APPENDIX C

WELL DEVELOPMENT AND PRESAMPLING RECORDS

C.O WELL DEVELOPMENT AND PRESAMPLING RECORDS

This appendix contain well development records for all RFI- Phase I new wells. Water quality field data sheets are provided for presample purging of all old and new wells. Piezometers were not developed or sampled.

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2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I

Well ID: S-1

Date: 8/9/90
Time Start: 1318
Time Finish: 1502

Samplers: A. WARNEK / S. CONDRAN

Well Information

Depth to water: 8.35 * ft.
Well depth: 22.0 * ft.
Sample depth: 15 ft.
Casing diameter: 4½ in.
Casing volume: 21.7 gal.
Stickup: 2.0 ft.
Screened interval: 10 to 20

* from stick-up

Field Equipment

pH meter: orion research model 3?? Serial No. 4571
Water level meter: Solinst Serial No. 05837
E.C. meter: YSI model 33 Serial No. 15622
Dissolved O_2 meter: N/A Serial No. N/A
Pump: N/A Serial No. N/A
Temperature meter: YSI Model 33 Serial No. as before
Pumping rate: N/A gal/min
Filter Apparatus: N/A
Filters: N/A
Tubing: N/A
Size: NA in x ____ in
Bailer: 3" OD Sch. 40 PVC Size: 3 ft long ~~in~~

Field Chemistry

See water quality field data sheet for well S-30-88 on 8/9/90

Calibration pH 7.00 = ____ @ ____ °C pH 10.00 = ____ @ ____ °C Time ____

Conductance standard ____ umhos/cm @ 25° C Reading ____ umhos @ ____ °C Time ____

Calibrated conductivity ____ umhos/cm @ 25° C Diss. O_2 ____ mg/l @ ____ °C Time ____

Time	Volume Removed		Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
	Gals	Csng Vols					
1318 ~~1327~~	0	0	17	1350	9.2	N/A	clear, though slightly turbid
1336	14.8	~2/3	13.5	1450	9.0	N/A	slightly cloudy
1343	29.6	~1.3	12.5	1425	9.1	N/A	as above
1357	43.4	2	13.5	1600	8.9	N/A	as above
1413	65.1	3	12.5	1450	8.9	N/A	~~slight silty~~ [illegible]
1445	86.8	4	15	1530	9.1	NA	lt. yellow-brown, cloudy w/s. lt. sand
1502	108.5	5	15	1525	9.1	NA	lt. yellow-brown, slightly cloudy w/ silt & sand SC 8/9/90
1527	start sampling						

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID 5-2

Date 7-28-90
Time Start 0806
Time Finish 1427

Samplers T. Wollen
C. LINDSTRAND

Well Information

Depth to water 58.93 ft.
Well depth 78 59 ft.
Sample depth 78-58 ft.

Casing diameter 4 in.
Casing volume 12.3 gal.
33.06 gal

Stickup 2.3 ft.
Screened interval 78.59 to 58.89

Field Equipment

pH meter ORION Serial No. 9001
E.C. meter ORION Serial No. 9001
Pump HAND PUMP Serial No. —
Pumping rate 1½ gal/min

Water level meter SOLINIST Serial No. 08611
Dissolved O_2 meter N/A Serial No. N/A
Temperature meter ORION Serial No. 9001
Filter Apparatus NALGENE - DISPOSABLE Filters CN - 0.45 µ
Tubing 1½" PVC Size — in x — in Bailer 16ML, PVC Size 3 in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 66°F °C pH 10.00 = 10.00 @ 66°F °C Time 0730
Conductance standard 1000 umhos/cm @ 25° C Reading 1000 umhos @ 22 °C Time 0740
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ N/A °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
0820	0	0	66°F	455	8.30	—	CLEARITY CLOUDY, LT BROWN OVA-0ppm HNU-0ppm
0915	33.0	1	—	435	8.58	—	" " " OVA-0ppm HNU-0ppm
1325	66.0	2	22.0	350	8.43	—	" " " OVA-0ppm HNU-0ppm
1345	99.0	3	17.5	280	8.38	—	" " " OVA-0ppm HNU-0ppm
1420	132.0	4	15.0	256	8.29	—	" " " OVA-0ppm HNU-0ppm
1427	165.0	5	20.0	280	8.20	—	" " " OVA-0ppm HNU-0ppm

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-3

Date 8/12/90
Time Start 1350
Time Finish 1610

Samplers A. WARNER, D LEBLANC

Well Information

Depth to water 26.0 ft. | Casing diameter 4½ in. | Stickup 2.5 ft.
Well depth 45.1 ft. | Casing volume 34.4 gal. | Screened interval 24 to 44
Sample depth 35.0 ft.

Field Equipment

pH meter ORION RESEARCH MODEL SA 230 Serial No. 4531 | Water level meter SOLINST Serial No. 05837
E.C. meter Y.S.I. MODEL 33 Serial No. 15662 | Dissolved O_2 meter NA Serial No. NA
Pump NA Serial No. NA | Temperature meter (Dissolved Oxygen) Y.S.I. MODEL 33 Serial No. 15662
Pumping rate NA gal/min | Filter Apparatus 500 ml Nalgene | Filters .45 µ
Tubing NA | Size NA in x in | Bailer PVC SCHEDULE 40 | Size 3.0 ID x 3.5 OD in

Field Chemistry # SEE WATER QUALITY FIELD DATA SHEET FOR WELL S-45-90 8/12/90

Calibration pH 7.00 = @ °C | pH 10.00 = @ °C | Time
Conductance standard umhos/cm @ 25° C | Reading umhos @ °C | Time
Calibrated conductivity umhos/cm @ 25° C | Diss. O_2 mg/l @ °C | Time

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Physical Characteristics ~~Safety Procedures/Readings~~ 8/12/90
1350	0	0	17	5,100	7.54	NR	clear
1419	34.4	1	15	6,100	7.43	NA	clear, but v. slight turbidity
1451	68.8	2	14	6,000	7.44	NR	clear; as above
1519	103.2	3	14	6,000	7.43	NR	as above
1543	137.6	4	13	5,800	7.47	NR	cloudy
1607	172.0	5	14.5	6,000	7.46	NR	cloudy
1610	Start sampling						

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-4-88

Date 8/6/90
Time Start 1525
Time Finish 1900

Samplers P. Anderson, D. LeBlanc

Well Information

Depth to water 58.65 (TOPVC) ft.
Well depth 83.0 ft.
Sample depth 83-63 ft.
Casing diameter 4" in.
Casing volume 17.1 gal.
Stickup 1.9 ft.
Screened interval 83 to 63

Field Equipment

pH meter Orion Serial No. 1633
Water level meter Solinist Serial No. —
E.C. meter YSI Model 33 Serial No. 90D014127
Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate < 1 gal/min
Filter Apparatus Nalgene Filters CN 0.45M
Tubing N/A Size — in x — in
Bailer Schedule 40 PVC Size 3'X3" in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 1020
Conductance standard 1000 umhos/cm @ 25° C Reading 1070 umhos @ 25 °C Time 1025
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2 mg/l~~ salinity (o/oo)	Safety Procedures/Readings
1550	—	—	20.5	7400	8.38	4.9	clear
1719	44	2.6	19.0	6100	8.54	4.2	cloudy, grey, sandy
		well bailed dry then sampled					

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I

Well ID: S-65 (8/06/90)

Date: 8/06/90 | 8/07/90
Time Start: 1706 | 0922
Time Finish: 1730 | 1059

Samplers: S. CENDRAN; A. WARNER

Well Information

Depth to water: 36.03 ft.
Casing diameter: 4 ½" in.
Stickup: 1.6 ft.
Well depth: 58.90 ft.
Casing volume: 41.2 gal.
Screened interval: 38 to 58
Sample depth: 48 ft.

Field Equipment

pH meter: Orion Research SA210; Serial No. 1633
Water level meter: SOLINST; Serial No. 05654
E.C. meter: Y.S.I Model 33; Serial No. 90D014127
Dissolved O_2 meter: NA; Serial No. NA
Pump: 1.7" hand pump; Serial No. NA
Temperature meter: Y.S.I Model 33; Serial No. 90D014127
Pumping rate: ~2.5 gal/min
Filter Apparatus: 500 ml Nalgene
Filters: .45 µ
Tubing: NA
Size: NA in x ___ in
Bailer: NA
Size: NA in

***Field Chemistry** *SEE WELL S-23-88 F. ANDERSON/D LEBLANC CREW

Calibration pH 7.00 = ____ @ ____ °C pH 10.00 = ____ @ ____ °C Time ____

Conductance standard ____ umhos/cm @ 25° C Reading ____ umhos @ ____ °C Time ____

Calibrated conductivity ____ umhos/cm @ 25° C Diss. O_2 NA mg/l @ ____ °C Time NA

Time	Volume Removed		Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	~~Safety~~ Physical Characteristics Procedures/Readings
	Gals	Csng Vols					
1707	0	0	30	12,500	* 01	NA	clear - slightly cloudy
1721	41.2	1	30	12,000	7.78		clear - slightly cloudy
0933	82.4	2	26	11,000	7.74		clear
0958	123.6	3	23	10,900	7.28		clear
1022	164.8	4	23	10,700	7.64		clear
1059	206.0	5	21	10,000	7.57		clear
1250	Start	sampling					

8/07/90

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-6

Date 8/13/90
Time Start 0740
Time Finish 1005

Samplers P. Anderson, S. Bradfield

Well Information

Depth to water 18.56 (TOPVC) ft.
Casing diameter 4" in.
Stickup 2.5 ft.
Well depth 35 ft.
Casing volume 12.3 gal.
Screened interval 35 to 25
Sample depth 35-25 ft.

Field Equipment

pH meter Orion Serial No. 1633
Water level meter Solinist Serial No. —
E.C. meter YSI Model 33 Serial No. 90D014127
Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate < 1 gal/min
Filter Apparatus Nalgene Filters CN 0.45M
Tubing N/A Size — in x — in Bailer schedule 40 PVC Size 3" x 3' in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0750
Conductance standard 1000 umhos/cm @ 25° C Reading 1390 umhos @ 25 °C Time 0755
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2 mg/l~~ salinity (o/oo)	Safety Procedures/Readings
0803	—	—	11.0	21,500	8.01	18.4	initial readings clear
0821	~32	2.6	11.0	21,500	7.52	18.5	clear
0850	~64	5.2	11.0	21,900	7.70	18.9	mostly clear
0934	~96	7.8	17.5	22,000	7.89	16.0	
			well bailed dry after 3rd volume				

3/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-7

Date 8-14-90
Time Start 1023
Time Finish 1225

Samplers T. J. WOLLEN
M. LEWIS

Well Information

Depth to water 29.51 ft. Casing diameter 4 in. Stickup 2.43 ft.
Well depth 54.51 ft. Casing volume 42 gal. Screened interval 54 to 34
Sample depth 54-30 ft.

Field Equipment

pH meter ______ Serial No. ______ Water level meter SOLINST Serial No. ______
E.C. meter YSI MODEL 33 Serial No. ______ Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. — Temperature meter YSI MODEL 33 Serial No. ______
Pumping rate ~1 gal/min Filter Apparatus NALGENE - DISPOSABLE Filters 0.45 µ
Tubing N/A Size — in x — in Bailer SCH 40 PVC Size 3" x 3' in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 7.00/64 °C pH 10.00 = 10.00 @ 10.56/68 °C Time 0958

Conductance standard 1000 umhos/cm @ 25° C Reading 1050 umhos @ 20 °C Time 1000

Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ — °C Time —

Time	Volume Removed		Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
	Gals	Csng Vols					
1035	0	INTIAL	63.4°F	10,750	7.37	N/A	HNU - 0ppm OVA - 0ppm 0.972 OF
1123	39	~1	58.3°F	10,690	7.33	N/A	HNU - 0ppm OVA - 0ppm CLOUDY

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-8

Date 8-14-90
Time Start 1430
Time Finish

Samplers T. WOLLEN
M. LEWIS

Well Information

Depth to water 79.20 ft. Casing diameter 4 in. Stickup 2.50 ft.
Well depth 87.53 ft. Casing volume 13.99 gal. Screened interval 88 to 68
Sample depth 88-79 ft.

Field Equipment

pH meter JC1 Serial No. 9001 Water level meter SOLINST Serial No. 08661
E.C. meter SC1 Serial No. 9001 Dissolved O_2 meter N/A Serial No. N/A
Pump BAIL Serial No. — Temperature meter SC1 Serial No. 9001
Pumping rate <1 gal/min Filter Apparatus NALGENE-DISPOSABLE Filters CN, 45 M
Tubing N/A Size — in x — in Bailer PVC SCH40 Size 3' x 3" in

Field Chemistry

Calibration pH 7.00 = 7.01 @ 69 °F °C pH 10.00 = 9.55 @ 69° F °C Time 1410
Conductance standard 1000 umhos/cm @ 25° C Reading 1065 umhos @ 69°F °C Time 1415
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1430	0	INITIAL	67.8	1080	7.34	N/A	OPM - OVA OPM - HNU
1455	14.0	1	63.0	1049	7.47	N/A	BAILED DRY

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-8-86

Date 11/2/90
Time Start 1153
Time Finish 1234

Samplers J. Coe
S. Broadfield

Well Information

Depth to water 79.04 ft.
Well depth ≈88.74 ft.
Sample depth ≈84 ft.

Casing diameter 4 in.
Casing volume 6.2 gal.

Stickup 2.5 ft.
Screened interval _____ to _____

Field Equipment SA230

pH meter Orion Serial No. 4142
Water level meter Solinst Serial No. _____
E.C. meter _____ Serial No. _____
Dissolved O_2 meter _____ Serial No. _____
Pump _____ Serial No. _____
Temperature meter _____ Serial No. _____
Pumping rate _____ gal/min
Filter Apparatus _____ Filters _____
Tubing _____ Size _____ in x _____ in
Bailer _____ Size _____ in

Field Chemistry

Calibration pH 7.00 = _____ @ 16 °C pH 10.00 = _____ @ _____ °C Time _____
Conductance standard _____ umhos/cm @ 25° C Reading _____ umhos @ _____ °C Time _____
Calibrated conductivity _____ umhos/cm @ 25° C Diss. O_2 _____ mg/l @ _____ °C Time _____

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1155	0	0	N/A		7.21		
1203	6.2	1	↓		7.34		
1208	12.4	2			7.52		
1215	18.6	3	↓		7.53		
Bailing Dry - Recharge and Sample							

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-10

Date 8/15/90
Time Start 0805
Time Finish 1220

Samplers P. Anderson, S. Bradfield

Well Information

Depth to water 67.45 (TOPVC) ft.
Well depth 90 ft.
Sample depth 90-80 ft.

Casing diameter 4" in.
Casing volume 16.3 gal.

Stickup 2.5 ft.
Screened interval 90' to 80'

Field Equipment

pH meter Orion Serial No. 1633
E.C. meter YSI Model 33 Serial No. 90D014127
Pump N/A Serial No. —
Pumping rate < 1 gal/min

Water level meter Solinist Serial No. —
Dissolved O_2 meter N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Filter Apparatus Nalgene Filters CN 0.45M
Tubing PVC pump Size 1¼" in x ½" in
Bailer N/A Size — in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0820
Conductance standard 1000 umhos/cm @ 25° C Reading 1800 umhos @ 25 °C Time 0825
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2~~ salinity (o/oo) ~~mg/l~~	Safety Procedures/Readings
0826	—	—	13.0	290	9.20	0.0	initial readings clear
0910	~42	2.6	17.0	260	9.06	0.0	clear
0950	84	5.2	16.0	275	9.02	0.0	"
1059	126	7.7	13.5	280	9.19	0.0	"
1123	168	10.3	13.5	270	8.84	0.0	"
1141	210	12.9	13.5	275	8.69	0.0	"

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-12

Date 7-28-90
Time Start 1100
Time Finish 1300

Samplers T. Wollen
C. Lindstrand

Well Information

Depth to water 12.91 ft. | Casing diameter 4 in. | Stickup 2.40 ft.
Well depth 40.60 ft. | Casing volume 16.83 gal. | Screened interval 40 to 35
Sample depth 40-30 ft.

Field Equipment

pH meter ORION Serial No. 9001 | Water level meter SOFT METER Serial No. SOLINIST
E.C. meter ORION Serial No. 9001 | Dissolved O_2 meter N/A Serial No. N/A
Pump N/A Serial No. N/A | Temperature meter ORION Serial No. 9001
Pumping rate N/A gal/min | Filter Apparatus NALGEN - DISPOSABLE | Filters CN 0.45 µ
Tubing N/A Size N/A in x — in | Bailer 3" PVC Size SCH40-3 in

Field Chemistry

Calibration pH 7.00 = 7.32 @ °C | pH 10.00 = 10.33 @ °C | Time 0830
Conductance standard 1000 umhos/cm @ 25° C | Reading 1060 umhos @ °C | Time 0840
Calibrated conductivity N/A umhos/cm @ 25° C | Diss. O_2 N/A mg/l @ — °C | Time N/A

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1100	0	0	72°F	8350	8.53	N/A	OVA 0 ppm HNU 0 ppm CLOUDY
1124	16.8	1	65.1°F	7060	9.23	N/A	"
1139	33.6	2	65.1°F	8300	7.72	N/A	"
1149	50.4	3	60.0°F	9370	7.6	N/A	OVA 0 ppm HNU 0 ppm SLIGHTLY CLOUDY
1157	67.2	4	59.3°F	9660	7.57	N/A	"
1300	84	5	61.2°F	10,030	7.59	N/A	SLIGHTLY CLOUDY

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-14-88

Date 8/7/90
Time Start 1310
Time Finish 1345 (8/8/90)

Samplers P. Anderson

Well Information

Depth to water 12.15 (TOC) ft.
Well depth 32' ft.
Sample depth 32-22 ft.

Casing diameter 4" in.
Casing volume 14.59 gal.

Stickup 2.5 ft.
Screened interval 32 to 22

Field Equipment

pH meter Orion SA 210 Serial No. 1633
Water level meter Solinist Serial No. —
E.C. meter YSI Model 33 Serial No. 90D0141127
Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D0141127
Pumping rate <1 gal/min
Filter Apparatus Nalgene
Filters CN 0.45 µ
Tubing N/A Size — in x — in
Bailer Schedule 40, PVC Size 3'x3" in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0920
Conductance standard 1000 umhos/cm @ 25° C Reading 1400 umhos @ 25 °C Time 0925
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time N/A

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Salinity (‰) Dissolved O_2 mg/l		Safety Procedures/Readings
1340	—	—	17.0	>50,000	7.85	>	40	clear
1408	38	2.6	200 19.0		7.99	>	40	slightly cloudy, tr. silt
1438	76	5.2	19.0 20.0		7.68	>	40	lt. grey, tr. silt
1508	114	7.8	17.0		7.80	>	40	" "
1528	152	10.4	17.0		7.07	>	40	" "
8/8 → 0810	190	13.0	11.0		7.89	>	40	" "
0853	228	15.6	11.5	↓	7.55	>	40	" "

8/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-16-88

Date 8/21/90
Time Start 0812
Time Finish 1019

Samplers S. CONDRAN, S. BRADFIELD

Well Information

Depth to water 97.0 ft. (from PVC stickup)
Well depth 172.71 ft. (from PVC stickup)
Sample depth 151 ft.
Casing diameter 4 in.
Casing volume 89.1 gal.
Stickup 1.71 ft.
Screened interval 131 to 171

Field Equipment

pH meter Orion Research Model SA 250 Serial No. 4531
Water level meter SOLINST Serial No. 05839
E.C. meter YSI MODEL 33 Serial No. 15662
Dissolved O_2 meter NA Serial No. NA
Pump Standard Serial No. PX 8560274 MX 8560246
Temperature meter (Dissolved Metals only) YSI MODEL 33 Serial No. 15662
Pumping rate ~3½ - 4½ gal/min
Filter Apparatus 500 ml Nalgene Filters 0.45 µ
Tubing PVC Size ½ in x — in
Bailer PVC SCHEDULE 40 Size 3.0' long 3.0" O.D. in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 18 °C pH 10.00 = ~~10.00~~ @ 18 °C Time 0805
Conductance standard 1,000 umhos/cm @ 25° C Reading 1,005 umhos @ 18 °C Time 0805
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS ~~Safety Procedures/Readings~~ SCS 8/21/90
0813	0	0	13.5	250	* 7.0/ 7.02	NA	clear
0832	89.1	1	12	260	* 6.5/ 7.13	NA	clear
0854	178.2	2	12	245	* 6.5/ 7.15	NA	Clear
0915	267.3	3	12	243	* 6.5/ 7.17	NA	clear
0937	356.4	4	12	250	* 6.5/ 7.19	NA	clear
0959	445.5	5	13	249	* / 7.19	NA	Clear
1040	Start Sampling						

5/1/90

* pH meter measuring 10.00 solution does not appear to be functioning properly
** pH also measured with indicator strips because meter did not appear to be functioning properly

EBASCO SERVICES INCORPORATED
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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-17-88

Date AUG 6 1990
Time Start 1530
Time Finish 1630

Samplers T. WOLLEN, M. LEWIS

Well Information

Depth to water 72.20 ft. | Casing diameter 4 in. | Stickup — ft.
Well depth — ft. | Casing volume — gal. | Screened interval — to —
Sample depth — ft.

Field Equipment

pH meter SCI Serial No. 9001 | Water level meter SOLINST Serial No. 08611
E.C. meter SCI Serial No. 9001 | Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. — | Temperature meter SCI Serial No. 9001
Pumping rate < 1 gal/min | Filter Apparatus NALGENE - DISPOSABLE | Filters CN 0.45 µ
Tubing N/A Size — in x — in | Bailer TEFLON PVC Size 3½" x 3" in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 69°F °C | pH 10.00 = 10.20 @ 69°F °C | Time 1520
Conductance standard 7000 umhos/cm @ 25° C | Reading 701 umhos @ 69°F °C | Time 1525
Calibrated conductivity N/A umhos/cm @ 25° C | Diss. O_2 N/A mg/l @ — °C | Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1545	0	INTIAL	20°C	2700	8.49	N/A	ANU OPAT UVA OPA
1559	1	1	13.5°C	2550	8.56	N/A	
		2	13.5°C	2100	8.41	N/A	

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-18-88

Date 8/6/90
Time Start 0925
Time Finish 1515

Samplers P.Anderson
D.LeBlanc

Well Information

Depth to water 20.98 (TOPVC) ft.
Casing diameter 4" in.
Stickup 1.80' ft.
Well depth 36.0 ft.
Casing volume 11.0 gal.
Screened interval 36' to 16'
Sample depth 36-16' ft.

Field Equipment

pH meter Orion Serial No. 1633
Water level meter Solinist Serial No. —
E.C. meter YSI Model 33 Serial No. 90D014127
Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate < 1 gal/min
Filter Apparatus Nalgene
Filters CN 0.45M
Tubing N/A Size — in x — in
Bailer schedule 40 PVC Size 3'x3" in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 1020
Conductance standard 1000 umhos/cm @ 25° C Reading 1070 umhos @ 25 °C Time 1025
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2 mg/l~~ salinity (o/oo)	Safety Procedures/Readings
1017	—	—	16.0	22500	7.20	17.0	mostly clear
1240	~28	2.6	19.0	26000	6.85	18.5	" "
		well bailed dry then sampled					

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-19-88

Date 7-31-90
Time Start 0837
Time Finish 0930

Samplers T. WOLLEN
C. LINDSTRAND

Well Information

Depth to water 37.37 ft. | Casing diameter 4 in. | Stickup 2.07 ft.
Well depth 39.22 ft. | Casing volume 3.06 gal. | Screened interval 39.22 to 19.22
Sample depth 39-37 ft.

Field Equipment

pH meter ORION Serial No. 9001 | Water level meter SOLINIST Serial No. 100FT METER
E.C. meter ORION Serial No. 9001 | Dissolved O_2 meter N/A Serial No. N/A
Pump N/A Serial No. ____ | Temperature meter ORION Serial No. 9001
Pumping rate N/A gal/min | Filter Apparatus NALGEN - DISPOSABLE | Filters CN 0.45 M
Tubing N/A Size N/A in x ____ in | Bailer PVC SCH 40 Size 3" in

Field Chemistry

Calibration pH 7.00 = 7.33 @ 59F °C | pH 10.00 = 10.33 @ 59F °C | Time 0850
Conductance standard 1000 umhos/cm @ 25° C | Reading ____ umhos @ ____ °C | Time ____
Calibrated conductivity N/A umhos/cm @ 25° C | Diss. O_2 N/A mg/l @ ____ °C | Time N/A

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
~~0837~~ ~~0838~~	0	0	60.03	10470.0	7.65	N/A	HNU - 0 ppm OVA - 0 ppm CLEAR
0858	1	3.0	56.50	9,936.00	7.63	N/A	HNU - 0 ppm OVA - 0 ppm V. SLIGHTLY CLOUDY
0905	2	6.2	58.90	9940.0	7.73	N/A	HNU - 0 ppm OVA - 0 ppm "
0912	3	9.3	58.40	9,940.00	7.71	N/A	HNU - 0 ppm OVA - 0 ppm "
0919	4	12.4	58.40	9940.0	7.70	N/A	HNU - 0 ppm OVA - 0 ppm "
0926	5	15.5	57.10	9930.0	7.70	N/A	HNU - 0 ppm OVA - 0 ppm "

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID 5-20-88

Date 8/21/90
Time Start 1615
Time Finish

Samplers S CONORAN
S. BRADFIELD

Well Information

Depth to water 79.71 ft. (from PVC sticker)
Well depth 118 65 ft.
Sample depth 97 ft.

Casing diameter 4 in.
Casing volume 6.5.5 gal.

Stickup 1.77 ft.
Screened interval 75 to 115

Field Equipment O'Ion Research

pH meter Model 5A230 Serial No. 4531
Water level meter SOLINST Serial No. 05839
E.C. meter YSI Model 33 Serial No. 15662
Dissolved O_2 meter NA Serial No. NA
Pump Standard Serial No. PX8560274 MX9560246
Temperature meter YSI Model 33 Serial No. 15662
Pumping rate ~4-5 gal/min
Filter Apparatus 500 ml Nalgene (Dissolved metals only) Filters 0.45 µ
Tubing PVC Size 1/2 in x - in
Bailer PVC Schedule 40 Size 3 c'long 3.0" o.d. in

Field Chemistry * SEE WATER QUALITY FIELD DATA SHEET FOR WELL 5-16-89 8/21/90

Calibration pH 7.00 = @ °C pH 10.00 = @ °C Time
Conductance standard umhos/cm @ 25° C Reading umhos @ °C Time
Calibrated conductivity umhos/cm @ 25° C Diss. O_2 mg/l @ °C Time

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS Safety Procedures/Readings
1618	0	0	21	1,340	**7.0/7.14	NA	clear - yellowish slightly cloudy
1633	65.5	1	17.5	1,340	**7.0/7.17	NA	clear
1646	131.0	2	17	1,340	**7.0/7.18	NA	clear
1700	196.5	3	16.5	1,400	**6.5/7.19	NA	clear
1714	262.0	4	16	1,380	**7.0/7.15	NA	clear
1728	327.5	5	16	1,400	**7.9/7.18	NA	clear
1751	Start sampling						

5/1/90

** pH also measured with indicator strips because meter did not appear to be functioning properly

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-21-88

Date 7-31-90
Time Start 1451
Time Finish 1641

Samplers T. WOLLEN
C. LINDSTRAND

Well Information

Depth to water 12.02 ft.
Well depth 22.71 ft.
Sample depth 22-12 ft.

Casing diameter 4 in.
Casing volume 18.0 gal.

