SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/24/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MRS/JNT

Well ID: ~~MW-23~~ 24 JNT
Sampling Zone No.: 5
Starting Time: 1009

Depth (ft.): ~~542~~ 678 JNT
Finishing Time: 1130

Water Pressure Inside MP Casing -
Beginning of Session: 170.25
End of Session: 168.12

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	170.25	✓	208.88	✓	208.88	✓	✓	170.25	1045	8.69	-10	20.0	0.329
2	✓	✓	✓	✓	✓	✓	170.17	✓	208.88	✓	208.88	✓	✓	170.17					
3	✓	✓	✓	✓	✓	✓	168.11	✓	208.88	✓	208.88	✓	✓	168.12					
4																			
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12																			

Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 3.5L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/24/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JWT

Well ID: MW-24
Depth (ft.): ~~445~~ 554
Sampling Zone No.: 4
Starting Time: 1137
Finishing Time: 1242

Water Pressure Inside MP Casing - Beginning of Session: 116.15
End of Session: 114.04

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	116.15	✓	156.65	✓	156.66	✓	✓	116.14	1209	9.48	Ø	25.5	0.281
2	✓	✓	✓	✓	✓	✓	116.10	✓	156.65	✓	156.65	✓	✓	116.10					
3	✓	✓	✓	✓	✓	✓	114.03	✓	156.64	✓	156.65	✓	✓	114.04					
4																			
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11																			
12																			

Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 3.5L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/24/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JNT

Well ID: MW-24
Depth (ft.): ~~319~~ 435
Sampling Zone No.: 3
Starting Time: 1255
Finishing Time: 1335

Water Pressure Inside MP Casing - Beginning of Session: 64.19
End of Session: 62.14

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	64.19	✓	106.02	✓	106.02	✓	✓	64.18	1320	9.58	999	23.7	0.327
2	✓	✓	✓	✓	✓	✓	62.13	✓	106.01	✓	106.02	✓	✓	62.14					
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Notes: NO NOTICABLE ODOR, SLIGHT YELLOW TINT

Total Volume: 2.0L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/24/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MEG/JNT

Well ID: MW-24
Depth (ft.): ~~284~~ 373
Sampling Zone No.: 2
Starting Time: 1343
Finishing Time: 1408

Water Pressure Inside MP Casing - Beginning of Session: 38.10
End of Session: 38.10

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	38.10	✓	78.68	✓	78.68	✓	✓	38.10	1400	9.05	1	25.2	0.419
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10																			
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Notes: NO ODOR, SLIGHT YELLOW TINT
(1) RUN, 8 BOTTLES = 2.0L

Total Volume: 2.0 L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/24/07

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES / JWT

Well ID: MW-24
Depth (ft.): ~~174~~ 279'
Sampling Zone No.: 1
Starting Time: 1418
Finishing Time: 1519

Water Pressure Inside MP Casing - Beginning of Session: 14.23
End of Session: 14.26

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	14.23	✓	36.86	✓	36.86	✓	✓	14.26	1440	8.89	Ø	25.5	0.420
2	✓	✓	✓	✓	✓	✓	14.25	✓	36.87	✓	36.87	✓	✓	14.27					
3	✓	✓	✓	✓	✓	✓	14.24	✓	36.85	✓	36.88	✓	✓	14.26					
4																			
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10																			
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12																			

Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 4.5L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/25/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JWT

Well ID: MW-11 Depth (ft.): 149
Sampling Zone No.: 1
Starting Time: 1209 Finishing Time: 1225

Water Pressure Inside MP Casing - Beginning of Session: 14.14
End of Session: 14.16

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	14.14	✓	24.40	✓	24.35	✓	✓	14.16	1220	8.87	0	20.2	.451
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10																			
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12																			

Notes: (1) RUN, 8 BOTTLES
NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/25/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JWT

Well ID: MW-11
Sampling Zone No.: 5
Starting Time: ~~0908~~ JWT 0954
Depth (ft.): 639
Finishing Time: 1038

Water Pressure Inside MP Casing -
Beginning of Session: 174.05
End of Session: 171.46

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	174.05	✓	215.51	✓	215.31	✓	✓	174.05	10:14	9.35	23	17.6	0.274
2	✓	✓	✓	✓	✓	✓	171.45	✓	215.46	✓	215.41	✓	✓	171.46					
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10																			
11																			
12																			

Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 1.75L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/25/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES / JNT

Well ID: MW-11
Sampling Zone No.: 4
Starting Time: 0908

Depth (ft.): 524
Finishing Time: 0945

Water Pressure Inside MP Casing - Beginning of Session: 125.51
End of Session: 125.52

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	125.51	✓	171.71	✓	171.61	✓	✓	125.52	0930	8.90	27	16.2	0.232
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10																			
11																			
12																			

Notes: NO NOTICABLE COLOR OR ODOR
(8) BOTTLES, 1 RUN

Total Volume: 2.0L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/25/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MBS/JNT

Well ID: MW-11
Sampling Zone No.: 3
Starting Time: 1051
Depth (ft.): 429
Finishing Time: 1121

Water Pressure Inside MP Casing - Beginning of Session: 83.39
End of Session: 81.35

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	83.39	✓	129.96	✓	129.83	✓	✓	83.39	1100	9.00	27	18.0	0.320
2	✓	✓	✓	✓	✓	✓	81.33	✓	129.94	✓	129.85	✓	✓	81.35					
3																			
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10																			
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Notes: DUAL COLLARS AT PORT.
NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/25/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JST

Well ID: MW-11
Sampling Zone No.: 2
Starting Time: 1132

Depth (ft.): 259
Finishing Time: 1200

Water Pressure Inside MP Casing - Beginning of Session: 14.16
End of Session: 14.20

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	14.16	✓	58.02	✓	57.99	✓	✓	14.20	1153	9.09	28	19.2	0.367
2	✓	✓	✓	✓	✓	✓	14.16	✓	57.98	✓	57.94	✓	✓	14.20					
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11																			
12																			

Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/28/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JNT

Well ID: MW-22
Sampling Zone No.: 5
Starting Time: 1100

Depth (ft.): 588
Finishing Time: 1151

Water Pressure Inside MP Casing - Beginning of Session: 136.04
End of Session: 133.43

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	136.04	✓	183.20	✓	183.20	✓	✓	136.05	1130	8.24	27	17.2	0.290
2	✓	✓	✓	✓	✓	✓	133.43	✓	183.19	✓	18320	✓	✓	133.43					
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9																			
10																			
11																			
12																			

Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 1.75L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/28/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JAT

Well ID: MW-22
Sampling Zone No.: 4
Starting Time: 1205

Depth (ft.): 467
Finishing Time: 1258

Water Pressure Inside MP Casing - Beginning of Session: 83.37
End of Session: 81.23

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	83.33	✓	132.10	✓	132.11	✓	✓	83.34	1230	9.10	622	17.1	0.305
2	✓	✓	✓	✓	✓	✓	81.25	✓	132.11	✓	132.10	✓	✓	81.23					
3																			
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7																			
8																			
9																			
10																			
11																			
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Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/28/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JWT

Well ID: MW-22
Sampling Zone No.: 3
Starting Time: 1311

Depth (ft.): 389
Finishing Time: 1343

Water Pressure Inside MP Casing - Beginning of Session: 49.26
End of Session: 47.18

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	49.26	✓	99.61	✓	99.60	✓	✓	49.26	1330	8.94	90	16.9	0.430
2	✓	✓	✓	✓	✓	✓	47.18	✓	99.61	✓	99.60	✓	✓	47.18					
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12																			

Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/28/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/SWT

Well ID: MW-22
Sampling Zone No.: 2
Starting Time: 1355

Depth (ft.): 329
Finishing Time: 1430

Water Pressure Inside MP Casing - Beginning of Session: 23.01
End of Session: 20.95

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	23.01	✓	73.40	✓	73.40	✓	✓	23.01	1415	8.91	4	17.0	0.509
2	✓	✓	✓	✓	✓	✓	20.95	✓	73.38	✓	73.39	✓	✓	20.95					
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10																			
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Notes: No NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 1/28/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/LWT

Well ID: MW-22
Sampling Zone No.: 1
Starting Time: 1440

Depth (ft.): 245

Finishing Time: _____

Water Pressure Inside MP Casing - Beginning of Session: 14.10
End of Session: 14.10

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	14.10	✓	35.05	✓	35.05	✓	✓	14.10	1500	8.30	25	16.2	1.20
2	✓	✓	✓	✓	✓	✓	14.10	✓	35.05	✓	35.07	✓	✓	14.10					
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9																			
10																			
11																			
12																			

Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.25L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 2/5/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MGS/JMT/TAM

Well ID: MW-4
Sampling Zone No.: 5
Starting Time: 1047
Depth (ft.): 513
Finishing Time: 11:39

Water Pressure Inside MP Casing - Beginning of Session: 139.10
End of Session: 137.05

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	139.10	✓	190.40	✓	190.4	✓	✓	139.11	1123	6.85	15	19.0	.390
2	✓	✓	✓	✓	✓	✓	137.05	✓	190.40	✓	190.39	✓	✓	137.05					
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12																			

Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0 L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 2/5/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: JNT/TAM/MGS

Well ID: MW-4
Sampling Zone No.: 4
Starting Time: 1149

Depth (ft.): 392
Finishing Time: 1248

Water Pressure Inside MP Casing - Beginning of Session: 86.25
End of Session: 84.22

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	86.25	✓	138.04	✓	138.04	✓	✓	86.25	1236	7.12	29	20.1	.412
2	✓	✓	✓	✓	✓	✓	84.27	✓	138.01	✓	138.02	✓	✓	84.22					
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8																			
9																			
10																			
11																			
12																			

Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.0L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 2/5/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JUT/TAM

Well ID: MW-4
Sampling Zone No.: 3
Starting Time: 1300

Depth (ft.): 322
Finishing Time: 1356

Water Pressure Inside MP Casing - Beginning of Session: 55.63
End of Session: 54.09

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	55.63	✓	107.89	✓	107.90	✓	✓	55.64	1331	6.36	29	22.2	.403
2	✓	✓	✓	✓	✓	✓	55.64	✓	107.88	✓	107.89	✓	✓	55.60					
3	✓	✓	✓	✓	✓	✓	54.09	✓	107.88	✓	107.90	✓	✓	54.09					
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11																			
12																			

Notes: NO ODOR, BUT AN ORANGE-ISH TINT TO THE WATER

Total Volume: 3.75L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 2/5/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JWT/TAM

Well ID: MW-4
Sampling Zone No.: 2
Starting Time: 1406
Depth (ft.): 240'
Finishing Time: 1609

Water Pressure Inside MP Casing - Beginning of Session: 19.74
End of Session: 18.60

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	19.74	✓	72.08	✓	72.09	✓	✓	19.74	1454	6.76	13	21.9	.695
2	✓	✓	✓	✓	✓	✓	19.73	✓	72.09	✓	72.09	✓	✓	19.73					
3	✓	✓	✓	✓	✓	✓	19.70	✓	72.10	✓	72.09	✓	✓	19.68					
4	✓	✓	✓	✓	✓	✓	19.70	✓	72.08	✓	72.09	✓	✓	19.65					
5	✓	✓	✓	✓	✓	✓	19.60	✓	72.08	✓	72.08	✓	✓	19.62					
6	✓	✓	✓	✓	✓	✓	18.60	✓	72.09	✓	72.10	✓	✓	18.60					
7	✓	✓																	
8																			
9																			
10																			
11																			
12																			

Notes: NO ODOR, BUT ORANGE IN COLOR

Total Volume: 8.5L

SOTA Environmental Technology, Inc.

Groundwater Sampling

Field Data Sheet for Multi-Port Well

Date: 2/5/02

Project Name: JPL Pasadena
Project No: 00HW019
Personnel: MES/JST/TRM

Well ID: MW-4
Sampling Zone No.: 1
Starting Time: 1620

Depth (ft.): 150
Finishing Time: 1647

Water Pressure Inside MP Casing - Beginning of Session: 14.17
End of Session: 14.20

Run No.	Surface Function Checks					Position Sampler	Sample Collection Checks								Water Quality Parameters				
	Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Deactivate Set Arm Locate Port	Pressure in MP	Shoe out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mmhos)
1	✓	✓	✓	✓	✓	✓	14.17	✓	33.67	✓	33.67	✓	✓	14.18	1638	6.43	Ø	19.4	.348
2	✓	✓	✓	✓	✓	✓	14.18	✓	33.66	✓	33.66	✓	✓	14.20					
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Notes: NO NOTICABLE COLOR OR ODOR

Total Volume: 2.25L

SOTA Environmental Technology, Inc.

