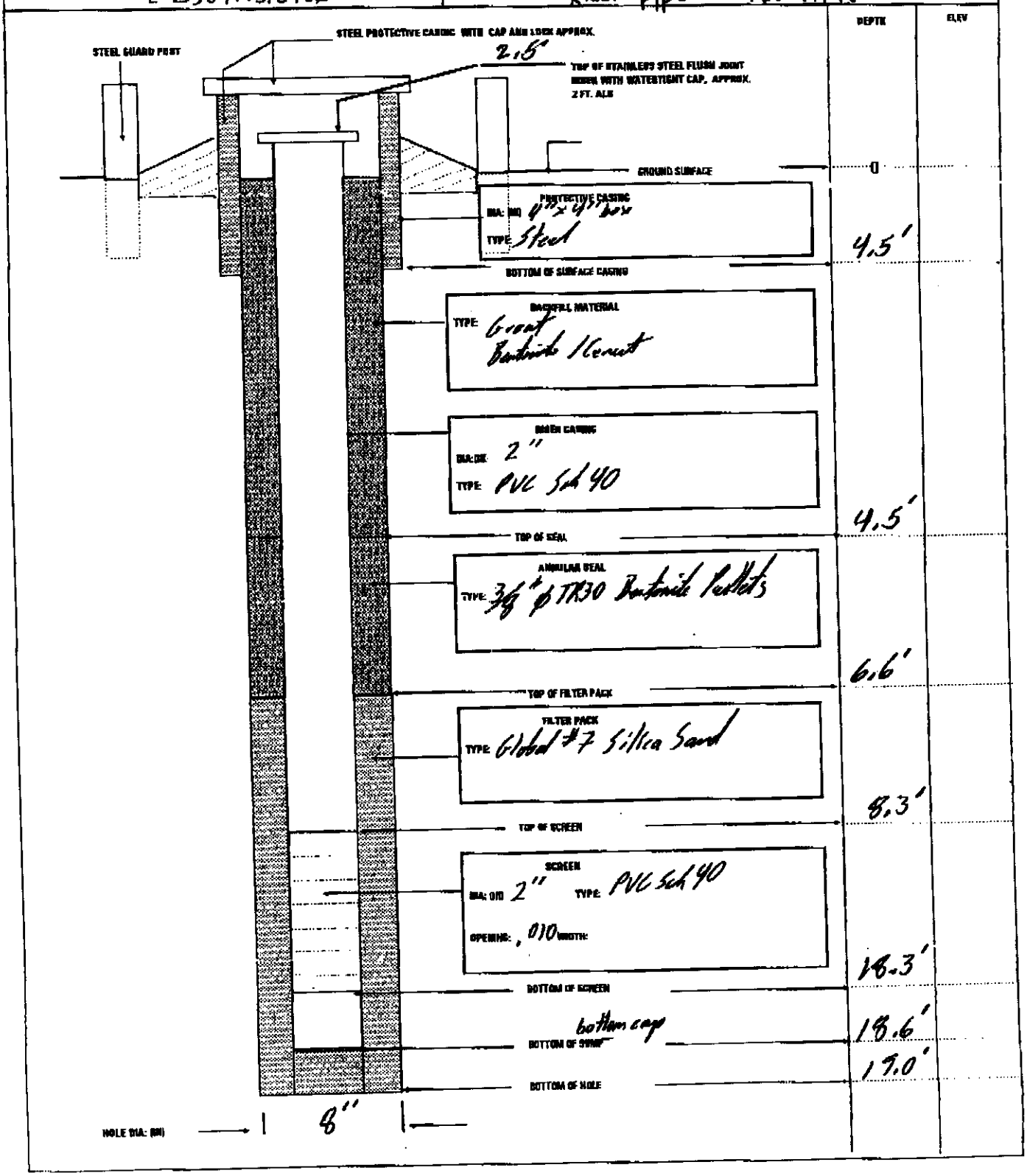
PARAMETER ESTIMATES:
K = 3.875E-05 cm/sec
y0 = 0.5905 m

AQTESOLV

PROJECT NAME: Pine T.R. @ MDS and Ecosystems Investigation DELIVERY ORDER NO: 0060

WELL NUMBER: 0086 mw-005 BEGIN: 22 Apr 98 END: 22 Apr 98

COORDINATES: N: 563037.1716 E: 2367163.5480 REFERENCE POINT: Top of Riser Pipe ELEVATION: 1052.198 MSL



PROJECT KVAAP Phase II RI | INSPECTOR Brad Baker | SHEET 1

LITH (A)	DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	1	0-1.5 ft Sandy SILT; sand: fine-med ~30%, silt ~70%; Mod Greenish Gray; subangular; poorly sorted; low plasticity, moist (ML)	LEL-0% O_2-21% PID-0 ppm	NA	NA	0-4 ft run Spoon would not break apart core recovered and logged back @ field office - had to heat barrel to expose core 3.8' recovery (~95%)
	2					
	3	1.5-3.8 ft Sandy SILT; sand: med ~30% silt ~70% Lt Yellowish Brown variegated gray, yellowish orange, and black; poorly sorted, subangular; low-med plasticity hard, moist (ML)				
	4					
	5	Silty SAND; sand: med ~60%, silt ~30%, clay ~10%; Mod Reddish Brown w/ 1" gleyed clay present; subangular; poorly sorted; low plasticity; v. soft; moist (SM)	O_2-21% LEL-0% PID 0 ppm	NA	NA	4-9 ft run (5% recovery) - Saturated cuttings, sand present @ 6' ft bgs. Ø9.5" Breaking spoon and allowing groundwater to equilibrate - currently no H_2O detected down hole Tagged bottom of hole @ 9.0 ft
	6					
	7					
	8					
	9					
	10	Clay; clay ~90%, sand: granular ~2%; Mod Gray; poorly sorted; mod plasticity; firm; moist (CL)	LEL-0% O_2-21% PID-0 ppm	NA	NA	Free H_2O present w/ cuttings @ 11 ft bgs 9-14 ft run 1.6 ft recovered (~30%) - H_2O tagged @ 14.55 ft from top of augers @ 1015 hrs - H_2O @ 12.66 ft by of augers 1030 hr. 1.7 ft augers sticky, @ 10.96 ft bgs
	11					
	12					
	13					
	14					
	15		LEL-0% O_2-21% PID-0 ppm	WBØ858	NA	Shelby Tube Advanced 1.5 ft refusal (14-15.5 ft bgs)
	16	CLAY; clay ~90%, sand: med ~20% Mod Gray; interbedded sand; poorly sorted, subrounded; mod plasticity; firm; v. moist - saturated (CL	LEL-0% O_2-21% PID-0 ppm	NA	NA	14-19 ft run 1.8 ft recovery (~35%) (cuttings removed saturated during drill of run 1130 hr H_2O @ 13.88' bgs 1300 hr H_2O @ 5.18' bgs
	17					
	18					
	19	TD=19.0 ft				

B-206

PROJECT KVAAP Phase II RI N 563037.1770 E 2357163.5480 ELEV. 1052.198 | HOLE NO W.BG mw-005

IN_SITU INC. TROLL
Serial number: 00001342
Unit name: Ft Knox #3

Report generated: 10/01/98 10:38:37
Report from file: C:\MYDOCU~1\RAVENN~1\WBGMW005.BIN

Test name: WBGmw005

Test defined on: 05/26/98 15:04:24
Test started on: 05/26/98 15:32:38
Test stopped on: 05/26/98 15:50:19
Test extracted on: 05/26/98 15:51:41

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 354

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 4.256 Meters H2O

Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O
05/26/98	15:32:38	0.0000	9.56	0.000
05/26/98	15:32:41	0.0500	9.61	0.000
05/26/98	15:32:44	0.1000	9.61	0.000
05/26/98	15:32:47	0.1500	9.61	0.001
05/26/98	15:32:50	0.2000	9.61	0.001
05/26/98	15:32:53	0.2500	9.62	0.000
05/26/98	15:32:56	0.3000	9.63	0.001
05/26/98	15:32:59	0.3500	9.60	0.001
05/26/98	15:33:02	0.4000	9.61	0.001
05/26/98	15:33:05	0.4500	9.62	0.001
05/26/98	15:33:08	0.5000	9.62	0.001
05/26/98	15:33:11	0.5500	9.60	0.002
05/26/98	15:33:14	0.6000	9.68	0.002
05/26/98	15:33:17	0.6500	9.65	0.001
05/26/98	15:33:20	0.7000	9.65	0.002
05/26/98	15:33:23	0.7500	9.65	0.002
05/26/98	15:33:26	0.8000	9.65	0.002
05/26/98	15:33:29	0.8500	9.65	0.002
05/26/98	15:33:32	0.9000	9.66	0.002
05/26/98	15:33:35	0.9500	9.65	0.003
05/26/98	15:33:38	1.0000	9.63	0.003

05/26/98	15:33:41	1.0500	9.70	0.004
05/26/98	15:33:44	1.1000	9.69	0.004
05/26/98	15:33:47	1.1500	9.68	0.003
05/26/98	15:33:50	1.2000	9.68	0.003
05/26/98	15:33:53	1.2500	9.68	0.004
05/26/98	15:33:56	1.3000	9.68	0.004
05/26/98	15:33:59	1.3500	9.68	0.004
05/26/98	15:34:02	1.4000	9.68	0.004
05/26/98	15:34:05	1.4500	9.68	0.857
05/26/98	15:34:08	1.5000	9.68	0.716
05/26/98	15:34:11	1.5500	9.68	0.644
05/26/98	15:34:14	1.6000	9.68	0.623
05/26/98	15:34:17	1.6500	9.68	0.609
05/26/98	15:34:20	1.7000	9.68	0.598
05/26/98	15:34:23	1.7500	9.68	0.590
05/26/98	15:34:26	1.8000	9.68	0.581
05/26/98	15:34:29	1.8500	9.68	0.575
05/26/98	15:34:32	1.9000	9.68	0.569
05/26/98	15:34:35	1.9500	9.69	0.563
05/26/98	15:34:38	2.0000	9.69	0.559
05/26/98	15:34:41	2.0500	9.68	0.555
05/26/98	15:34:44	2.1000	9.69	0.551
05/26/98	15:34:47	2.1500	9.69	0.546
05/26/98	15:34:50	2.2000	9.69	0.541
05/26/98	15:34:53	2.2500	9.69	0.538
05/26/98	15:34:56	2.3000	9.69	0.534
05/26/98	15:34:59	2.3500	9.70	0.530
05/26/98	15:35:02	2.4000	9.69	0.527
05/26/98	15:35:05	2.4500	9.68	0.524
05/26/98	15:35:08	2.5000	9.69	0.520
05/26/98	15:35:11	2.5500	9.70	0.517
05/26/98	15:35:14	2.6000	9.70	0.513
05/26/98	15:35:17	2.6500	9.70	0.510
05/26/98	15:35:20	2.7000	9.70	0.507
05/26/98	15:35:23	2.7500	9.70	0.504
05/26/98	15:35:26	2.8000	9.67	0.501
05/26/98	15:35:29	2.8500	9.74	0.498
05/26/98	15:35:32	2.9000	9.73	0.496
05/26/98	15:35:35	2.9500	9.73	0.492
05/26/98	15:35:38	3.0000	9.72	0.490
05/26/98	15:35:41	3.0500	9.72	0.487
05/26/98	15:35:44	3.1000	9.72	0.484
05/26/98	15:35:47	3.1500	9.72	0.481
05/26/98	15:35:50	3.2000	9.72	0.478
05/26/98	15:35:53	3.2500	9.72	0.475
05/26/98	15:35:56	3.3000	9.72	0.472
05/26/98	15:35:59	3.3500	9.72	0.470
05/26/98	15:36:02	3.4000	9.72	0.467
05/26/98	15:36:05	3.4500	9.72	0.464
05/26/98	15:36:08	3.5000	9.72	0.462
05/26/98	15:36:11	3.5500	9.72	0.459
05/26/98	15:36:14	3.6000	9.72	0.457
05/26/98	15:36:17	3.6500	9.72	0.455
05/26/98	15:36:20	3.7000	9.71	0.453
05/26/98	15:36:23	3.7500	9.71	0.450
05/26/98	15:36:26	3.8000	9.72	0.448