Stickup 1.74 ft.
Screened interval 22.71 to 12.71

Field Equipment

pH meter ORION Serial No. 9001
E.C. meter ORION Serial No. 9001
Pump N/A Serial No. N/A
Pumping rate N/A gal/min

Water level meter SOLINIST Serial No. 100 ft meter
Dissolved O_2 meter N/A Serial No. N/A
Temperature meter ORION Serial No. 9001
Filter Apparatus NALGEN - DISPOSABLE Filters CN 0.45 M

Tubing N/A Size — in x — in Bailer 3" PVC SCH 40 Size 3 in

Field Chemistry

Calibration pH 7.00 = 7.24 @ 61 F °C pH 10.00 = 10.30 @ 61 °C Time 1450
Conductance standard 1000 umhos/cm @ 25° C Reading 1068 umhos @ 60 °C Time 1455
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ — °C Time N/A

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1452	0	0	60.20	20,000 (+)	6.24	N/A	OVA - 0 PPM HNU - 0 ppm CLOUDY
1507	18	1	60.78	"	7.35	N/A	"
1518	36	2	59.20	"	7.25	N/A	"
1527	54	3	59.10	"	7.31	N/A	"
1537	72	4	58.7	"	7.31	N/A	"
1553	90	5	58.8	"	7.37	N/A	OVA - 0.2 PPM HNU - 0 ppm SLIGHTLY CLOUDY

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-22-88

Date 7-29-90
Time Start 1453
Time Finish 1720

Samplers T. WOLLEN, C. LINDSTRAND

Well Information

Depth to water 8.3 ft. | Casing diameter 4 in. | Stickup 2.5 ft.
Well depth 23.2 ft. | Casing volume 18.48 gal. | Screened interval 23 to 13
Sample depth 23-12 ft.

Field Equipment

pH meter SCI Serial No. 9001 | Water level meter SOLINIST Serial No. 08611
E.C. meter SCI Serial No. 9001 | Dissolved O_2 meter N/A Serial No. —
Pump HAND-suction Serial No. — | Temperature meter SCI Serial No. 9001
Pumping rate 2-3 gal/min | Filter Apparatus NALGENE - DISPOSABLE | Filters 0.45 µ
Tubing PVC | Size 1½ x ¾ in x in | Bailer SCHEDULE PVC | Size 3½" x 3" in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 69°F °C | pH 10.00 = 10.10 @ 69°F °C | Time 1450
Conductance standard 1000 umhos/cm @ 25° C | Reading 890 umhos @ 69°F °C | Time 1451
Calibrated conductivity N/A umhos/cm @ 25° C | Diss. O_2 N/A mg/l @ — °C | Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1505	0	INTIAL	65.9	3420	7.72	N/A	HNU 0ppm OVA 0ppm
1522	18.5	1	60.8	3300	7.75	N/A	
1527	37.0	2	57.3	2950	7.79	N/A	
1531	55.5	3	57.8	3004	7.60	N/A	HNU 0ppm OVA 0ppm
1538	73.9	4	55.0	3380	7.77	N/A	
1545	92.4	5	55.0	3250	7.71	N/A	HNU 0ppm OVA 0ppm

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-23-88

Date 8/7/90
Time Start 0830
Time Finish 1142

Samplers P. Anderson, D. Leblanc

Well Information

Depth to water 18.87 (TOC) ft.
Well depth 19.0' ft.
Sample depth 19.0' ft.
Casing diameter 4" in.
Casing volume 1.17 gal.
Stickup 1.67 ft.
Screened interval 19' to 9'

Field Equipment

pH meter Orion SA 210 Serial No. 1633
E.C. meter YSI Model 33 Serial No. 90D014127
Pump N/A Serial No. —
Pumping rate <1 gal/min
Tubing N/A Size — in x — in
Water level meter Solinist Serial No. —
Dissolved O_2 meter N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Filter Apparatus Nalgene Filters CN 0.45 µ
Bailer Schedule 40 PVC Size 3' x 3" in

Field Chemistry

Calibration pH 7.00 = N/A @ — °C pH 10.00 = 10 @ 25 °C Time 0920
Conductance standard 1000 umhos/cm @ 25° C Reading 1400 umhos @ 25 °C Time 0925
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time N/A

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2~~ salinity (‰) mg/l	Safety Procedures/Readings
0952	—	—	15.0	19000	8.11	14.8	clear
0954	3	2.6	12.5	18500	7.50	15.0	lt. gray, tr. silt
			well	bailed dry	then	sampled	

8/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-24-90

Date 7-31-90
Time Start 1115
Time Finish 1301

Samplers T. Wolley
C. LINDSTRAND

Well Information

Depth to water 12.20 ft. Casing diameter 4 in. Stickup 1.94 ft.
Well depth 22.31 ft. Casing volume 16.2 gal. Screened interval 22.3 to 11.81
Sample depth 22 - 12 ft.

Field Equipment

pH meter ORION Serial No. 9001 Water level meter SOLINIST Serial No. 100 FT METER
E.C. meter ORION Serial No. 9001 Dissolved O_2 meter N/A Serial No. N/A
Pump N/A - HAND Serial No. N/A Temperature meter ORION Serial No. 9001
Pumping rate 2 GAL/min gal/min Filter Apparatus NALGEN - DISPOSABLE Filters CN .45 M
Tubing 1½ " PVC Size 1½ in x 3/4 in Bailer 3" PVC-SCH 40 Size 3 in

Field Chemistry

Calibration pH 7.00 = 7.33 @ 60F °C pH 10.00 = 10.34 @ 60F °C Time 1110
Conductance standard 1000 umhos/cm @ 25° C Reading 1060 umhos @ 60 °C Time 1113
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ — °C Time N/A

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1117	0	0	61.5	8210	7.65	N/A	OVA - 0 ppm HNU - 0 ppm CLOUDY
1125	16.2	1	59.5	20,000+	7.75	N/A	OVA - 4 ppm HNU - 0 ppm CLOUDY
1201	32.4	2	60.4	20,000+	7.60	N/A	OVA - 4 ppm HNU - 0 ppm CLOUDY
1220	40.1	2.5	60.5	20,000+	7.92	N/A	CLOUDY

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-25-88

Date 8-20-90
Time Start 1414
Time Finish 1440

Samplers Conrad J Bieniulis

Well Information

Depth to water 10.47 ft.
Well depth 18.84 ft.
Sample depth 13.84 ft.

Casing diameter 4 in.
Casing volume + annulus 15.26 gal.

Stickup 0.0 ft. (not as orig. built)
Screened interval 18.84 to 8.84

Field Equipment

pH meter Orion SA 210 Serial No. 1633
Water level meter Solinst Serial No. 08611
E.C. meter YSI Model 33 Serial No. 90D014127
Dissolved O_2 meter NA Serial No. NA
Pump NA Serial No. NA
Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate NA gal/min
Filter Apparatus Nalgene
Filters .45 microns
Tubing NA Size NA in x in
Bailer PVC Size 3 in

Field Chemistry

Calibration pH 7.00 = 7.0 @ 18 °C pH 10.00 = 10.0 @ 18 °C Time 1320
Conductance standard 1000 umhos/cm @ 25° C Reading 1000 umhos @ 18 °C Time 1320
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Sample Description ~~Safety Procedures/Readings~~
1325	1.1	.07	~~18~~ 14	7200	6.6	NA	lt. gray color - almost clear minor suspended particles
1355	8.0	.52	~~17~~ 13.5	7000	7.8	NA	grayish-yellow, minor particles slight film on surface

8/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-26-88

Date 8-8-90
Time Start 0915
Time Finish

Samplers T. Wellen, M. LEWIS

Well Information

Depth to water 10.14 ft. | Casing diameter 4 in. | Stickup 0 ft.
Well depth 19.54 ft. | Casing volume 15.78 gal. | Screened interval 19 to 9
Sample depth 14-10 ft.

Field Equipment

pH meter CSI Serial No. 9001 | Water level meter SOLINIST Serial No. 08611
E.C. meter CSI Serial No. 9001 | Dissolved O_2 meter N/A Serial No. N/A
Pump N/A Serial No. N/A | Temperature meter CSI Serial No. 9001
Pumping rate 2 gal/min | Filter Apparatus NALGENE-DISPOSABLE | Filters CN 0.45M
Tubing N/A Size ~ in x ~ in | Bailer SCHEDULE PVC Size 3" x 3' in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 60°F °C | pH 10.00 = 10.26 @ 60°F °C | Time 0820
Conductance standard 1000 umhos/cm @ 25° C | Reading 815 umhos @ 67°F °C | Time 0830
Calibrated conductivity N/A umhos/cm @ 25° C | Diss. O_2 N/A mg/l @ — °C | Time N/A

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
0915	0	INITIAL	62.5	2700	7.36	N/A	OVA - 0ppm HNU - 0ppm SLIGHT SHEEN OIL
0938	15.7	1	60.0	3390	7.44	N/A	"
0950	31.4	2	59.5	3300	7.41	N/A	"
1000	47.1	3	59.0	3300	7.46	N/A	"
1010	62.8	4	60.4	3290	7.45	N/A	OVA - 0ppm HNU - 0ppm SLIGHTLY OILY
1025	78.5	5	60.5	3340	7.48	N/A	"

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-27-88

Date 8-8-90
Time Start 1140
Time Finish

Samplers T. WOLLEN
M. LEWIS

Well Information

Depth to water 9.43 ft. Casing diameter 4 in. Stickup 0 ft.
Well depth 20.05 ft. Casing volume 17.8 gal. Screened interval 20 to 10
Sample depth 20-10 ft.

Field Equipment

pH meter SCI Serial No. 9001 Water level meter SOLINST (TV 8-8-90) Serial No. 08611
E.C. meter SCI Serial No. 9001 Dissolved O_2 meter N/A Serial No. N/A
Pump N/A Serial No. N/A Temperature meter SCI Serial No. 9001
Pumping rate 2 gal/min Filter Apparatus NALGENE - DISPOSABLE Filters CN 0.45µ
Tubing N/A Size — in x — in Bailer SCHYO PVC Size 3" x 3½' in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 65F °C pH 10.00 = 10.20 @ 65°C °C Time 1130
Conductance standard 1000 umhos/cm @ 25° C Reading 817 umhos @ 69 °C Time 1135
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ — °C Time N/A

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
	0	INITIAL	71.0	9380	7.58	N/A	OVA YPA OIL NODULES HNU OFF PRESENT
	17.8	1	71.0	17380	7.54	N/A	OIL INCREASE
	356	2	65.2	15,000	7.54	N/A	
~~1135~~	~~534~~	~~3~~		BAILED DRY			
~~1138~~	~~7.2~~	~~4~~					
~~1140~~	~~89.0~~	~~5~~					

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I

Well ID: S-28-88
Date: 8/8/90
Time Start: 0957
Time Finish: 11 15
Samplers: S. CONDRAN; A. WARNER

Well Information

Depth to water: 13.35 ft. (from top stickup)
Casing diameter: 4.5 in.
Stickup: 2.13 ft.
Well depth: 17.13 ft.
Casing volume: 6.9 gal.
Screened interval: 5 10 15
Sample depth: ~~16~~ 14 ft.

Field Equipment

pH meter: ORION RESEARCH MODEL SA 250 Serial No. 4531
Water level meter: SUMMIT Serial No. 05339
E.C. meter: Y.S.I. MODEL 33 Serial No. 15662
Dissolved O_2 meter: NA Serial No. NA
Pump: NA Serial No. NA
Temperature meter: Y.S.I. MODEL 33 Serial No. 15662
Pumping rate: NA gal/min
Filter Apparatus: 500 ml Nalgene (Dissolved metals only)
Filters: .45 m
Tubing: NA Size: NA in x in
Bailer: PVC Size: 3.0' long 3.5" O.D. in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 17 °C pH 10.00 = 10.00 @ 17 °C Time 0837
Conductance standard 1000 umhos/cm @ 25° C Reading 1050 umhos @ 17 °C Time 0831
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	~~Safety Procedures~~/Readings
1001	0	0	PARAMETERS NOT TAKEN DUE TO (NA) FREE PRODUCT IN SAMPLES				
1012	6.9	1		"			"
1015	13.8	2		"			"
1021	20.7	3		"			"
1029	27.6	4	23	10,100	7.36		pale yellow-brown - some oil present
1036	34.5	5	25	9,900	7.35		pale yellow-brown some oil present
		NOTE: PURGED IN LEVEL C: HNu readings 1-2 ppm in breathing zone					

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-29-88

Date 8/8/90
Time Start 1409
Time Finish 1523

Samplers S. CONDRAN
A. WARNER

Well Information

Depth to water 10.62 ft. (from PVC stickup)
Well depth 17.74 ft. (from PVC stickup)
Sample depth 14 ft.

Casing diameter 4 AW 8/7/90 4" in.
Casing volume 13.0 gal.

Stickup 1.71 ft.
Screened interval 6 to 16

Field Equipment

pH meter ORION RESEARCH MODEL SA 230 Serial No. 4531
Water level meter SOLINST Serial No. 05E39
E.C. meter Y.S.I. MODEL 33 Serial No. 5662
Dissolved O_2 meter NA Serial No. NA
Pump NA Serial No. NA
Temperature meter Y.S.I MODEL 33 Serial No. 5662
Pumping rate NA gal/min
Filter Apparatus 500 ml Nalgene Filters .45 M
Tubing NA Size NA in x in
Bailer PVC sch 40 Size 3ft x 3" OD. in

Field Chemistry SEE WATER QUALITY FIELD DATA SHEET FOR WELL S-29-29D

Calibration pH 7.00 = @ °C pH 10.00 = @ °C Time
Conductance standard umhos/cm @ 25° C Reading umhos @ °C Time
Calibrated conductivity umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS ~~Safety~~ Procedures/Readings SC 8/8/90
1409	0	0	25	5,250	7.86	NA	Clear
1417	13.5	1	22	7,500	7.61	NA	Light brown, cloudy; slight oil film
1429	27.0	2	16	6,500	7.51	NA	Light brown, cloudy
1436	40	3	16.5	6,000	7.53	NA	Light brown, turbid
1445	53	4	17.0	6,000	7.47	NA	Light brown, turbid
1523	66	5	18.0	5,750	7.63	NA	Light brown, turbid
1540	Begin to sample						

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-30-95

Date 8/9/90
Time Start 0920
Time Finish 1000

Samplers S. CONDRAN
A. WARNER

Well Information

Depth to water 9.65 ft. (from PVC stickup)
Well depth 17.48 ft. (from PVC stickup)
Sample depth 11 ft.

Casing diameter 4 in.
Casing volume 13.3 gal.

Stickup 1.96 ft.
Screened interval 6 to 16

Field Equipment

pH meter ORION RESEARCH MODEL SA 230 Serial No. 4531
Water level meter SOLINST Serial No. USB 39
E.C. meter Y.S.I MODEL 33 Serial No. 15662
Dissolved O_2 meter NA Serial No. NA
Pump NA Serial No. NA
Temperature meter Y.S.I MODEL 33 Serial No. 5662
Pumping rate NA gal/min
Filter Apparatus 500 ml Nalgene
Filters .45 µm
Tubing NA Size NA in x in
Bailer PVC Size 3.0' long 3.5" O.D. in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 21 °C pH 10.00 = 10.00 @ 21 °C Time 0829
Conductance standard 1000 umhos/cm @ 25° C Reading 940 umhos @ 21 °C Time 0832
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS ~~Safety Procedures~~/Readings
0921	0	0	23	7,600	7.45	NA	lt. yellow-brown, cloudy, some s.i + sand
0926	13.3	1	16.5	7,500	7.37		yellow-brown, cloudy, some s.i + sand
0932	26.6	2	17.5	8,600	7.36		yellow-brown, cloudy, some s.i + sand
0940	39.9	3	17	7,500	7.46 (3)		yellow-brown, cloudy, some s.i + sa
0951	53.2	4	19	9,900	7.40		yellow-brown, cloudy, some s.i + sa
1000	66.5	5	17	10,000	7.41		yellow-brown, cloudy, some s.i + sa
1006	Start sampling						

5/1/90

EBASCO SERVICES INCORPORATED
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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I

Well ID 5-31-88

Date 8/13/90
Time Start 0823
Time Finish 0830

Samplers S CONORAN, A WARNER

Well Information

Depth to water 13.72 ft. (from PVC sheet) Casing diameter 4 in. Stickup 1.8 ft.

Well depth ~~12~~ 20.55 ft. Casing volume 11.5 gal. Screened interval 8.75 to 18.75

Sample depth 17 ft.

Field Equipment

pH meter ORION RESEARCH MODEL SA230 Serial No. 4531 Water level meter SOLINST Serial No. 65839

E.C. meter Y.S.I MODEL 33 Serial No. 15662 Dissolved O_2 meter NA Serial No. NA

Pump NA Serial No. NA Temperature meter Y.S.I MODEL 33 Serial No. 15662

Pumping rate NA gal/min Filter Apparatus (Dissolved Metals Only) 500 ml Nalgene Filters 0.45 µ

Tubing NA Size NA in x __ in Bailer PVC SCHEDULE 40 Size 30" long 3.0" OD in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 16 °C pH 10.00 = 1,000 @ 16 °C Time 0815

Conductance standard 1,000 umhos/cm @ 25° C Reading 1,000 umhos @ 16 °C Time 0817

Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ __ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Physical Characteristics ~~Safety~~ Procedures/Readings
0824	0	0	12.5	12,000	7.52	NA	clear
0830	Well bailed dry after ≈ 4 gallons						
0940	Start sampling after well recovered ≈ 3.5 ft						
	Took parameters while sampling						
1005	5.75	½	18	14500	7.51	NA	Cloudy; slight oily sheen

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: Paul Anderson
Well No.: S-32-90
Date of Installation: 7/1/90

Well Information

Depth to Water: 220.94' from T.O.PVC.
Total Depth: 235.0'
Casing Diameter: 4"
Borehole Diameter: 8"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: 2.3'
Screen Length: 20'
Amt. of fluid in well (Prior to development)
In well casing: 10.7 gal.
In sat. annulus: 27.5 gal.
(30% porosity)

Development

Date/time started: 7/23/90 0925
Completed: 7/24/90 1205

Water level
Before development: 220.94 from T.O.PVC
24 hrs. after: 221.10'

Depth to sediment
Before development: 221.10'
After development: 221.10'

Measurement	Temp °C	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	22.9 then 26.0	6.0	1100 µmHos	7/23/90	0930	0 gal	dark brown, sandy silt
1	20.0	6.5	950 µmHos	7/23/90	1332	~27.5 gal	light brown, some silt
2	19.0	7.0	940 "	7/23/90	1652	55.0 gal	lt. brn., tr. silt & fine sand
3	19.0	6.5	810 "	7/24/90	0908	82.5 gal	" "
4	18.0	6.5	790 "	7/24/90	1155	110.0 gal	" "
5						gal	
Extra purges						gal	
After development						gal	

Surge technique: purge dry, let recover
Type, size and capacity of bailer or pump: Air lift compressor
Quantity of fluid removed: 110 gallons
Time for removal: 8 2/3 hrs.
Comments:

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID 5-32-90

Date 8-15-90
Time Start 1020
Time Finish 1339

Samplers T. J WOLLEN

Well Information

Depth to water 227.05 ft. (TOC 8-15-90)
Well depth 237.07 ft.
Sample depth 237-221 ft.

Casing diameter 4 in.
Casing volume 19.97 gal.

Stickup 2.51 ft.
Screened interval 237 to 217

Field Equipment

pH meter ____ Serial No. ____
E.C. meter YSI MODEL 33 Serial No. ____
Pump SUBMERSIBLE Serial No. —
Pumping rate >1 gal/min

Water level meter SOLINST Serial No. ____
Dissolved O_2 meter N/A Serial No. —
Temperature meter YSI MODEL 33 Serial No. ____
Filter Apparatus NALGENE - DISPOSABLE Filters 0.45 µ

Tubing .5" PVC REINFORCE (TOC 8-15-90) Size .5" (TOC 8-15-90) in x ____ in
Bailer SCHED PVC Size 3" x 3' in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 64°F °C pH 10.00 = 10.00 @ 64°F °C Time 0700
Conductance standard 1000 umhos/cm @ 25° C Reading 1070 umhos @ 64°F °C Time 0705
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1022	0	INTIAL	62.5°F	721	7.52	N/A	HNU = 0ppm CGA = 0ppm
1035	1	20.0	61°F	645	7.45	N/A	
1112	2	40.0	60.9°F	645	7.50	N/A	
1208	3	60.0	58.1°F	649	7.45	N/A	

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area RFI - Phase I

Geologist: Paul Anderson

Well No.: S-33-90

Date of Installation: 7/13/90

Well Information

Depth to Water: 201.70'

Total Depth: 240.0'

Casing Diameter: 4"

Borehole Diameter: 8"

Amt. of mud/water lost during drilling:

Casing Stickup: 2.3'

Screen Length: 20'

Amt. of fluid in well (Prior to development)
In well casing: ~~2.62~~ 19.60 (PWA) gal.
In sat. annulus: 50.42 gal.
(30% porosity)

Development

Date/time started: 7/25/90 @ 1048

Completed: 7/26/90 @ 0751

Water level
Before development: 201.70'
24 hrs. after:

Depth to sediment
Before development:
After development:

Measurement	temp (°C)	sal (‰)	pH	Specific Conduct. (μmhos)	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	18.5	.3	9.21	600	7/25/90	1049	0 gal	lt. brown, tr. silt, vf. sand
1	18.0	.9	6.54	1280	7/25/90	1215	50.4 gal	lt. brown, bentonite
2	19.0	.9	8.70	1430	7/25/90	1416	100.8 gal	" "
3	20.0	.9	8.58	1490	7/25/90	1537	151.2 gal	mostly clear
4	19.8	.9	8.60	1480	7/25/90	1641	201.7 gal	" "
5	19.0	.9	8.60	1310	7/26/90	0751	251.2 gal	" "
Extra purges							gal	
After development							gal	

Surge technique: purge dry, let recover

Type, size and capacity of bailer or pump: air lift, compressor

Quantity of fluid removed: 251.2 gallons

Time for removal: ~3 hrs.

Comments: time of removal estimatated from times that parameters were taken

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID 5-33-90

Date 8/20/90
Time Start ~~327~~ 0995 sc 8/21/90
Time Finish 1050

Samplers S. CONORAN
S. BRADFIELD

Well Information

Depth to water 208.95 ft. (from PVC stickup)
Well depth 242.30 ft.
Sample depth 230 ft.

Casing diameter 4 in.
Casing volume 37.2 gal.

Stickup 2.3 ft.
Screened interval 220 to 240

Field Equipment

pH meter Orion Research Model SA230 Serial No. 4531
Water level meter SOLINST Serial No. 05837
E.C. meter Y.S.I. Model 33 Serial No. 15662
Dissolved O_2 meter NA Serial No. NA
Pump Standard Serial No. Ps 8560 274 mx 8560 246 NA sc 8/21/90
Temperature meter Y.S.I. Model 33 (Dissolved Metals Only) Serial No. 15662
Pumping rate ~3 gal/min
Filter Apparatus 500 ml Nalgene
Filters 0.45 M
Tubing PVC
Size 1/2 in x NA in
Bailer PVC schedule 40 Size 3.0' long, 3.0" O.D. in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 20 °C pH 10.00 = ** @ °C Time 0923
Conductance standard 1,000 umhos/cm @ 25° C Reading 1,120 umhos @ 20 °C Time 0929
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS ~~Safety Procedures/Readings~~ sc 8/21/90
0944	0	0	15	1,280	**7.0/7.04	NA	clear
1000	37.2	1	14	1,250	**7.0/7.07	NA	clear
1012	74.4	2	13.5	1,230	**7.0/7.07	NA	clear
1024	111.60	3	14	1,250	**7.0/7.01	NA	clear
1036	148.80	4	13.5	1,240	**7.0/7.02	NA	clear
1050	186.0	5	14	1,240	**7.0/7.12	NA	clear
1140	Start sampling						

5/1/90

* pH meter not operating ISO solution
** not sure if meter functioning properly so pH also measured with indicator strips

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: Paul Anderson
Well No.: S-34-90
Date of Installation: 7/17/90

Well Information

Depth to Water: 210.84'
Total Depth: 229.0'
Casing Diameter: 4"
Borehole Diameter: 8"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: 2.5'
Screen Length: 20'
Amt. of fluid in well (Prior to development): 13.46 (PWR)
In well casing: ~~180~~ gal.
In sat. annulus: 34.70 gal.
(30% porosity)

Development

Date/time started: 7/26/90 @ 1126
Completed: 7/27/90 @ 1056

Water level
Before development: 210.84'
24 hrs. after: 210.84'

Depth to sediment
Before development: 229.0'
After development: 229.0'

Measurement	Temp (°C)	Sal ‰	pH	Specific Conduct. (mMHOS)	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	24.0	.6	9.00	1110	7/26/90	1150	0 gal	brown w/silt & fine sand
1	20.0	.6	9.08	880	7/26/90	1530	~34.7 gal	light brown, less silt
2	20.0	.5	8.79	840	7/26/90	1740	~69.0 gal	mostly clear
3	16.0	.4	8.67	810	7/27/90	0809	~104.0 gal	" " w/tr. silt
4	20.0	.5	889	890	7/27/90	0950	~138.7 gal	" "
5	20.5	.5	8.90	900	7/27/90	1056	~173.5 gal	" "
Extra purges							gal	
After development							gal	

Surge technique: purge well dry, let recover
Type, size and capacity of bailer or pump: air lift, compressor
Quantity of fluid removed: 173.5 gallons
Time for removal: 6.2 hrs.
Comments:

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-34-90

Date 8/20/90
Time Start 1337
Time Finish 1410

Samplers S CONDRAN, S. BRADFIELD

Well Information

Depth to water * 210.89 ft. (from PVC shield?)
Well depth 231.50 ft.
Sample depth 219 ft.

Casing diameter 4 in.
Casing volume 25.6 gal.

Stickup 2.5 ft.
Screened interval 209 to 229

Field Equipment

pH meter Orion Research Model SA 230 Serial No. 4531
E.C. meter Y.S.I. Model 33 Serial No. 15662
Pump Standard Serial No. PXBC 6 0274 MXBC 6 0246 cc 8/20/90
Pumping rate ~ 3.5 gal/min

Water level meter SOLINST Serial No. 05539
Dissolved O_2 meter NA Serial No. NA
Temperature meter Y.S.I. Model 33 (Dissolved metals only) Serial No. 15662
Filter Apparatus 500 ml Nalgene Filters 0.45 µm

Tubing PVC Size 1/4 in x NA in
Bailer PVC SCHEDULE 40 Size 30" long 3.0" O.D. in

Field Chemistry * SEE WATER QUALITY FIELD DATA SHEET FOR WELL S-33-90 8/20/90

Calibration pH 7.00 = @ °C pH 10.00 = @ °C Time
Conductance standard umhos/cm @ 25° C Reading umhos @ °C Time
Calibrated conductivity umhos/cm @ 25° C Diss. O_2 mg/l @ °C Time

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS ~~Safety~~ Procedures/Readings (as effective)
1333	0	0	14	850	7.0 / 7.08	NA	Clear
1343	25.4	1	14	800	7.0 / 7.15	NA	clear
1350	51.20	2	14	800	7.0 / 7.14	NA	Clear
1402	76.80	3	14	805	7.0 / 7.14	NA	Clear
1410	102.4	4	14	810	7.0 / 7.15	NA	clear
1418	128.0	5	14.5	800	7.0 / 7.16	NA	Clear
1453	start	sampling					

5/1/90

* water level not measured prior to sampling used well development water level
** pH also measured with indicator strips because of meter fluctuations

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: T. J WOLLEN
Well No.: S-35-90
Date of Installation: 5-23-90

Well Information

Depth to Water: 271.30
Total Depth: 280.0
Casing Diameter: 3.86"ID / 4.0"OD
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: 2.5'
Screen Length: 20 Ft
Amt. of fluid in well (Prior to development)
In well casing: 5.68 GALS
In sat. annulus: 10.62 GALS
(30% porosity)

Development

Date/time started: JUNE 5, 1990 / 1610
Completed: JUNE 6, 1990 / 1606

Water level
Before development: 271.30
24 hrs. after: 271.30

Depth to sediment
Before development: 280.0
After development: 280.0

Measurement	T	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	18.0	7.9	1400	6-5-90	1610	0 gal	OPAQUE, YELLOWISH BROWN
1	N/A	7.5	1650	6-6-90	1238	14.5 gal	OPAQUE, YELLOWISH BROWN
2	N/A	7.5	1780	6-6-90	1530	29.0 gal	OPAQUE, YELLOWISH BROWN
3	N/A	7.6	1550	6-6-90	1531	43.5 gal	CLOUDY, "
4	N/A	7.6	1510	6-6-90	1532	58.0 gal	CLOUDY, "
5	N/A	7.6	1500	6-6-90	1606	72.5 gal	SLIGHTLY CLOUDY "
Extra purges						gal	
After development						gal	

Surge technique: BAILING
Type, size and capacity of bailer or pump: 1½ GAL PVC, Bottom BALL COCK
Quantity of fluid removed: 72.5
Time for removal: 3 hrs 28 min.
Comments:

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-35-90

Date 8-20-90
Time Start 1003
Time Finish 1107

Samplers Conrad J. Bieniulis

Well Information

Depth to water 271.41 ft.
Well depth 276.6 ft.
Sample depth 271.6 ft.