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena
Project No: 00HW019
Date: 1/29/02
Personnel: MES/JNT

Well ID: MW-13
Equipment: GRUNDFOS REDI-FLO
Contractor: SOTA ENV.

	Before	Reference Point	After
Depth to Water (ft.)	206.07	TOC	206.1'
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)	NM		

TD = 275'

Depth of Well (ft.) 275'
Diameter of Casing (ft.) 4"
Water Column Height (ft.) 68.93

0.653 Casing Volume (gal.) = π(Casing Diam.[ft.]/2)^2 (Water Column Ht.[ft.]) 7.48 gal./ft^3) = 45 gal
Casing Volumes Purged 3

Total Volume Purged (gal.) 135 gal.

Time	pH #	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
1220					1	START - WATER TURBID YELLOW
1223	6.60	37	18.8	0.540	1	3 gal " "
1230	5.52	18	20.9	0.624	1	10 gal - CLEAR
~~1235~~ 1240	4.86	7	21.8	0.539	1	20 gal - CLEAR
1250	4.79	0	22.2	0.522	1	30 gal - CLEAR
1300	4.63	1	22.2	.520	1	40 GAL - CLEAR
1310	4.54	0	22.3	.516	1	50 GAL - CLEAR
1320	4.55	5	22.3	0.525	1	60 gal. - CLEAR
1330	4.44	7	22.3	0.567	1	70 gal.
1340	4.45	10	22.3	0.519	1	80 gal.
1350	4.42	6	22.3	0.505	1	90 gal
1400	4.39	2	21.9	0.507	1	100 gal.
1410	4.33	0	21.7	0.503	1	110 gal.
1420	4.29	0	21.6	0.501	1	120 gal.
1430	4.36	0	21.2	0.500	1	130 gal.
1435	4.30	2	21.3	0.502	1	135 gal.

Notes: SAMPLE COLLECTED @ 1435 # PH BULB BROKEN - OBSERVED @ FINISH

SOTA Environmental Technology, Inc.

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena
Project No: 00HW019
Date: 1/29/02
Personnel: MES/JNT

Well ID: MW-16
Equipment: REDI-FLO (GRUNDFOS)
Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	259.78	TOC	259.8
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 285'
Diameter of Casing (ft.) 4"
Water Column Height (ft.) 25.22'
Casing Volume (gal.) = π(Casing Diam.[ft.]/2)^2 (Water Column Ht.[ft.]) 7.48 gal./ft^3) = 16.5
Casing Volumes Purged 3
Total Volume Purged (gal.) 50

Time	pH*	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
15:17						START
15:22	*	2	18.9	0.501	2	10 gal. – CLEAR
15:25						PUMP SHUT OFF – OVERLOAD
15:33						PUMP ON
15:37		2	22.1	0.433	2	20 gal. – CLEAR
15:43						PUMP SHUT OFF 30 gal. – OVERLOAD
15:51						PUMP ON 1.5 gpm
15:52	*	2	21.6	0.423	1.5	32 gal. – CLEAR
15:57	*	0	21.6	0.424	1.5	40 gal – CLEAR
16:03	*	1	22.0	0.424	1.5	50 gal. – CLEAR

Notes: * pH BULB BROKEN SAMPLED @ 1604

SOTA Environmental Technology, Inc.

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena
Project No: 00HW019
Date: 1/30/02
Personnel: MES/JNT

Well ID: MW-10
Equipment: GRUNDFOS REDIFLO
Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	111.22	TOC	111.22
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 155'
Diameter of Casing (ft.) 4"
Water Column Height (ft.) 43.78'
Casing Volume (gal.) = π(Casing Diam.[ft.]/2)^2 (Water Column Ht.[ft.]) 7.48 gal./ft^3) = 28.5 gal x3=86
Casing Volumes Purged 3
Total Volume Purged (gal.)

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
13:04						START PUMP @ 2gpm RED-BROWN TURBID
13:07	6.01	-10	19.9	1.32	2	6gal. — CLEAR
13:14	6.03	-10	19.8	1.32		20 gal. - CLEAR
13:19	6.01	-10	20.1	1.31		30 gal. - CLEAR
13:24	6.02	-10	20.0	1.32		40 gal. - CLEAR
13:29	6.02	-10	20.0	1.32		50 gal. - CLEAR
13:34	6.02	-3	20.2	1.32		60 gal.- CLEAR
13:39	6.02	-10	20.2	1.32		70 gal- CLEAR
13:44	6.03	0	20.1	1.31		80 gal.- CLEAR
13:47	6.03	-10	20.2	1.32		86 gal- CLEAR

Notes: SAMPLE COLLECTED @ 13:47

SOTA Environmental Technology, Inc.