05/26/98	15:36:29	3.8500	9.72	0.445	
05/26/98	15:36:32	3.9000	9.72	0.443	
05/26/98	15:36:35	3.9500	9.72	0.441	
05/26/98	15:36:38	4.0000	9.72	0.438	
05/26/98	15:36:41	4.0500	9.72	0.436	
05/26/98	15:36:44	4.1000	9.72	0.434	
05/26/98	15:36:47	4.1500	9.72	0.431	
05/26/98	15:36:50	4.2000	9.72	0.429	
05/26/98	15:36:53	4.2500	9.72	0.426	
05/26/98	15:36:56	4.3000	9.73	0.425	
05/26/98	15:36:59	4.3500	9.73	0.422	
05/26/98	15:37:02	4.4000	9.70	0.420	
05/26/98	15:37:05	4.4500	9.73	0.419	
05/26/98	15:37:08	4.5000	9.77	0.416	
05/26/98	15:37:11	4.5500	9.76	0.414	
05/26/98	15:37:14	4.6000	9.76	0.413	
05/26/98	15:37:17	4.6500	9.76	0.410	
05/26/98	15:37:20	4.7000	9.76	0.408	
05/26/98	15:37:23	4.7500	9.76	0.406	
05/26/98	15:37:26	4.8000	9.76	0.404	
05/26/98	15:37:29	4.8500	9.76	0.402	
05/26/98	15:37:32	4.9000	9.76	0.400	
05/26/98	15:37:35	4.9500	9.76	0.398	
05/26/98	15:37:38	5.0000	9.76	0.397	
05/26/98	15:37:41	5.0500	9.75	0.394	
05/26/98	15:37:44	5.1000	9.81	0.393	
05/26/98	15:37:47	5.1500	9.80	0.391	
05/26/98	15:37:50	5.2000	9.79	0.389	
05/26/98	15:37:53	5.2500	9.80	0.387	
05/26/98	15:37:56	5.3000	9.79	0.385	
05/26/98	15:37:59	5.3500	9.79	0.383	
05/26/98	15:38:02	5.4000	9.79	0.381	
05/26/98	15:38:05	5.4500	9.78	0.380	
05/26/98	15:38:08	5.5000	9.78	0.378	
05/26/98	15:38:11	5.5500	9.79	0.376	
05/26/98	15:38:14	5.6000	9.78	0.374	
05/26/98	15:38:17	5.6500	9.79	0.373	
05/26/98	15:38:20	5.7000	9.78	0.371	
05/26/98	15:38:23	5.7500	9.76	0.369	
05/26/98	15:38:26	5.8000	9.79	0.367	
05/26/98	15:38:29	5.8500	9.79	0.366	
05/26/98	15:38:32	5.9000	9.78	0.364	
05/26/98	15:38:35	5.9500	9.84	0.363	
05/26/98	15:38:38	6.0000	9.83	0.361	
05/26/98	15:38:41	6.0500	9.82	0.359	
05/26/98	15:38:44	6.1000	9.82	0.359	
05/26/98	15:38:47	6.1500	9.82	0.356	
05/26/98	15:38:50	6.2000	9.82	0.355	
05/26/98	15:38:53	6.2500	9.82	0.354	
05/26/98	15:38:56	6.3000	9.82	0.352	
05/26/98	15:38:59	6.3500	9.82	0.350	
05/26/98	15:39:02	6.4000	9.82	0.348	
05/26/98	15:39:05	6.4500	9.82	0.347	
05/26/98	15:39:08	6.5000	9.82	0.345	B-209
05/26/98	15:39:11	6.5500	9.82	0.344	
05/26/98	15:39:14	6.6000	9.82	0.342	

05/26/98	15:39:17	6.6500	9.82	0.341	
05/26/98	15:39:20	6.7000	9.82	0.339	
05/26/98	15:39:23	6.7500	9.82	0.338	
05/26/98	15:39:26	6.8000	9.82	0.337	
05/26/98	15:39:29	6.8500	9.82	0.335	
05/26/98	15:39:32	6.9000	9.82	0.334	
05/26/98	15:39:35	6.9500	9.82	0.333	
05/26/98	15:39:38	7.0000	9.82	0.331	
05/26/98	15:39:41	7.0500	9.82	0.330	
05/26/98	15:39:44	7.1000	9.82	0.328	
05/26/98	15:39:47	7.1500	9.82	0.327	
05/26/98	15:39:50	7.2000	9.82	0.326	
05/26/98	15:39:53	7.2500	9.81	0.324	
05/26/98	15:39:56	7.3000	9.82	0.323	
05/26/98	15:39:59	7.3500	9.82	0.323	
05/26/98	15:40:02	7.4000	9.81	0.321	
05/26/98	15:40:05	7.4500	9.82	0.320	
05/26/98	15:40:08	7.5000	9.81	0.318	
05/26/98	15:40:11	7.5500	9.81	0.317	
05/26/98	15:40:14	7.6000	9.82	0.316	
05/26/98	15:40:17	7.6500	9.82	0.315	
05/26/98	15:40:20	7.7000	9.82	0.314	
05/26/98	15:40:23	7.7500	9.82	0.312	
05/26/98	15:40:26	7.8000	9.82	0.311	
05/26/98	15:40:29	7.8500	9.82	0.309	
05/26/98	15:40:32	7.9000	9.82	0.309	
05/26/98	15:40:35	7.9500	9.82	0.307	
05/26/98	15:40:38	8.0000	9.83	0.306	
05/26/98	15:40:41	8.0500	9.83	0.304	
05/26/98	15:40:44	8.1000	9.83	0.304	
05/26/98	15:40:47	8.1500	9.84	0.303	
05/26/98	15:40:50	8.2000	9.80	0.302	
05/26/98	15:40:53	8.2500	9.84	0.301	
05/26/98	15:40:56	8.3000	9.87	0.300	
05/26/98	15:40:59	8.3500	9.90	0.299	
05/26/98	15:41:02	8.4000	9.88	0.298	
05/26/98	15:41:05	8.4500	9.89	0.296	
05/26/98	15:41:08	8.5000	9.87	0.295	
05/26/98	15:41:11	8.5500	9.93	0.295	
05/26/98	15:41:14	8.6000	9.92	0.294	
05/26/98	15:41:17	8.6500	9.91	0.292	
05/26/98	15:41:20	8.7000	9.91	0.291	
05/26/98	15:41:23	8.7500	9.91	0.290	
05/26/98	15:41:26	8.8000	9.90	0.289	
05/26/98	15:41:29	8.8500	9.90	0.288	
05/26/98	15:41:32	8.9000	9.90	0.287	
05/26/98	15:41:35	8.9500	9.90	0.285	
05/26/98	15:41:38	9.0000	9.90	0.285	
05/26/98	15:41:41	9.0500	9.90	0.283	
05/26/98	15:41:44	9.1000	9.90	0.282	
05/26/98	15:41:47	9.1500	9.90	0.281	
05/26/98	15:41:50	9.2000	9.90	0.281	
05/26/98	15:41:53	9.2500	9.90	0.279	
05/26/98	15:41:56	9.3000	9.90	0.278	B-210
05/26/98	15:41:59	9.3500	9.89	0.277	
05/26/98	15:42:02	9.4000	9.90	0.276	

05/26/98	15:42:05	9.4500	9.89	0.275
05/26/98	15:42:08	9.5000	9.89	0.274
05/26/98	15:42:11	9.5500	9.89	0.273
05/26/98	15:42:14	9.6000	9.89	0.272
05/26/98	15:42:17	9.6500	9.89	0.271
05/26/98	15:42:20	9.7000	9.89	0.270
05/26/98	15:42:23	9.7500	9.89	0.269
05/26/98	15:42:26	9.8000	9.89	0.269
05/26/98	15:42:29	9.8500	9.89	0.267
05/26/98	15:42:32	9.9000	9.89	0.266
05/26/98	15:42:35	9.9500	9.89	0.266
05/26/98	15:42:38	10.0000	9.89	0.264
05/26/98	15:42:41	10.0500	9.89	0.264
05/26/98	15:42:44	10.1000	9.89	0.264
05/26/98	15:42:47	10.1500	9.89	0.262
05/26/98	15:42:50	10.2000	9.89	0.262
05/26/98	15:42:53	10.2500	9.89	0.261
05/26/98	15:42:56	10.3000	9.88	0.259
05/26/98	15:42:59	10.3500	9.89	0.259
05/26/98	15:43:02	10.4000	9.88	0.259
05/26/98	15:43:05	10.4500	9.89	0.257
05/26/98	15:43:08	10.5000	9.87	0.257
05/26/98	15:43:11	10.5500	9.88	0.256
05/26/98	15:43:14	10.6000	9.88	0.255
05/26/98	15:43:17	10.6500	9.89	0.254
05/26/98	15:43:20	10.7000	9.89	0.253
05/26/98	15:43:23	10.7500	9.88	0.252
05/26/98	15:43:26	10.8000	9.88	0.251
05/26/98	15:43:29	10.8500	9.88	0.250
05/26/98	15:43:32	10.9000	9.88	0.250
05/26/98	15:43:35	10.9500	9.88	0.249
05/26/98	15:43:38	11.0000	9.88	0.248
05/26/98	15:43:41	11.0500	9.88	0.247
05/26/98	15:43:44	11.1000	9.88	0.247
05/26/98	15:43:47	11.1500	9.88	0.246
05/26/98	15:43:50	11.2000	9.88	0.245
05/26/98	15:43:53	11.2500	9.88	0.245
05/26/98	15:43:56	11.3000	9.88	0.244
05/26/98	15:43:59	11.3500	9.89	0.243
05/26/98	15:44:02	11.4000	9.88	0.242
05/26/98	15:44:05	11.4500	9.88	0.241
05/26/98	15:44:08	11.5000	9.88	0.240
05/26/98	15:44:11	11.5500	9.88	0.240
05/26/98	15:44:14	11.6000	9.88	0.239
05/26/98	15:44:17	11.6500	9.88	0.238
05/26/98	15:44:20	11.7000	9.88	0.238
05/26/98	15:44:23	11.7500	9.88	0.237
05/26/98	15:44:26	11.8000	9.88	0.236
05/26/98	15:44:29	11.8500	9.88	0.236
05/26/98	15:44:32	11.9000	9.88	0.235
05/26/98	15:44:35	11.9500	9.89	0.234
05/26/98	15:44:38	12.0000	9.88	0.234
05/26/98	15:44:41	12.0500	9.87	0.233
05/26/98	15:44:44	12.1000	9.88	0.233
05/26/98	15:44:47	12.1500	9.93	0.232
05/26/98	15:44:50	12.2000	9.92	0.231

05/26/98	15:44:53	12.2500	9.91	0.230	
05/26/98	15:44:56	12.3000	9.91	0.229	
05/26/98	15:44:59	12.3500	9.91	0.228	
05/26/98	15:45:02	12.4000	9.91	0.228	
05/26/98	15:45:05	12.4500	9.91	0.228	
05/26/98	15:45:08	12.5000	9.91	0.227	
05/26/98	15:45:11	12.5500	9.91	0.226	
05/26/98	15:45:14	12.6000	9.91	0.226	
05/26/98	15:45:17	12.6500	9.91	0.225	
05/26/98	15:45:20	12.7000	9.91	0.224	
05/26/98	15:45:23	12.7500	9.91	0.224	
05/26/98	15:45:26	12.8000	9.90	0.224	
05/26/98	15:45:29	12.8500	9.90	0.223	
05/26/98	15:45:32	12.9000	9.90	0.221	
05/26/98	15:45:35	12.9500	9.90	0.221	
05/26/98	15:45:38	13.0000	9.90	0.221	
05/26/98	15:45:41	13.0500	9.90	0.220	
05/26/98	15:45:44	13.1000	9.90	0.219	
05/26/98	15:45:47	13.1500	9.90	0.219	
05/26/98	15:45:50	13.2000	9.90	0.219	
05/26/98	15:45:53	13.2500	9.90	0.218	
05/26/98	15:45:56	13.3000	9.90	0.217	
05/26/98	15:45:59	13.3500	9.90	0.216	
05/26/98	15:46:02	13.4000	9.89	0.217	
05/26/98	15:46:05	13.4500	9.90	0.215	
05/26/98	15:46:08	13.5000	9.90	0.214	
05/26/98	15:46:11	13.5500	9.90	0.214	
05/26/98	15:46:14	13.6000	9.90	0.214	
05/26/98	15:46:17	13.6500	9.89	0.213	
05/26/98	15:46:20	13.7000	9.89	0.213	
05/26/98	15:46:23	13.7500	9.89	0.212	
05/26/98	15:46:26	13.8000	9.89	0.212	
05/26/98	15:46:29	13.8500	9.89	0.211	
05/26/98	15:46:32	13.9000	9.89	0.210	
05/26/98	15:46:35	13.9500	9.89	0.210	
05/26/98	15:46:38	14.0000	9.89	0.210	
05/26/98	15:46:41	14.0500	9.89	0.209	
05/26/98	15:46:44	14.1000	9.89	0.208	
05/26/98	15:46:47	14.1500	9.89	0.207	
05/26/98	15:46:50	14.2000	9.88	0.207	
05/26/98	15:46:53	14.2500	9.89	0.207	
05/26/98	15:46:56	14.3000	9.89	0.206	
05/26/98	15:46:59	14.3500	9.89	0.205	
05/26/98	15:47:02	14.4000	9.88	0.205	
05/26/98	15:47:05	14.4500	9.89	0.205	
05/26/98	15:47:08	14.5000	9.88	0.204	
05/26/98	15:47:11	14.5500	9.88	0.203	
05/26/98	15:47:14	14.6000	9.88	0.202	
05/26/98	15:47:17	14.6500	9.88	0.202	
05/26/98	15:47:20	14.7000	9.89	0.202	
05/26/98	15:47:23	14.7500	9.89	0.201	
05/26/98	15:47:26	14.8000	9.89	0.201	
05/26/98	15:47:29	14.8500	9.88	0.200	B-212
05/26/98	15:47:32	14.9000	9.88	0.200	
05/26/98	15:47:35	14.9500	9.88	0.199	
05/26/98	15:47:38	15.0000	9.88	0.199	