Casing diameter 4 in.
Casing volume + annulus 9.13 gal.

Stickup 2.5 ft.
Screened interval 266.6 to 276.6

Field Equipment

pH meter Orion SA210 Serial No. 1633
Water level meter Solinst Serial No. 08611
E.C. meter YSI Model 33 Serial No. 90D014127
Dissolved O_2 meter NA Serial No. NA
Pump NA Serial No. NA
Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate NA gal/min
Filter Apparatus Nalgene Filters .45 microns
Tubing NA Size NA in x in Bailer PVC Size 3 in

Field Chemistry

Calibration pH 7.00 = 7.0 @ 16 °C pH 10.00 = 10.0 @ 16 °C Time 0900
Conductance standard 1000 umhos/cm @ 25° C Reading 1000 umhos @ 16 °C Time 0900
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Sample Description ~~Safety Procedures/Readings~~
0910	1.1	.12	~~17~~ 13.5	1210	6.18	NA	lt. brown, silty, cloudy
0942	4.9	.54	~~16~~ 13	1200	7.62	NA	yellowish-brown, less silty & cloudy
0950	5.7	.62	~~16~~ 13	1200	7.76	NA	yellowish-brown, cloudy, silty

8/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: T. Wollen
Well No.: S-36-90
Date of Installation: 7-31-90

Well Information

Depth to Water: 202.40
Total Depth: 226.0
Casing Diameter: 4"
Borehole Diameter: 8"
Amt. of mud/water lost during drilling: 0
Casing Stickup: 2.3
Screen Length: 20'
Amt. of fluid in well (Prior to development)
In well casing: 15.92
In sat. annulus (30% porosity):

Development

Date/time started: 8-9-90 / 0745
Completed: 8-9-90 / 1545

Water level
Before development: 202.40
24 hrs. after:

Depth to sediment
Before development: 226.0
After development: 226.0

Measurement	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	7.97	862	8-9-90	0745	0 gal	MURKY
1	7.99	882	8-9-90	0945	36.5 gal	CLOUDY
2	8.05	905	8-9-90	11000	73.0 gal	CLOUDY
3					gal	
4	8.08	1910	8-9-90	1345	140 gal	SLIGHTLY CLOUDY
5	8.07	2000	8-9-90	1545	176.5 gal	CLEAR
Extra purges					gal	
After development					gal	

Surge technique: PUMP DRY ALLOW WELL TO RECOVER AND CONTINUE
Type, size and capacity of bailer or pump: AIR COMPRESSOR - AIR LIFT
Quantity of fluid removed: 176.5 Time for removal: 8 hrs.
Comments:

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-36-90

Date 8-22-90
Time Start 1610
Time Finish 1818

Samplers Conrad J. Benintis

Well Information

Depth to water 204.78 ft.
Well depth 228.5 ft.
Sample depth 216 ft.

Casing diameter 4 in.
Casing volume 35.1 gal.

Stickup 2.5 ft.
Screened interval 226 to 206

Field Equipment

pH meter Orion SA 210 Serial No. 1633
E.C. meter YSI Model 33 Serial No. 90D014127
Pump Standard Serial No. MX8560246 PX 8560294
Pumping rate ~3.5 - 4.5 gal/min

Water level meter Solinst Serial No. 08611
Dissolved O_2 meter NA Serial No. NA
Temperature meter YSI Model 33 Serial No. 90D014127
Filter Apparatus Nalgene Filters .45 microns

Tubing PVC Size 1/2 in x in Bailer PVC Size 3' length 3" O.D. in

Field Chemistry

Calibration pH 7.00 = 7.0 @ 19 °C pH 10.00 = 10.0 @ 19 °C Time 1550

Conductance standard 1000 umhos/cm @ 25° C Reading 1000 umhos @ 19 °C Time 1550

Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	~~Safety Procedures/Readings~~
1610	1	.03	14.5	975	7.64	NA	clear, no suspended particles
1625	35	1	15	875	7.72	NA	" "
1635	70	2	14.5	875	7.73	NA	" "
1647	105	3	14.0	875	7.54	NA	" "
1701	140	4	15	850	7.67	NA	" "
1713	175	5	15	875	7.59	NA	" "

3/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: Conrad Bienvilla / Jordan
Well No.: S-37-90
Date of Installation: ~~5/31/90~~ & 9/4/90 6/4/90

Well Information

Depth to Water	205.77	Casing Stickup	2.5'
Total Depth	224.00	Screen Length	20'
Casing Diameter	4" (3.86)	Amt. of fluid in well (Prior to development)	
Borehole Diameter	8"	In well casing	1.59 ft³
Amt. of mud/water lost during drilling	Casing/A.R	In sat. annulus (30% porosity)	1.91 ft³

Development

Date/time started: 1301 6/19/90 Completed: 1052 6/20/90

Water level
Before development: 205.77
24 hrs. after: 204.30

Depth to sediment
Before development: 223.00
After development: 223.67

Measurement	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristic
0 temp 23°	8.3	960	6/19/90	1347	0 gal	v. muddy w/ coarse sand
15 21°	8.5	820	6/19/90	1450	22.6 gal	milky; cloudy, lighter soon
25 18°	8.3	850	6/19/90	1640	45.2 gal	clearing up; still cloudy
34 17°	8.0	790	6-20-90	0755	67.8 gal	sl. cloudy w/ H. br. tinge
40 22°	7.7	850	6-20-90	1045	90.4 gal	v. sl. br. tinge; v. few fines
5					gal	
Extra purges					gal	
After development					gal	

Surge technique: Raising and lowering of water column
Type, size and capacity of bailer or pump:
Quantity of fluid removed: ~~≈113 gallons~~ 6/19/90 → 90.4 gallons Time for removal: ≈ 1 day
Comments: well clears up nicely; still very turbid for suspended solids but have decreased during development

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-37-90

Date 8-12-90
Time Start 1051
Time Finish 1500

Samplers T. WOLLAI
M. LEWIS

Well Information

Depth to water 204.3 ft.
Well depth 226.3 ft.
Sample depth 226-204 ft.

Casing diameter 4" in.
Casing volume 27.08 gal.

Stickup 2.3 ft.
Screened interval 226 to 206

Field Equipment

pH meter SCI Serial No. 9001
E.C. meter SCI Serial No. 9001
Pump N/A Serial No. N/A
Pumping rate <1- gal/min

Water level meter SOLINIST Serial No. 08611
Dissolved O_2 meter N/A Serial No. N/A
Temperature meter SCI Serial No. 9001
Filter Apparatus NALGENE - DISPOSABLE Filters CN 0.45 M
Tubing 1" PVC REINFORCED Size 1" ID in x in Bailer SCHED PVC Size 3" x 3" in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 63 °F °C pH 10.00 = 9.53 @ 63 °F °C Time 0950
Conductance standard 1000 umhos/cm @ 25° C Reading 1000 umhos @ 63 °F °C Time 0955
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1051	0	INITIAL	62.5	694	8.03	N/A	OVA 0 ppm HNU 0 ppm
1101	27.0	1	60.0	669	7.43	N/A	
1128	54	2	60.0	674	7.82	N/A	
1153	81	3	61.7	675	7.63	N/A	
1230	108	4	60.0	685	7.44	N/A	
1300	135	5	60.0	700	7.50	N/A	

3/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area RFI - Phase I
Geologist: T. J. WOLLEN / P. ANDERSON / J COEN
Well No.: S-38-90
Date of Installation: 6-19-90

Well Information

Depth to Water: 224.1
Total Depth: 240.0
Casing Diameter: 3.86" ID / 4" OD
Borehole Diameter: 8"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: ~~2.7 Ft~~ (2.5 Ft Above) jc 9/6/90
Screen Length: 20 Ft
Amt. of fluid in well (Prior to development)
In well casing: 10.39
In sat. annulus: 9.35
(30% porosity).

Development

Date/time started: 1115 7/10/90 ~~0714 / 6-15-90~~ jc 9/6/90
Completed: ~~6-18-90~~ jc 9/6/90 7/11/90

Water level
Before development: 224.1
24 hrs. after: 220.76

Depth to sediment
Before development: —
After development: —

Measurement	T	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristic
0	21.5°	13?	540	7-9-90	1115	0 gal	OPAQUE - GRAY
1	23°C	8.3	1050	7-9-90	1245	~20 gal	OPAQUE GRAY
2	24°C	7.9	1090	7-10-90	1115	~40 gal	CLOUDY - GRAY
3	19°C	8.0	1300	7-10-90	1515	~60 gal	CLOUDY - GRAY
4	19°C	8.0	1350	7-10-90	1730	~80 gal	SLIGHTLY CLOUDY
5	19°C	8.0	1400	7-11-90	1000	~100 gal	SLIGHTLY CLOUDY
Extra purges						gal	
After development						gal	

Surge technique: PUMPED DRY AND ALLOWED TO RECHARGE
Type, size and capacity of bailer or pump: AIRLIFT
Quantity of fluid removed: 100 GALLONS Time for removal: 2 DAYS
Comments:

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID 5-38-90

Date 8-12-90
Time Start 1715
Time Finish 2130

Samplers T. WOLLEN
M. LEWIS

Well Information

Depth to water 220.45 ft. Casing diameter 4 in. Stickup 2.3 ft.
Well depth 233.70 ft. Casing volume 19.22 gal. Screened interval 233 to 213
Sample depth 233-220 ft.

Field Equipment

pH meter SCI Serial No. 4001 Water level meter SOLINST Serial No. 08611
E.C. meter SCI Serial No. 4001 Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. — Temperature meter SCI Serial No. 4001
Pumping rate <1 gal/min Filter Apparatus NALGENE - DISPOSAL Filters CN 0.45 µ
Tubing N/A Size — in x — in Bailer SCH 40 PVC Size 3' x 3" in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 64 °F °C pH 10.00 = 9.54 @ 64 °F °C Time 1900
Conductance standard 1000 umhos/cm @ 25° C Reading 1000 umhos @ 64 °F °C Time 1905
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ — °C Time —

Time	Volume Removed		Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
	Gals	Csng Vols					
1855	0	INITIAL	63°	762	7.55	N/A	OVA 0ppm HNU 0ppm
							ATTEMPT SUBMERSIBLE NOT ENOUGH WATER IN WELL
							BAILED DRY

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area RFI - Phase I
Geologist: S. CONDRAN
Well No.: S-39-40
Date of Installation: ~~7/14/90~~ 6/30/90 JC 9/6/90

Well Information

Depth to Water: ~240.00
Total Depth: 255.0' (257.5' TOC)
Casing Diameter: 4.0"
Borehole Diameter: 8.0"
Amt. of mud/water lost during drilling: 0
Casing Stickup: 2.5'
Screen Length: 20'
Amt. of fluid in well (Prior to development)
In well casing: 17.0 galls.
In sat. annulus: 15.3 galls
(30% porosity)

Development

Date/time started: 7/14/90 / 0915
Completed: 7/19/90 / 1626

Water level
Before development: 227.60'
24 hrs. after: 234.90'

Depth to sediment
Before development: (~~255'~~ ~~257.5'~~ TOC 7/19/90) unable to accurately determine with weighted tape
After development: 256.85'

Measurement	Temp	* pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	20	8	630	7/19/90	0916	0 gal	brown, micky, silty
1	20	7.5	1260	7/19/90	0958	20.4 gal	brown, micky, silty
2	23	7.5	1660	7/19/90	1030	40.8 gal	brown, micky, silty
3	21	8	1590	7/19/90	1114	61.2 gal	brown, micky, silty
4	22	8	1700	7/19/90	1143	81.6 gal	pale brown, micky, silty
5	24	8	1710	7/19/90	1210	102.0 gal	pale brown, micky, silty
Extra purges (7/14/90)	23.5	8	1720	7/19/90	1512	130.0 gal	pale brown, micky
After-development	22 (7/19/90)	8	1780	7/19/90	1626	** 161.0 gal	v. pale brown, cloudy

Surge technique: dropping the water level allowing to recover and repeat
Type, size and capacity of bailer or pump: air
Quantity of fluid removed: 161.0 gallons
Time for removal: ~4 hrs 15 min
Comments: * pH was measured with indicator strips
** The volume indicated under extra purges represents the total volume required to be purged as the original volume of water removed was below the required amount

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-39-90

Date 8-13-90
Time Start 1530
Time Finish 1810

Samplers T. WOLLEN
M. LEWIS

Well Information

Depth to water 234.85 ft.
Well depth 257.50 ft.
Sample depth 257-234 ft.

Casing diameter 4 in.
Casing volume 32.84 gal.

Stickup 2.5 ft.
Screened interval 257 to 237

Field Equipment

pH meter SCI Serial No. 9001
E.C. meter SCI Serial No. 9001
Pump SUBMERSIBLE Serial No. 115
Pumping rate 6 gal/min

Water level meter SOLINIST Serial No. 06611
Dissolved O_2 meter N/A Serial No. —
Temperature meter SCI Serial No. 9001
Filter Apparatus NALGENE - DISPOSABLE Filters CN 0.45 µ

Tubing 1/2 ID PVC Size 1/2" in x 250' in
Bailer SCHYDROPVC Size 3' x 3" in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 65 °F °C pH 10.00 = 9.53 @ 64°F °C Time 1500

Conductance standard 1000 umhos/cm @ 25° C Reading 1001 umhos @ 64°F °C Time 1505

Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1530	0	INITIAL	63.0	1400	7.39	N/A	DUA 4PM HNU 0PPM
1535	32.0	1	62.0	1368	7.33	N/A	
1540	64.0	2	61.0	1275	7.39	N/A	
1550	96.0	3	59.0	1295	7.30	N/A	
1555	128.0	4	58.9	1260	7.32	N/A	
1600	160.0	5	58.8	1290	7.31	N/A	DUA 4PM WATER HNU 0PPM VERYCLEAR

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: T. Wollen / C. Bieniulis
Well No.: S-40-90
Date of Installation: 6-12-90 & 9/6/90 / 14

Well Information

Depth to Water	255.3	Casing Stickup	2.5'
Total Depth	275.0'	Screen Length	20'
Casing Diameter	3.86"	Amt. of fluid in well (Prior to development)	
Borehole Diameter	10"	In well casing	
Amt. of mud/water lost during drilling	N/A	In sat. annulus (30% porosity)	

Development

Date/time started: 1020 7-2-90 — Completed: 7-3-90

Water level
- Before development: 255.3
- 24 hrs. after: N/A

Depth to sediment
- Before development: 274.8
- After development: 275.0 - None

Measurement	temp °C	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	23°C	8.5	1400	7-2-90	1015	0 gal	Opaque, Brown
1	22°C	8.4	1010	7-2-90	1300	28.5 gal	Opaque, Brown
2	27°C	8.3	1700	7-02-90	1515	28.5 gal	H. brown, cloudy, v. fine sand
3	21°C	8.3	1200	7-02-90	1750	28.5 gal	H. brown, cloudy, v. fine sand
4	20°C	8.2	1150	7-03-90	0936	28.5 gal	H. brown, cloudy, v. fine sand
5	19°C	8.2	1160	7-3-90	1300	28.5 gal	Slightly cloudy, Brown
Extra purges						gal	
After development						gal	

Surge technique: Raising & Lowering of Water Column
Type, size and capacity of ~~bailer or~~ pump: Air Lift
Quantity of fluid removed: 114 gallons — Time for removal:
Comments:

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID 5-40-90

Date 8-14-90
Time Start 0745/8-13-90
Time Finish 1901/8-14-90

Samplers T. UNLLEN
M. LEWIS

Well Information

Depth to water 254.37 ft. Casing diameter 4" in. Stickup 2.3 ft.
Well depth 273.60 ft. Casing volume 27.90 gal. Screened interval 273 to 253
Sample depth 273-254 ft.

Field Equipment

pH meter SCI Serial No. 9001 Water level meter SOLINIST Serial No. 0566
E.C. meter SCI Serial No. 9001 Dissolved O_2 meter N/A Serial No. —
Pump STANDARD-SUB Serial No. 115 Temperature meter SCI Serial No. 9001
Pumping rate ______ gal/min Filter Apparatus NALGENE - DISPOSABLE Filters CN 0.45 µ
Tubing PVC-REINFORCED Size 1/2" in x 250 in Bailer I CH 40 PVC Size 3' x 3" in

Field Chemistry

Calibration pH 7.00 = 6.98 @ 64 °C pH 10.00 = 9.54 @ 63 °C Time 0820
Conductance standard 1000 umhos/cm @ 25° C Reading 1064 umhos @ 64° °C Time 0825
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ — °C Time —

Time	Volume Removed		Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
	Gals	Csng Vols					
1030	0	INITIAL	62.0	646	7.70	N/A	~~WAS~~ PUMP DIDN'T WORK. HAD OPEN BAILER HAD TO
1608	27	1	73.0	890	7.43	N/A	USE PUMP ON 8-14-90 PMP.
1644	54	2	70.0	977	7.43	N/A	
1645	81	3	61.2	920	7.39	N/A	
1649	108	4	60.4	926	7.36	N/A	
1518	135	5	58.3	931	7.40	N/A	

8/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: Paul Anderson
Well No.: S-41-90
Date of Installation: 7/26/90

Well Information

Depth to Water: 286.14 from ground surface
Total Depth: 307.0
Casing Diameter: 4"
Borehole Diameter:
Amt. of mud/water lost during drilling:
Casing Stickup: 2.5'
Screen Length: 20'
Amt. of fluid in well (Prior to development)
In well casing:
In sat. annulus: 35 gallons (30% porosity)

Development

Date/time started: 8/1/90 @ 1027
Completed:
Water level
Before development: 288.64' from T.o.PVC
24 hrs. after:
Depth to sediment
Before development:
After development:

Measurement	Temp	Col. (Brn)	pH	Specific Conduct. (mmhos)	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	21.5	1.3	8.51	2000	8/1/90	1027	0 gal	grey w/tr. s. H+vf. sand
1	20.0	1.2	8.78	2050	8/1/90	1359	35 gal	" "
2							gal	
3							gal	
4							gal	
5							gal	
Extra purges							gal	
After development							gal	

Surge technique:
Type, size and capacity of bailer or pump:
Quantity of fluid removed: Time for removal:
Comments:

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: Paul Anderson
Well No.: S-41-90
Date of Installation: ~~7/26/90~~ 7-27-90

Well Information

Depth to Water: 288.64 from TOPVC
Total Depth: 307.0
Casing Diameter: 4"
Borehole Diameter: 8"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: 2.5'
Screen Length: 20'
Amt. of fluid in well (Prior to development)
In well casing: 1.82
In sat. annulus: 35.0 gal. (30% porosity)

Development

Date/time started: 8/1/90 @ 1027
Completed: 8/8/90

Water level
Before development: 288.64'
24 hrs. after: ~~290~~ 296-3 8/9/90

Depth to sediment
Before development: 307.0
After development: 307.0

Measurement	temp	salinity	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	21.5	1.3	8.51	2000 µmhos	8/1/90	1027	0 gal	grey w/ tr. silt & vf. sand
P.A. 1	20.0	1.2	8.78	2050	8/1/90	1359	~35.0 gal	" " "
JC 2	18.2	—	9.22	1900 µmhos	8/8/90	0820	70.0 gal	cloudy, s/t, vf sand
3	19.1	—	8.15	2200 µmhos	8/8/90	1055	105 gal	cloudy, grey w/ s/t
4	19.3	—	8.17	2150 µmhos	8/8/90	1355	140 gal	silty - less sand
5	—	—	—	—	—	—	— gal	—
Extra purges			—	—	—	—	— gal	—
After development			—	—	—	—	— gal	—

Surge technique: ~~purge~~ dry, let recover
Type, size and capacity of bailer or pump: Air lift, compressor
Quantity of fluid removed: 140 gallons Time for removal: ~ 10 hours
Comments: Development started slow and gradually increased after the second volume

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-41-90

Date 8-23-90
Time Start 0842
Time Finish 1147

Samplers Conrad J. Bieniulis

Well Information

Depth to water 288.82 ft. Casing diameter 4 in. Stickup 2.5 ft.
Well depth 309.5 ft. Casing volume 31.1 gal. Screened interval 309.5 to 289.5
Sample depth 299 ft.

Field Equipment

pH meter Orion SA 210 Serial No. 1633 Water level meter Solinst Serial No. 08611
E.C. meter YSI Model 33 Serial No. 90D014127 Dissolved O_2 meter NA Serial No. NA
PX8560294
Pump Standard Serial No. MX8560246 Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate ~3.5 - 4.5 gal/min Filter Apparatus Nalgene Filters .45 microns
Tubing PVC Size ½ in x in Bailer PVC Size 3' length in

Field Chemistry

Calibration pH 7.00 = 7.0 @ 15 °C pH 10.00 = 10.0 @ 15 °C Time 0835
Conductance standard 1000 umhos/cm @ 25° C Reading 1000 umhos @ °C Time
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	~~Safety Procedures/Readings~~
0842	1	.03	14	1600	7.56	NA	lt. grayish-brown slightly cloudy & silty
0904	31	1	13.5	1550	7.47	"	clear, no suspended particles
0931	31	2	14	1575	7.58	"	" "
0957	31	3	15.5	1600	7.68	"	" "
1029	31	4	15	1550	7.35	"	" "
1044	31	5	14.5	1610	7.37	"	" "

8/1/90

TEAD - SOUTH AREA RFI PHASE I

EBASCO SERVICES INC.

WATER QUALITY FIELD DATA SHEET

Project: USATHAMA TOCELE SOUTH
Date: 5/21/90
Time Start: 10:39
Time Finish:
Samplers: A. WARNER, S. Raith, D. Armstrong, J. Etcheverry

Well ID: S-42-90

Well Information

Depth to Water: 82.0 ft.
Casing Diameter: 4 in.
Stickup: 2.5 ft.
Well Depth: 86.1 ft.
Casing Volume: NA gal
Screened Interval: 86.1 to 75.8
Sample Depth: NA ft.

Field Equipment

pH Meter: NA
Serial No: NA
Water Level Meter: Solinst #05839
Serial No: 05839
E.C. Meter: YSI #33
Serial No:
Dissolved O_2 Meter: NA
Serial No: NA
Pump: NA
Serial No: NA
Temperature Meter: YSI #33
Serial No: 90D0141277
Pumping Rate: NA gal/min
Filter Appartus:
Filters:
Tubing: PVC
Size: In x In
Bailer: NA
Size: NA In

Field Chemistry

Calibration: pH 7.00 = NA @ NA °C
pH 10.00 = NA @ NA °C
Time: NA
Conductance Standard: NA umhos/cm @ 25°C
Reading: NA umhos @ °C
Time: NA
Calibrated Conductivity: NA umhos/cm @ 25°C
Diss. O^2: NA mg/l @ °C
Time: NA

Time	Volume Removed Gals.	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O^2 mg/l	Safety Procedures/ Readings
1043	0	NA	18	1500	NA	NA	
1104	5	NA	15	1650	NA	NA	
1130	6+	NA	NA	NA	NA	NA	

TEAD - SOUTH AREA RFI PHASE I

EBASCO SERVICES INC. **WATER QUALITY FIELD DATA SHEET**

Project: USATHAMA - TOOELE SOUTH
Well ID: S-42-90
Date: 5/23/90
Time Start: 0857
Time Finish:
Samplers: R. Armstrong, A. Warner, Tim Ross

Well Information

Depth to Water: 82.0 ft. Casing Diameter: 2" in. Stickup: 2.5 ft.
Well Depth: 87.6* ft. Casing Volume: NA gal Screened Interval: 86.1 to 69.5
Sample Depth: NA ft.
* measured w/ M-scope w/ stick up

Field Equipment

pH Meter: NA Serial No: NA Water Level Meter: Solinst Serial No: 05839
E.C. Meter: YSI #33 Serial No: Dissolved O_2 Meter: NA Serial No: NA
Pump: 1.7" Hand pump Serial No: NA Temperature Meter: YSI #33 Serial No:
Pumping Rate: NA gal/min Filter Appartus: NA Filters: NA
Tubing: 1.7" PVC Size: 1.7" in x in Bailer: NA Size: NA in

Field Chemistry

Calibration: pH 7.00 = NA @ °C pH 10.00 = NA @ °C Time: NA
Conductance Standard: NA umhos/cm @ 25°C Reading: NA umhos @ °C Time: NA
Calibrated Conductivity: NA umhos/cm @ 25°C Diss. O^2: NA mg/l @ °C Time: NA

Time	Volume Removed Gals.	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O^2 mg/l	Safety Procedures/ Readings
0911	~2	NA	18	1700	NA	NA	NA
0932	~9.5	NA	14.5	1550	NA	NA	NA
1016	~15.0	NA	15.0	1800	NA	NA	NA
1117	~20.0	NA	15.5	1550	NA	NA	NA WATER STILL light brown
1207	~25.0	NA	17.0	1600	NA	NA	WATER SLIGHTLY more clear
1:59	~29.0	NA	17.0	1600	NA	NA	as above

TOTAL VOLUME REMOVED ~30.0 GALLONS
THIS IS 3 well volumes RW 5/23/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-12-90

Date 8/10/90
Time Start 0811
Time Finish 0956

Samplers S CONDRAN, A WARNER

Well Information

Depth to water 79.27 ft. (from PVC stickup)
Well depth 97.57 ft.
Sample depth 81 ft.

Casing diameter 4 in.
Casing volume 13.9 gal.

Stickup 2.7 ft.
Screened interval 75.8 to 86.1

Field Equipment

pH meter ORION RESEARCH MODEL SA 232 Serial No. 4531
Water level meter SOLINST Serial No. 05979
E.C. meter U.S.I MODEL 33 Serial No. 15662
Dissolved O_2 meter NA Serial No. NA
Pump NA Serial No. NA
Temperature meter (dissolved oxygen probe) U.S.I MODEL 33 Serial No. 15662
Pumping rate NA gal/min
Filter Apparatus 500ml Nalgene
Filters .45µ
Tubing NA Size NA in x in
Bailer PVC SCHEDULE 40 Size 3' long 3.6" O.D. in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 21 °C pH 10.00 = 10.01 @ 21 °C Time 0745
Conductance standard 1000 umhos/cm @ 25° C Reading 1,090 umhos @ 21 °C Time 0753
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS ~~Safety~~ Procedures/Readings SC 8/10/90
0812	0	0	15	1,250	7.92	NA	slightly cloudy
0830	13.9	1	15	1,280	7.83		pale brown, turbid
0856	27.8	2	17.5	1,290	7.95		pale brown, turbid
1E 0942 8/10/90	41.7	3	18.5	1,380	8.02		brown, turbid
	~~55.6~~	~~4~~ 8/10/90					
0956	start Sampling						

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: Paul Anderson
Well No.: S-43-90
Date of Installation: 6/17/90

Well Information

Depth to Water: 75.85'
Total Depth: 90.0'
Casing Diameter: 4"
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: 2.5'
Screen Length: 10'
Amt. of fluid in well (Prior to development): 10.84 (PWR)
In well casing: ~~14.5~~ gal.
In sat. annulus: 27.96 gal.
(30% porosity)

Development

Date/time started: 7/30/90 @ 0809
Completed: 7/31/90 @ 0715

Water level
Before development: 75.85
24 hrs. after: 76.15

Depth to sediment
Before development: 90.0'
After development: 90.0'

Measurement	temp	cnd.	pH	Specific Conduct. (µmHos)	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	15.0	3.1	7.79	4130	7/30/90	0809	0 gal	mostly clear, tr. sand
1	21.0	3.1	7.96	4800	7/30/90	0944	~28 gal	brown, some silt
2	17.3	4.1	8.00	5900	7/30/90	1303	~56 gal	" "
3	22.0	3.9	7.87	5800	7/30/90	1400	~84 gal	" "
4	18.0	3.9	7.95	5300	7/30/90	1600	~112 gal	lt. brown, tr. silt
5	14.0	3.9	8.20	4850	7/31/90	0715	~140 gal	lt. grey, tr. silt
Extra purges							gal	
After development							gal	

Surge technique: purge dry, let recover
Type, size and capacity of bailer or pump: Airlift compressor
Quantity of fluid removed: ~140 gallons
Time for removal: 3.6 hrs.
Comments:

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-43-90

Date 8/10/90
Time Start 1253
Time Finish 1555

Samplers S. CUNDRAN, D. LEBLANC, A WARNER

Well Information

Depth to water 75.15 ft. (from pvc stickup)
Well depth 91.50 ft. (from pvc stickup)
Sample depth 80 ft.