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena
Project No: 00HW019
Date: 1/30/02
Personnel: MES/JNT

Well ID: MW-5
Equipment: GRUNDFOS REDI FLO
Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	97.03'	TOC	97.03
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 140'
Diameter of Casing (ft.) 4"
Water Column Height (ft.) 42.97'
Casing Volume (gal.) = π(Casing Diam.[ft.]/2)^2 (Water Column Ht.[ft.]) 7.48 gal./ft^3) = 28 gal
Casing Volumes Purged 3
Total Volume Purged (gal.) ~~84~~ 86 gal

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
9:27					5	PUMP ON FOR 1 MIN.
9:28					3	
9:31	6.04	69	13.2	0.582		11 gal - TURB. ORANGE
9:35	6.16	-10	15.1	0.525		23 gal - CLEAR
9:38	6.10	-10	15.1	0.501		29 gal - CLEAR
9:43	6.05	-10	15.3	0.488		44 gal
9:48	6.09	-10	14.9	0.575		59 gal
9:52	6.18	-10	15.5	0.535		71 gal
9:55	6.13	-10	15.7	0.534		80 gal
9:57						SAMPLED

Notes: -10 FOR TURB. = OUT OF RANGE

SOTA Environmental Technology, Inc.

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena
Project No: 00HW019
Date: 2/1/02
Personnel: MES / JNT

Well ID: MW-15
Equipment: GRUNDFOS REDI FLO
Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	28.90	TOC	28.90
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 74'
Diameter of Casing (ft.) 4"
Water Column Height (ft.) 45.1'
Casing Volume (gal.) = π(Casing Diam.[ft.]/2)^2 (Water Column Ht.[ft.]) 7.48 gal./ft^3) = 29.5 gal x3 = 88.5
Casing Volumes Purged 3
Total Volume Purged (gal.) 90 gal.

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
847						START PUMP @ 3gpm
849	6.30	6	14.2	0.575	3	6 gal - CLEAR
853	6.39	-1	14.9	0.543		18 gal - CLEAR
857	6.37	0	15.1	0.550		30 gal.
903	6.35	2	15.3	0.549		48 gal.
907	6.33	-2	15.8	0.543		60 gal.
912	6.36	0	15.6	0.547		75 gal
917	6.37	0	15.7	0.548		90 gal.

Notes: SAMPLED @ 917

SOTA Environmental Technology, Inc.

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena
Project No: 00HW019
Date: 2/1/02
Personnel: MGS/SNT

Well ID: MW-6
Equipment: GRUNDFOS REDIFLO
Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	199.50	TOC	199.50
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 245'
Diameter of Casing (ft.) ~~245'~~ 4"
Water Column Height (ft.) 45.5'
Casing Volume (gal.) = π(Casing Diam.[ft.]/2)^2 (Water Column Ht.[ft.]) 7.48 gal./ft^3) = 30 gal
Casing Volumes Purged 3
Total Volume Purged (gal.) 90 gal.

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
946						START PUMP @ 2 gpm
950	6.05	338	17.7	1.16	2	8 gal. - WHITE CLOUDY TURBID *
954	6.02	12	17.1	1.20		16 gal - CLEAR *
959	5.97	14	17.4	1.18		26 gal - CLEAR
1001	5.98	16	17.9	1.18		30 gal - CLEAR
1006	6.00	~~20~~ 13	17.2	1.17		40 gal. - CLEAR
1011	6.02	11	17.1	1.18		50 gal. - CLEAR
1016	6.07	14	17.3	1.17		60 gal. - CLEAR
1021	6.02	13	16.9	1.17		70 gal. - CLEAR
1026	6.10	14	15.8	1.17		80 gal. - CLEAR
1031	6.05	14	16.2	1.16		90 gal. - CLEAR

Notes: SAMPLED @ 1031
* PURGE WATER EFFERVESCING

SOTA Environmental Technology, Inc.