05/26/98	15:47:41	15.0500	9.85	0.199
05/26/98	15:47:44	15.1000	9.90	0.198
05/26/98	15:47:47	15.1500	9.90	0.198
05/26/98	15:47:50	15.2000	9.89	0.197
05/26/98	15:47:53	15.2500	9.89	0.196
05/26/98	15:47:56	15.3000	9.89	0.195
05/26/98	15:47:59	15.3500	9.88	0.195
05/26/98	15:48:02	15.4000	9.88	0.195
05/26/98	15:48:05	15.4500	9.88	0.194
05/26/98	15:48:08	15.5000	9.88	0.194
05/26/98	15:48:11	15.5500	9.88	0.193
05/26/98	15:48:14	15.6000	9.88	0.193
05/26/98	15:48:17	15.6500	9.88	0.193
05/26/98	15:48:20	15.7000	9.88	0.192
05/26/98	15:48:23	15.7500	9.88	0.191
05/26/98	15:48:26	15.8000	9.88	0.191
05/26/98	15:48:29	15.8500	9.88	0.191
05/26/98	15:48:32	15.9000	9.88	0.190
05/26/98	15:48:35	15.9500	9.88	0.190
05/26/98	15:48:38	16.0000	9.87	0.189
05/26/98	15:48:41	16.0500	9.88	0.189
05/26/98	15:48:44	16.1000	9.88	0.188
05/26/98	15:48:47	16.1500	9.88	0.188
05/26/98	15:48:50	16.2000	9.88	0.188
05/26/98	15:48:53	16.2500	9.88	0.188
05/26/98	15:48:56	16.3000	9.88	0.187
05/26/98	15:48:59	16.3500	9.88	0.186
05/26/98	15:49:02	16.4000	9.88	0.186
05/26/98	15:49:05	16.4500	9.88	0.186
05/26/98	15:49:08	16.5000	9.88	0.186
05/26/98	15:49:11	16.5500	9.87	0.185
05/26/98	15:49:14	16.6000	9.89	0.185
05/26/98	15:49:17	16.6500	9.89	0.185
05/26/98	15:49:20	16.7000	9.88	0.184
05/26/98	15:49:23	16.7500	9.89	0.185
05/26/98	15:49:26	16.8000	9.90	0.184
05/26/98	15:49:29	16.8500	9.90	0.184
05/26/98	15:49:32	16.9000	9.90	0.183
05/26/98	15:49:35	16.9500	9.90	0.182
05/26/98	15:49:38	17.0000	9.90	0.182
05/26/98	15:49:41	17.0500	9.90	0.182
05/26/98	15:49:44	17.1000	9.87	0.182
05/26/98	15:49:47	17.1500	9.92	0.181
05/26/98	15:49:50	17.2000	9.91	0.181
05/26/98	15:49:53	17.2500	9.91	0.181
05/26/98	15:49:56	17.3000	9.90	0.181
05/26/98	15:49:59	17.3500	9.92	0.181
05/26/98	15:50:02	17.4000	9.96	0.181
05/26/98	15:50:05	17.4500	9.95	0.179
05/26/98	15:50:08	17.5000	9.95	0.179
05/26/98	15:50:11	17.5500	9.94	0.179
05/26/98	15:50:14	17.6000	9.94	0.178
05/26/98	15:50:17	17.6500	9.94	0.177

21.28
5.01
15.67 TOW m
4.77 m

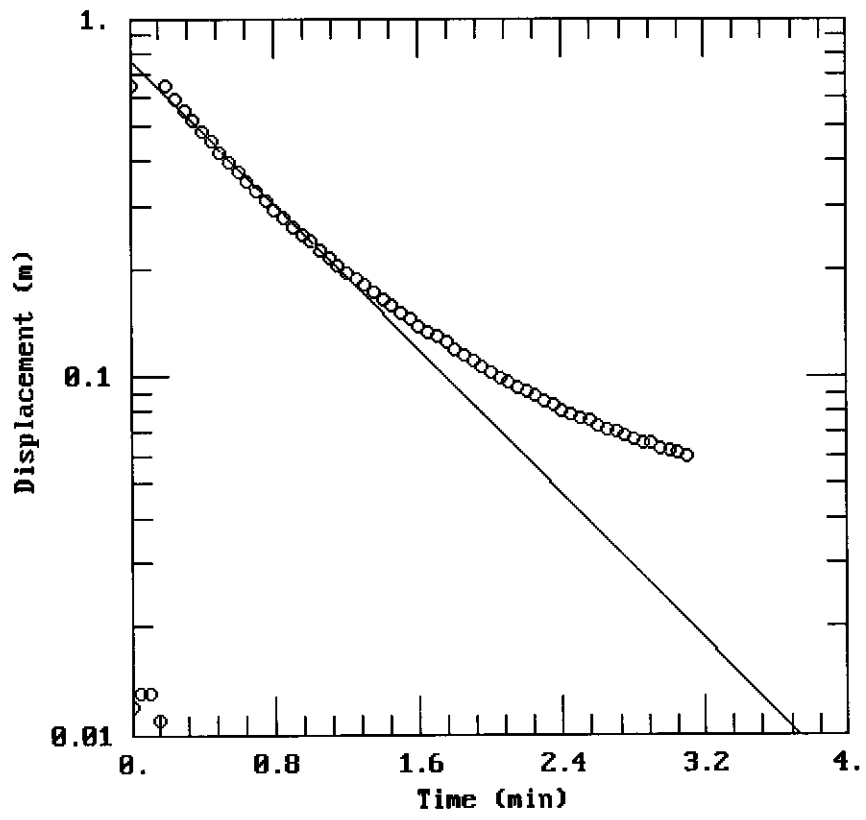
Screen
3.66 m

~~WB6MW005~~ o
WB6MW005.

brwd = 0.0

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-8218-011

WBGmw-006 Slug Test Solution



DATA SET:
WBGMW6.AQT
10/05/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 0.648 m
r_c= 0.025 m
r_w= 0.102 m
L = 3.89 m
b = 3.89 m
H = 3.89 m

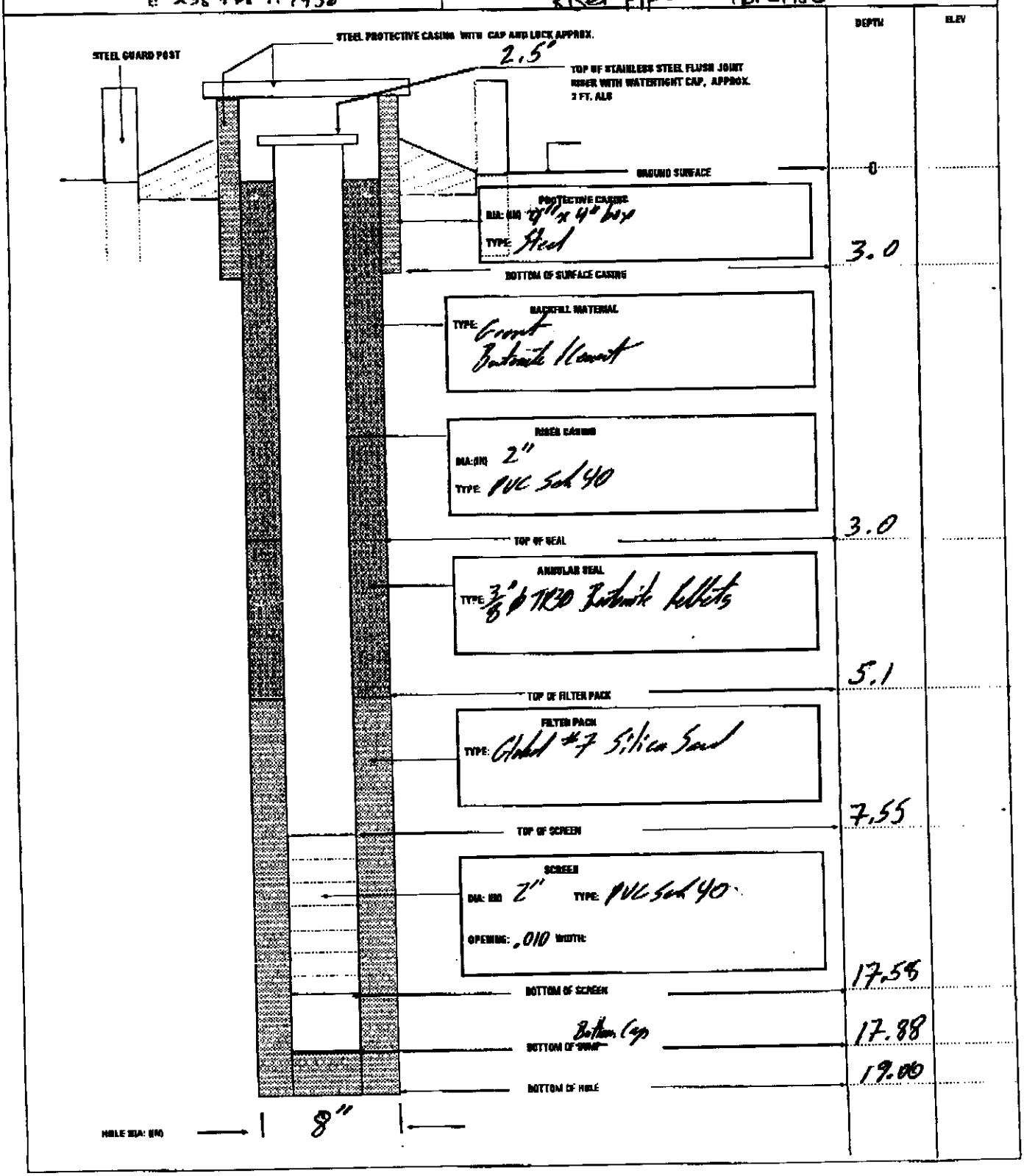
PARAMETER ESTIMATES:
K = 0.002455 cm/sec
y0 = 0.7582 m

AQTESOLV

PROJECT NAME: Phase II RI @ WBG and Background Investigation DELIVERY ORDER NO: 0060