Casing diameter 4 in.
Casing volume 23.7 gal.

Stickup 2.5 ft.
Screened interval 70 to 90

Field Equipment

pH meter ORION RESEARCH MODEL SA 230 Serial No. 4531
Water level meter SOLINST Serial No. 05837
E.C. meter YSI MODEL 33 Serial No. 15662
Dissolved O_2 meter NA Serial No. NA
Pump NA Serial No. NA
Temperature meter YSI MODEL 57 (Dissolved Oxygen) Serial No. 15662
Pumping rate NA gal/min
Filter Apparatus 500ml Nalgene Filters 45 M
Tubing NA Size NR in x in Bailer PVC SCHEDULE 40 Size 3.0' long 3.0" O.D. in

Field Chemistry (SEE WATER QUALITY FIELD DATA SHEET FOR WELL S-42-90 8/10/90)

Calibration pH 7.00 = @ °C pH 10.00 = @ °C Time
Conductance standard umhos/cm @ 25° C Reading umhos @ °C Time
Calibrated conductivity umhos/cm @ 25° C Diss. O_2 mg/l @ °C Time

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS ~~Safety Procedures/Readings~~ 8/10/90
1254	0	0	21	4100	7.71	NA	clear - v. slightly cloudy
1324	23.7	1	23	4,380	7.65	NA	brown, turbid
1411	47.4	2	20	4,480	7.71	NA	yellow-brown, turb. d
1458	71.1	3	19.5	4,100	7.79	NA	yellow-brown, turb. d
1529	94.8	4	20	4,300	7.79	NA	sc silvery ~tt. pale brown, cloudy
1555	118.5	5	18	4,050	7.69	NA	brown, turb. d
1600	Start sampling						

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: Paul Anderson
Well No.: S-44-90
Date of Installation: 7/13/90

Well Information

Depth to Water: 74.14'
Total Depth: 90.0'
Casing Diameter: 4"
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: 2.5'
Screen Length: 10'
Amt. of fluid in well (Prior to development)
In well casing: 11.98 gallons
In sat. annulus: 30.84 gallons
(30% porosity)

Development

Date/time started: 7/31/90 @ 0904
Completed: 7/31/90 @ 1700

Water level
Before development: 74.14'
24 hrs. after: 74.43'

Depth to sediment
Before development: 74.14' (PWR) 90.0'
After development: 90.0'

Measurement	Temp	Salin	pH	Specific Conduct. (µMHOS)	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	18.0	2.8	8.47	3600	7/31/90	0904	0 gal	
1	18.0	2.8	8.43	3756	7/31/90	0958	~31 gal	
2	21.0	2.6	8.48	3800	7/31/90	1147	~62 gal	
3	20.0	2.5	8.39	3700	7/31/90	1415	~93 gal	
4	21.0	3.0	8.33	4000	7/31/90	1522	~124 gal	
5	21.0	2.8	8.44	3850	7/31/90	1700	~155 gal	
Extra purges							gal	
After development							gal	

Surge technique: purge dry, let recover
Type, size and capacity of bailer or pump: Air lift, compressor
Quantity of fluid removed: ~155 gallons
Time for removal: 3.95 hrs.
Comments:

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-44-90

Date 5/11/90
Time Start 0850
Time Finish 1223

Samplers S. CONDRAN, A WARNER

Well Information

Depth to water 73.63 ft. (from PVC stickup)
Well depth 91.95 ft. (from PVC stickup)
Sample depth 80 ft.

Casing diameter 4 in.
Casing volume 26.5 gal.

Stickup 2.5 ft.
Screened interval 69.7 to 90

Field Equipment

pH meter ORION RESEARCH MODEL SA 230 Serial No. 4531
E.C. meter Y.S.I. MODEL 33 Serial No. 15662
Pump NA Serial No. NA
Pumping rate NA gal/min

Water level meter SOLINST Serial No. 03837
Dissolved O_2 meter NA Serial No. NA
Temperature meter Y.S.I. MODEL 33 (Dissolved metals only) Serial No. 15667
Filter Apparatus 500 mL Nalgene Filters 0.45M

Tubing NA Size NA in x in Bailer PVC Size 3.0" long 3.0" OD in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 18 °C pH 10.00 = 10.00 @ 18 °C Time 0826
Conductance standard 1000 umhos/cm @ 25° C Reading 900 umhos @ 18 °C Time 0822
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS ~~Safety~~ as similar ~~Procedures/Readings~~
0852	0	0	19	2580	7.92	NA	clear
0955	26.5	1	17	2,790	7.97	NA	pale yellow-brown turb'd ~~murky~~
1022	53.0	2	17	3,090	7.89	NA	pale yellow-brown, turb'd
1109	79.5	3	17	2875	7.77	NA	slightly cloudy
1154	106.0	4	17	3,200	7.74	NA	cloudy
1223	1325	5	16	2,950	7.93	NA	cloudy
1230	Start sampling S-44-90 and S-44-90-DP						

5/1/90

TEAD - SOUTH AREA RFI PHASE I

EBASCO SERVICES INC.

WATER QUALITY FIELD DATA SHEET

Project: TEAD - TOOELE

Date: MAY 31, 1990
Time Start: 1428
Time Finish: JUNE 1, 1990 0854

Samplers: T. J. WOLLEN

Well ID: S-45-90

Well Information

Depth to Water: 23.12 ft. Casing Diameter: 4 in. Stickup: 2'3" ft.

Well Depth: 33.1 ft. Well Casing Volume: 16.72 gal Screened Interval: 33.1 to 23.1

Sample Depth: — ft.

Field Equipment

pH Meter: PEN Serial No: 5941-00 Water Level Meter: Solinst Serial No: N/A

E.C. Meter: 451-33 Serial No: 90001427 Dissolved O_2 Meter: N/A Serial No: N/A

Pump: COMPRESSOR Serial No: N/A Temperature Meter: YSI-33 Serial No: 90001427

Pumping Rate: variable gal/min Filter Appartus: N/A Filters: N/A

Tubing: PVC Size: 1½" in & 1" out Bailer: N/A Size: N/A in

Field Chemistry

Calibration: pH 7.00 = N/A @ °C pH 10.00 = N/A @ °C Time: NA

Conductance Standard: N/A umhos/cm @ 25°C Reading: N/A umhos @ °C Time: N/A

Calibrated Conductivity: N/A umhos/cm @ 25°C Diss. O^2: N/A mg/l @ °C Time: N/A

	Time	Volume Removed Gals.	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O^2~~ SALINITY mg/l (JW 6-2-90)	~~Safety Procedures/~~ Readings (JW 6-2-90)
5-31-90	1428	0	0	18.1	5000	11.8	3.7%	O/A → PPM HNU-PPM CLARITY - OPAQUE
	1500	12.5	.75	15.0	2550	10.1	2.0%	CLARITY - OPAQUE
	1530	25.0	1.50	14.0	2900	8.8	2.0%	CLARITY - CLOUDY
	1607	37.5	2.25	12.9	2700	8.8	2.0%	CLARITY - CLOUDY
	1700	50.0	3.00	12.0	2700	8.4	2.0%	CLARITY - SLIGHTLY CLOUDY
6-1-90	0853	62.5	3.75	12.0	2700	8.4	2.0%	CLARITY - CLEAR

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID 5-45-90

Date 8/12/90
Time Start 0934
Time Finish 1110

Samplers S CONDRAN
A WARNER

Well Information

Depth to water 23.86 ft. (from PVC STICKUP) Casing diameter 4 in. Stickup 2.5 ft.
Well depth 31.75 ft. Casing volume 13.5 gal. Screened interval 21 to 31
Sample depth 27 ft.

Field Equipment

pH meter ORION RESEARCH MODEL SA 230 Serial No. 4531 Water level meter SOLINST Serial No. 05839
E.C. meter YSI MODEL 33 Serial No. 15662 Dissolved O_2 meter NA Serial No. NA
Pump NA Serial No. NA Temperature meter YSI MODEL 33 (Dissolved metals only) Serial No. 15662
Pumping rate NA gal/min Filter Apparatus 500 ml Nalgene Filters .45 µm
Tubing NA Size NA in x in Bailer PVC SCHEDULE 40 Size 3.5" long 3" O.D. in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 18 °C pH 10.00 = 10.01 @ 18 °C Time 0757
Conductance standard 1000 umhos/cm @ 25° C Reading 1,000 umhos @ 18 °C Time 0759
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
0934	0	0	12	2,100	9.78	NA	Light brown, v. turb.
0954	13.5	1	13	2,400	8.43	NA	as above w/ "some flaked" flat sediment
1015	27.0	2	13	2,300	8.69	NA	as above w/ less "flat sed." but "clumpy sed."
1031	40.5	3	13	2,350	8.09	NA	Light brown; less clumpy sed.
1054	54.0	4	13	2,390	7.91	NA	light brown, less sediment
1110	67.5	5	14.5	2,250	8.18	NA	light brown, less sediment
1111	start	sampling					

5/1/90

TEAD - SOUTH AREA RFI PHASE I

EBASCO SERVICES INC. **WATER QUALITY FIELD DATA SHEET**

Project: TEAD - TWELVE Date: JUNE 3, 1990 Samplers: T. J. WOLLEN

Time Start: 1501 - 1653 JUNE 4, 1990 JUNE 5, 1990

Well ID: S-46-90 Time Finish: 0830 - 1720 0700 - 1800

Well Information

Depth to Water: 14.29 ft. Casing Diameter: 4" in. Stickup: 2'9" ft.

Well Depth: 26.1 ft. Well Casing Volume: 19.82 gal Screened Interval: 26.1' to 16.1'

Sample Depth: — ft.

Field Equipment

pH Meter: PEN Serial No: 5941-00 Water Level Meter: SOLINIST Serial No: 0B611

E.C. Meter: YSI-33 Serial No: 900014127 Dissolved O_2 Meter: N/A Serial No: N/A

Pump: Compressor & BAILER Serial No: — Temperature Meter: YSI-33 Serial No: 900014127

Pumping Rate: gal/min Filter Appartus: N/A Filters: N/A

Tubing: PVC Size: 1" in x 1½ OUT Bailer: PVC (1½ GAL) Size: 3 in

Field Chemistry

Calibration: pH 7.00 = N/A @ °C pH 10.00 = N/A @ °C Time: N/A

Conductance Standard: N/A umhos/cm @ 25°C Reading: N/A umhos @ °C Time: N/A

Calibrated Conductivity: N/A umhos/cm @ 25°C Diss. O^2: N/A mg/l @ °C Time: N/A

	Time	Volume Removed Gals.	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O^2~~ SALINITY mg/l	Safety Procedures/ Readings
JUNE 3 1990	1501	0	0	21°C	2490	8.1	1.5	HNU = 0ppm OVA = 0ppm (CLARITY - OPAQUE
JUNE 4 1990	1500	19.82	1.0	17.5°C	14000	7.8	8.0%	CLARITY - OPAQUE
JUNE 5 1990	0750	40.0	2.0	13.1	11800	7.8	8.0%	CLARITY - OPAQUE
	1000	60.0	3.0	14.1	11700	7.7	9.0%	CLARITY - CLOUDY
	1730	80.0	4.0	13.0	12100	7.5	9.1%	CLARITY - CLOUDY
	1800	100.0	5.0	14.0	12050	7.5	9.4%	CLARITY - SLCLOUDY

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID 5-46-90

Date 8-1-90
Time Start 1140
Time Finish

Samplers T. WOLLEN
C. LINDSTRAND
L. LINDSTRAND

Well Information

Depth to water 20.90 ft.
Well depth 27.87 ft.
Sample depth 27.20 ft.

Casing diameter 4"00 in.
Casing volume 11.74 gal.

Stickup 2.00 ft.
Screened interval 2767 to 17.5

Field Equipment

pH meter ORION Serial No. 9001
E.C. meter ORION Serial No. 9001
Pump N/A Serial No. N/A
Pumping rate N/A gal/min

Water level meter SOLINIST Serial No. 100' 77.06
Dissolved O_2 meter N/A Serial No. N/A
Temperature meter ORION Serial No. 9001
Filter Apparatus NALGENE - DISPOSABLE Filters CN 0.45 µ

Tubing N/A Size — in x — in Bailer 3" PVC SCH40 Size 3 in

Field Chemistry N/A

Calibration pH 7.00 = @ °C pH 10.00 = @ °C Time

Conductance standard umhos/cm @ 25° C Reading umhos @ °C Time

Calibrated conductivity umhos/cm @ 25° C Diss. O_2 mg/l @ °C Time

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1149	0	0	64.2	9570	7.88	N/A	OVA - 0/2~ HNU - 0/10 ppm
1156	11.7	1	62.7	11340	7.88	N/A	
1222	23.4	2	59.0	11110	7.84	N/A	
				Bailed Dry			

5/1/90

TEAD - SOUTH AREA RFI PHASE I

EBASCO SERVICES INC. **WATER QUALITY FIELD DATA SHEET**

Project: TEAD

Date: 5-30-90 Samplers: T. WOLLEN

Time Start: 1022-1630

Well ID: S-47-90

Time Finish: 5-31-90 0730 - 1130

Well Information

Depth to Water: 99.92 ft. Casing Diameter: 4" in. Stickup: 2'2" ft.

Well Depth: 116.1 ft. Well Casing Volume: 25.1 gal Screened Interval: 116.1 to 106.1

Sample Depth: — ft.

Field Equipment

pH Meter: PEN Serial No: 5941-50 Water Level Meter: SOLINIST Serial No: 08611

E.C. Meter: SCT-YSI-33 Serial No: 90D01427 Dissolved O_2 Meter: N/A Serial No: N/A

Pump: COMPRESSOR Serial No: N/A Temperature Meter: YSI-33 Serial No: SAME

Pumping Rate: N/A gal/min Filter Appartus: N/A Filters: N/A

Tubing: 1½" PVC IN - 1" PVC OUT Size: ← in x in Bailer: N/A Size: N/A in

Field Chemistry

Calibration: pH 7.00 = @ °C pH 10.00 = @ °C Time:

Conductance Standard: umhos/cm @ 25°C Reading: umhos @ °C Time:

Calibrated Conductivity: umhos/cm @ 25°C Diss. O^2: mg/l @ °C Time:

N/A

	Time	Volume Removed Gals.	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	SALINITY 6-2-90 Dissolved O² mg/l	Safety Procedures/ Readings
5-30-90	1022	0	0	16.9°	1310	10.1	2%	HNU OPPM OVA OPPM CLARITY GOOD
	1126	16	.5	16.9°	1310	10.1	2%	CLARITY - OPAQUE
	1216	25	1.0	14.5°	600	9.7	2%	CLARITY - OPAQUE
	1430	35	1.4	20.0°	590	9.7	2%	CLARITY - OPAQUE
	1620	40	1.6	18.0°	500	9.1	2%	CLARITY - V. CLOUDY
5-31-90	0830	50.2	2.0	12.5	500	9.0	0.1%	CLARITY - CLOUDY
	1130	75.3	3.0	15.1	600	9.0	0.1%	CLARITY - TOTAL CLEAR

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-47-90

Date 8/10/90
Time Start 0745
Time Finish 1045

Samplers P. Anderson
S. Bradfield

Well Information

Depth to water 100.15 (T.O.P.V.C.) ft.
Casing diameter 4" in.
Stickup 2.4 ft.
Well depth 114.0 ft.
Casing volume 10.60 gal.
Screened interval 114 to 104
Sample depth 114-104 ft.

Field Equipment

pH meter Orion Serial No. 1633
Water level meter Solinist Serial No. —
E.C. meter YSI Model 33 Serial No. 90D014127
Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate < 1 gal/min
Filter Apparatus Nalgene
Filters CN 0.45M
Tubing N/A
Size — in x — in
Bailer schedule 40 PVC Size 3'x3" in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0812
Conductance standard 1000 umhos/cm @ 25° C Reading 1350 umhos @ 25 °C Time 0817
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2 mg/l~~ salinity (o/oo)	Safety Procedures/Readings
0815	—	—	15.0	650	9.46	.5	initial parameters no elevated readings
		well bailed dry with ~22 gallons removed					

8/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: JON COLEN
Well No.: S-48-90
Date of Installation: 6/12/90

Well Information

Depth to Water: 96.4' 96.3' (6-28)
Total Depth: 111.4' 111.2' (6-28)
Casing Diameter: 3.86"
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: 2.5'
Screen Length: 10'
Amt. of fluid in well (Prior to development)
In well casing: 1.31 ft³
In sat. annulus: 2.45 ft³
(30% porosity)

Development

Date/time started: 6/17/90 (1401)
Completed: 6/28/90

Water level
Before development: 96.4 96.3' (6-28)
24 hrs. after: 96.5

Depth to sediment
Before development: 111.4 111.2' (6-28)
After development: 111.5

Measurement	Temp	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristi
0	28°C	9.7	990	6/17/90	1401	0 gal	muddy
1	18.5°C	NA	675	6-28-90	1304	26 gal	lt. gray, cloudy, v. fine
2	17.5°C	NA	675	6-28-90	1554	52 gal	gray, cloudy, v. fine sa
3	14.5°C	8.3	600	6-29-90	0830	78 gal	SLIGHTLY CLOUDY-GRAY
4	14.5°C	8.3	600	6-29-90	0930	104 gal	SLIGHTLY CLOUDY-GRAY
5						gal	
Extra purges						gal	
After development						gal	

Surge technique: Raising and lowering of water
Type, size and capacity of bailer or pump: 1½ in & 1" dia PVC hand pump
Quantity of fluid removed: ≈ 52 gallons +52 more Time for removal: ≈ 5 hours
Comments: 6-28-90 : pH meter was broken - no readings available
It was decided that since the well was pumped dry twice that was all that we would do. However later we did 2 more surveys

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-48-90

Date 8/10/90
Time Start 1245
Time Finish 1505

Samplers P. Anderson, S. Bradfield

Well Information

Depth to water 96.38' (T.O.PVC) | Casing diameter 4" in. | Stickup 2.2' ft.
Well depth 110' ft. | Casing volume 10.32 gal. | Screened interval 110 to 100
Sample depth 110-100 ft.

Field Equipment

pH meter Orion | Serial No. 1633 | Water level meter Solinist | Serial No. —
E.C. meter YSI Model 33 | Serial No. 90D014127 | Dissolved O_2 meter N/A | Serial No. —
Pump N/A | Serial No. — | Temperature meter YSI Model 33 | Serial No. 90D014127
Pumping rate < 1 gal/min | Filter Apparatus Nalgene | Filters CN 0.45M
Tubing — | Size — in x — in | Bailer Schedule 40, PVC | Size 3'x3" in

Field Chemistry

Calibration pH 7.00 = — @ — °C | pH 10.00 = 10 @ 25 °C | Time 0812
Conductance standard 1000 umhos/cm @ 25° C | Reading 1350 umhos @ 25 °C | Time 0817
Calibrated conductivity — umhos/cm @ 25° C | Diss. O_2 — mg/l @ — °C | Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2~~ salinity (o/oo) mg/l	Safety Procedures/Readings
1305	~~2.7~~ ~27	~~2.6~~ (PVA)	18.5	610	8.68	0.5	initial parameters, clear, no elevated readings
1346	~~5.4~~ ~54	~~5.2~~ 2.6 (P/V) 5.2	20.0	710	8.65	0.5	lt. grey, tr. silt
		well bailed dry then sampled					

8/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: Conrad J. Bieniulis
Well No.: S-49-90
Date of Installation: 6-15-90

Well Information

Depth to Water: 98.0'
Total Depth: 109.65'
Casing Diameter: 3.86"
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: ____
Casing Stickup: 2.2'
Screen Length: 10'
Amt. of fluid in well (Prior to development)
In well casing: ____
In sat. annulus (30% porosity): ____

Development

Date/time started: 6-28-90 / 1210
Completed: 6-28-90 / 1555
Water level
Before development: 98.0'
24 hrs. after: ____
Depth to sediment
Before development: 109.65'
After development: ____

Measurement	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0 temp 22°C	NA	650	6-28-90	1210	0 gal	gray, milky, silty
1 17.5°C	NA	425	6-28-90	1218	20 gal	" "
2 17°C	NA	450	6-28-90	1310	20 gal	" "
3 19.5°C	NA	425	6-28-90	1417	20 gal	" "
4 18°C	NA	425	6-28-90	1503	20 gal	lt. gray, cloudy, less silt
5 18°C	NA	410	6-28-90	1555	20 gal	lt. gray, cloudy, little silt
Extra purges					gal	
After development					gal	

Surge technique: ____
Type, size and capacity of ~~bailer or~~ pump: PVC, 1½" & 1" dia. hand pump
Quantity of fluid removed: ____ Time for removal: ____
Comments: 6-28-90: pH meter was broken - no readings available

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID 5-49-90

Date 8/11/90
Time Start 0800
Time Finish 1150

Samplers P. Anderson, S. Smallfield

Well Information

Depth to water 98.25 (T.O.PVC) ft.
Well depth 109.0 ft.
Sample depth 109-99 ft.

Casing diameter 4" in.
Casing volume 8.44 gal.

Stickup 2.2' ft.
Screened interval 109' to 99'

Field Equipment

pH meter Orion Serial No. 1633
Water level meter Solinist Serial No. —
E.C. meter YSI Model 33 Serial No. 90D014127
Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate < 1 gal/min
Filter Apparatus Nalgene Filters CN 0.45M
Tubing N/A Size — in x — in
Bailer schedule 40, PVC Size 3' x 3' in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0845
Conductance standard 1000 umhos/cm @ 25° C Reading 1500 umhos @ 25 °C Time 0850
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2 mg/l~~ salinity (o/oo)	Safety Procedures/Readings
0856	—	—	17.0	410	8.76	0.2	initial readings clear
0920	~16	1.9	15.5	435	8.52	0.3	grey, fr. uf sand, silt
		well bailed dry, sampled					

8/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: T. J. WOLLEN
Well No.: J-50-90
Date of Installation: 5/31/90

Well Information

Depth to Water: 63.72
Total Depth: 69.70
Casing Diameter: 10 3.86" or 4"00
Borehole Diameter: 10 INCH
Amt. of mud/water lost during drilling: 0
Casing Stickup: 2.4 ft
Screen Length: 10 ft
Amt. of fluid in well (Prior to development)
In well casing: 3.89 GALS
In sat. annulus (30% porosity): 7.33 GALS

Development

Date/time started: JUNE 5, 1990 / 1745
Completed: JUNE 11, 1990

Water level
Before development: 63.72
24 hrs. after:

Depth to sediment
Before development: 69.60
After development: 69.70 - NO SED.

Measurement	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	7.9	1650	6-5-90	1745	0 gal	OPAQUE
1	9.1	410	6-6-90	0739	10 gal	OPAQUE
2	9.0	470	6-6-90	0857	20 gal	CLOUDY
3	8.4	431	6-6-90	1130	30 gal	CLOUDY
4	8.5	449	6-6-90	1554	40 gal	SLIGHTLY CLOUDY
5					gal	
Extra purges					gal	
After development					gal	

Surge technique:
Type, size and capacity of bailer or pump:
Quantity of fluid removed: Time for removal:
Comments: NOT Completely Filled OUT

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-50-90

Date 8/11/90
Time Start 1155
Time Finish 1340

Samplers P. Anderson
S. Bradfield

Well Information

Depth to water 63.89 (T.O.PVC) ft.
Well depth 67.3 ft.
Sample depth 67.3 - 57.3 ft.

Casing diameter 4" in.
Casing volume 3.80 gal.

Stickup 2.4' ft.
Screened interval 67.3 to 57.3

Field Equipment

pH meter Orion Serial No. 1633
E.C. meter YSI Model 33 Serial No. 90D014127
Pump N/A Serial No. —
Pumping rate < 1 gal/min
Tubing — Size — in x — in

Water level meter Solinist Serial No. —
Dissolved O_2 meter N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Filter Apparatus Nalgene Filters CN 0.45M
Bailer Schedule 40 PVC Size 3'x3" in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0845
Conductance standard 1000 umhos/cm @ 25° C Reading 1500 umhos @ 25 °C Time 0850
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2 mg/l~~ salinity (o/oo)	Safety Procedures/Readings
1215	—	—	18.0	435	9.25	0.2	initial parameters no elevated readings clear
1225	29.8	2.6	15.0	2600	12.11	2.0	brown, silty
			well	bailed dry	then	sampled after	~10 gallons
			were	removed			

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: T. J. Wollen
Well No.: S-51-90
Date of Installation: ~~6-24-90~~ 6-18-90 9-06-90

Well Information

Depth to Water: 59.10 ft
Total Depth: 67.80 ft
Casing Diameter: 4"OD / 3.86" ID
Borehole Diameter: 9"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: 2.5 ft
Screen Length: 10 ft
Amt. of fluid in well (Prior to development)
In well casing: 5.68 GAL
In sat. annulus (30% porosity): 6.88 GAL

Development

Date/time started: 6-29-90 / 1030
Completed: 6-30-90

Water level
Before development: 59.10 ft
24 hrs. after:

Depth to sediment
Before development: 67.80 - none
After development: 67.90 - 1"

Measurement	T °C	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristic
0	19.5°	8.7	650	6-29-90	1033	0 gal	
1	–	8.2	700	6-29-90	1100	15 gal	
2	14.5°	8.2	550	6-29-90	1120	30 gal	
3	19.5°	8.2	550	6-29-90	1240	45 gal	
4	12.0°	8.2	560	6-29-90	1255	60 gal	
5	14.5°	8.2	530	6-30-90	0902	75 gal	
Extra purges						gal	
After development						gal	

Surge technique: BAILER ACTION - BAIL DRY ALLOW TO RECOVER REPEAT.
Type, size and capacity of bailer or pump: BAILER - PVC 3"
Quantity of fluid removed: 75 GAL
Time for removal: ~2 DAYS
Comments:

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-51-90

Date 5/14/90
Time Start 1350
Time Finish 1708

Samplers S CONDRAN
A WARNER

Well Information

Depth to water 58.02 ft. (from PVC sticking?)
Well depth 67.8 ft.
Sample depth 63 ft.

Casing diameter 4 in.
Casing volume 16.4 gal.

Stickup 2.3 ft.
Screened interval 56 to 66

Field Equipment

pH meter ORION RESEARCH MODEL SA 230 Serial No. 4531
E.C. meter Y.S.I MODEL 33 Serial No. 15662
Pump NA Serial No. NA
Pumping rate NA gal/min

Water level meter SOLINST Serial No. C5436
Dissolved O_2 meter NA Serial No. NA
Temperature meter Y.S.I. MODEL 33 (dissolved metals only) Serial No. 15662
Filter Apparatus 500 ml Nalgene Filters 0.45 µ

Tubing NA Size NA in x in
Bailer PVC SCHEDULE 40 Size 3.0" long 3.0" dia in

Field Chemistry * SEE WATER QUALITY FIELD DATA SHEET FOR WELL S-69-90 5/14/90

Calibration pH 7.00 = @ °C pH 10.00 = @ °C Time

Conductance standard umhos/cm @ 25° C Reading umhos @ °C Time

Calibrated conductivity umhos/cm @ 25° C Diss. O_2 mg/l @ °C Time

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Physical Characteristics -Safety- Procedures/Readings
1350	0	0	17	~~5,500~~ 550 KW 8/14/92	7.75	NA	clear
1410	16.4	1	15	525	7.81	NA	lt. yellowbrown, turbid
1444	32.8	2	15	500	7.90	NA	lt. brown, turbid
1524	49.2	3	16	560	7.87	NA	as above
1637	65.6	4	15	475	7.74	NA	as above
1708	82.0	5	15	560	7.92	NA	as above
1710	Start Sampling						

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: T. J. Wollen
Well No.: S-53-90
Date of Installation: 6-19-90

Well Information

Depth to Water: 62.6'
Total Depth: 71.6
Casing Diameter: 4" OD
Borehole Diameter: 8"
Amt. of mud/water lost during drilling: AIR ROTARY
Casing Stickup: 2.3'
Screen Length: 10'
Amt. of fluid in well (Prior to development)
In well casing: 5.93 GALLS
In sat. annulus: 9.18 GALS
(30% porosity)

Development

Date/time started: 6-30-90 / 0907
Completed: 6-30-90 / 1430

Water level
Before development: 62.6'
24 hrs. after: 62.62

Depth to sediment
Before development: ~~72.5'~~ 71.5'
After development: 71.6 - CLEAR

Measurement	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	8.0	896	6-30-90	0907	0 gal	OPAQUE - VERY PALE BROWN
1	8.1	780	6-30-90	1011	15.1 gal	OPAQUE - VERY PALE BROWN
2	8.0	830	6-30-90	1048	32.2 gal	CLOUDY - VERY PALE BROWN
3	8.0	810	6-30-90	1146	45.3 gal	CLOUDY - VERY PALE BROWN
4	8.0	810	6-30-90	1345	50.4 gal	CLOUDY - VERY PALE BROWN
5	8.0	810	6-30-90	1430	65.5 gal	SLIGHTLY CLOUDY
Extra purges	—	—	—	—	— gal	—
After development	—	—	—	—	— gal	—

Surge technique: BAILING
Type, size and capacity of bailer or pump: PVC 3½" BAILER ~ ¾ GAL
Quantity of fluid removed: TOT = 65.5
Time for removal: 7.23 min.
Comments: RECOVERY TIME IMPROVED AS IT WAS DEVELOPED.