WELL NUMBER: WBGmw-006 BEGIN: 24 Apr 98 END: 25 Apr 98

COORDINATES: N: 563008.8676 E: 2359887.7932 REFERENCE POINT: TOP of Riser Pipe ELEVATION: 1012.15 MSL



DEPTH (ft)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
	0-0.8 ft Silty CLAY; sand: med-fine ~15% silt ~25% clay 60%; med gray poorly sorted; subrounded; mod plasticity; soft; v. moist, (CL) 0.8-3.5 ft SAME AS ABOVE w/ color change Mod Yellowish Brown w/ varigate gray clay (CL)	PID-0 ppm LEL-0% O_2-21%	NA	NA	1-4 ft run 3.5 recovered 87%
4	4.0-6.3' same as above 6.3-8.8' SAME AS ABOVE except color change: Mod Yellowish Brown w/ pale Yellow mottling, slightly fissile; hard (CL), low plasticity 8.8-9.0' SAND; sand: med ~75% granular ~10%, silt ~15%; Reddish Brown; subrounded; mod sorted; no plasticity; Soft; wet (SM)	PID 0 ppm LEL-0% O_2-21%	NA	NA	4-9 ft run 100% recovery
9		PID 0 ppm LEL-0% O_2-21%		NA	Pushed Shelby Tube 100% Recovery 9.0-10.8 ft refusal
10.8	10.8-12.3 ft Sandy SILT, sand: med-fine ~35%, silt ~65%; Mod Yellowish Brown; subrounded; poorly sorted; mod plasticity; soft; saturated (ML) 12.3-13.3 CLAY; sand: v. fine ~10% clay 90%; bluish gray; hard; poorly sorted; subrounded; mod-low plasticity (CL) 13.3-14.0 ft Sandy SILT; sand: fine ~30% silt ~70%. Mod Yellowish Brown; subrounded; poorly sorted; low plasticity; soft; saturated (ML)	PID-0 ppm LEL-0% O_2-21%	NA	NA	1510 H_2O tagged @ 5.86 ft bgs 10.8-14.0 ft Run 4.5 ft recovery 100% recovery
14	14-15.8 ft Silty SAND; sand: fine-med ~60% silt ~30%; granular ~10%; Yellowish Brown; poorly sorted; subrounded; no plasticity; soft/loose; saturated (SM)	PID-0 ppm LEL-0% O_2-21%	NA	NA	14-19 ft bgs 1.8 ft recovery (~40%)
19	TD = 19 ft				

PROJECT RVAAP N 563008.8670 E 2359087.7930 ELEV. 1012.156

HOLE NO WBG MW-006

IN_SITU INC. TROLL
Serial number: 00001342
Unit name: Ft Knox #3

Report generated: 10/01/98 11:17:32
Report from file: C:\MYDOCU~1\RAVENN~1\WBGMW006.BIN

Test name: WBGmw006

Test defined on: 05/26/98 14:46:14
Test started on: 05/26/98 14:46:33
Test stopped on: 05/26/98 14:51:40
Test extracted on: 05/26/98 15:07:55

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 103

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 3.480 Meters H2O

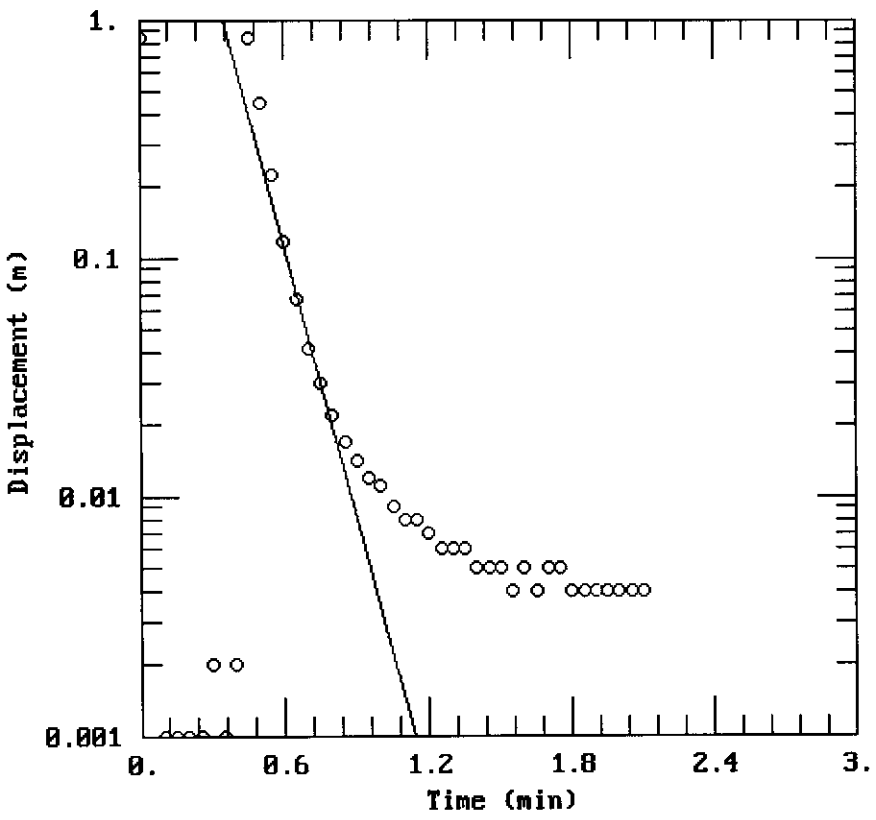
Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O
05/26/98	14:46:33	0.0000	12.03	0.000
05/26/98	14:46:36	0.0500	12.02	0.000
05/26/98	14:46:39	0.1000	11.98	0.001
05/26/98	14:46:42	0.1500	11.95	0.001
05/26/98	14:46:45	0.2000	11.93	0.001
05/26/98	14:46:48	0.2500	11.89	0.002
05/26/98	14:46:51	0.3000	11.87	0.003
05/26/98	14:46:54	0.3500	11.84	0.004
05/26/98	14:46:57	0.4000	11.80	0.004
05/26/98	14:47:00	0.4500	11.78	0.004
05/26/98	14:47:03	0.5000	11.76	0.004
05/26/98	14:47:06	0.5500	11.74	0.005
05/26/98	14:47:09	0.6000	11.70	0.007
05/26/98	14:47:12	0.6500	11.71	0.006
05/26/98	14:47:15	0.7000	11.68	0.008
05/26/98	14:47:18	0.7500	11.66	0.008
05/26/98	14:47:21	0.8000	11.63	0.007
05/26/98	14:47:24	0.8500	11.58	0.008
05/26/98	14:47:27	0.9000	11.63	0.008
05/26/98	14:47:30	0.9500	11.59	0.009
05/26/98	14:47:33	1.0000	11.57	0.008

05/26/98	14:47:36	1.0500	11.54	0.008	
05/26/98	14:47:39	1.1000	11.52	0.009	
05/26/98	14:47:42	1.1500	11.49	0.009	
05/26/98	14:47:45	1.2000	11.47	0.010	
05/26/98	14:47:48	1.2500	11.46	0.010	
05/26/98	14:47:51	1.3000	11.44	0.011	
05/26/98	14:47:54	1.3500	11.42	0.010	
05/26/98	14:47:57	1.4000	11.39	0.012	
05/26/98	14:48:00	1.4500	11.36	0.011	
05/26/98	14:48:03	1.5000	11.39	0.011	
05/26/98	14:48:06	1.5500	11.36	0.011	
05/26/98	14:48:09	1.6000	11.35	0.011	
05/26/98	14:48:12	1.6500	11.33	0.011	
05/26/98	14:48:15	1.7000	11.30	0.011	
05/26/98	14:48:18	1.7500	11.29	0.011	
05/26/98	14:48:21	1.8000	11.27	0.012	
05/26/98	14:48:24	1.8500	11.25	0.012	
05/26/98	14:48:27	1.9000	11.23	0.012	
05/26/98	14:48:30	1.9500	11.22	0.012	
05/26/98	14:48:33	2.0000	11.20	0.012	
05/26/98	14:48:36	2.0500	11.19	0.013	
05/26/98	14:48:39	2.1000	11.17	0.013	
05/26/98	14:48:42	2.1500	11.16	0.011	
05/26/98	14:48:45	2.2000	11.14	0.648	
05/26/98	14:48:48	2.2500	11.13	0.593	
05/26/98	14:48:51	2.3000	11.11	0.553	
05/26/98	14:48:54	2.3500	11.09	0.516	
05/26/98	14:48:57	2.4000	11.08	0.481	
05/26/98	14:49:00	2.4500	11.07	0.451	
05/26/98	14:49:03	2.5000	11.05	0.422	
05/26/98	14:49:06	2.5500	11.04	0.395	
05/26/98	14:49:09	2.6000	11.02	0.371	
05/26/98	14:49:12	2.6500	11.01	0.349	
05/26/98	14:49:15	2.7000	10.99	0.328	
05/26/98	14:49:18	2.7500	10.98	0.309	
05/26/98	14:49:21	2.8000	10.97	0.292	
05/26/98	14:49:24	2.8500	10.96	0.277	
05/26/98	14:49:27	2.9000	10.94	0.262	
05/26/98	14:49:30	2.9500	10.93	0.249	
05/26/98	14:49:33	3.0000	10.91	0.238	
05/26/98	14:49:36	3.0500	10.89	0.226	
05/26/98	14:49:39	3.1000	10.89	0.214	
05/26/98	14:49:42	3.1500	10.88	0.205	
05/26/98	14:49:45	3.2000	10.86	0.195	
05/26/98	14:49:48	3.2500	10.86	0.187	
05/26/98	14:49:51	3.3000	10.83	0.180	
05/26/98	14:49:54	3.3500	10.88	0.172	
05/26/98	14:49:57	3.4000	10.86	0.164	
05/26/98	14:50:00	3.4500	10.85	0.157	
05/26/98	14:50:03	3.5000	10.82	0.150	
05/26/98	14:50:06	3.5500	10.81	0.144	
05/26/98	14:50:09	3.6000	10.80	0.138	
05/26/98	14:50:12	3.6500	10.77	0.133	B-219
05/26/98	14:50:15	3.7000	10.78	0.129	
05/26/98	14:50:18	3.7500	10.80	0.124	
05/26/98	14:50:21	3.8000	10.78	0.119	

05/26/98	14:50:24	3.8500	10.77	0.115
05/26/98	14:50:27	3.9000	10.75	0.110
05/26/98	14:50:30	3.9500	10.74	0.106
05/26/98	14:50:33	4.0000	10.73	0.103
05/26/98	14:50:36	4.0500	10.72	0.099
05/26/98	14:50:39	4.1000	10.71	0.096
05/26/98	14:50:42	4.1500	10.70	0.093
05/26/98	14:50:45	4.2000	10.68	0.091
05/26/98	14:50:48	4.2500	10.72	0.088
05/26/98	14:50:51	4.3000	10.69	0.085
05/26/98	14:50:54	4.3500	10.69	0.083
05/26/98	14:50:57	4.4000	10.69	0.080
05/26/98	14:51:00	4.4500	10.65	0.078
05/26/98	14:51:03	4.5000	10.65	0.076
05/26/98	14:51:06	4.5500	10.64	0.075
05/26/98	14:51:09	4.6000	10.63	0.073
05/26/98	14:51:12	4.6500	10.62	0.071
05/26/98	14:51:15	4.7000	10.61	0.070
05/26/98	14:51:18	4.7500	10.60	0.068
05/26/98	14:51:21	4.8000	10.58	0.067
05/26/98	14:51:24	4.8500	10.61	0.065
05/26/98	14:51:27	4.9000	10.60	0.065
05/26/98	14:51:30	4.9500	10.56	0.063
05/26/98	14:51:33	5.0000	10.59	0.062
05/26/98	14:51:36	5.0500	10.58	0.061
05/26/98	14:51:39	5.1000	10.57	0.060

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-0218-011

WBGmw-007 Slug Test Solution



DATA SET:
WBGMW7.AQT
10/06/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

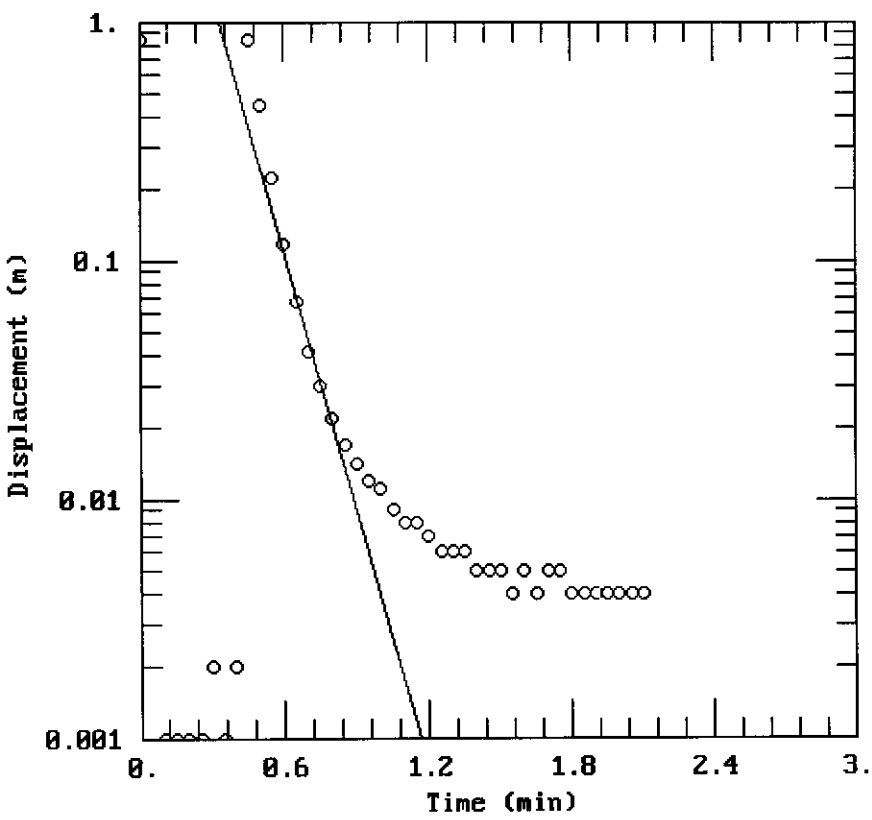
TEST DATA:
H0= 0.842 m
r_c= 0.025 m
r_w= 0.102 m
L = 3.18 m
b = 3.18 m
H = 3.18 m

PARAMETER ESTIMATES:
K = 0.02115 cm/sec
y0 = 20.81 m

AQTESOLV

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-8218-011

WBGmw-007 Slug Test Solution



DATA SET:
WBGMW7.AQT
10/06/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 0.842 m
r_c= 0.025 m
r_w= 0.102 m
L = 1.97 m
b = 1.97 m
H = 1.97 m

PARAMETER ESTIMATES:
K = 0.02732 cm/sec
y0 = 15.36 m

AQTESOLV

PROJECT RVAAP INSPECTOR Brad Baker SHEET 1

DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
4	Silty CLAY; sand: granules ~15%, silt ~35%; clay ~50%; Yellowish Brown and variegated med gray clay; poorly sorted; subrounded; firm; moist; med plasticity (CL)	PID-0ppm LEL-0% O_2-21%	NA	NA	0-4 ft run 3.0 ft recovered (75%)
9	Silty CLAY; sand: fine ~10%; silt ~30%, clay 60%; Yellowish Brown and variegated bluish gray clay; poorly sorted; subrounded; firm; med plasticity; moist (CL)	PID-0ppm LEL-0% O_2-21%	NA	NA	4-9 ft run 5.0 ft recovery (100%) cuttings v. moist End of work day 23 Apr 98
10.5	Shelby Tube	PID-0ppm LEL-0% O_2-21%	✓	NA	24 Apr 98 tagged hole @ 9.0 ft bls no H_2O detected 9-10.5 ft Shelby Tube
14.0	Silty CLAY; sand: granules ~10%, silt ~30%, clay ~60% Med Yellowish Brown; poorly sorted; well rounded; soft; med plasticity moist (CL)	PID-0ppm LEL-0% O_2-21%	NA	NA	10.5 - 14.0 ft run 0.5 ft recovery (15%)
19.0	SAME AS ABOVE w/ sandstone frags present	PID 0ppm LEL-0% O_2-21%	NA	NA	Auger refusal rig chatter 16 - 19 ft bls - gravels 0.5 ft recovered (~10%)
21	19-20.2 ft CLAY; sand-med ~15%, clay 65%; bluish gray; poorly sorted; subrounded; soft, high plasticity (fat clay), wet (CL) 20.2 - 20.8 ft SAND; granules ~10%, silt ~15%, coarse ~75%; med gray; subrounded; poorly sorted; soft/loose; no plasticity; saturated; (SW)	PID-0ppm LEL-0% O_2-20%	NA	NA	At 20 ft bls drilling became easier / softer 19-21 ft run Upon spoon retrieval free H_2O in sampler 0947 tagged H_2O @ 18.72 ft bls 0.8 ft recovered (90%) 1016 H_2O @ 18.72 ft bls 1109 H_2O @ 18.72 ft bls Tagged hole @ 20.7' bls auger are open
24	Sandy CLAY; sand: med-coarse ~30%; 10% sandstone frags; clay ~55%; med gray; subrounded; poorly sorted; soft; med plasticity; saturated (CL)				21-24 ft run 1.0 ft recovery (20%) H_2O tagged @ 15.62 ft bls (1126) 1130 H_2O @ 14.10 ft bls 1305 H_2O tagged @ 13.76' bls
	TD = 24.0 ft bls				

B-223

PROJECT RVAAP N 562479.8650 E 2360420.4410 ELEV. 998.091 HOLE NO. MW-mw-007

IN_SITU INC. TROLL
Serial number: 00001342
Unit name: Ft Knox #3

Report generated: 10/01/98 11:21:15
Report from file: C:\MYDOCU~1\RAVENN~1\WBGMW007.BIN

Test name:WBGmw007

Test defined on: 05/26/98 14:29:56
Test started on: 05/26/98 14:30:12
Test stopped on: 05/26/98 14:32:56
Test extracted on: 05/26/98 15:07:24

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 55

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

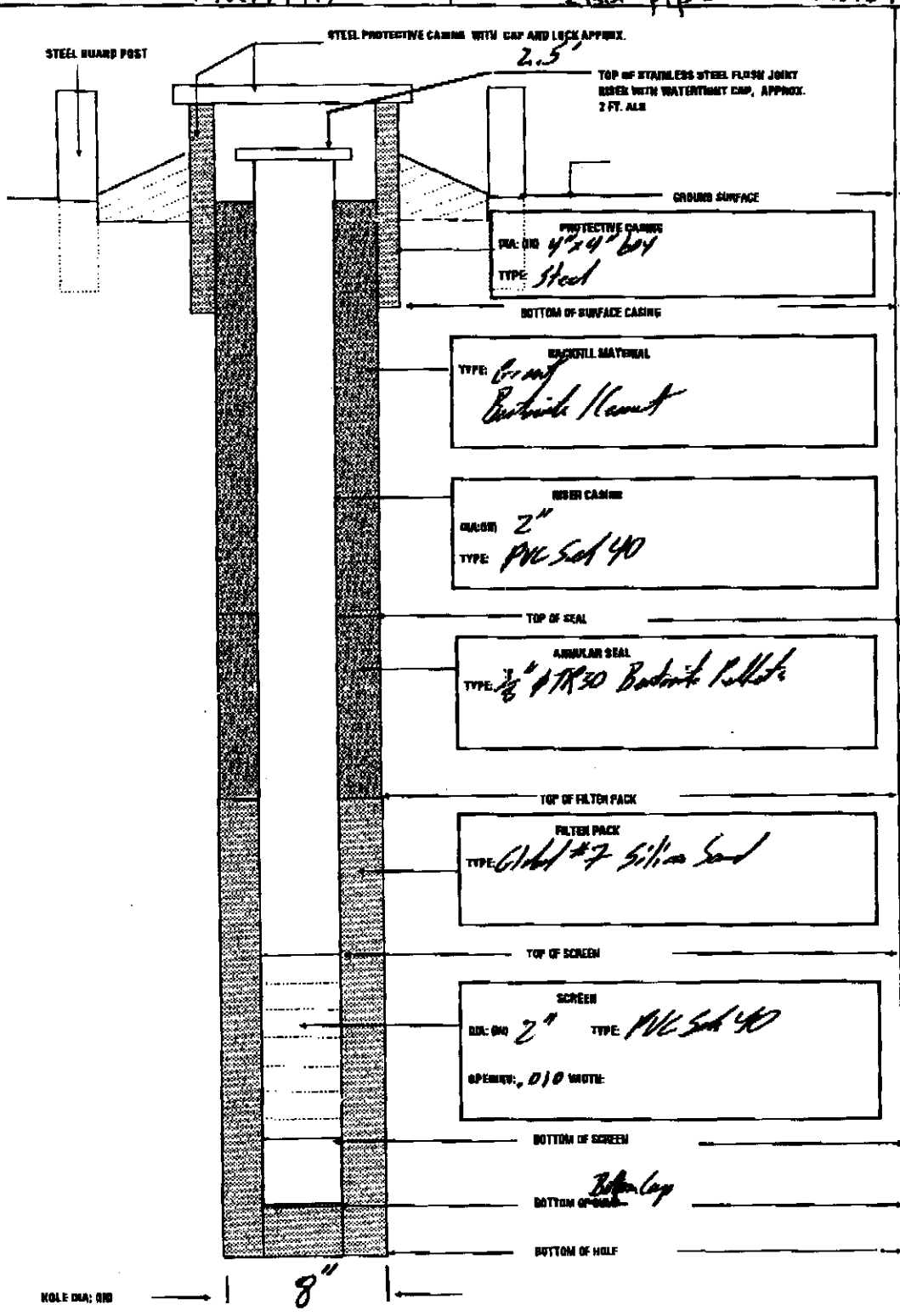
Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 2.930 Meters H2O

Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O
05/26/98	14:30:12	0.0000	12.36	0.000
05/26/98	14:30:15	0.0500	12.37	0.000
05/26/98	14:30:18	0.1000	12.35	-0.001
05/26/98	14:30:21	0.1500	12.33	0.000
05/26/98	14:30:24	0.2000	12.31	-0.001
05/26/98	14:30:27	0.2500	12.28	-0.001
05/26/98	14:30:30	0.3000	12.26	-0.001
05/26/98	14:30:33	0.3500	12.24	-0.001
05/26/98	14:30:36	0.4000	12.22	-0.001
05/26/98	14:30:39	0.4500	12.20	-0.001
05/26/98	14:30:42	0.5000	12.18	0.000
05/26/98	14:30:45	0.5500	12.17	-0.001
05/26/98	14:30:48	0.6000	12.14	0.000
05/26/98	14:30:51	0.6500	12.17	0.000
05/26/98	14:30:54	0.7000	12.14	-0.001
05/26/98	14:30:57	0.7500	12.12	-0.001
05/26/98	14:31:00	0.8000	12.10	-0.001
05/26/98	14:31:03	0.8500	12.09	-0.001
05/26/98	14:31:06	0.9000	12.07	-0.002
05/26/98	14:31:09	0.9500	12.06	-0.001
05/26/98	14:31:12	1.0000	12.04	-0.002

05/26/98	14:31:15	1.0500	12.03	0.842
05/26/98	14:31:18	1.1000	12.01	0.447
05/26/98	14:31:21	1.1500	11.99	0.221
05/26/98	14:31:24	1.2000	11.97	0.117
05/26/98	14:31:27	1.2500	11.95	0.067
05/26/98	14:31:30	1.3000	11.95	0.042
05/26/98	14:31:33	1.3500	11.92	0.030
05/26/98	14:31:36	1.4000	11.90	0.022
05/26/98	14:31:39	1.4500	11.88	0.017
05/26/98	14:31:42	1.5000	11.87	0.014
05/26/98	14:31:45	1.5500	11.85	0.012
05/26/98	14:31:48	1.6000	11.84	0.011
05/26/98	14:31:51	1.6500	11.82	0.009
05/26/98	14:31:54	1.7000	11.80	0.008
05/26/98	14:31:57	1.7500	11.79	0.008
05/26/98	14:32:00	1.8000	11.77	0.007
05/26/98	14:32:03	1.8500	11.76	0.006
05/26/98	14:32:06	1.9000	11.76	0.006
05/26/98	14:32:09	1.9500	11.74	0.006
05/26/98	14:32:12	2.0000	11.72	0.005
05/26/98	14:32:15	2.0500	11.71	0.005
05/26/98	14:32:18	2.1000	11.69	0.005
05/26/98	14:32:21	2.1500	11.68	0.004
05/26/98	14:32:24	2.2000	11.66	0.005
05/26/98	14:32:27	2.2500	11.65	0.004
05/26/98	14:32:30	2.3000	11.62	0.005
05/26/98	14:32:33	2.3500	11.67	0.005
05/26/98	14:32:36	2.4000	11.65	0.004
05/26/98	14:32:39	2.4500	11.63	0.004
05/26/98	14:32:42	2.5000	11.61	0.004
05/26/98	14:32:45	2.5500	11.60	0.004
05/26/98	14:32:48	2.6000	11.59	0.004
05/26/98	14:32:51	2.6500	11.57	0.004
05/26/98	14:32:54	2.7000	11.57	0.004