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-53-90

Date 8/14/90
Time Start 1550
Time Finish 1614

Samplers A. WARNER, S. COUSEAN

Well Information

Depth to water 62.59 ft. (from PVC stick) Casing diameter 4 in. Stickup 2.3 ft.
Well depth 71.63 ft. Casing volume 13.1 gal. Screened interval 59.5 to 69.5
Sample depth 61 ft.

Field Equipment

pH meter ORION RESEARCH MODEL SA 230 Serial No. 4531 Water level meter SOLINST Serial No. 05839
E.C. meter Y.S.I. MODEL 33 Serial No. 15662 Dissolved O_2 meter NA Serial No. NA
Pump NA Serial No. NA Temperature meter Y.S.I. MODEL 33 Serial No. 15662
Pumping rate NA gal/min Filter Apparatus (Dissolved Metals Only) 500 ml Nalgene Filters 0.45 μ
Tubing NA Size NA in x __ in Bailer PVC SCHEDULE 40 Size 5.0' long 3.0" O.D. in

Field Chemistry * SEE WATER QUALITY FIELD DATA SHEET FOR WELL S-69-90 8/14/90

Calibration pH 7.00 = __ @ __ °C pH 10.00 = __ @ __ °C Time __

Conductance standard __ umhos/cm @ 25° C Reading __ umhos @ __ °C Time __

Calibrated conductivity __ umhos/cm @ 25° C Diss. O_2 __ mg/l @ __ °C Time __

Time	Volume Removed		Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS ~~Safety~~ Procedures/Readings
	Gals	Csng Vols					
1550	0	0	17	740	7.75	NA	Clear
1614	13.1	1	17	760	7.83	NA	lt. gray, cloudy
1629	Well	bailed dry	after	1 volume 6 gallons		slow to recover	
1818	Start Sampling						

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: A.R. WARNER
Well No.: S-54-90
Date of Installation: 6/15/90

Well Information

Depth to Water	15.7 ft.	Casing Stickup	2.5 ft.
Total Depth	30.55 ft.	Screen Length	10 ft
Casing Diameter	3.86"	Amt. of fluid in well (Prior to development)	23.2 gal/well vol
Borehole Diameter	10"	In well casing	1.18 ft³
Amt. of mud/water lost during drilling	NA	In sat. annulus (30% porosity)	2.23 ft³

Development

Date/time started: 6/18/90 @ 0850
Completed: 6/19/90 @ 0846

Water level		Depth to sediment	
Before development	15.7 ft	Before development	NA
24 hrs. after	17.2 ft.	After development	NA

Measurement	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	NA	NA	NA	NA	0 gal	NA
1	7.6	24,000	6/18	0852	5 gal	Temp 15°C; light cloudy
2	7.7	23,500	6/18	1018	22.8 gal (2nd w.v.)	Temp 16.5°C; turbid lt. gray
3	7.7	23,000	6/19	0845	50.8 gal (3rd w.v.)	Temp 14°C; as above
4	NA	NA	6/19	0846	52.3 gal	NA
5					gal	
Extra purges					gal	
After development					gal	

Surge technique: by pump
Type, size and capacity of bailer or pump: 1.7" hand pump
Quantity of fluid removed: 52.3 Time for removal:
Comments: First 22.8 gal removed volume is actually 2nd volume removed from the well; J. Coen performed first volume on 6/17/90; Note original 3rd well volume should be 45.6 gallon, mistake in tally resulted in more water removed

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INC.

WATER QUALITY FIELD DATA SHEET

Project: TEAD - South

Date: 6/17/90
Time Start: 1111
Time Finish:

Samplers: J. Coen / J. Burt

Well ID: S-54-90

Well Information

Depth to Water: 16.98 ft. Casing Diameter: 4 in. Stickup: 2.5 ft.

Well Depth: 30.58 ft. TOC Casing Volume: 23.2 gal + annulus Screened Interval: 17.5 to 27.5

Sample Depth: 29.2 ft.

Field Equipment

pH Meter: ______ Serial No: ______ Water Level Meter: ______ Serial No: ______

E.C. Meter: ______ Serial No: ______ Dissolved O_2 Meter: ______ Serial No: ______

Pump: ______ Serial No: ______ Temperature Meter: ______ Serial No: ______

Pumping Rate: ______ gal/min Filter Appartus: ______ Filters: ______

Tubing: ______ Size: ____ in x ____ in Bailer: ______ Size: ____ in

Field Chemistry

Calibration: pH 7.00= ______ @ ______ °C pH 10.00 = ______ @ ______ °C Time: ______

Conductance Standard: ______ umhos/cm @ 25°C Reading: ______ umhos @ ____ °C Time: ______

Calibrated Conductivity: ______ umhos/cm @ 25°C Diss. O^2: ______ mg/l @ ____ °C Time: ______

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O^2 mg/l	Safety Procedures/ Readings
1112	0	0	18	25,000	7.7		Clear, getting muddy
1137	23	1	23	23,000	7.8		muddy - less particulate
	46	2					
	69	3					
	92	4					
	115	5					

J Coen

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-54-90

Date 8/9/90
Time Start 0815
Time Finish 1030

Samplers P. Anderson
D. LeBlanc

Well Information

Depth to water 17.05 ft.
Well depth 27.5 ft.
Sample depth 27.5-17.5 ft.

Casing diameter 4" in.
Casing volume 8.45 gal.

Stickup 2.5' ft.
Screened interval 27.5 to 17.5

Field Equipment

pH meter Orion SA210 Serial No. 1633
E.C. meter YSI Model 33 Serial No. 90D014127
Pump N/A Serial No. —
Pumping rate <1 gal/min
Tubing N/A Size — in x — in

Water level meter Solinist Serial No. —
Dissolved O_2 meter N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Filter Apparatus Nalgene Filters CN 0.45u
Bailer Schedule 40 PVC Size 3' x 3" in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0840
Conductance standard 1000 umhos/cm @ 25° C Reading 1500 umhos @ 25 °C Time 0845
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2~~ Salinity (o/oo) mg/l	Safety Procedures/Readings
0952	—	initial	15.0	22000	7.81	17.2	1ppm (HNu) in well 0ppm " in BZ
			well	bailed dry	after	~20 gallons	

8/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: A.R. WARNER
Well No.: S-55-90
Date of Installation: 6/16/90

Well Information

Depth to Water	7.75 ft	Casing Stickup	2.5 ft
Total Depth	21.0	Screen Length	10 ft
Casing Diameter	3.86"	Amt. of fluid in well (Prior to development)	26.8 gal/well volume
Borehole Diameter	10"	In well casing	
Amt. of mud/water lost during drilling	NA	In sat. annulus (30% porosity)	

Development

Date/time started: 6/16/90 1538 — Completed: 6/19/90 0832

Water level
- Before development: 7.75 ft.
- 24 hrs. after: 7.9 ft

Depth to sediment
- Before development: 21.0 ft.
- After development:

Measurement	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	7.4	27,000	6/16/90	1538	1 gal (AW 6/16/90)	Temp 16°C, Turbid beige
1	7.3	41,500	6/18/90	1607	27 gal 1 W.V. gal	Temp 15°C "
2	7.3	39,000	6/18/90	1616	54 gal 2 W.V. gal	Temp 13°C "
3	7.3	41,000	6/18/90	1625	81 gal 3 W.V. gal	Temp 13°C "
4	7.3	41,000	6/18/90	1636	108 gal 4th W.V. gal	Temp 14°C "
5	7.4	39,700	6/19	0832	~135 gal 5 W.V. gal	Temp 12°C "
Extra purges					gal	
After development					gal	

Surge technique: by pump
Type, size and capacity of bailer or pump: 1.7" Hand pump
Quantity of fluid removed: ~135 gallons — Time for removal:
Comments: Never bailed dry; largest observed draw down level at 8.3 ft

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-55-90

Date 8/9/90
Time Start 1040
Time Finish 1250

Samplers P. Anderson, D. LeBlanc

Well Information

Depth to water 8.65 (T.O.PVC.) ft.
Well depth 18.0 ft.
Sample depth 18-8 ft.

Casing diameter 4" in.
Casing volume 7.7 gal.

Stickup ____ ft.
Screened interval 18.0' to 8.0'

Field Equipment

pH meter Orion SA 210 Serial No. 1633
Water level meter Solinist Serial No. ____
E.C. meter YSI Model 33 Serial No. 90D014127
Dissolved O_2 meter N/A Serial No. ____
Pump N/A Serial No. ____
Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate <1 gal/min
Filter Apparatus Nalgene Filters CN 0.45M
Tubing N/A Size ____ in x ____ in
Bailer Schedule 40 PVC Size 3'x3" in

Field Chemistry

Calibration pH 7.00 = ____ @ ____ °C pH 10.00 = 10 @ 25 °C Time 0840
Conductance standard 1000 umhos/cm @ 25° C Reading 1500 umhos @ 25 °C Time 0845
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 ____ mg/l @ ____ °C Time ____

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2~~ salinity (‰) mg/l	Safety Procedures/Readings
1108	—	—	20.0	38200	7.75	28.0	initial readings clear
1117	20	2.6	15.0	40000	7.72	32.5	light grey, tr. silt
1141	40	5.2	17.0	43500	7.78	33.0	" "
1150	60	7.8	16.0	42000	7.21	34.0	" "
1157	80	10.4	18.0	41600	7.79	32.0	" "
1204	100	13.0	15.0	41100	7.68	34.0	" "

8/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

well Development Record
~~Water Quality Field Data Sheet~~

TEAD - South Area
RFI - Phase I
Well ID S-56-90

Date 6/25/96
Time Start 1106
Time Finish 1122

Samplers F. J. Anderson

Well Information

Depth to water 17.37 ft.
Well depth 40.0 ft.
Sample depth 23 ft.

Casing diameter 4" in.
Casing volume 26 gal.

Stickup 2.5 ft.
Screened interval 39 to 49

Field Equipment Not Recorded

pH meter _____ Serial No. _____
E.C. meter _____ Serial No. _____
Pump _____ Serial No. _____
Pumping rate _____ gal/min

Water level meter _____ Serial No. _____
Dissolved O_2 meter _____ Serial No. _____
Temperature meter _____ Serial No. _____
Filter Apparatus _____ Filters _____

Tubing _____ Size ____ in x _____ in
Bailer _____ Size _____ in

Field Chemistry Not Recorded

Calibration pH 7.00 = _____ @ _____ °C pH 10.00 = _____ @ _____ °C Time _____

Conductance standard _____ umhos/cm @ 25° C Reading _____ umhos @ _____ °C Time _____

Calibrated conductivity _____ umhos/cm @ 25° C Diss. O_2 _____ mg/l @ _____ °C Time _____

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2~~ mg/l	Description ~~Safety Procedures~~/Readings
	26	1	20	35,505	7.3	27.19	mlt. brown
	52	2	16	36,000	7.2	27.19	slightly cloudy
	78	3	16	39,000	7.1	27.19	cloudy
	104	4	~~18.5~~ 18	38,000	7.2	~~26.19~~ 27.19	less cloudy

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID MW S-56-90

Date 8/9/90
Time Start 1430
Time Finish 1830

Samplers P. Anderson, D. LeBlanc

Well Information

Depth to water 19.30 (TOC.) ft.
Well depth 49 ft.
Sample depth 49-39 ft.
Casing diameter 4" in.
Casing volume 21.0 gal.
Stickup 2.5 ft.
Screened interval 49 to 39

Field Equipment

pH meter Orion Serial No. 1633
Water level meter Solinist Serial No. —
E.C. meter YSI Model 33 Serial No. 90D014127
Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate < 1 gal/min
Filter Apparatus Nalgene Filters CN 0.45M
Tubing PVC pump Size 1¼" pipe in x ½" inside
Bailer — Size — in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0840
Conductance standard 1000 umhos/cm @ 25° C Reading 1500 umhos @ 25 °C Time 0845
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2 mg/l~~ salinity (o/oo)	Safety Procedures/Readings
1630	—	—	20.0	37200	7.93	27.5	initial readings, no elev. readings
	well dry after ~37 gallons removed, well sampled when enough						
	water returned in casing						

8/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: S. CONDRAN
Well No.: S-57-90
Date of Installation: 6/28/90

Well Information

Depth to Water: 9.0' (11.5' TOC)
Total Depth: 17.0' (19.5' TOC)
Casing Diameter: 4"
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: 0
Casing Stickup: 2.5'
Screen Length: 10'
Amt. of fluid in well (Prior to development)
In well casing: 6.1 galls.
In sat. annulus: 9.5 galls.
(30% porosity)

Development

Date/time started: 7/15/90 /1245
Completed: 7/15/90 /1504

Water level
Before development: 10.26
24 hrs. after: 10.31

Depth to sediment
Before development: 19.50' difficult to measure because of sediment in well
After development: 19.81'

Measurement	Temp	*pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	29	8	33,000	7/15/90	1249	0 gal	brown, milky, v. silty
1	15	7½	26,000	7/15/90	1254	15.60 gal	brown, milky, v. silty
2	18	8	26,200	7/15/90	1314	31.2 gal	pale brown, cloudy, silty
3	15½	7½	25,900	7/15/90	1343	46.8 gal	gray-brown, cloudy, silty
4	15	7½	26,800	7/15/90	1446	62.4 gal	gray, cloudy
5	15½	7½	26,100	7/15/90	1504	78.0 gal	gray, slightly cloudy
Extra purges						gal	
After development						gal	

Surge technique: dropping the water level allowing to recover and repeating
Type, size and capacity of bailer or pump: hand pump, 1¼"
Quantity of fluid removed: 78.0 gallons
Time for removal: ~2 hrs 20 min
Comments: * pH measured with indicator strips

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-57-90

Date 8-9-90
Time Start 1215
Time Finish 1400

Samplers T. Wellen, M. LEWIS

Well Information

Depth to water 11.15 ft. | Casing diameter 4 in. | Stickup 2.5 ft.
Well depth 19.60 ft. | Casing volume 14.13 gal. | Screened interval 19.6 to 9.6
Sample depth 19-1 ft.

Field Equipment

pH meter SCI Serial No. 9001 | Water level meter SOLINST Serial No. 08611
E.C. meter SCI Serial No. 9001 | Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. — | Temperature meter SCI Serial No. 9001
Pumping rate <1 gal/min | Filter Apparatus NALGENE - DISPOSABLE | Filters CN 0.45 µ
Tubing N/A Size — in x — in | Bailer 40SCH PVC Size 3'x3" in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 69°F °C | pH 10.00 = 10.20 @ 69°F °C | Time 1210
Conductance standard 1000 umhos/cm @ 25° C | Reading 815 umhos @ 69°F °C | Time 1212
Calibrated conductivity N/A umhos/cm @ 25° C | Diss. O_2 N/A mg/l @ — °C | Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1220	0	INTIAL	67.5	20,000(+)	7.21	N/A	H2S 0ppm ONION OVA 0ppm SMELL
1224	14.1	1	65.4	20,000(+)	7.30	N/A	"
1250	28.2	2	65.4	22000(+)	7.46	N/A	H2S 0ppm ONION OVA 0ppm ODOR
							BAILDRY

5/1/90

TEAD - SOUTH AREA RFI PHASE I

well Development Record

EBASCO SERVICES INC.

~~WATER QUALITY FIELD DATA SHEET~~

Project: TEAD

Date: 6-5-90

Samplers: T. J. WOLLEN

Time Start: 1445

Time Finish: 1541

Well ID: S-58-90

Well Information

Depth to Water: 6.10 ft.

Casing Diameter: 4 in.

Stickup: 2.5 ft.

Well Depth: 18.50 ft.

Well Casing Volume: 20.12 gal

Screened Interval: 18.5 to 8.5

Sample Depth: — ft.

Field Equipment

pH Meter: PEN Serial No: 5941-00 Water Level Meter: SOLINIST Serial No: 08611

E.C. Meter: YSI-33 Serial No: 900014127 Dissolved O_2 Meter: N/A Serial No: —

Pump: HAND PUMP Serial No: — Temperature Meter: YSI-33 Serial No: 900014127

Pumping Rate: ~2.5 gal/min Filter Appartus: N/A Filters: N/A

Tubing: 1" PVC Size: 1 in x 18 ~~ft~~ Baller: N/A Size: N/A in

TJW 6-5-90

Field Chemistry

Calibration: pH 7.00 = N/A @ °C pH 10.00 = N/A @ °C Time: N/A

Conductance Standard: N/A umhos/cm @ 25°C Reading: N/A umhos @ °C Time: N/A

Calibrated Conductivity: N/A umhos/cm @ 25°C Diss. O^2: N/A mg/l @ °C Time: N/A

Time	Volume Removed Gals.	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	TJW 6-5-90 SALINITY ~~Dissolved O^2~~ mg/l	Safety Procedures/ Readings
1445	0	0	21.0	5,000	7.5	4.1%	HNU = 0ppm CLARITY - MUD OUT = BROWN
1510	20.12	1.0	16.6	11100	7.3	8.5%	CLARITY - OPAQUE
1518	40.24	2.0	12.5	11900	7.4	9.1%	CLARITY - OPAQUE
1530	60.36	3.0	14.5	11900	7.4	9.1%	CLARITY - CLOUDY
1535	80.48	4.0	11.5	11950	7.3	9.1%	CLARITY - CLOUDY
1541	100.60	5.0	11.5	12000	7.3	9.1%	CLARITY - SLIGHTLY CLOUDY

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-58-90

Date 8/8/90
Time Start 1150
Time Finish 1345

Samplers P.Pinderson

Well Information

Depth to water 8.15 (TOC) ft.
Well depth 14.0 ft.
Sample depth 14-4 ft.

Casing diameter 4" in.
Casing volume 5.45 gal.

Stickup 2.5' ft.
Screened interval 14' to 4'

Field Equipment

pH meter Orion SA210 Serial No. 1633
E.C. meter YSI Model 33 Serial No. 900014127
Pump N/A Serial No. —
Pumping rate <1 gal/min
Tubing N/A Size — in x — in

Water level meter Solinist Serial No. —
Dissolved O_2 meter N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 900014127
Filter Apparatus Nalgene Filters CN 0.45M
Bailer schedule 40 PVC Size 3'x3" in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0740
Conductance standard 1000 umhos/cm @ 25° C Reading 1480 umhos @ 25 °C Time 0745
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Salinity (%) Dissolved ~~O_2~~ mg/l	Safety Procedures/Readings
1216	—	—	20.0	~~10.1~~ 15000	7.52	10.1	H.gray, vf.sand
1223	14	2.5	17.5	~~10.0~~ 14100	6.74	10.0	brown, "
1230	28	5.0	17.5	Purge 9/7 ~~10.5~~ 14800	7.46	10.5	" , "
1242	42	7.5	17.5	~~10.0~~ 14200	6.64	10.0	lt.brown, vf sand
1250	56	9.0	16.5	~~10.2~~ 14000	6.46	10.2	" , "
1256	70	10.5	16.2	~~10.5~~ 14100	7.38	10.5	" , "

5/1/90

 well Development Record DB 8/27/12

EBASCO SERVICES INC. ~~WATER QUALITY FIELD DATA SHEET~~

Project: Tooele Army Depot (S) 7804.044
Date: 6/11/90
Sampler: Paul Anderson
Time Start: 1030
Time Finish: 1445
Well ID: S-59-90

Well Information

Depth to Water: 5.18 (fz2) ft. Casing Diameter: 4 in. Stickup: 2.5 ft.
Well Depth: 15 ft. Casing Volume: 20.15 gal Screened Interval: 15' to 5'
Sample Depth: N/A ft.

Field Equipment

pH Meter: PEN Serial No: 5941-00 Water Level Meter: Solinst Serial No: N/A
E.C. Meter: YSI-33 Serial No: 900014127 Dissolved O_2 Meter: N/A Serial No: N/A
Pump: hand pump Serial No: N/A Temperature Meter: YSI-33 Serial No: 90004127
Pumping Rate: ~2.5 gal/min Filter Appartus: N/A Filters: N/A
Tubing: 1" PVC Size: 1 in x 16 ~~ft~~ ft (PWA 6/11) Bailer: N/A Size: N/A in

Field Chemistry

Calibration: pH 7.00= ____ @ ____ °C pH 10.00 = ____ @ ____ °C Time: ____

Conductance Standard: ____ umhos/cm @ 25°C Reading: ____ umhos @ ____ °C Time: ____

Calibrated Conductivity: ____ umhos/cm @ 25°C Diss. O²: ____ mg/l @ ____ °C Time: ____

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Salinity (PWA 6/11) ~~Dissolved O² mg/l~~	Safety Procedures/ Readings
	0	0	14.0	2100	8.0	1.5%	clarity: clear
	20	1	12.5	4700	8.0	3.8%	cloudy
	40	2	16.1	5800	7.9	4.0%	mostly cloudy
	60	3	18.0	6000	7.8	4.0%	medium
	80	4	19.0	6000	7.7	4.0%	mostly clear
	100	5	18.0	6000	7.8	4.2%	mostly clear

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-59-90

Date 7/8/90
Time Start 1540
Time Finish 1800

Samplers P. Anderson

Well Information

Depth to water 7.57 (TOC) ft.
Well depth 15' ft.
Sample depth 15-5' ft.

Casing diameter 4" in.
Casing volume 6.48 gal.

Stickup 2.5 ft.
Screened interval 15' to 5'

Field Equipment

pH meter Orion SA210 Serial No. 1633
E.C. meter YSI Model 33 Serial No. 90D014127
Pump N/A Serial No. —
Pumping rate <1 gal/min
Tubing N/A Size — in x — in

Water level meter Solinist Serial No. —
Dissolved O_2 meter N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Filter Apparatus Nalgene Filters CN 0.45M
Bailer Schedule 40 PVC Size 3'x3" in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 2.5 °C Time 0740
Conductance standard 1000 umhos/cm @ 25° C Reading 1480 umhos @ 25 °C Time 0745
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2~~ salinity (ppt) mg/l	Safety Procedures/Readings
1602	—	initial	17.0	6900	7.10	4.9	initial reading
1631	10.7	2.6	19.5	7000	7.18	4.9	OVA HNU } not above background
		well bailed dry then sampled					

8/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: J. Coen/
Well No.: S-60-90
Date of Installation: 6/13/90

Well Information

Depth to Water: 5.04
Total Depth: 18.84
Casing Diameter: 3.86 ID (4")
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: 2.5'
Screen Length: 10'
Amt. of fluid in well (Prior to development)
In well casing: 1.31 ft³
In sat. annulus: 2.54 ft³
(30% porosity)

Development

Date/time started: 6/17/90 / 0836
Completed: 6/20/90

Water level
Before development: 5.04
24 hrs. after: ____

Depth to sediment
Before development: 18.84
After development: ____

Measurement	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0 Temp 14°C (Jon Coen Salinity 4)	6.2	1400 mhos	6/17	0837	0 gal	v. muddy
1					gal	
2					gal	
3					gal	
4					gal	
5					gal	
Extra purges					gal	
After development					gal	

Surge technique: Brainard Killman Handpump
Type, size and capacity of bailer or pump: 1.7" Hand Pump
Quantity of fluid removed: N/A
Time for removal: ____
Comments: Was unable to get 1 well volume completed before leaving for the day

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: D.R. WARNER
Well No.: S-60-90
Date of Installation: 6/13/90

Well Information

Depth to Water	5.05 ft	Casing Stickup	2.5 ft
Total Depth	19.25 ft	Screen Length	10 ft.
Casing Diameter	3.86"	Amt. of fluid in well (Prior to development)	1 well vol: 23.2 gal
Borehole Diameter	10"	In well casing	1.31 ft³
Amt. of mud/water lost during drilling	NR	In sat. annulus (30% porosity)	2.54 ft³

Development

Date/time started: 6/18/90; 1041 — Completed: 6/20/90

Water level
- Before development: 5.05 ft.
- 24 hrs. after: 7.65 ft.

Depth to sediment
- Before development: 19.25 ft
- After development: 19.25 ft

Measurement	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristic
0	7.8	5100	6/18	1044	6 ~~tw 6/19/90~~ gal	Temp 14°C turbid light brown
1	7.9	7,000	6/19	1805	~23.5 2nd w.v gal	Turb.d
2	NA	NA	6/20	0838	31.5 gal	Level at 0838 ~5 ft
3	NA	NA	6/20	1158	39.5 gal	Level at 1158 @ 5.25 ft
4					gal	
5					gal	
Extra purges					gal	
After development					gal	

Surge technique: Raising & Lowering of pump/bailer
Type, size and capacity of bailer or pump: 1.7" hand pump
Quantity of fluid removed: 39.5 gallons — Time for removal: ~2 days
Comments: BAILED DRY AFTER ~8 gal.; thus 1 well volume total removed so far. 1046 on 6/18/90; by end of day 6/18 5.75 gal removed into 2nd well volume; on 6/19 2nd well volume completed; Thus on 6/20 total 16 gal removed into 3rd well vol.

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-60-90

Date 8-8-90
Time Start 1514
Time Finish 1735

Samplers T. Wolley
M. Lewis

Well Information

Depth to water 6.73 ft. | Casing diameter 4 in. | Stickup 2.5 ft.
Well depth 19.55 ft. | Casing volume 23.5 gal. | Screened interval 19 to 9
Sample depth 19-9 ft.

Field Equipment

pH meter SCI Serial No. 9001 | Water level meter SOLINIST Serial No. 08611
E.C. meter SCI Serial No. 9001 | Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. N/A | Temperature meter SCI Serial No. 9001
Pumping rate <1 gal/min | Filter Apparatus NALGENE - DISPOSABLE Filters CN 0.45 M
Tubing N/A Size — in x — in | Bailer STAINLESS Size 3' x 3" in

Field Chemistry

Calibration pH 7.00 = 7.03 @ 68 F °C | pH 10.00 = 10.15 @ 68 F °C | Time 1400
Conductance standard 1000 umhos/cm @ 25° C | Reading 815 umhos @ 68 F °C | Time 1402
Calibrated conductivity N/A umhos/cm @ 25° C | Diss. O_2 N/A mg/l @ — °C | Time N/A

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1600	0	INITIAL	68.0	6100	7.64	N/A	HNU-OPM SLIGHTLY OVA-OPM CLOUDY
1630	23.5	1	68.5	6500	7.73	N/A	
							BAILED DRY

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: A.R. WARNER
Well No.: S-61-90
Date of Installation: 6/6/90

Well Information

Depth to Water: 90.85 ft
Total Depth: ~~97.0 ft~~ 99.6 ft T.o.c. (AW 6/12/90)
Casing Diameter: 3.86" ID
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: NA
Casing Stickup: 2.6 ft (PVC stickup)
Screen Length: 10 ft.
Amt. of fluid in well (Prior to development): ~~26.~~ 10.5 gal (total) (AW 6/19/90)
In well casing: 4.1 gal
In sat. annulus: 6.4 gal
(30% porosity)

Development

Date/time started: 6/19/90 11:14
Completed:

Water level
Before development: 90.85 ft
24 hrs. after: 91.05 ft on 6/20/90 : 903

Depth to sediment
Before development: 96.1 ft
After development:

Measurement	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristic
0	NA	NA	NA	NA	0 gal	NA
1	10.6	380	6/19/90	1602	10.5 (1 w.v.) gal	Temp. 13°C turbid
2	8.5	460	6/20/90	0921	21.0 (2 w.v.) gal	Temp 27°C* v. turbid; light brn
3	8.5	375	6/25/90	0825	31.5 (3 w.v.) gal	Temp. 16°C
4					gal	
5					gal	
Extra purges					gal	
After development					gal	

Surge technique: bailing
Type, size and capacity of bailer or pump: 1.1 gallon 3" ID PVC BAIL
Quantity of fluid removed: Time for removal:
Comments: After first well volume, water came out even more turbid and "thick"; 2.5 gal into 2nd volume on 6/19 end of day; @ 0931 6/20/90 3.5 gal into 3rd volume;

Note: all depths measured from top of casing

5/1/90

*~3 hours later

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-61-90

Date 8-11-90
Time Start 1240
Time Finish 1545

Samplers M. LEWIS, T. WALLEN

Well Information

Depth to water 91.89 ft.
Well depth 99.59 ft.
Sample depth 9499 ft.

Casing diameter 4 in.
Casing volume 12.94 gal.

Stickup 2.5 ft.
Screened interval 99.5 to 89.5

Field Equipment

pH meter SCI Serial No. 9001
E.C. meter SCI Serial No. 9001
Pump N/A Serial No. —
Pumping rate <1 gal/min

Water level meter SOLINIST Serial No. 08611
Dissolved O_2 meter N/A Serial No. —
Temperature meter SCI Serial No. 9001
Filter Apparatus NALGENE DISPOSABLE Filters CN 0.45 µ

Tubing N/A Size — in x — in
Bailer SCH 40 PVC Size 3 1/2 x 3" in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 69°F °C pH 10.00 = 1020 @ 69°F °C Time 1230
Conductance standard 1000 umhos/cm @ 25° C Reading 0820 umhos @ 89° °C Time 1232
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1314	0	INITIAL	69.6	313	8.08	N/A	HNU 0 ppm OVA 0 ppm
1325	129	1	60.9	285	7.96	N/A	HNU 0 ppm OVA 0 ppm
							BAILED DRY

8/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area RFI - Phase I
Geologist: S. CONDRAN
Well No.: S-62-90
Date of Installation: 6/30/90

Well Information

Depth to Water: 90.0' (92.5' TOC) 7/18/90
Casing Stickup: 2.5'
Total Depth: 105.0' (107.5' TOC)
Screen Length: 20' (21.7' w/cap and changeover)
Casing Diameter: 4.0"
Amt. of fluid in well (Prior to development)
Borehole Diameter: 10.0"
In well casing: 11.8 galls
Amt. of mud/water lost during drilling: 0
In sat. annulus (30% porosity): 18.6 galls.

Development

Date/time started: 07/18/90 / 1101
Completed: 7-24-90

Water level
Before development: 89.34'
24 hrs. after:

Depth to sediment
Before development: 107.50'
After development:

Measurement	Temp	* pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristic
0	15	10	420	7/18/90	1101	0 gal	dk. brown, v. silty, f. sand
1	15.5	8	333	7/18/90	1140	30.5 7/18/90 gal	dk. brown, silty, sands
2	13.0	8	290	7/23/90	0914	30.5 gal	brown, turbid; 2nd vol.
3	21.0	8	300	7/23/90	1520	30.5 gal	Lt brown, slightly cloudy
4	-	8	330	7/24/90	0931	30.5 gal	Lt Brown, Slightly Cloudy
5	18	8	310	7-24-90	1545	30.5 gal	CLEAR, lt silt
Extra purges						gal	
After development						gal	

Surge technique: dropping the water level allowing to recover and repeat
Type, size and capacity of bailer or pump: PVC bailer, 3", 1½ gallon capacity
Quantity of fluid removed:
Time for removal:
Comments: *pH was measured with indicator strips; H2O level 0830 7/23/90: 89.2 ft
on 7/23/90 @ 0936 recovered ~12 gal into 3rd volume;

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-62-90

Date 8/12/90
Time Start 0952
Time Finish 1200

Samplers P. Anderson
S. Bradfield

Well Information

Depth to water 89.35 (TOPVC) ft.
Well depth 105.0 ft.
Sample depth 105.0-95' ft.

Casing diameter 4" in.
Casing volume 11.8 gal.

Stickup 2.5 ft.
Screened interval 105' to 95'

Field Equipment

pH meter Orion Serial No. 1633
Water level meter Solinist Serial No. —
E.C. meter YSI Model 33 Serial No. 90D014127
Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate < 1 gal/min
Filter Apparatus Nalgene
Filters CN 0.45M
Tubing N/A Size — in x — in
Bailer Schedule 40 PVC Size 3'x3' in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0735
Conductance standard 1000 umhos/cm @ 25° C Reading 1350 umhos @ 25 °C Time 0740
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	salinity (o/oo) Dissolved O_2 mg/l	Safety Procedures/Readings
1005	—	—	14.0	278	8.59	0.1	initial readings, more elevated clear
1042	~31	2.6	20.0	320	8.81	0.1	H. brown, trace silt
			well bailed dry after ~35 gallons				

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: A.R. WARNER
Well No.: S-63-90
Date of Installation: 6/17/90

Well Information

Depth to Water: 90.25
Total Depth: ~~104~~ 106.9 ft T.OC.
Casing Diameter: 3.96" I.D.
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: NA
Casing Stickup: 2.5 ft
Screen Length: 20 ft.
Amt. of fluid in well (Prior to development): 26.7 gal = well vol.
In well casing:
In sat. annulus (30% porosity):

Development

Date/time started: 6/19/90 13:25
Completed:

Water level
Before development: 90.25
24 hrs. after: 91.38

Depth to sediment
Before development: 105.9
After development:

Measurement	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristic
0	NA	NA	NA	NA	0 gal	NA
1	11.6	1300	6/19/90	1422	27 (1 W.V.) gal	Temp 16°C turbid
2	9.6	320	6/20/90	1033	~54 (2 W.V.) gal	Temp 27°C* light brown
3	9.2	265	6/25/90	0924	81 (3 W.V.) gal	temp. 15.2°C
4					gal	
5					gal	
Extra purges					gal	
After development					gal	

Surge technique: bailing
Type, size and capacity of bailer or pump: 1.1 gal 3" ID PVC BAIL
Quantity of fluid removed: 32.5 gal Time for removal: 53 minutes
Comments: light brown in color; bailed dry after 5.5 gal. into 2nd volume; @1041 on 6/20/90 ~2 gal into 3rd well vol.

Note: all depths measured from top of casing

5/1/90

* ~2 hours later

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Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: A.R. WARNER
Well No.: S-63-90
Date of Installation: 6/17/90

Well Information

Depth to Water: 90.25
Total Depth: ~~104~~ 106.9 ft T.oc.
Casing Diameter: 3.96" I.D.
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: NA
Casing Stickup: 2.5 ft
Screen Length: 20 ft
Amt. of fluid in well (Prior to development): 26.7 gal - well vol.
In well casing:
In sat. annulus (30% porosity):

Development

Date/time started: 6/19/90 13:25
Completed:

Water level
Before development: 90.25
24 hrs. after: 91.38

Depth to sediment
Before development: 105.9
After development:

Measurement	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	NA	NA	NA	NA	0 gal	NA
1	11.6	1300	6/19/90	1422	27 gal (1 W.V.)	Temp 16°C turbid
2	9.6	320	6/20/90	1033	~54 gal (2 W.V.)	Temp 17°C* light brown
3					gal	
4	8.8	352	6/27/90	1158	~81 gal (4th W.V.)	Temp 17°C; turbid level 90.3
5	NA	310	6/27/90	1537	~95.5 gal	Temp 17°C; turbid
~~Extra~~ purges	wtr	325	6/28/90	1045	~107.5 gal (5th W.V.)	Temp 17°C; turbid
After development					gal	

Surge technique: bailing
Type, size and capacity of bailer or pump: 1.1 gal 3" ID PVC BAIL
Quantity of fluid removed: 32.5 gal
Time for removal: 53 minutes
Comments: light brown in color; bailed dry after 5.5 gal, into 2nd volume; @1041 on 6/20/90 ~2 gal into 3rd well vol.; on 6/27/90 removed 14.5 gal into the 5th volume; 6/28/90 Finished 5th well volume

Note: all depths measured from top of casing

5/1/90

* ~2 hours late

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-63-90

Date 8/12/90
Time Start 0720
Time Finish 0940

Samplers P. Anderson
S Bradfield

Well Information

Depth to water 90.31 (TOPVC) ft.
Well depth 104.4 ft.
Sample depth 104.4-94.4 ft.
Casing diameter 4" in.
Casing volume 10.8 gal.
Stickup 2.5 ft.
Screened interval 104.4' to 94.4'

Field Equipment

pH meter Orion Serial No. 1633
E.C. meter YSI Model 33 Serial No. 90D014127
Pump N/A Serial No. —
Pumping rate < 1 gal/min
Tubing N/A Size — in x — in
Water level meter Solinist Serial No. —
Dissolved O_2 meter N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Filter Apparatus Nalgene Filters CN 0.45M
Bailer schedule 40 PVC Size 3'x3" in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0735
Conductance standard 1000 umhos/cm @ 25° C Reading 1350 umhos @ 25 °C Time 0740
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2~~ salinity (o/oo) ~~mg/l~~	Safety Procedures/Readings
0749	—	—	11.5	230	9.57	0.0	Initial parameters clear
			well	bailed dry	after	25 gallons	were removed*

*1/90

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Well Development Record

Project: TEAD - South Area RFI - Phase I

Geologist: S. Cundran

Well No.: 5-~~15~~ 64-90 SC 7/17/90

Date of Installation: 7/10/90

Well Information

Depth to Water: 21.60' (24.1' TOC)

Casing Stickup: 2.5'

Total Depth: 35.0' (37.5' TOC)

Screen Length: 10.5 (w/cap)

Casing Diameter: 4.0"

Amt. of fluid in well (Prior to development)

Borehole Diameter: 10.0"

In well casing: 9.5 galls

Amt. of mud/water lost during drilling: 0

In sat. annulus: 15.0 galls.

(30% porosity)

Development

Date/time started: 7/17/90 / 1108

Completed: 7/23/90 1350

Water level

Before development: 22.90'

24 hrs. after:

Depth to sediment

Before development: 37.50'

After development:

Measurement	TEMP	*pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	17	7	29,000	7/17/90	1108	0 gal	brown, micky, slightly silty
1	16	7	28,300	7/17/90	1138	24.5 gal	brown, micky, slightly silty
2	7.5	7	28,800	7/17/90	1218 SC 7/17/90	49.0 gal	lt. brown, cloudy
3	13.5	7	27,900	7/18/90	0928	73.5 gal	lt. gray, slightly cloudy
4	18.5	7.5	32,000	7/10/90	1410	98.0 gal	cloudy
5	≈ 20.0	7.5	38,000	7/23/90	1350	122.5 gal	slightly cloudy
Extra purges						gal	
After development						gal	

Surge technique: dropping the water level allowing to recover and repeat

Type, size and capacity of bailer or pump: PVC bailer, 3", 1½ gallon capacity, after 2nd volume changed to hand pump, 1¼"

Quantity of fluid removed:

Time for removal:

Comments: *pH was measured with indicator strips

Note: all depths measured from top of casing

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-64-90

Date 8/14/90
Time Start 0800
Time Finish 0945

Samplers P.Anderson, S.Bradfield

Well Information

Depth to water 23.03 (TOPVC) ft.
Well depth 35 ft.
Sample depth 35-25 ft.
Casing diameter 4" in.
Casing volume 9.4 gal.
Stickup 2.5 ft.
Screened interval 35' to 25'

Field Equipment

pH meter Orion Serial No. 1633
Water level meter Solinist Serial No. —
E.C. meter YSI Model 33 Serial No. 90D014127
Dissolved O_2 meter N/A Serial No. —
Pump N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate < 1 gal/min
Filter Apparatus Nalgene
Filters CN 0.45M
Tubing N/A Size — in x — in
Bailer Schedule 40, PVC Size 3'x3" in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0835
Conductance standard 1000 umhos/cm @ 25° C Reading 1550 umhos @ 25 °C Time 0840
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2 mg/l~~ salinity (o/oo)	Safety Procedures/Readings
0846	—	—	13.0	25000	8.12	20.1	no elevated readings clear
			well bailed dry after ~16 gallons were removed**				

3/1/90

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Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: S. CONORAN
Well No.: S-65-90
Date of Installation: 6/29/90

Well Information

Depth to Water: 18.0' (20.5 TOC)
Total Depth: 25.0' (27.5' TOC)
Casing Diameter: 4.0"
Borehole Diameter: 10.0"
Amt. of mud/water lost during drilling: 0
Casing Stickup: 2.5'
Screen Length: 10'
Amt. of fluid in well (Prior to development)
In well casing: 4.3 galls.
In sat. annulus: 6.8 galls.
(30% porosity)

Development

Date/time started: 7/16/90/1300
Completed: 7/17/90/1450

Water level
Before development: 18.30'
24 hrs. after: 18.41'

Depth to sediment
Before development: 24.90'
After development: 28.70'

Measurement	Temp	* pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	26	8	13,200	7/16/90	1300	0 gal	brown, murky, v. silty
1	19	7	9,950	7/16/90	1420	11.1 gal	brown, muddy
2	15	7.5	12,700	7/16/90	1597	22.2 gal	lt. gray, cloudy
3	15.5	7.5	12,800	7/17/90	1024	33.3 gal	lt. gray, cloudy
4	17.5	7	13,000	7/17/90	1250	44.4 gal	lt. gray, cloudy
5	14	7	13,400	7/17/90	1450	55.5 gal	lt. gray, cloudy
Extra purges						gal	
After development						gal	

Surge technique: dropping the water level allowing to recover and repeating
Type, size and capacity of bailer or pump: hand pump, 1¼"
Quantity of fluid removed: 55.5 galls. Time for removal: ~7 Hrs
Comments: *pH was measured with indicator strips

Note: all depths measured from top of casing

S/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-65-90

Date 8/13/90
Time Start 1312
Time Finish 1535

Samplers P. Anderson
S. Bradfield

Well Information

Depth to water 18.72 (TOPVC) ft.
Well depth 25.0 ft.
Sample depth 25-15 ft.

Casing diameter 4" in.
Casing volume 5.7 gal.

Stickup 2.5 ft.
Screened interval 25' to 15'

Field Equipment

pH meter Orion Serial No. 1633
E.C. meter YSI Model 33 Serial No. 90D014127
Pump N/A Serial No. —
Pumping rate < 1 gal/min

Water level meter Solinist Serial No. —
Dissolved O_2 meter N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Filter Apparatus Nalgene Filters CN 0.45M
Tubing N/A Size — in x — in Bailer Schedule 40, PVC Size 3'x3" in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0750
Conductance standard 1000 umhos/cm @ 25° C Reading 1390 umhos @ 25 °C Time 0755
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2~~ salinity (o/oo) ~~mg/l~~	Safety Procedures/Readings
1348	—	—	15.0	10800	8.19	8.0	initial readings no elevated readings clear
			well dry after ~8 gallons were removed				

8/1/90

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Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: T. J. WOLLEN
Well No.: S-66-90
Date of Installation: 7-3-90

Well Information

Depth to Water: 37.35
Total Depth: 97.50
Casing Diameter: 4" OD, 3.86" ID
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: 0
Casing Stickup: 2.5'
Screen Length: 10.0'
Amt. of fluid in well (Prior to development)
In well casing: 39.26 GAL
In sat. annulus: 18.36 GAL
(30% porosity)

Development

Date/time started: 7-24-90 / 0945
Completed: 7-24-90

Water level
Before development: 37.35
24 hrs. after:

Depth to sediment
Before development: 97.50
After development: 97.50

Measurement	T	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	16°C 25°C	8.0	950	7-24-90	0945	0 gal	CLEAR, NO SEDIMENT
1	20°C 16°C	8.3	11500	7-24-90	1030	25 gal	OPAQUE, GRAY
2	18°C 20°C	9.0	10,000	7-24-90	1100	50 gal	CLOUDY, GRAY
3	17°C 18°C	9.2	10,000	7-24-90	1145	75 gal	SLIGHTLY CLOUDY, GRAY
4	17°C	9.3	10,000	7-24-90	1310	100 gal	SLIGHTLY CLOUDY, LT GRAY
5	16°C	9.3	10,000	7-24-90	1415	125 gal	
Extra purges						gal	
After development						gal	

Surge technique: BAILING WELL ONLY ALLOWING TO RECOVER - REPEAT
Type, size and capacity of bailer or pump: 3" PVC 1½ GAL
Quantity of fluid removed: 125 Time for removal: 4½ HRS.
Comments: WELL RECOVERED AND PUMPED APPROXIMATELY 1 GAL PER MINUTE.

Note: all depths measured from top of casing

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-66-90

Date 8/14/90
Time Start 1110
Time Finish 1550

Samplers P. Anderson, S. Bradfield

Well Information

Depth to water 37.91 ft. | Casing diameter 4" in. | Stickup 2.5 ft.
Well depth 94.0 ft. | Casing volume 10.4 gal. | Screened interval 94 to 84
Sample depth 94-84 ft.

Field Equipment

pH meter Orion | Serial No. 1633 | Water level meter Solinist | Serial No. —
E.C. meter YSI Model 33 | Serial No. 90D014127 | Dissolved O_2 meter N/A | Serial No. —
Pump N/A | Serial No. — | Temperature meter YSI Model 33 | Serial No. 90D014127
Pumping rate < 1 gal/min | Filter Apparatus Nalgene | Filters CN 0.45M
Tubing PVC pump | Size 1¼" in x ½" in | Bailer N/A | Size — in

Field Chemistry

Calibration pH 7.00 = — @ — °C | pH 10.00 = 10 @ 25 °C | Time 0835
Conductance standard 1000 umhos/cm @ 25° C | Reading 1550 umhos @ 25 °C | Time 0840
Calibrated conductivity — umhos/cm @ 25° C | Diss. O_2 — mg/l @ — °C | Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2 mg/l~~ salinity (o/oo)	Safety Procedures/Readings
1309	—	—	20.0	8900	9.80	6.0	initial readings mostly clear
1326	227	2.6	18.0	8800	9.90	6.0	lt. grey, tr. silt
1418	254	5.2	17.5	10000	9.11	7.0	" "
			well dry after 75 gallons were removed				

5/1/90

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Well Development Record

Project: TEAD - South Area RFI - Phase I
Geologist: R. T. Canon
Well No.: S-67-90
Date of Installation: 5-19-90

Well Information

Depth to Water: 19.54 ft
Total Depth: 36.92 ft
Casing Diameter: 4 in
Borehole Diameter: 10 in
Amt. of mud/water lost during drilling: ∅
Casing Stickup: 2.5 ft
Screen Length: 10 ft
Amt. of fluid in well (Prior to development)
In well casing: 9.79 gal
In sat. annulus: 15.3 gal
(30% porosity) 25.1

Development

Date/time started: 5-22-90 / 0945
Completed: 5-22-90 / 1218

Water level
Before development: 19.54 ft
24 hrs. after: 19.77

Depth to sediment
Before development: 36.92 ft
After development: 38.08 ft

Measurement	°C Temp	pH	Specific Conduct. x 100	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0		NA	12,500	5-22-90	0945	0 gal	dirty, muddy
1		NA	22,500	5-22-90	1015	25 gal	clearing up, murky
2		NA	24,800	5-22-90	1045	50 gal	a little clearer
3	14.5	NA	25,200	5-22-90	1118	75 gal	clear to 6-7 inch.
4	14.5	NA	25,200	5-22-90	1145	100 gal	very clear
5	15.0	NA	25,000	5-22-90	1218	125 gal	very clear
Extra purges		NA	NA	NA	NA	NA gal	NA
After development						gal	

Surge technique: Not surged
Type, size and capacity of bailer or pump: No name discharge pipe 1¼ inch; ½ inch jet; 25 gal/minute size
Quantity of fluid removed: 125 gal
Time for removal: 1218 - 0945 = 0233 hour
Comments: Temperature was not collected on first 3 measurements. Water level after development = 21.08 ft.

Note: all depths measured from top of casing

5/1/90

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-67-90

Date 5/06/90
Time Start 1012
Time Finish 1223

Samplers S. CLANCY
A. WARNER

Well Information

Depth to water 20.02 ft. (from PVC stickup)
Well depth 38.55 ft. (from PVC stickup)
Sample depth 31 ft.

Casing diameter 4 in.
Casing volume ** 31.2 gal.

Stickup 2.5 ft.
Screened interval 26 to 36

Field Equipment

pH meter ORION RESEARCH MODEL SA210 Serial No. 1633
E.C. meter Y.S.I. MODEL 33 Serial No. 90D014127
Pump 1.7" HAND PUMP Serial No. NA
Pumping rate ≈1 gal/min

Water level meter SOLINST Serial No. 05539
Dissolved O_2 meter NA Serial No. NA
Temperature meter Y.S.I. MODEL 33 (dissolved metals only) Serial No. 90D014127
Filter Apparatus 500 ml Nalgene Filters .45 µ
Tubing NA Size NA in x in
Bailer NA Size ~~.45 µ~~ stainless in

Field Chemistry * SEE WATER QUALITY FIELD DATA SHEET FOR WELL S-10-88 5/6/90

Calibration pH 7.00 = @ °C pH 10.00 = @ °C Time
Conductance standard umhos/cm @ 25° C Reading umhos @ °C Time
Calibrated conductivity umhos/cm @ 25° C Diss. O_2 mg/l @ °C Time

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Physical Characteristics Safety Procedures/Readings
1013	0	0	31	34,000	7.55	NA	CLEAR - SLIGHTLY CLOUDY
1045	31.2	1	26	31,200	7.38		pale brown, cloudy
1106	62.4	2	20	29,000	7.31		lt. yellowish-brown, cloudy
1132	93.6	3	13	23,700	* 6		lt. yellowish-brown ~~lt. gray~~, cloudy 5/6/90
1149	124.8	4	18	26,900	7.90		lt. gray, cloudy
1223	156.0	5	17	26,100	6.70		lt. gray, cloudy
1312	Start	Sampling					

5/1/90

* pH measured with indicator strips because meter was fluctuating
** Original volume was overestimated due to a miscalculation total volume removed should have been 126.0 gallons and a casing volume should have been 25.2 gallons/volume

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Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: R. T. Canon
Well No.: S-68-90
Date of Installation: 5-18-90

Well Information

Depth to Water: 40.03 ft
Total Depth: 63.0 ft
Casing Diameter: 4 inch
Borehole Diameter: 10 inch
Amt. of mud/water lost during drilling: Ø
Casing Stickup: 2.5 ft
Screen Length: 10 ft
Amt. of fluid in well (Prior to development)
In well casing: 16.6 gal
In sat. annulus (30% porosity): 15.3 gal

Development

Date/time started: 5-22-90 / 1519
Completed: 5-23-90 / 0945

Water level
Before development: 40.03 ft
24 hrs. after:

Depth to sediment
Before development: 65.52 ft
After development: 65.59 ft

Measurement	°C Temp	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	16.5	NA	10,000	5-22-90	1519	0 gal	murky
1	15.5	NA	11,800	5-22-90	1610	25 gal	light murky
2	16.0 ~~15.5~~ RTC 5-22-90	NA	12,500	5-22-90	1655	50 gal	less murky
3	15.0	NA	12,200	5-22-90	RTC 5-23-90 ~~1535~~ 1735	75 gal	very to fairly clear
4	13.0	NA	11,300	5-23-90	0845	110 gal	very clear
5	14.5	NA	11,900	5-23-90	0945	155 gal	very clear
Extra purges		NA	NA	NA	NA	NA gal	NA
~~After development~~ RTC 5-23-90	Temp = 17.5°C	NA	10,100	5-23-90	0802	85 gal	murky

Surge technique: Not surged
Type, size and capacity of bailer or pump: Size: discharge pipe = 1¼ inch | ½ inch jet; capacity = 25 gal/min
Quantity of fluid removed: 155 gal
Time for removal: 3 hrs 59 minutes
Comments: This measurement was collected at beginning of 4th well volume (morning of 5-23-90). The well recharged between 5-22-90 and 5-23-90 (to 40.88 ft). Well development archive sample is collected. Water level after development = 42.14 ft (collected at 1226 hours, 2¾ hours after last purge.)
Note: all depths measured from top of casing

5/1/90 RTC 5-23-90 2/6 4/3

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Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID MWS-68-90

Date 8/12/90
Time Start 1317
Time Finish 1715

Samplers P. Anderson
S. Bradfield

Well Information

Depth to water 40.57 (TOPVC) ft.
Well depth 63.0 ft.
Sample depth 63-53 ft.

Casing diameter 4" in.
Casing volume 16.3 gal.

Stickup 2.5 ft.
Screened interval 63' to 53'

Field Equipment

pH meter Orion Serial No. 1633
E.C. meter YSI Model 33 Serial No. 90D014127
Pump N/A Serial No. —
Pumping rate < 1 gal/min

Water level meter Solinist Serial No. —
Dissolved O_2 meter N/A Serial No. —
Temperature meter YSI Model 33 Serial No. 90D014127
Filter Apparatus Nalgene Filters CN 0.45M
Tubing PVC pump Size 1 1/4" in x 1/2" in
Bailer N/A Size — in

Field Chemistry

Calibration pH 7.00 = — @ — °C pH 10.00 = 10 @ 25 °C Time 0735
Conductance standard 1000 umhos/cm @ 25° C Reading 1350 umhos @ 25 °C Time 0740
Calibrated conductivity — umhos/cm @ 25° C Diss. O_2 — mg/l @ — °C Time —

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O_2 mg/l~~ salinity (o/oo)	Safety Procedures/Readings
1411	—	—	23.0	12800	8.00	8.1	initial readings brown, vf-sand tr silt
1437	~42	2.6	20.0	12100	8.19	8.2	light brown, tr silt
1545	~84	5.2	19.0	12200	8.17	8.3	" "
			well	bailed dry after	2nd volume		

8/1/90

EBASCO SERVICES INCORPORATED
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Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: Paul Anderson
Well No.: S-69-90
Date of Installation: 7/15/90

Well Information

Depth to Water: 103.17'
Total Depth: 125.5'
Casing Diameter: 4"
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: 2.5
Screen Length: 10'
Amt. of fluid in well (Prior to development): 10.84 (PWA)
In well casing: 1.45 gallons
In sat. annulus: 27.90 gallons (30% porosity)

Development

Date/time started: 7/27/90 @ 1414
Completed: 7/29/90 @ 1400

Water level
Before development: 103.17'
24 hrs. after: 103.23'

Depth to sediment
Before development: 123.2'
After development: 123.2'

Measurement	temp.	% sat.	pH	Specific Conduct. (umhos)	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	22.0	1.8	9.95	2900	7/27/90	1414	0 gal	mostly clear, tr. silt
1	21.0	2.0	8.75	3100	7/27/90	1600	~28 gal	lt. brown, silty
2	13.5	2.0	7.80	2600	7/28/90	0831	~56 gal	lt. grey, v fine sand
3	20.0	1.9	8.76	2920	7/28/90	1342	~84 gal	lt. brown, silty
4	13.0	2.0	8.86	2600	7/29/90	0810	~112 gal	lt. grey, v fine sand
5	21.0	2.0	8.30	3100	7/29/90	1400	~140 gal	mostly clear, tr. v fine sand
Extra purges							gal	
After development							gal	

Surge technique: purge dry, let recover
Type, size and capacity of bailer or pump: Air lift compressor
Quantity of fluid removed: 140 gallons
Time for removal: ~~2 hrs.~~ 7 hrs.
Comments: ~~time of removal estimated from times that parameters were taken~~ (PWA)

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-69-90

Date 8/13/90 / 8/14/90 Samplers A. WARNER, S. CONDRAN
Time Start 1730 / 0840
Time Finish 1900 / 1151

Well Information

Depth to water 103.48 ft. Casing diameter 4 in. Stickup 2.5 ft.
Well depth 125.7 ft. Casing volume 27.9 gal. Screened interval 106.6 to 123.2
Sample depth ~~115~~ 124 ft. sc 8/14/90

Field Equipment

pH meter ORION SA 230 Serial No. 4531 Water level meter SOLINST Serial No. 05839
E.C. meter YSI # 33 Serial No. 15662 Dissolved O_2 meter NA Serial No. NA
Pump NA Serial No. NA Temperature meter YSI #33 Serial No. 15662
Pumping rate NA gal/min Filter Apparatus 500 ml Nalgene (for dissolved metals only) Filters 0.45 u
Tubing NA Size NA in x in Bailer PVC Sch 40 Size 3"OD x 36"long in

Field Chemistry see water quality data for well S-31-88 on 8/13/90

Calibration 8/14/90 pH 7.00 = 7.00 @ 20 °C pH 10.00 = 9.99 @ 20° °C Time 0839
Conductance standard 1,000 umhos/cm @ 25° C Reading 1,040 umhos @ 20 °C Time 0839
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

	Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS ~~Safety~~ Procedures/Readings AW 8/13/90
8/13/90	1730	0	0	18	2,550	7.89	NA	clear
	1834	27.9	1	15	2,300	~~7.85~~	NA	v. light brown, turbid
8/14/90	0935	55.8	2	17	2,230	7.79	NA	as above
	0945	Well bailed dry after ~2½ volumes and is slow to recharge						
	1107	start sampling						

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: Paul Anderson
Well No.: S-70-90
Date of Installation: 7/10/90

Well Information

Depth to Water: 45.46' from T.O.PVC
Total Depth: 50'
Casing Diameter: 4"
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: 2.5'
Screen Length: 10'
Amt. of fluid in well (Prior to development)
In well casing: 4.59 gal.
In sat. annulus: 11.83 gal.
(30% porosity)

Development

Date/time started: 7/25/90 / 0805
Completed: 7/25/90 / 1400

Water level
Before development: 45.46'
24 hrs. after: 44.0'

Depth to sediment
Before development: ~~N/A~~ (RWA) 50'
After development: 50'

Measurement	sa(%)	temp.	pH	Specific Conduct.	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	8.0	14.9	7.50	10,500	7/25/90	0805	0 gal	light brown with sand & silt
1	7.9	13.1	7.45	10,000	7/25/90	0815	~12.0 gal	" "
2	8.0	20.0	7.76	10,200	7/25/90	1114	~24.0 gal	" "
3	8.1	18.1	7.73	12,000	7/25/90	1200	~35.0 gal	slightly cloudy, grey
4	8.0	20.0	7.70	12,000	7/25/90	1352	~46.5 gal	" "
5	7.0	19.0	7.70	10,000	7/25/90	1400	~59.0 gal	" "
Extra purges							gal	
After development							gal	

Surge technique: pvc. hand pump; pump dry, let recover
Type, size and capacity of bailer or pump: 1 1/4" PVC w/ 1/2" PVC inside
Quantity of fluid removed: ~59 gal. Time for removal: 50 minutes pumping
Comments: very slow recovery of water ~~until~~ (RWA) well was purged twice then faster recovery for last three volumes

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID 5-70-90

Date 5/13/90
Time Start 1234
Time Finish 1410

Samplers S CLINDEAN
A. WARNER

Well Information

Depth to water 45.96 ft. (From PVC stickup)
Well depth 52.30 ft.
Sample depth 49 ft.