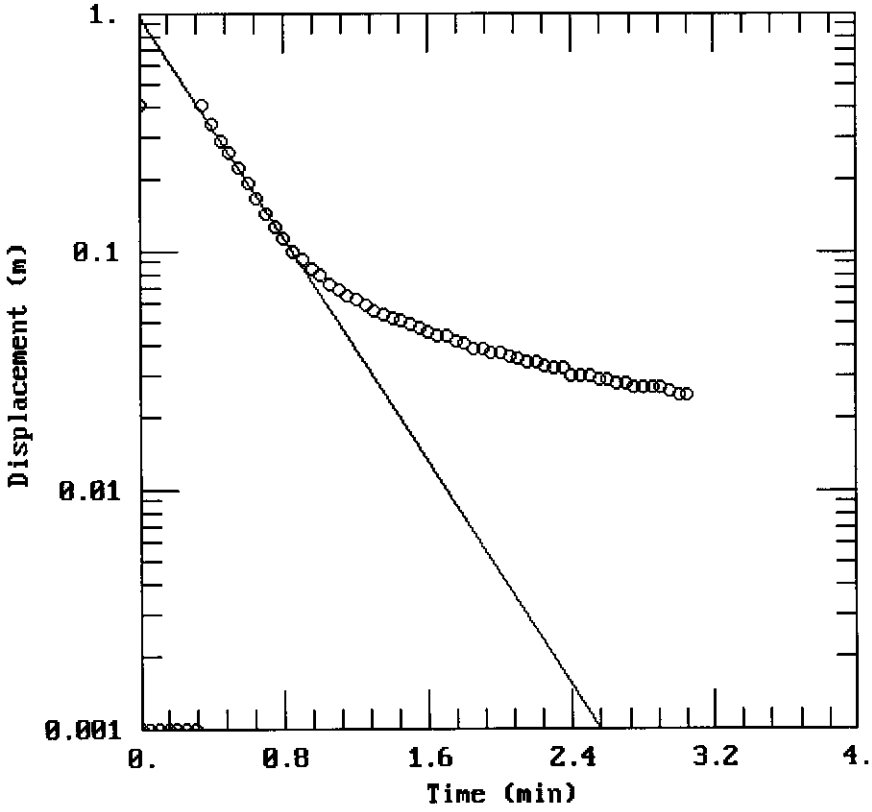
PROJECT NAME: Phase II RI @ WBG Area Background Investigation DELIVERY ORDER NO.: 0190

WELL NUMBER: WBGmw-007		BEGIN: 23 Apr 98	END: 24 Apr 98
COORDINATES:	N: 562479.865Ø E: 236Ø42Ø.441Ø	REFERENCE POINT: TOP of Riser Pipe	ELEVATION 998.897 MSL



CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-0218-011

WBGmw-008 Slug Test Solution



DATA SET:
WBGMW8.AQT
10/06/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

TEST DATA:
H0= 0.408 m
r_c= 0.025 m
r_w= 0.102 m
L = 1.97 m
b = 1.97 m
H = 1.97 m

PARAMETER ESTIMATES:
K = 0.000848 cm/sec
y0 = 0.95 m

AQTESOLV

IN_SITU INC. TROLL
Serial number: 00001342
Unit name: Ft Knox #3

Report generated: 10/01/98 11:18:55
Report from file: C:\MYDOCU~1\RAVENN~1\WBGMW008.BIN

Test name: WBGmw008

Test defined on: 05/26/98 11:59:07
Test started on: 05/26/98 11:59:47
Test stopped on: 05/26/98 12:04:23
Test extracted on: 05/26/98 12:05:49

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 92

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 1.897 Meters H2O

Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O
05/26/98	11:59:47	0.0000	11.39	0.000
05/26/98	11:59:50	0.0500	11.43	0.000
05/26/98	11:59:53	0.1000	11.41	0.000
05/26/98	11:59:56	0.1500	11.41	0.001
05/26/98	11:59:59	0.2000	11.39	0.000
05/26/98	12:00:02	0.2500	11.38	-0.001
05/26/98	12:00:05	0.3000	11.37	0.000
05/26/98	12:00:08	0.3500	11.37	-0.001
05/26/98	12:00:11	0.4000	11.36	0.000
05/26/98	12:00:14	0.4500	11.35	0.000
05/26/98	12:00:17	0.5000	11.34	0.000
05/26/98	12:00:20	0.5500	11.33	0.000
05/26/98	12:00:23	0.6000	11.33	0.000
05/26/98	12:00:26	0.6500	11.32	0.000
05/26/98	12:00:29	0.7000	11.31	0.000
05/26/98	12:00:32	0.7500	11.30	0.000
05/26/98	12:00:35	0.8000	11.29	0.001
05/26/98	12:00:38	0.8500	11.30	0.001
05/26/98	12:00:41	0.9000	11.29	0.001
05/26/98	12:00:44	0.9500	11.27	0.001
05/26/98	12:00:47	1.0000	11.30	0.001

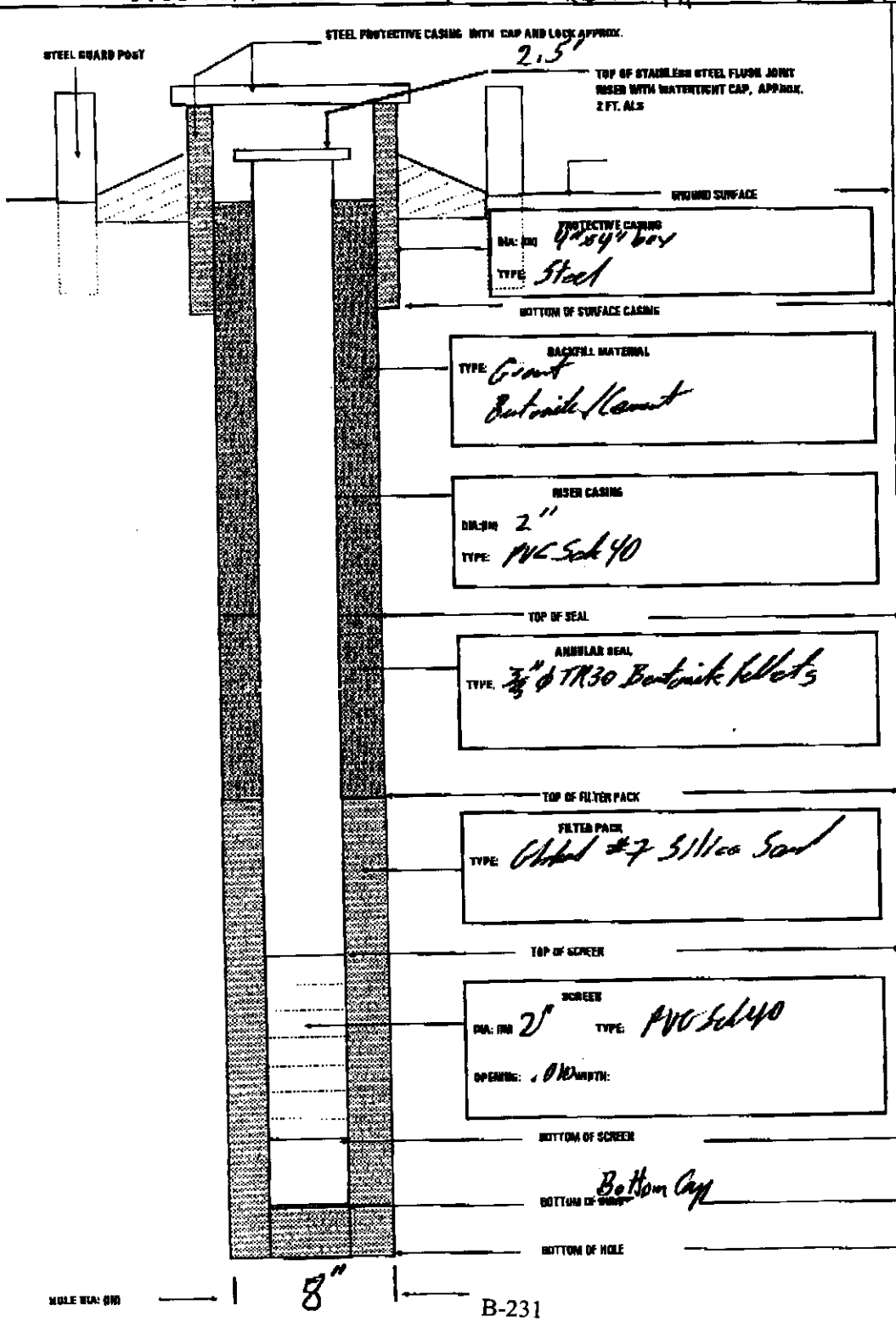
05/26/98	12:00:50	1.0500	11.30	0.001
05/26/98	12:00:53	1.1000	11.29	0.001
05/26/98	12:00:56	1.1500	11.28	0.001
05/26/98	12:00:59	1.2000	11.27	0.001
05/26/98	12:01:02	1.2500	11.27	0.001
05/26/98	12:01:05	1.3000	11.26	0.001
05/26/98	12:01:08	1.3500	11.26	0.001
05/26/98	12:01:11	1.4000	11.25	0.001
05/26/98	12:01:14	1.4500	11.24	0.001
05/26/98	12:01:17	1.5000	11.24	0.001
05/26/98	12:01:20	1.5500	11.23	0.001
05/26/98	12:01:23	1.6000	11.22	0.001
05/26/98	12:01:26	1.6500	11.22	0.001
05/26/98	12:01:29	1.7000	11.21	0.001
05/26/98	12:01:32	1.7500	11.21	0.001
05/26/98	12:01:35	1.8000	11.20	0.001
05/26/98	12:01:38	1.8500	11.20	0.408
05/26/98	12:01:41	1.9000	11.19	0.340
05/26/98	12:01:44	1.9500	11.19	0.291
05/26/98	12:01:47	2.0000	11.18	0.256
05/26/98	12:01:50	2.0500	11.18	0.222
05/26/98	12:01:53	2.1000	11.17	0.191
05/26/98	12:01:56	2.1500	11.17	0.166
05/26/98	12:01:59	2.2000	11.16	0.143
05/26/98	12:02:02	2.2500	11.16	0.126
05/26/98	12:02:05	2.3000	11.15	0.112
05/26/98	12:02:08	2.3500	11.15	0.100
05/26/98	12:02:11	2.4000	11.15	0.092
05/26/98	12:02:14	2.4500	11.14	0.084
05/26/98	12:02:17	2.5000	11.13	0.079
05/26/98	12:02:20	2.5500	11.12	0.073
05/26/98	12:02:23	2.6000	11.11	0.069
05/26/98	12:02:26	2.6500	11.11	0.065
05/26/98	12:02:29	2.7000	11.11	0.062
05/26/98	12:02:32	2.7500	11.11	0.059
05/26/98	12:02:35	2.8000	11.10	0.056
05/26/98	12:02:38	2.8500	11.10	0.054
05/26/98	12:02:41	2.9000	11.09	0.052
05/26/98	12:02:44	2.9500	11.09	0.051
05/26/98	12:02:47	3.0000	11.07	0.049
05/26/98	12:02:50	3.0500	11.05	0.047
05/26/98	12:02:53	3.1000	11.08	0.046
05/26/98	12:02:56	3.1500	11.11	0.044
05/26/98	12:02:59	3.2000	11.10	0.044
05/26/98	12:03:02	3.2500	11.09	0.042
05/26/98	12:03:05	3.3000	11.09	0.041
05/26/98	12:03:08	3.3500	11.08	0.039
05/26/98	12:03:11	3.4000	11.07	0.039
05/26/98	12:03:14	3.4500	11.06	0.037
05/26/98	12:03:17	3.5000	11.06	0.037
05/26/98	12:03:20	3.5500	11.05	0.036
05/26/98	12:03:23	3.6000	11.05	0.035
05/26/98	12:03:26	3.6500	11.05	0.034
05/26/98	12:03:29	3.7000	11.04	0.034
05/26/98	12:03:32	3.7500	11.03	0.033
05/26/98	12:03:35	3.8000	11.03	0.032

05/26/98	12:03:38	3.8500	11.03	0.032
05/26/98	12:03:41	3.9000	11.02	0.030
05/26/98	12:03:44	3.9500	11.02	0.030
05/26/98	12:03:47	4.0000	11.01	0.030
05/26/98	12:03:50	4.0500	11.01	0.029
05/26/98	12:03:53	4.1000	11.00	0.029
05/26/98	12:03:56	4.1500	11.00	0.028
05/26/98	12:03:59	4.2000	11.00	0.028
05/26/98	12:04:02	4.2500	10.99	0.027
05/26/98	12:04:05	4.3000	10.99	0.027
05/26/98	12:04:08	4.3500	10.96	0.027
05/26/98	12:04:11	4.4000	10.98	0.027
05/26/98	12:04:14	4.4500	11.00	0.026
05/26/98	12:04:17	4.5000	11.00	0.025
05/26/98	12:04:20	4.5500	11.00	0.025

MONITORING WELL

PROJECT NAME: Phase II RI @ WBG and Background Investigation DELIVERY ORDER NO. 3088

WELL NUMBER: WBG mw-008	BEGIN: 23 Apr 98	END: 23 Apr 98	
COORDINATES: N: 569010.3496 E: 2359700.5730	REFERENCE POINT: Top of Riser Pipe	ELEVATION: MSL 005.709	



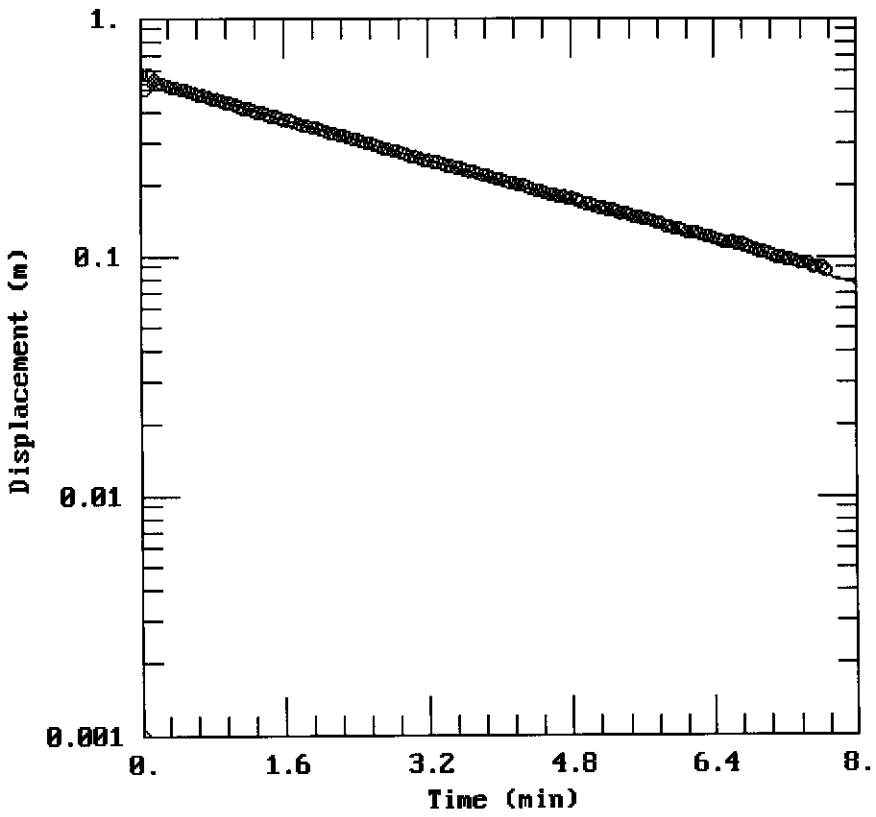
DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO. (F)	REMARKS (G)
0	Sandy Clayey SILT; silt ~45%, clay ~30%; sand: fine-med ~25%; Med Yellowish Brown variegated reddish orange, tan, and lt. gray; poorly sorted; subangular; med plasticity, firm-hard; moist, (ML)	PID 0.0ppm LEL 0% O_2 21.0%	NA	NA	0-4 ft run lost shoe off split barrel drilled additional 1 ft to catch shoe in augers 3.4 ft recovered (85%) Shelby Tube 5-7.0 ft 18" penetration / refusal actual 5-6.5 ft
4			NA	NA	Shoe recovered
5		PID 0.0ppm LEL 0% O_2 21.0%		NA	Shelby Tube 5-6.5 ft 100% (recovery)
6.5		PID 0ppm LEL 0% O_2 21.0%	NA	NA	6.5 ft rig chatter rk frag 6.5-9 ft run 0% recovery
9	SAME AS ABOVE (9.0-9.5 ft) 9.5-10.0 ft SAND; sand:med ~80%, silt ~20%; Med Brown; mod sorted; subrounded; v. soft; wet (SM)	PID 0ppm LEL 0% O_2 21.0%	NA	NA	9-12 ft run 1.0 ft recovery (33.3%)
12	Shelby Tube			NA	Shelby Tube 12-13.5 ft Tube came up wet 1448 Tagged H_2O @ 11.66' bls
13.5	SAND; sand: med ~85%, silt ~15%, Med Brown; mod sorted; subrounded, v. soft, saturated (SM) Note: Bottom of shoe soil change to bluish gray, sandy silt.	PID 0ppm LEL 0% O_2 21.0%	NA	NA	13.5-18.5 ft run 1.3 ft recovery ~25% Saturated cuttings present while augers @ 17 ft bls 1515 H_2O tagged @ 14.18 ft bls
18.5	TD = 18.5				

PROJECT RVAAP N 562010.3490 E 2359700.5730 ELEV. 1005.709

HOLE NO. VBC mw-008

CLIENT: USACE	COMPANY: SAIC
LOCATION: Ravenna, Ohio	PROJECT: 01-XXXX-04-8218-011

WBGmw-009 Slug Test Solution



DATA SET:
WBG9.AQT
10/06/98

AQUIFER MODEL:
Unconfined

SOLUTION METHOD:
Bouwer-Rice

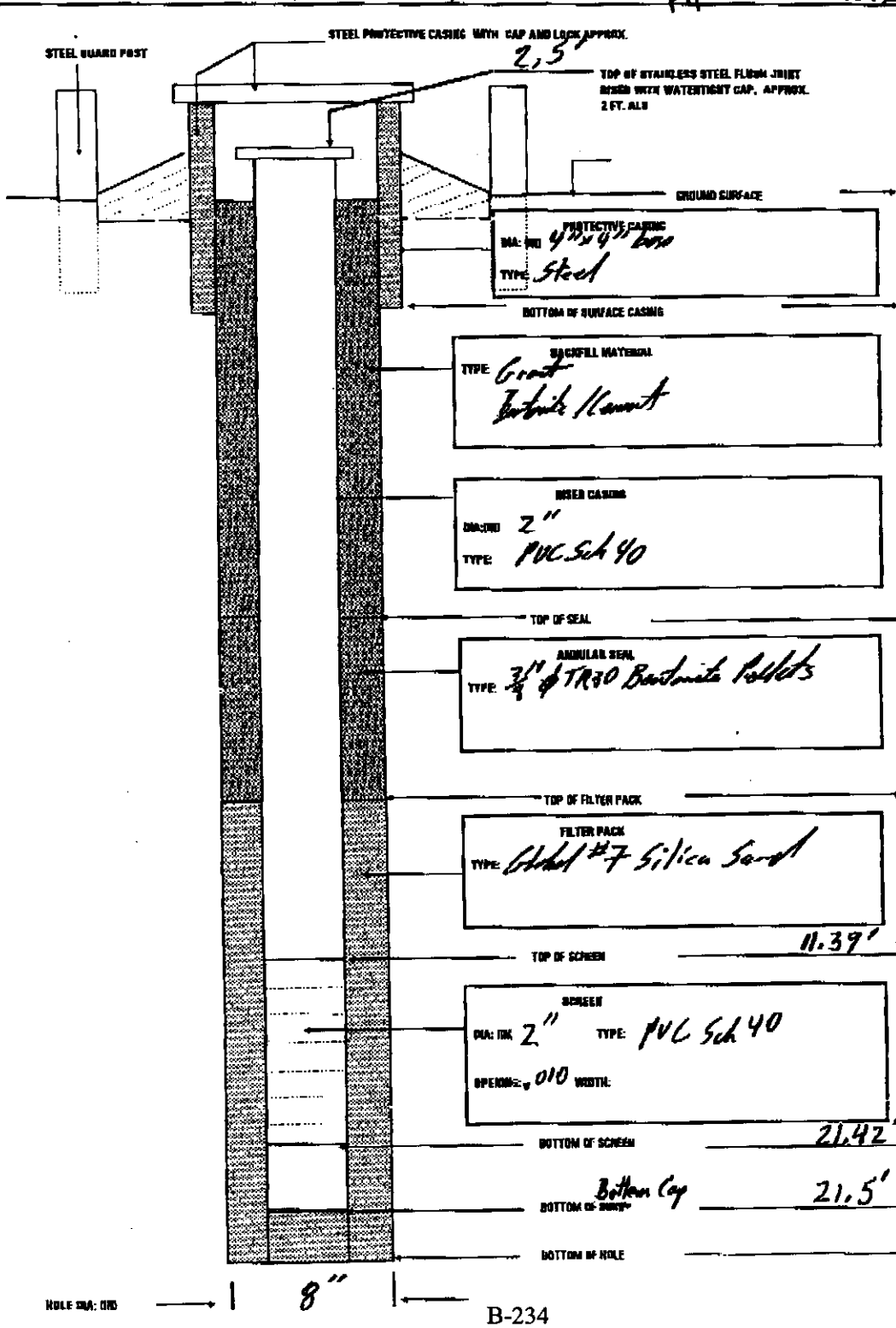
TEST DATA:
H0= 0.582 m
r_c= 0.025 m
r_w= 0.102 m
L = 3.47 m
b = 3.47 m
H = 3.47 m

PARAMETER ESTIMATES:
K = 0.000565 cm/sec
y0 = 0.5561 m

AQTESOLV

PROJECT NAME: Phase II RI @ WBG and Background Investigation DELIVERY ORDER NO: 0068

WELL NUMBER: WBG mw - 09	BEGIN: 22 Apr 94	END: 23 Apr 94
COORDINATES: N: 561603.5350 E: 235159.2040	REFERENCE POINT: TOP OF Riser Pipe ELEVATION: 1045.829 MSL	



DEPTH (B)	DESCRIPTION OF MATERIALS (C)	FIELD SCREENING RESULTS (D)	GEOTECH SAMPLE OR CORE BOX NO. (E)	ANALYTICAL SAMPLE NO (F)	REMARKS (G)
0–5	Sandy SILT; sand - fine - med ~25%, silt ~75%; Mod yellowish brown; subrounded; poorly sorted; hard; low-mod plasticity; moist; ML.	LEL-0% O_2-21.3% PID-0ppm	NA	NA	0-4 ft run lost shoe down hole; drilled additional 1 ft to 5.0 ft bls and tripped out - shoe recovered 3.2 ft recovery / 65%
5					Drilled out to recover lost shoe
5–9	Silty CLAY; silt ~30% clay ~60%, v fine sand ~10%; Mod Yellowish Brown; subrounded; poorly sorted, soft; mod plasticity; moist, CL. Note: color w/ variegated lt gray	LEL-0% O_2-21.3% PID-0ppm	NA	NA	5-9 ft run 1.6 ft recovery / 30%
9–14		LEL-0% O_2-21.3% PID-0ppm	NA	NA	9-14 ft run 0% recovery, probably pushed a rk. down hole; cuttings appear same as 5-9 ft run w/ less moisture
14–19		LEL-0% O_2-21.3% PID-0ppm	NA	NA	14-19 ft run Rig chatter @ 14 ft 0% recovery Cuttings appear same as above Shelby Tube 24-26 ft bls No Recovery TD 22 Apr 98 - 19.0 ft
19	See Pg 45 for final core run		B-235		23 Apr 98 Borehole TD 24' bls

PROJECT RVAAP N561603.5350 E2357159.2040 ELEV. 1045.029 HOLE NO MW-09

~~MGB~~ WRG

IN_SITU INC. TROLL
Serial number: 00000971
Unit name: RVAAP

Report generated: 10/01/98 11:19:58
Report from file: C:\MYDOCU~1\RAVENN~1\WBGMW009.BIN

Test name: WBGmw009

Test defined on: 05/26/98 12:19:57
Test started on: 05/26/98 12:20:15
Test stopped on: 05/26/98 12:29:57
Test extracted on: 05/26/98 16:21:32

Data gathered using Linear testing
Time between data points: 0.0500 Minutes.
Number of data samples: 194

Channel number [1]
Measurement type: Temperature
Channel name: OnBoard Temp

Channel number [2]
Measurement type: Pressure/Level
Channel name: OnBoard Pressure
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Meters H2O
Referenced on: test start
Pressure head at reference: 2.828 Meters H2O