Casing diameter 4 in.
Casing volume 11.5 gal.

Stickup 2.5 ft.
Screened interval 40 to 50

Field Equipment

pH meter BRUN RESEARCH Model 290 Serial No. 4531
E.C. meter U.S.I. MODEL 33 Serial No. 15662
Pump NA Serial No. NA
Pumping rate NA gal/min
Tubing NA Size NA in x in

Water level meter SOLINST Serial No. 05839
Dissolved O_2 meter NA Serial No. NA
Temperature meter U.S.I MODEL 33 Serial No. 15662 (Dissolved metals only)
Filter Apparatus 50mm Nulgene Filters 0.45 M
Bailer PVC SCHEDULE 40 Size 3.0' long 3.0" O.D in

Field Chemistry * SEE WATER QUALITY FIELD DATA SHEET FOR WELL 5-31-06 5/13/90

Calibration pH 7.00 = @ °C pH 10.00 = @ °C Time
Conductance standard umhos/cm @ 25° C Reading umhos @ °C Time
Calibrated conductivity umhos/cm @ 25° C Diss. O_2 mg/l @ °C Time

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS ~~Safety~~ Procedures/Readings sc 5/13/90
1236	0	0	19	8900	7.39	NA	clear - slightly cloudy
1248	11.5	1	15	8400	7.57	NA	pale yellow-brown, turbid
1303	23.0	2	17	8,500	7.60	NA	pale yellow-brown, turbid
1317	34.5	3	18	8,000	7.56	NA	lt. gray, cloudy
1345	46.0	4	18.5	9,500	7.53	NA	lt gray cloudy
1410	57.5	5	17.5	8,900	7.70	NA	lt gray cloudy
1414	Start Sampling						

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Well Development Record

Project: TEAD - South Area / RFI - Phase I
Geologist: Paul W. Anderson
Well No.: S-71-90
Date of Installation: 7/12/90

Well Information

Depth to Water: 41.90'
Total Depth: 68.0'
Casing Diameter: 4"
Borehole Diameter: 10"
Amt. of mud/water lost during drilling: N/A
Casing Stickup: 2.5'
Screen Length: 10'
Amt. of fluid in well (Prior to development): 9.81 (corr)
In well casing: ~~1.57~~ ~~2.81~~ gal.
In sat. annulus: 30.20 gal.
(30% porosity)

Development

Date/time started: 7/25/90 @ 0840
Completed: 7/30/90 @ 1540

Water level
Before development: 41.90'
24 hrs. after: 42.56

Depth to sediment
Before development: 68.0'
After development: 68.0'

Measurement	°C temp	‰ Sal.	pH	Specific Conduct. (umhos)	Date	Time	Vol. Wtr. Removed	Physical Characteristics
0	13.0	5.6	7.88	7200	7/25/90	0840	0 gal	lt.grey w/tr.s.,lt
1	16.9	4.7	7.70	6500	7/25/90	1157	~30.2 gal	lt.brown, vf.sand
2	12.2	6.1	6.14	8000	7/28/90	0755	~60.5 gal	lt.grey, tr. vf.sand
3	12.0	6.2	7.90	7900	7/29/90	0741	~90.8 gal	lt.grey
4	16.8	6.1	7.42	8600	7/29/90	1651	~121.0 gal	lt.grey
5	15.5	6.2	7.87	8600	7/30/90	1540	~151.2 gal	mostly clear, tr.s.,lt
Extra purges							gal	
After development							gal	

Surge technique: bail dry, let recover
Type, size and capacity of bailer or pump: 3" dia., PVC bailer; 1.5 gal. capacity
Quantity of fluid removed: ~151.0 gallons
Time for removal: 2.5 hrs.
Comments: well was very slow to recover, did not improve its recovery speed as volumes were removed.

Note: all depths measured from top of casing

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-71-90

Date 5/15/90
Time Start 0950
Time Finish 1111

Samplers S. CONDRAN
A. WARNER

Well Information

Depth to water 41.91 ft. (From PVC stickup)
Well depth 71.21 ft. (From PVC stickup)
Sample depth 64 ft.

Casing diameter 4 in.
Casing volume 30.2 gal.

Stickup 2.5 ft.
Screened interval 58 to 68

Field Equipment

pH meter ORION RESEARCH MODEL SA 230 Serial No. 4531
Water level meter SOLINST Serial No. 05839
E.C. meter Y.S.I. MODEL 33 Serial No. 15662
Dissolved O_2 meter NA Serial No. NA
Pump NA Serial No. NA
Temperature meter Y.S.I MODEL 33 Serial No. 15662
Pumping rate NA gal/min
Filter Apparatus 500 ml Nalgene (Dissolved Metals Only)
Filters 0.45 µ
Tubing NA Size NA in x in
Bailer PVC SCHEDULE 40 Size 3.0' long 3.0" O.D. in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 22.5 °C pH 10.00 = 10.00 @ ~~20~~ 22.5 °C Time 0818
5/15/90

Conductance standard 1,000 umhos/cm @ 25° C Reading 1200 umhos @ 22.5 °C Time 0822

Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	PHYSICAL CHARACTERISTICS ~~Safety Procedures/Readings~~ SC 5/15/90
0952	0	0	15	6,200	7.68	NA	clear
1019	~20	2/3	15	6,500	7.78	NA	V. pale brown, cloudy
1020	Well bailed dry after ~20 gals, V. slow to recover						
1111	Start sampling						

5/1/90

TEAD - SOUTH AREA RFI PHASE I well Development Record

EBASCO SERVICES INC. ~~WATER QUALITY FIELD DATA SHEET~~ DB 6/27/02

Project: TEAD - TOOELE   Date: 6-2-90   Samplers: T. J. WOLLEN
Time Start: 1000
Well ID: S-74-90   Time Finish: 1340

Well Information

Depth to Water: 24.85 ft.   Casing Diameter: 4 in.   Stickup: 2.5 ft.
Well Depth: 32.0 ft.   Casing Volume: 11.89 gal (TJW 6-2-90)   Screened Interval: 32.00 to 22.00
Sample Depth: — ft.

Field Equipment

pH Meter: PEN   Serial No: 5971-0-   Water Level Meter: SOLINIST   Serial No: 05611
E.C. Meter: SCT YSI-33   Serial No: 90DC14127   Dissolved O_2 Meter: N/A   Serial No: N/A
Pump: N/A   Serial No: N/A   Temperature Meter: YSI-33   Serial No: SAME AS E.C.
Pumping Rate: ____ gal/min   Filter Appartus: NA   Filters: N/A
Tubing: PVC   Size: 1½" in x 1¼" in   Bailer: N/A   Size: N/A in

Field Chemistry

Calibration: pH 7.00= N/A @ ____ °C   pH 10.00 = N/A @ ____ °C   Time: N/A

Conductance Standard: N/A umhos/cm @ 25°C   Reading: N/A umhos @ ____ °C   Time: N/A

Calibrated Conductivity: N/A umhos/cm @ 25°C   Diss. O²: N/A mg/l @ ____ °C   Time: N/A

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O₂~~ SALINITY (TJW 6-2-90) mg/l	Safety Procedures/ Readings
1000	0	0	14.5	2150	8.0	1.7%	HNU - open OVA - open CLARITY - OPAQUE
1030	8	0.67	12.1	6500	8.0	4.5%	CLARITY - OPAQUE
1104	16	1.35	12.0	5000	7.4	5.0%	CLARITY - OPAQUE
~~1131~~	~~24~~						
1133	24	2.02	13.5	6500	7.9	5.1%	CLARITY - CLEAR
1210	32	2.69	14.0	6750	7.9	5.3%	CLARITY - CLOUDY
1250	40	3.36	15.0	6750	7.9	5.4%	CLARITY - SLIGHTLY CLOUDY
1340	48	4.03	16.0	6700	7.9	5.4%	CLARITY - CLEAR TO "

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID: S-74-90

Date: 8-9-90
Time Start: 1530
Time Finish: 1730

Samplers: T. Wollen; M. Lewis; S CONDRAN, A WARNER

Well Information

Depth to water: 25.78 ft. Casing diameter: 4 in. Stickup: 2.3 ft.
Well depth: 31.68 ft. Casing volume: 9.87 gal. Screened interval: 316 to 23.0
Sample depth: 31.25 ft.

Field Equipment

pH meter: SCI Serial No.: 9001 Water level meter: SOLINIST Serial No.: OBell
E.C. meter: SCI Serial No.: 9001 Dissolved O_2 meter: N/A Serial No.: —
Pump: N/A Serial No.: — Temperature meter: SCI Serial No.: 9001
Pumping rate: <1 gal/min Filter Apparatus: NALGENE - DISPOSABLE Filters: CN 0.45µ
Tubing: N/A Size: — in x — in Bailer: SCH 40 PVC Size: 3' x 3" in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 68°F °C pH 10.00 = 10.11 @ 68°F °C Time: 1500
Conductance standard: 1000 umhos/cm @ 25° C Reading: 820 umhos @ 68°F °C Time: 1505
Calibrated conductivity: N/A umhos/cm @ 25° C Diss. O_2: N/A mg/l @ — °C Time: —

Time	Volume Removed		Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
	Gals	Csng Vols					
1600	0	INITIAL	61.0	3550	7.25	N/A	HNU 0ppm OVA 0ppm
							BAILED DRY BEFORE 1.5
							VOLUME IS EXTRACTED

5/1/90

TEAD - SOUTH AREA RFI PHASE I

EBASCO SERVICES INC. **WATER QUALITY FIELD DATA SHEET**

Project: TEAD - TOOELE Date: 6-2-90 Samplers: T. J. WALLEN

Time Start: 1530 - 1710

Well ID: S-75-90 Time Finish: 6-3-90 0831 - 1247

Well Information

Depth to Water: 27.72 ft. Casing Diameter: 4 in. Stickup: 2'5" ft.

Well Depth: 21.61 ft. Well Casing Volume: 10.25 gal Screened Interval: 27.7 to 17.7

Sample Depth: — ft.

Field Equipment

pH Meter: PEN Serial No: 5941-00 Water Level Meter: SOLINST Serial No: 08611

E.C. Meter: YSI-33 Serial No: 90D014127 Dissolved O_2 Meter: N/A Serial No: N/A

Pump: COMPRESSOR Serial No: N/A Temperature Meter: YSI-33 Serial No: 90D014127

Pumping Rate: N/A gal/min Filter Appartus: N/A Filters: N/A

Tubing: N/A Size: 1" in x 1½" OUT Bailer: N/A Size: N/A in

Field Chemistry

Calibration: pH 7.00 = N/A @ °C pH 10.00 = N/A @ °C Time: N/A

Conductance Standard: N/A umhos/cm @ 25°C Reading: N/A umhos @ °C Time: N/A

Calibrated Conductivity: N/A umhos/cm @ 25°C Diss. O^2: N/A mg/l @ °C Time: N/A

	Time	Volume Removed Gals.	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	TDS 6-8-90 SALINITY ~~Dissolved O^2~~ mg/l	Safety Procedures/ Readings
6-2-90	1530	0	0	21.0	2700	7.8	5.4%	HNU - 0ppm OVA - 0ppm CLARITY - OPAQUE
	1600	5	0.53	18.0	2800	8.1	2.0%	CLARITY - OPAQUE
	1710	10.25	1.0	21.0	2950	8.2	2.1%	CLARITY - OPAQUE
6-3-90	0830	20.5	2.0	14.0	2700 6-2-90	8.1	2.0%	CLARITY - MURKY
	1000	30.75	3.0	18.0	29.50	8.1	2.1%	CLARITY - V. CLOUDY
	1145	41.00	4.0	18.0	3100	8.1	2.1%	CLARITY - SLIGHTLY CLOUDY
	247	46.50	4.50	19.0	3109	8.1	2.1%	CLARITY - CLEAR

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-7S-90

Date 8-9-90
Time Start 1520
Time Finish 1900

Samplers T. Wolley
S. CONDRAN
A. WARNER

Well Information

Depth to water 22.56 ft.
Well depth 27.82 ft.
Sample depth 27-22 ft.

Casing diameter 4 in.
Casing volume 8.92 gal.

Stickup 2.5 ft.
Screened interval 23.8 to 17.8

Field Equipment

pH meter YSI Serial No. 9001
E.C. meter YSI Serial No. 9001
Pump N/A Serial No. N/A
Pumping rate <1 gal/min

Water level meter SOLINIST Serial No. 08611
Dissolved O_2 meter N/A Serial No. –
Temperature meter YSI Serial No. 9001
Filter Apparatus NALGENE - DISPOSABLE Filters CN 0.45 µ
Tubing N/A Size – in x – in Bailer STAINLESS Size 3' x 3" in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 68°F °C pH 10.00 = 10.11 @ 69°F °C Time 1500
Conductance standard 1000 umhos/cm @ 25° C Reading 820 umhos @ 68°F °C Time 1505
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ – °C Time –

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1619	0	INITIAL	58.3	2490	7.60	N/A	HNO 0ppm OVA 0ppm
1625	8	1	57.5	3200	7.62	N/A	HNO 0ppm OVA 5ppm

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-CAM-1

Date 8-7-90
Time Start 1537
Time Finish

Samplers T. WOLLEN
M. LEWIS

Well Information

Depth to water 10.82 ft. | Casing diameter 2 in. | Stickup 0 ft.
Well depth 22.48 ft. | Casing volume 10.46 gal. | Screened interval to
Sample depth 22.11 ft.

Field Equipment

pH meter CSI Serial No. 9001 | Water level meter SOLINIST Serial No. 08611
E.C. meter CSI Serial No. 9001 | Dissolved O_2 meter N/A Serial No. N/A
Pump N/A Serial No. N/A | Temperature meter CSI Serial No. 9001
Pumping rate 1 gal/min | Filter Apparatus NALGEN - DISPOSABLE | Filters CN 0.45 µ
Tubing NA | Size — in x — in | Bailer 4½ Foot PVC | Size 1½ in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 74 °F °C | pH 10.00 = 10.00 @ 74 °F °C | Time 0940
Conductance standard 1000 umhos/cm @ 25° C | Reading 860 umhos @ 79 °F °C | Time 0942
Calibrated conductivity N/A umhos/cm @ 25° C | Diss. O_2 N/A mg/l @ — °C | Time N/A

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1553	0	INITIAL	70.0	5,001	8.45	N/A	OIL ~ 6" ON TOP OF WATER
1558	10.5	1/2	71.0	3,840	8.36	N/A	OIL increases - cloudy
1610	21.0	2 ±	68.6	5890	8.27	N/A	cloudy - dissolved oil
1627	31.5	3 ±	69.0	4890	8.27	N/A	— " —
1638	42.0	4 ±	66.5	5750	8.20	N/A	— " —
1646	53.5	5 ±	66.4	5810	8.26	N/A	— " —

5/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID S-CAM-2

Date 8-7-90
Time Start 1130
Time Finish 1400

Samplers T. WOLLEN
M. LEWIS

Well Information

Depth to water 13.40 ft.
Well depth 25.0 ft.
Sample depth 25-13 ft.

Casing diameter 2 in.
Casing volume 10.4 gal.

Stickup 2.53 ft.
Screened interval 25.0 to 7.0'

Field Equipment

pH meter CSI Serial No. 9001
E.C. meter CSI Serial No. 9001
Pump N/A Serial No. N/A
Pumping rate 1 gal/min

Water level meter SOLINIST Serial No. 08611
Dissolved O_2 meter N/A Serial No. N/A
Temperature meter CSI Serial No. 9001
Filter Apparatus NALGENE -DISPOSABLE Filters 0.45 μ

Tubing N/A Size ~ in x ~ in
Bailer SCH 40 PVC Size 4½" x 1½" in

Field Chemistry

Calibration pH 7.00 = 7.00 @ 74 °C pH 10.00 = 10.00 @ 74° °C Time 940
Conductance standard 1000 umhos/cm @ 25° C Reading 860 umhos @ 69°F °C Time 943
Calibrated conductivity N/A umhos/cm @ 25° C Diss. O_2 N/A mg/l @ ~ °C Time N/A

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1137	0.0	INITIAL	73.7F	720	7.42	N/A	OIL 4" THICK
1150	10.4	1	83.3	4060	8.01	N/A	OIL NODULES CLOUDY
1235	20.8	2	76.4	4950	7.99	N/A	SLIGHTLY CLOUDY DISSOLVED OIL
1240	31.2	3	68.4	5490	7.98	N/A	— " —
1250	41.6	4	69.0	5260	7.94	N/A	— " —
1304	52.0	5	69.0	5200	7.98	N/A	— " —

S/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID SBR-1

Date 8-22-90
Time Start 1018
Time Finish 1230

Samplers Conrad J. Bieniulis

Well Information

Depth to water 126.04 ft.
Well depth 159.32 ft.
Sample depth 140.0 ft.

Casing diameter 5 in.
Casing volume 64.1 gal.

Stickup 3.0 ft.
Screened interval 160 to 120

Field Equipment

pH meter Orion SA 210 Serial No. 1633
Water level meter Solinst Serial No. 08611
E.C. meter YSI Model 33 Serial No. 90D014127
Dissolved O_2 meter NA Serial No. NA
Pump Standard Serial No. PX85G0294 MX85G0246
Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate ~3.5 - 4.5 gal/min
Filter Apparatus Nalgene Filters .45 microns
Tubing PVC Size 1/2 in x in Bailer PVC Size 3' length 3" O.D. in

Field Chemistry

Calibration pH 7.00 = 7.0 @ 16 °C pH 10.00 = 10.0 @ 16 °C Time 0944
Conductance standard 1000 umhos/cm @ 25° C Reading 1000 umhos @ 16 °C Time 0944
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	~~Safety Procedures/Readings~~
1018	1	.02	16.0	335	7.32	NA	clear, no suspended particles
1054	48	.75	14.3 15.5	300	7.67	NA	" "
1110	61	.95	15.0	310	7.88	NA	" "

8/1/90

EBASCO SERVICES INCORPORATED
2111 Wilson Blvd., Ste. 1000, Arlington, VA 22201

Water Quality Field Data Sheet

TEAD - South Area
RFI - Phase I
Well ID Pump House #2

Date 8-21-90
Time Start 1339
Time Finish 1400

Samplers Conrad J Bieniulis

Well Information

Depth to water NA ft. Casing diameter NA in. Stickup NA ft.
Well depth NA ft. Casing volume NA gal. Screened interval NA to
Sample depth NA ft. Samples were taken directly from the tap attached to a lead pipe water line.

Field Equipment

pH meter Orion SA210 Serial No. 1.33 Water level meter NA Serial No. NA
E.C. meter YSI Model 33 Serial No. 90D014127 Dissolved O_2 meter NA Serial No. NA
Pump NA Serial No. NA Temperature meter YSI Model 33 Serial No. 90D014127
Pumping rate NA gal/min Filter Apparatus Nalgene Filters .45 microns
Tubing NA Size NA in x in Bailer NA Size NA in

Field Chemistry

Calibration pH 7.00 = 7.0 @ 18 °C pH 10.00 = 10.0 @ 18 °C Time 1335
Conductance standard 1000 umhos/cm @ 25° C Reading 1000 umhos @ 18 °C Time 1335
Calibrated conductivity NA umhos/cm @ 25° C Diss. O_2 NA mg/l @ °C Time NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Dissolved O_2 mg/l	Safety Procedures/Readings
1340	1	NA	13	525	7.46	NA	clear, no suspended particles

5/1/90

ADDITIONAL SAMPLING

JUNE, 1992

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI PHASE I ADDITIONAL SAMPLING PROGRAM
Date: 6/24/92
Time Start: 13:41
Time Finish: 14:29
Samplers: Sarah Condra… / Shawn Badfield
Well ID: S-3

Well Information

Depth to Water: 28.99 ft. (5 ... 6/23/92) From TOC
Casing Diameter: 4.5 in. (Borehole Diameter: Assume 10 in.)
Stickup: 2.5 ft.
Well Depth: 45.03 ft.
Casing Volume: 34.2 gal ($h = 14.0$)
Screened Interval: 24 to 44 G.S.
Sample Depth: 35.5 ft. → 33' Ground Surface

$V = (\pi R^2 h - \pi r^2 h).3 + \pi r^2 h$

Field Equipment

pH Meter: Cambridge Scientific Industries Serial No: 9107 Water Level Meter: Hazco 300' Serial No: 5593
E.C. Meter: YSI Model 33 Serial No: 910029345 Dissolved O₂ Meter: NA Serial No:
Pump: 4" Submersible Serial No: unknown Temperature Meter: YSI Model 33 Serial No: SAA
Pumping Rate: variable ~4-8 gal/min Filter Appartus: NA Filters:
Tubing: Size: in x in Bailer: Dedicated PVC bailer for last volume and samples Size: in

Field Chemistry SEE calibration info. Well S-46-90

Calibration: pH 7.00= @ °C pH 10.00 = @ °C Time:

Conductance Standard: umhos/cm @ 25°C Reading: umhos @ °C Time:

Calibrated Conductivity: umhos/cm @ 25°C Diss. O²: mg/l @ °C Time:

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	~~Dissolved O² mg/l~~ Salinity % Scale 4/4c	Safety Procedures/ Readings
1341	0	0	18	8200	8.11	5.4	lt-brown, murky
1350	34.2	1	17	8900	7.68	5.6	lt gray slightly cloudy
1354	68.4	2	20	7900	7.90	5.6	slightly cloudy
1400	102.6	3	21	7900	7.77	5.0	"
1403	136.8	4	21	7850	7.73	5.0	"
1429	171.0	5	20	7900	7.80	5.0	"
1430	Start Sampling						

Form: WQFDS
Revised: 9/11/91

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI ADDITIONAL SAMPLING PROGRAM
Date: 6/26/92
Samplers: Sarah Condron, Shawn Bradfield
Time Start: 13:30
Time Finish: 16:25
Well ID: S-32-90

Well Information

Depth to Water: 222.3 ft T.O.C. Casing Diameter: 5.56 in. (Borehole Diameter 8 in.) Stickup: 2.3 ft.
Well Depth: 235 ft G.S. Casing Volume: 18.1 gal Screened Interval: 212.5 to 235 G.S.
Sample Depth: 227.5 ft G.S. (well construction log)

$V = (\pi R^2 h - \pi r^2 h) .3 + \pi r^2 h$

Field Equipment

pH Meter: Cambridge Scientific Ind. Serial No: 9107 Water Level Meter: Nagco 300' Serial No: 5893
E.C. Meter: YSI Model 33 Serial No: 91002948 Dissolved O_2 Meter: NA Serial No:
Pump: NA Serial No: Temperature Meter: NA Serial No:
Pumping Rate: ~1 gal/min w/bailer Filter Appartus: Filters:
Tubing: Size: in x in Bailer: 15' LONG PVC bailer Size: in
Samples collected with PVC dedicated bailer

Field Chemistry

Calibration: pH 7.00 = 7.01 @ 18 °C pH 10.00 = 10.0 @ 18 °C Time: 13:25
Conductance Standard: 1000 umhos/cm @ 25°C Reading: 1090 umhos @ 17.9°C Time: 13:25
Calibrated Conductivity: umhos/cm @ 25°C Diss. O²: NA mg/l @ °C Time:

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Salinity %o Dissolved O² mg/l	Physical Characteristics Safety Procedures/ Readings
1330	0	0	21.2	910	8.28	Not collected	slightly cloudy
1434	18	1	20	910	8.72	0.01	cloudy
1452	36	2	17	900	9.57	0.01	cloudy, brown
1519	54	3	19	900	8.60	0.01	cloudy, brown
1550	72	4	16	890	8.61	0.01	cloudy, brown
1625	90	5	22.5 (6/26/92)	840 (6/26/92)	8.62	0.01	Orange brown
	Start Sampling						

Form: WQFDS
Revised: 7/1/91

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI PHASE I ADDITIONAL SAMPLING PROGRAM
Date: 7/8/92
Time Start: 12:41
Time Finish: 14:14
Samplers: S. CONDRAN, M. BILLMAN
Well ID: S-33-90

Well Information

Depth to Water: 209.76 ft } TOC
Borehole Diameter 9 in
Casing Diameter: 3.86 in.
Stickup: 2.3 ft.
Well Depth: 242.53 ft } TOC
Casing Volume: 46.5 gal
Screened Interval: 220 to 240 G.S.
Sample Depth: 224 ft.
h =
$V = (\pi R^2 h - \pi r^2 h).3 + \pi r^2 h$

Field Equipment

pH Meter: Cambridge Scientific Serial No: 9107
Water Level Meter: Hazen 300' Serial No: 5893
E.C. Meter: YSI Model 33 Serial No: 910029348
Dissolved O_2 Meter: NA Serial No: NA
Pump: NA Serial No: NA
Temperature Meter: YSI Model 33 Serial No: SAA
Bailing Rate: ~2.5 gal/min
Filter Appertus: NA Filters: NA
Tubing: Bailer to Purge sample volumes Size: .25' I.D. x 3' = 1.1 gal.
Dedicated Bailer: for sampling Size: 3' x .25' I.D. = 1.1 gal.