Date	Time	ET (min)	Channel[1] Celsius	Channel[2] Meters H2O	
05/26/98	12:20:15	0.0000	10.05	0.000	
05/26/98	12:20:18	0.0500	10.05	0.000	
05/26/98	12:20:21	0.1000	10.04	0.000	
05/26/98	12:20:24	0.1500	10.03	0.000	
05/26/98	12:20:27	0.2000	10.03	0.000	
05/26/98	12:20:30	0.2500	10.02	0.000	
05/26/98	12:20:33	0.3000	10.02	0.000	
05/26/98	12:20:36	0.3500	10.02	0.001	
05/26/98	12:20:39	0.4000	10.02	0.000	
05/26/98	12:20:42	0.4500	10.02	0.000	
05/26/98	12:20:45	0.5000	10.02	0.000	
05/26/98	12:20:48	0.5500	10.02	0.000	
05/26/98	12:20:51	0.6000	10.01	0.000	
05/26/98	12:20:54	0.6500	10.01	0.000	
05/26/98	12:20:57	0.7000	10.01	0.000	
05/26/98	12:21:00	0.7500	10.01	0.000	
05/26/98	12:21:03	0.8000	10.01	0.000	
05/26/98	12:21:06	0.8500	10.01	0.000	
05/26/98	12:21:09	0.9000	10.01	0.000	B-236
05/26/98	12:21:12	0.9500	10.01	0.000	
05/26/98	12:21:15	1.0000	10.00	0.000	

05/26/98	12:21:18	1.0500	10.00	0.000	
05/26/98	12:21:21	1.1000	10.00	0.000	
05/26/98	12:21:24	1.1500	10.00	0.000	
05/26/98	12:21:27	1.2000	10.01	0.000	
05/26/98	12:21:30	1.2500	10.04	0.001	
05/26/98	12:21:33	1.3000	10.04	0.000	
05/26/98	12:21:36	1.3500	10.03	0.000	
05/26/98	12:21:39	1.4000	10.04	0.000	
05/26/98	12:21:42	1.4500	10.08	0.000	
05/26/98	12:21:45	1.5000	10.06	0.000	
05/26/98	12:21:48	1.5500	10.06	0.000	
05/26/98	12:21:51	1.6000	10.05	0.000	
05/26/98	12:21:54	1.6500	10.05	0.000	
05/26/98	12:21:57	1.7000	10.05	0.000	
05/26/98	12:22:00	1.7500	10.05	0.004	
05/26/98	12:22:03	1.8000	10.04	0.000	
05/26/98	12:22:06	1.8500	10.04	0.000	
05/26/98	12:22:09	1.9000	10.04	0.000	
05/26/98	12:22:12	1.9500	10.04	0.000	
05/26/98	12:22:15	2.0000	10.03	0.000	
05/26/98	12:22:18	2.0500	10.03	0.501	
05/26/98	12:22:21	2.1000	10.03	0.582	
05/26/98	12:22:24	2.1500	10.03	0.545	
05/26/98	12:22:27	2.2000	10.03	0.532	
05/26/98	12:22:30	2.2500	10.03	0.527	
05/26/98	12:22:33	2.3000	10.03	0.522	
05/26/98	12:22:36	2.3500	10.03	0.515	
05/26/98	12:22:39	2.4000	10.03	0.509	
05/26/98	12:22:42	2.4500	10.03	0.503	
05/26/98	12:22:45	2.5000	10.03	0.498	
05/26/98	12:22:48	2.5500	10.03	0.491	
05/26/98	12:22:51	2.6000	10.03	0.485	
05/26/98	12:22:54	2.6500	10.03	0.478	
05/26/98	12:22:57	2.7000	10.03	0.472	
05/26/98	12:23:00	2.7500	10.03	0.468	
05/26/98	12:23:03	2.8000	10.03	0.461	
05/26/98	12:23:06	2.8500	10.03	0.453	
05/26/98	12:23:09	2.9000	10.02	0.448	
05/26/98	12:23:12	2.9500	10.02	0.442	
05/26/98	12:23:15	3.0000	10.03	0.437	
05/26/98	12:23:18	3.0500	10.03	0.431	
05/26/98	12:23:21	3.1000	10.05	0.426	
05/26/98	12:23:24	3.1500	10.07	0.420	
05/26/98	12:23:27	3.2000	10.06	0.415	
05/26/98	12:23:30	3.2500	10.06	0.409	
05/26/98	12:23:33	3.3000	10.05	0.405	
05/26/98	12:23:36	3.3500	10.05	0.399	
05/26/98	12:23:39	3.4000	10.05	0.394	
05/26/98	12:23:42	3.4500	10.05	0.390	
05/26/98	12:23:45	3.5000	10.05	0.384	
05/26/98	12:23:48	3.5500	10.04	0.380	
05/26/98	12:23:51	3.6000	10.05	0.375	
05/26/98	12:23:54	3.6500	10.04	0.371	B-237
05/26/98	12:23:57	3.7000	10.04	0.365	
05/26/98	12:24:00	3.7500	10.04	0.361	
05/26/98	12:24:03	3.8000	10.04	0.356	

05/26/98	12:24:06	3.8500	10.04	0.352
05/26/98	12:24:09	3.9000	10.03	0.348
05/26/98	12:24:12	3.9500	10.04	0.344
05/26/98	12:24:15	4.0000	10.03	0.340
05/26/98	12:24:18	4.0500	10.03	0.335
05/26/98	12:24:21	4.1000	10.03	0.331
05/26/98	12:24:24	4.1500	10.03	0.327
05/26/98	12:24:27	4.2000	10.03	0.323
05/26/98	12:24:30	4.2500	10.06	0.321
05/26/98	12:24:33	4.3000	10.09	0.316
05/26/98	12:24:36	4.3500	10.08	0.312
05/26/98	12:24:39	4.4000	10.07	0.308
05/26/98	12:24:42	4.4500	10.06	0.305
05/26/98	12:24:45	4.5000	10.06	0.300
05/26/98	12:24:48	4.5500	10.06	0.297
05/26/98	12:24:51	4.6000	10.06	0.292
05/26/98	12:24:54	4.6500	10.06	0.290
05/26/98	12:24:57	4.7000	10.05	0.285
05/26/98	12:25:00	4.7500	10.05	0.281
05/26/98	12:25:03	4.8000	10.05	0.278
05/26/98	12:25:06	4.8500	10.05	0.276
05/26/98	12:25:09	4.9000	10.05	0.272
05/26/98	12:25:12	4.9500	10.05	0.269
05/26/98	12:25:15	5.0000	10.05	0.265
05/26/98	12:25:18	5.0500	10.08	0.264
05/26/98	12:25:21	5.1000	10.09	0.259
05/26/98	12:25:24	5.1500	10.08	0.255
05/26/98	12:25:27	5.2000	10.08	0.252
05/26/98	12:25:30	5.2500	10.10	0.251
05/26/98	12:25:33	5.3000	10.12	0.248
05/26/98	12:25:36	5.3500	10.11	0.245
05/26/98	12:25:39	5.4000	10.10	0.241
05/26/98	12:25:42	5.4500	10.10	0.238
05/26/98	12:25:45	5.5000	10.09	0.237
05/26/98	12:25:48	5.5500	10.09	0.234
05/26/98	12:25:51	5.6000	10.09	0.230
05/26/98	12:25:54	5.6500	10.09	0.229
05/26/98	12:25:57	5.7000	10.09	0.225
05/26/98	12:26:00	5.7500	10.08	0.222
05/26/98	12:26:03	5.8000	10.08	0.219
05/26/98	12:26:06	5.8500	10.08	0.217
05/26/98	12:26:09	5.9000	10.08	0.215
05/26/98	12:26:12	5.9500	10.08	0.212
05/26/98	12:26:15	6.0000	10.08	0.210
05/26/98	12:26:18	6.0500	10.08	0.207
05/26/98	12:26:21	6.1000	10.09	0.205
05/26/98	12:26:24	6.1500	10.13	0.204
05/26/98	12:26:27	6.2000	10.11	0.201
05/26/98	12:26:30	6.2500	10.11	0.198
05/26/98	12:26:33	6.3000	10.10	0.195
05/26/98	12:26:36	6.3500	10.10	0.193
05/26/98	12:26:39	6.4000	10.09	0.190
05/26/98	12:26:42	6.4500	10.09	0.188
05/26/98	12:26:45	6.5000	10.09	0.187
05/26/98	12:26:48	6.5500	10.09	0.183
05/26/98	12:26:51	6.6000	10.09	0.181

05/26/98	12:26:54	6.6500	10.09	0.180	
05/26/98	12:26:57	6.7000	10.09	0.179	
05/26/98	12:27:00	6.7500	10.08	0.176	
05/26/98	12:27:03	6.8000	10.08	0.174	
05/26/98	12:27:06	6.8500	10.08	0.172	
05/26/98	12:27:09	6.9000	10.08	0.169	
05/26/98	12:27:12	6.9500	10.08	0.167	
05/26/98	12:27:15	7.0000	10.08	0.165	
05/26/98	12:27:18	7.0500	10.08	0.164	
05/26/98	12:27:21	7.1000	10.08	0.161	
05/26/98	12:27:24	7.1500	10.08	0.160	
05/26/98	12:27:27	7.2000	10.08	0.157	
05/26/98	12:27:30	7.2500	10.10	0.157	
05/26/98	12:27:33	7.3000	10.13	0.155	
05/26/98	12:27:36	7.3500	10.11	0.151	
05/26/98	12:27:39	7.4000	10.11	0.150	
05/26/98	12:27:42	7.4500	10.10	0.148	
05/26/98	12:27:45	7.5000	10.10	0.147	
05/26/98	12:27:48	7.5500	10.10	0.146	
05/26/98	12:27:51	7.6000	10.09	0.144	
05/26/98	12:27:54	7.6500	10.09	0.143	
05/26/98	12:27:57	7.7000	10.09	0.140	
05/26/98	12:28:00	7.7500	10.09	0.139	
05/26/98	12:28:03	7.8000	10.09	0.137	
05/26/98	12:28:06	7.8500	10.09	0.134	
05/26/98	12:28:09	7.9000	10.09	0.134	
05/26/98	12:28:12	7.9500	10.09	0.131	
05/26/98	12:28:15	8.0000	10.08	0.131	
05/26/98	12:28:18	8.0500	10.08	0.129	
05/26/98	12:28:21	8.1000	10.08	0.127	
05/26/98	12:28:24	8.1500	10.08	0.127	
05/26/98	12:28:27	8.2000	10.08	0.125	
05/26/98	12:28:30	8.2500	10.08	0.124	
05/26/98	12:28:33	8.3000	10.08	0.121	
05/26/98	12:28:36	8.3500	10.08	0.121	
05/26/98	12:28:39	8.4000	10.08	0.120	
05/26/98	12:28:42	8.4500	10.08	0.117	
05/26/98	12:28:45	8.5000	10.08	0.115	
05/26/98	12:28:48	8.5500	10.10	0.115	
05/26/98	12:28:51	8.6000	10.13	0.114	
05/26/98	12:28:54	8.6500	10.12	0.112	
05/26/98	12:28:57	8.7000	10.11	0.112	
05/26/98	12:29:00	8.7500	10.10	0.110	
05/26/98	12:29:03	8.8000	10.10	0.108	
05/26/98	12:29:06	8.8500	10.10	0.107	
05/26/98	12:29:09	8.9000	10.10	0.105	
05/26/98	12:29:12	8.9500	10.09	0.104	
05/26/98	12:29:15	9.0000	10.09	0.103	
05/26/98	12:29:18	9.0500	10.08	0.101	
05/26/98	12:29:21	9.1000	10.11	0.100	
05/26/98	12:29:24	9.1500	10.14	0.100	
05/26/98	12:29:27	9.2000	10.14	0.097	
05/26/98	12:29:30	9.2500	10.13	0.097	B-239
05/26/98	12:29:33	9.3000	10.12	0.096	
05/26/98	12:29:36	9.3500	10.12	0.094	
05/26/98	12:29:39	9.4000	10.12	0.093	

05/26/98	12:29:42	9.4500	10.12	0.093
05/26/98	12:29:45	9.5000	10.15	0.091
05/26/98	12:29:48	9.5500	10.16	0.090
05/26/98	12:29:51	9.6000	10.15	0.090
05/26/98	12:29:54	9.6500	10.14	0.087