Field Chemistry

Calibration: pH 7.00 = ______ @ ______ °C pH 10.00 = ______ @ ______ °C Time: ______
Conductance Standard: ______ umhos/cm @ 25°C Reading: ______ umhos @ ______ °C Time: ______
} SEE WELL S-34-90

Calibrated Conductivity: Not Calculated umhos/cm @ 25°C Diss. O^2: NA mg/l @ °C Time: NA

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	meter/strips * pH	Salinity	Physical Characteristics
12:41	0	0	15	1600	8.0/7	0.1	lt. gray, cloudy
12:52	46.5	1	16	1600	7.90/6.5	1	lt. yellow
13:15	93.0	2	14.5	1530	7.72/7	1	"
13:35	139.5	3	14	1550	7.63/7	1	"
13:58	186.0	4	14	1600	8.03/7	1	"
1414	232.5	5	14.5	1600	7.9/7	1	"
1425	Start Sampling						

* pH measured with meter and also pH indicator strips to check meter accuracy

Form: WQFDS

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI PHASE I — ADDITIONAL SAMPLING PROGRAM
Well ID: S-34-90
Date: 7/8/92
Time Start: 09:40
Time Finish: 11:22
Samplers: S. CONDRAN, M. BILLMAN

Well Information

Depth to Water: 211.85 ft. (TOC)
Well Depth: 230.94 ft. (TOC) (measured 6/24/92)
Sample Depth: 219 ft.
Borehole Diameter 8 in.
Casing Diameter: 3.86 in.
Casing Volume: 23.0 gal
h = 19.06
$V = (\pi R^2 h - \pi r^2 h) .3 + \pi r^2 h$
Stickup: 2.5 ft.
Screened Interval: 209 to 229 G.S.

Field Equipment

pH Meter: Cambridge Scientific Serial No: 9107
Water Level Meter: Hogen 300 Serial No: 5893
E.C. Meter: YSI Model 33 Serial No: 91D02934B
Dissolved O_2 Meter: NA Serial No: NA
Pump: NA Serial No: NA
Temperature Meter: YSI Model 33 Serial No: SAA
Bailing Pumping Rate: ~1 gal/min (sc 7/9/92)
Filter Apparatus: NA Filters: NA
Tubing: Bailer to Purge Size: .25" I.D. (sc 7/9/92)
Sample Volume: 5 x 10' = 8.7 gal. (sc 7/8/92)
Dedicated Bailer: for sampling Size: 3" x .25" I.D. = 1.1 gal. (sc 7/8/92)

Field Chemistry

Calibration: pH 7.00 = 7.00 @ 20 °C pH 10.00 = 7.98 @ 20 °C Time: 09:30
Conductance Standard: 1,000 umhos/cm @ 25°C Reading: 950 umhos @ 20 °C Time: 09:27
Calibrated Conductivity: Not Calculated umhos/cm @ 25°C Diss. O^2: NA mg/l @ °C Time: NA

Time	Volume Removed Gals	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH (strips / meter)	Salinity Dissolved O^2 mg/l (sc 7/8/92)	Physical Characteristics Safety Procedures Readings (sc 7/8/92)
09:40	0	0	15	700	7.50 / 7.5	0	clear
09:59	23.0	1	13	700 (sc 7/8/92)	7.47 / 7.5	0	lt. gray, cloudy
10:22	46.0	2	14.5 (sc 7/8/92)	800	7.85 / 7.5	0	"
10:44	69.0	3	16	700	8.08 / 7	0	"
11:17	92.0 (sc 7/8/92) 102.2	4	* 20	800	8.25 / 7	0	"
11:27	115.0 (sc 7/8/92) 129.0	5	14	700	7.97 / 7	0	"
12:00	Start Sampling						

Form: WQFDS
Revised: 3/11/92

* pH measured with meter and also pH indicator strips to check meter accuracy

** Sample set out for several minutes before purge collected

WATER QUALITY FIELD DATA SHEET

Project: RFI PHASE I ADDITIONAL SAMPLING PROGRAM Date: 6/28/92 Samplers: Sarah Condran
Time Start: 08:40 .. Shawn Bradford
Well ID: S-36-90 Time Finish: 10:14

Well Information

Depth to Water: 205.98 ft. } TOC
* Measured Well Depth: ~230.26 ft.
Well construc. log 228.5
Sample Depth: 215 ft.
Borehole diameter 9"
Casing Diameter: 3.86 in.
Casing Volume: 31.9 gal
$V=(\pi R^2h-\pi r^2h).3+\pi r^2h$
Stickup: 2.5 ft (sc 6/25/92)
Screened Interval: 226 to 206 From G.S. (sc 6/25/92)
* Difficult to feel T.D. due to silt

Field Equipment

pH Meter: Cambridge Scientific Industries Serial No: 9107 Water Level Meter: Hazco 300' Serial No: 5893
E.C. Meter: YSI model 33 Serial No: 910-29348 Dissolved O_2 Meter: NA Serial No: NA
Pump: NA Serial No: NA Temperature Meter: thermometer YSI Model 33 Serial No: SAA (sc 6/25/92)
Bailing Rate: ~1.5 gal/min Filter Apparatus: NA Filters: NA
Bailer: 4" thick Sch 40 PVC Bailer 15' long x .25" I.D. (sc 6/28/92) ~3 gal. Size: .25" I.D. in x in
Purge Bailer Volume ~6.5 gal
Bailer: Dedicated PVC bailer Used to sample 3' long x .25" I.D. Size: .25" I.D. (sc 6/25/92)
~ (sc 6/25/92) Sample Bailer volume ~1.1 gal

Field Chemistry

Calibration: pH 7.00 = 7.00 @ 24 °C pH 10.00 = 10.00 @ 24 °C Time: 08:35

Conductance Standard: 1000 umhos/cm @ 25°C Reading: 1000 umhos @ 24°C Time: 08:35

Calibrated Conductivity: NA umhos/cm @ 25°C Diss. O^2: NA mg/l @ °C Time: NA

Time	Volume Removed Gals	Csng Vols	Temp. °C/°F	Elec. Conductivity umhos/cm @ °C	*pH	Salinity ‰ (~~Dissolved O^2 mg/l~~)	Physical Characteristics (~~Safety Procedures/ Readings~~ sc 6/26/92)
08:40	0	0	15/60	1030	7.79/7	~~0.03~~ 0.3 (sc 6/28/92)	clear
09:58	31.9	1	15/59	1480	7.63/7	~~0.03~~ 0.3	clear
09:20	63.8	2	15/59	1380	7.58/7	~~0.03~~ 0.3	CLEAR
09:41	95.7	3	15/58	1380 (sc 6/28/92)	7.54/7	~~0.03~~ 0.3	Clear
09:56	127.6	4	15/58	1490	7.63/7	~~0.03~~ 0.3	Clear
10:14	159.5	5	15/58	1490	7.64/7	~~0.03~~ 9 (sc 6/28/92)	clear
10:20	Start Sampling						

Form: WQFDS Revised: 8/11/88

* PH measured with meter/indicator strips to check meter
- Temperature measured with YSI Model 33 meter and thermometer for ~~initial~~ parameters to check meter (sc 6/25/92)

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI PHASE I ADDITIONAL SAMPLING PROGRAM
Date: 6/28/92
Samplers: Sarah Condran, Shawn Bradfield
Time Start: 1528
Time Finish: 1613
Well ID: S-37-90

Well Information

Depth to Water: 207.58 ft } TOC
Borehole Diameter 8
Casing Diameter: 3.86 in.
Stickup: 2.5 ft.
Well Depth: 226.5 ft }
Casing Volume: 22.9 gal
Screened Interval: 204 to 224
h = 18.92
Sample Depth: 214.5 ft. from G.S.

$V=(\pi R^2 h - \pi r^2 h).3 + \pi r^2 h$

Field Equipment

pH Meter: CAMBRIDGE SCIENTIFIC INDUSTRIES Serial No: 9107
Water Level Meter: HAZCO 300' Serial No: 5893
E.C. Meter: YSI MODEL 33 Serial No: 910029348
Dissolved O_2 Meter: NA Serial No: NA
Pump: NA Serial No: NA
Temperature Meter: YSI MODEL 33 Serial No: SAA
~~Pumping~~ Bailing Rate: 2-2.5 gal/min (sc 6/28/92)
Filter Apparatus: NA
Filters: NA
~~Tubing:~~ Bailer to purge sample volumes
Size: .25' ~~in~~ x 20 ~~ft~~ ~1.3 gal (sc 6/28/92)
Dedicated Bailer: to sampling
Size: 3' x .25' ~1.1 gal

Field Chemistry
SEE WELL S-36-90 SOLUTIONS ARE TOO HOT ~100°F TO CHECK METERS

Calibration: pH 7.00= ___ @ ___ °C · pH 10.00 = ___ @ ___ °C Time: ___

Conductance Standard: 1000 umhos/cm @ 25°C Reading: ___ umhos @ ___ °C Time: ___

Calibrated Conductivity: Not calc. umhos/cm @ 25°C Diss. O²: NA mg/l @ ___ °C Time: NA

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Salinity ‰ ~~Dissolved O²~~ ~~mg/l~~ (sc 6/28/92)	Physical Characteristics ~~Safety Procedures/ Readings~~ (sc 6/28/92)
1528	0	0	18	700	8.92/NA	~~0~~ 0 (sc 6/28/92)	lt. orange brown, silt in bottom
1533	22.9	1	15	700	8.66/NA	0	"
1542	45.8	2	15	700	7.56/7	0	"
1553	68.7	3	11.5	700	9.56/7	0	"
1602	91.6	4	15	700	7.78/7	0	"
1613	114.5	5	18	700	9.59/7	0	"
1631	Start sampling						

pH meter fluctuating believed due to heat

* pH measured with indicator strips to check meter due to heat

Form: WQFDS
Revised: 5/11/88

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI PHASE I ADDITIONAL SAMPLING PROGRAM
Date: 6/28/92
Time Start: 17:06
Time Finish: 17:12
Samplers: Sarah Condren, Shawn Bradfield
Well ID: S-38-90

Well Information

Borehole Diameter 8 in.
Depth to Water: 223.7 ft. } TOC
Well Depth: 233.60 ft. } TOC
Casing Diameter: 3.86 in.
Stickup: 2.5 ft.
Casing Volume: 1.2 gal
Screened Interval: 210.5 to 230.5
Sample Depth: 226 ft. G.S.

$h = 9.9'$

$V = (\pi R^2 h - \pi r^2 h).3 + \pi r^2 h$

Field Equipment

pH Meter: CAMBRIDGE SCIENTIFIC INDUSTRIES Serial No: 9107
Water Level Meter: HAZCO 300' Serial No: 5893
E.C. Meter: YSI MODEL 33 Serial No: 910024348
Dissolved O_2 Meter: NA Serial No: NA
Pump: NA Serial No: NA
Temperature Meter: YSI MODEL 33 Serial No: SAA
~~Pumping~~ Bailing Rate: 1.2 gal/min (SC 6/28/92)
Filter Apparatus: NA
Filters: NA
~~Tubing:~~ Bailer to Purge Sample volumes
Size: .25' ~7.3 gal ~~in~~ x 20 ~~ft~~ (SC 6/28/92)
Dedicated Bailer: for sampling
Size: 3' x .25' ~1.1 gal

Field Chemistry

Calibration: pH 7.00 = ____ @ ____ °C · pH 10.00 = ____ @ ____ °C Time: ____

Conductance Standard: 1000 umhos/cm @ 25°C Reading: ____ umhos @ ____ °C Time: ____

} SEE WELL S-36-90 Scrivener are TOC MCT to check calibrations

Calibrated Conductivity: Not calc. umhos/cm @ 25°C Diss. O_2: NA mg/l @ °C Time: NA

Time	Volume Removed Gals.	Volume Removed Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	*pH	Salinity ‰ ~~Dissolved O~~ mg/l (SC 6/28/92)	Physical Characteristics ~~Safety Procedures/ Readings~~ (SC 6/28/92)
1706	0	0	18	950	8.25/7.5	0	Clear
1712	~7	~.6	17	980	8.24/7.5	0	lt. gray
		Well bailed dry after 7 gals removed					
		Start sampling					

Form: WQFDS
Revised: 8/11/92

* pH measured with meter and / indicator strips to check meter due to high heat

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI PHASE I ADDITIONAL SAMPLING PROGRAM Date: 7/6/92 Samplers: Sarah Condren

Time Start: 16:24 ~~[illegible]~~ sc 7/6/92

Well ID: S-39-90 Time Finish: 17:27

Well Information

Borehole Diameter 8 in.

Depth to Water: 237.37 ft. TOC Casing Diameter: 3.86 in. Stickup: 2.5 ft.

Well Depth: 257.5 ft. Casing Volume: 24.3 gal Screened Interval: 235 to 255 TOC

Sample Depth: 245 ft. G.S. TD. From Well Construction Log $V=(\pi R^2h-\pi r^2h).3+\pi r^2h$

Field Equipment

pH Meter: CAMBRIDGE SCIENTIFIC INDUSTRIES Serial No: 9107 Water Level Meter: HAZCO 300' Serial No: 5893

E.C. Meter: YSI MODEL 33 Serial No: 910029348 Dissolved O_2 Meter: NA Serial No: NA

Pump: NA Serial No: NA Temperature Meter: YSI MODEL 33 Serial No: SAA

Bailing ~~Pumping~~ Rate: ___ gal/min Filter Appartus: NA Filters: NA

sc 6/28/92 ~~Tubing~~: Bailer to Purge Sample volumes Size: .25' W x 20' ~~ft~~ ~7.39 gal sc 6/28/92 Dedicated Bailer: for sampling sc 6/28/92 Size: 3' x .25' ~1.1 gal in

Field Chemistry

Calibration: pH 7.00 = 7.01 @ 27 °C pH 10.00 = ___ @ 27 °C Time: 15:54

Conductance Standard: 1000 umhos/cm @ 25°C Reading: 1050 umhos @ 27 °C Time: 15:52

Calibrated Conductivity: Not calc. umhos/cm @ 25°C Diss. O^2: NA mg/l @ ___ °C Time: NA

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	*pH	Salinity ‰ ~~Dissolved O²~~ ~~mg/l~~ sc 6/28/92	Physical Characteristics ~~Safety Procedures/ Readings~~ sc 6/28/92
1624	** 0	0	16	1290	8.23/7	0.6	lt yellow brown cloudy
1636	24.3	1	17	1400	7.54/7	0.7	brown silty
1646	48.6	2	15	1300	7.64/7	0.5	"
1656	72.9	3	15	1300	7.85/7.5	0.5	"
1707	97.2	4	16	1310	8.03/7.5	0.5	"
1715	121.5	5	14.5	1300	7.94/7.5	0.5	"
*** 1727	145.8	6	15	1300	7.77/7	0.5	lt. yellow brown, silty
1735	Begin Sampling						

Form: WQFDS Revised: 8/11/88

* pH also measured with indicator strips to check meter accuracy

** Removed ~18 gallons prior to collecting initial parameters while cleaning up the well

*** Removed an extra volume plus 18 gallons previously removed to assure that well was clean prior to sampling

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI PHASE I ADDITIONAL SAMPLING PROGRAM
Date: 6/30/92
Samplers: Sarah Condren, Shawn Bradfield
Time Start: 0807
Time Finish: 0906
Well ID: S-40-90

Well Information

Depth to Water: 257.55 ft TOC
Borehole Diameter 8 in.
Casing Diameter: 3.86 in.
Stickup: 2.5 ft.
* Well Depth: 273.45 ft TOC
Casing Volume: 19.2 gal
h = 15.9'
Screened Interval: 250.95 to 270.95 from G.S.
Sample Depth: 263 ft G.S.
* from well construction log

$V = (\pi R^2 h - \pi r^2 h) \cdot .3 + \pi r^2 h$

Field Equipment

pH Meter: CAMBRIDGE SCIENTIFIC INDUSTRIES Serial No: 9107
Water Level Meter: HAZCO 300' Serial No: 5593
E.C. Meter: YSI MODEL 33 Serial No: 910029348
Dissolved O_2 Meter: NA Serial No: NA
Pump: NA Serial No: NA
Temperature Meter: YSI MODEL 33 Serial No: SAA
Bailing ~~Pumping~~ Rate: ~1.5 gal/min SC 6/28/92
Filter Apparatus: NA
Filters: NA
~~Tubing:~~ Bailer to Purge Sample volumes SC 6/28/92 Size: .25' ~~in~~ x 20 ~~ft~~ ~2.3 gal SC 6/28/92
Dedicated Bailer: for sampling Size: 3' x .25' ~~in~~ ~1.1 gal

Field Chemistry

Calibration: pH 7.00 = 7.00 @ 14 °C   pH 10.00 = 9.96 @ 14 °C   Time: 07:45

Conductance Standard: 1000 umhos/cm @ 25°C   Reading: 500 umhos @ 13.5°C   Time: 07:45

Calibrated Conductivity: Not calc. umhos/cm @ 25°C   Diss. O_2: NA mg/l @ °C   Time: NA

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	*pH	Salinity ‰ ~~Dissolved O_2 mg/l~~ SC 6/28/92	Physical Characteristics ~~Safety Procedures/ Readings~~ SC 6/28/92
0807	0	0	10	500	8.56/7.5	0	lt. brown, silty
0815	19.2	1	11	800	8.54/7	0	"
0830	38.4	2	12	900	7.87/7	0	dk. brown, silty
0841	57.6	3	11	925	7.52/7	0	orange-brown, silty
0851	76.8	4	12	940	7.61/7	0	"
0906	96.0	5	12	930	7.9	0	"
0915	Start sampling						

Form: WQFDS
Revised: 8/11/93

* pH measured with meter/and indicator strips to check meter

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI PHASE 2 ADDITIONAL SAMPLING PROGRAM
Date: 6/25/92
Time Start: 10:39
Time Finish: 12:15
Samplers: Sarah Condran, Shawn Bradfield
Well ID: S-41-90

Well Information

Depth to Water: 291.58 ft TOC Casing Diameter: 3.86 in. (Borehole Diameter 8 in.) Stickup: 2.5 ft (well construction log)

Well Depth: 310 ft (-.5) Casing Volume: 25.3 gal Screened Interval: 307 to 286.5 (6.5)

Sample Depth: 299.5 ft (From well construction diagram, not be measured in field) h = 20.9 $V = (\pi R^2h - \pi r^2h) \cdot .3 + \pi r^2 h$

Field Equipment

pH Meter: Cambridge Scientific Industries Serial No: 9102 Water Level Meter: Hasco 300' Serial No: 5893

E.C. Meter: YSI Model 33 Serial No: 91D029398 Dissolved O_2 Meter: NA Serial No:

Pump: NA (Air Lift Compressor) Serial No: Sullair 750 Q Temperature Meter: YSI Model 33 Serial No: SAA

Pumping Rate: ~.5 gal/min Filter Appartus: 2 in line air filters Filters: on compressor

Tubing: ______ Size: ___ in x ___ in Bailer: Dedicated bailer for sampling Size: ___ in

Field Chemistry

See calibration for Well S-46-90..

Calibration: pH 7.00= ____ @ ____ °C pH 10.00 = ____ @ ____ °C Time: ____

Conductance Standard: ____ umhos/cm @ 25°C Reading: ____ umhos @ ___ °C Time: ____

Calibrated Conductivity: ____ umhos/cm @ 25°C Diss. O^2: ____ mg/l @ ___ °C Time: ____

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Salinity ‰ (~~Dissolved O^2 mg/l~~)	PHYSICAL CHARACTERISTICS (~~Safety Procedures/ Readings~~)
1039	0	0	18.5	1,980	8.80	1	Orange - brown, v. f. sand
1050	9	2.8	Removed ~ 9 gallons		Well is dry		
1215	Final Parameters		19	1,700	8.33	0.9	pale yellow - brown
1216	Begin Sampling						

Form: WQFDS
Revised: 3/11/91

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI PHASE I ADDITIONAL SAMPLING PROGRAM
Date: 6/24/92
Time Start: 12:05
Time Finish: 12:27
Samplers: Sarah Condran, Shawn Bradfield
Well ID: S-46-90

Well Information

Depth to Water: 20.95 ft. } TOC
Well Depth: 28.40 ft. }
Sample Depth: 24.7 ft. 22.2' Ground surface
Borehole Diameter 10 in
Casing Diameter: ~~4~~ 2.86 in. sc 6/24/92
Casing Volume: 12.2 gal
h = 7.45
Stickup: 2.00 ft.
Screened Interval: 25 to 15 ~28 - 18 ?
$V = (\pi R^2 h - \pi r^2 h) \cdot .3 + \pi r^2 h$

Field Equipment

pH Meter: Cambridge Scientific Industries Serial No: 9107
Water Level Meter: Hazco 300' Serial No: 5543
E.C. Meter: YSI model 33 Serial No: 91D029348 Dissolved O_2 Meter: NA Serial No:
Pump: NA Serial No:
Temperature Meter: YSI model 33 Serial No: SAA
Pumping Rate: gal/min Filter Appartus: Filters:
Tubing: Size: in x in Bailer: Dedicated PVC Bailer for sampling and purging Size: in

Field Chemistry sc 6/25/92

Calibration: pH 7.00 = 7.00 @ 17 °C pH 10.00 = 10.00 @ 17 °C Time: 12:04

Conductance Standard: 1000 umhos/cm @ 25°C Reading: 980 umhos @ 16°C Time: 12:04

Calibrated Conductivity: umhos/cm @ 25°C Diss. O^2: NA mg/l @ °C Time:

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	pH	Salinity ‰ (~~Dissolved O² mg/l NA~~) sc 6/24	Physical Characteristics (~~Safety Procedures/ Readings~~) sc 6/24/92
1205	0	0	19	12,000	7.12	8	pale yellow brown slightly cloudy
1227	12.2	1	19	12,000	7.38	8	pale brown, slightly cloudy
1234	~~24.4~~ sc 6/24/92	Well	bailed	dry after	~	17 gallons	removed
1510		Start Sampling					

Form: WQFDS
Revised: 8/11/92

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI PHASE I ADDITIONAL SAMPLING PROGRAM
Date: 7/8/92
Time Start: 15:37
Time Finish: 15:51
Samplers: Sarah Condran, ~~Shawn Bradford~~ sc 7/8/92, Mark Billman
Well ID: S-47-90

Well Information

Depth to Water: 101.55' ft } TOC
Borehole Diameter 10 in.
Casing Diameter: 3.86 in.
Stickup: 2.4 ft
measured 6/28/92 Well Depth: 116.8 ft
Casing Volume: 25.2 gal
Screened Interval: ~~95.3~~ 107.7 to 113.7 sc 7/8/92
Sample Depth: 107 ft.

$V=(\pi R^2h-\pi r^2h).3+\pi r^2h$

Field Equipment

pH Meter: CAMBRIDGE SCIENTIFIC INDUSTRIES Serial No: 9107
Water Level Meter: HAZCO 300' Serial No: 5893
E.C. Meter: YSI MODEL 33 Serial No: 91D029348
Dissolved O_2 Meter: NA Serial No: NA
Pump: NA Serial No: NA
Temperature Meter: YSI MODEL 33 Serial No: SAA
~~Pumping~~ Bailing Rate: ~ 2 gal/min
Filter Apparatus: NA
Filters: NA
sc 6/28/92 ~~Tubing~~: Bailer to Purge Sample volumes Size: .25' ~ gal ~~in~~ sc 6/28/92
Bailer: Dedicated for sampling sc 6/28/92 Size: 3' x .25' ~ 1.1 gal

Field Chemistry

Calibration: pH 7.00= ____ @ ____ °C pH 10.00 = ____ @ ____ °C Time: ____
Conductance Standard: 1000 umhos/cm @ 25°C Reading: ____ umhos @ ____ °C Time: ____
} See Well S-34-90
Calibrated Conductivity: Not calc. umhos/cm @ 25°C Diss. O^2: NA mg/l @ °C Time: NA

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	*pH	Salinity ‰ ~~Dissolved O~~ ~~mg/l~~ sc 6/28/92	Physical Characteristics ~~Safety Procedures/ Readings~~ sc 6/28/92
15:37	0	0	15	700	8.51/7	Not measured	lt yellow brown
15:46	18	0.7	14	700	Not meas/7	0	gray
1551	20	0.8	14	650	8.45/7	0	GRAY
	Well Bailed		Dry				
16:05	Start	Sampling					

Form: WQFDS
Revised: 8/11/92

* pH measured with meter and also pH indicator strips to check meter accuracy

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI PHASE I ADDITIONAL SAMPLING PROGRAM
Date: 7/8/92
Samplers: S CONDRAN / M. BILLMAN
Time Start: 09:20
Time Finish: 09:26
Well ID: S-48-90

Well Information

Depth to Water: 97.90 ft } TOC
Well Depth: 111.5 ft } TOC
Sample Depth: 102.5 ft G.S.
Borehole Diameter 10 in
Casing Diameter: 3.86 in
Casing Volume: 22.4 gal
h = 13.6
$V = (\pi R^2 h - \pi r^2 h).3 + \pi r^2 h$
Stickup: 2.2 ft
Screened Interval: 100 to 110 G.S.

Field Equipment

pH Meter: Cambridge Scientific Serial No: 9107
Water Level Meter: Hegcn 300' Serial No: 5893
E.C. Meter: YSI Model 33 Serial No: 91D029348
Dissolved O_2 Meter: NA Serial No: NA
Pump: NA Serial No: NA
Temperature Meter: YSI Model 33 Serial No: SAA
~~Pumping~~ Bailing Rate: ~2.7 gal/min
Filter Apparatus: NA
Filters: NA
~~Tubing~~ Bailer to Purge Size: .25' I.D. x 10' = 3.67 gal.
Dedicated Bailer for Sampling Size: 3' x .25' I.D. = 1.1 gal.
sample ...

Field Chemistry

Calibration: pH 7.00 = 7.00 @ 24 °C · pH 10.00 = 9.94 @ 24 °C Time: 09:18

Conductance Standard: 1000 umhos/cm @ 25°C Reading: 1010 umhos @ 24 °C Time: 09:18

Calibrated Conductivity: Not Calculated umhos/cm @ 25°C Diss. O²: NA mg/l @ °C Time: NA

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	meter/strips * pH	Salinity ~~Dissolved O²~~	Physical Characteristics ~~Safety Procedures Readings~~
09:20	0	0	14.5	700	8.35/7	0.01	Clear
09:26	16	0.7	13	700	8.13/7		Cloudy
		Well bailed dry after ~16 gals removed					
09:35		start sampling					

Form: WQFDS
Revised: 8/11/88

* pH measured with meter and also pH indicator strips to check meter accuracy

WATER QUALITY FIELD DATA SHEET

Project: TEAD-S RFI PHASE I ADDITIONAL SAMPLING PROGRAM
Date: 7/9/92
Time Start: 10:02
Time Finish: 10:09
Samplers: S. CONDRAN, M. BILLMAN
Well ID: S-49-90

Well Information

Depth to Water: 97.96 ft } TOC
Well Depth: 110.0 ft } TOC
Sample Depth: 102 ~~200~~ ft SC 7/9/92
Borehole Diameter 10 in
Casing Diameter: 3.86 in.
Casing Volume: 19.9 gal
h = 12.04
$V = (\pi R^2 h - \pi r^2 h).3 + \pi r^2 h$
Stickup: 2.2 ft
Screened Interval: 99 to 109 G.S.

Field Equipment

pH Meter: Cambridge Scientific Serial No: 9107 Water Level Meter: Hegen 300' Serial No: 5893
E.C. Meter: YSI Model 33 Serial No: 91D02934B Dissolved O_2 Meter: NA Serial No: NA
Pump: NA Serial No: NA Temperature Meter: YSI Model 33 Serial No: SAA
Bailing ~~Pumping~~ Rate: ≈ 2.3 gal/min Filter Appartus: NA Filters: NA
~~Tubing~~ Bailer to purge Size: .25' I.D. x 10' = 3.67 gal. Dedicated Bailer for sampling Size: 3' x .25' I.D. = 1.1 gal.
SC 7/8/92 sample volume

Field Chemistry

Calibration: pH 7.00= ____ @ ____ °C pH 10.00 = ____ @ ____ °C Time: ____
Conductance Standard: ____ umhos/cm @ 25°C Reading: ____ umhos @ ____ °C Time: ____
} SEE WELL S-48-90
Calibrated Conductivity: Not Calculated umhos/cm @ 25°C Diss. O^2: NA mg/l @ °C Time: NA

Time	Volume Removed Gals.	Csng Vols	Temp. °C	Elec. Conductivity umhos/cm @ °C	meter/strips * pH	Salinity ~~Dissolved O^2 mg/l~~	Physical Characteristics ~~Safety Procedures Readings~~
10:02	0	0	15	400	8.27/7	0.01	Slightly cloudy
10:09	16	.8	13.5	300	8.05/7	0	"
	Well	bailed	dry after	16 gals	removed		
10:20	Start	sampling					

Form: WDF09 Revised: 8/11/88

* pH measured with meter and also pH indicator strips to check meter accuracy