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena
Project No: 00HW019
Date: 2/4/02
Personnel: MES/JWT

Well ID: MW-9
Equipment: GRUNDFOS REDIFLO
Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	18.43'	TOC	
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 68'
Diameter of Casing (ft.) 4"
Water Column Height (ft.) 49.57

Casing Volume (gal.) = π(Casing Diam.[ft.]/2)^2 (Water Column Ht.[ft.]) 7.48 gal./ft^3) = 32 gal

Casing Volumes Purged 3

Total Volume Purged (gal.) 98 gal

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
1345					2	START PUMP @ 2gpm
1347	6.26	3	18.0	0.423		4 gal. - CLEAR
1350	6.24	1	17.9	0.420		10 gal.
1355	6.19	-1	18.0	0.417		20 gal.
1400	6.12	-1	18.0	0.417		30 gal.
1405	6.12	3	18.1	0.415		40 gal.
1410	6.07	0	17.8	0.412		50 gal.
1415	6.05	-1	17.8	0.413		60 gal.
1420	6.03	0	17.7	0.414		70 gal.
1425 ~~1430~~	5.96	0	17.8	0.417		80 gal.
1430 ~~1435~~	6.00	0	17.8	0.418		90 gal
1434 ~~1440~~	5.98	0	17.8	0.418		98 gal

Notes: SAMPLED @ ~~1440~~ 1434 hr

SOTA Environmental Technology, Inc.

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena
Project No: 00HW019
Date: ~~2/2~~ 2/4/02
Personnel: MES/JNT

Well ID: MW-1
Equipment: GRUNDFOS REDI FLO
Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	22.66'	TOC	22.66'
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 120'
Diameter of Casing (ft.) 4"
Water Column Height (ft.) 97.34'

Casing Volume (gal.) = π(Casing Diam.[ft.]/2)^2 (Water Column Ht.[ft.]) 7.48 gal./ft^3) = 64 gal.

Casing Volumes Purged 3

Total Volume Purged (gal.) 192 gal.

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
1128						START PUMP @ 3 gpm
1130	6.78	0	15.2	0.481	3	6 gal. - CLEAR
1134	6.77	-1	15.2	0.476	~~18~~ 3 gpm	18 gal.
1138	6.80	-2	15.2	0.472	3	30 gal.
1143	6.79	-2	15.2	0.471	3	45 gal.
1148	6.83	-2	15.2	0.470	3	60 gal.
1153	6.85	-2	15.3	0.469	3	75 gal
1158	6.86	-2	15.2	0.470	3	90 gal.
1203	6.86	-2	15.3	0.469	3	105 gal.
1208	6.80	-2	15.3	0.465	3	120 gal.
1213	6.80	-2	15.2	0.465	3	135 gal.
1218	6.83	-2	15.2	0.465	3	150 gal.
1223	6.75	-2	15.2	0.466	3	165 gal.
1228	6.78	-2	15.2	0.464	3	190 gal.

Notes: SAMPLED @ 1230

SOTA Environmental Technology, Inc.

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena
Project No: 00HW019
Date: 2/6/02
Personnel: MES/JRT/TAM

Well ID: MW-8
Equipment: GRUNDFOS REDI-FLO
Contractor: SOTA

	Before	Reference Point	After
Depth to Water (ft.)	161.10'	TOC	161.10
Depth to Sediment (ft.)	NM		
Thickness of Sediment (ft.)			

Depth of Well (ft.) 205'
Diameter of Casing (ft.) 4"
Water Column Height (ft.) 43.9'

Casing Volume (gal.) = π(Casing Diam.[ft.]/2)^2 (Water Column Ht.[ft.]) 7.48 gal./ft^3) = 29 gal

Casing Volumes Purged 3

Total Volume Purged (gal.) 90 gal.

Time	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (µmhos)	Pump Rate (gpm)	Comments
~~1039~~						
1043						PUMP START @ 1.5 gpm
1047	6.13	13	18.3	0.470	1.5	6 gal. - CLEAR/NO ODOR
1055	6.27	2	18.8	0.476		18 gals
1101	6.32	0	18.8	0.476		27 gal.
1107	6.33	0	18.4	0.472		36 gal
1113	6.32	0	18.3	0.470		45 gal.
1119	6.36	-1	18.3	0.471		54 gal
1125	6.34	-1	18.3	0.472		63 gal
1131	6.34	-2	18.1	0.470		72 gal.
1137	6.34	-1	18.2	0.471		81 gal
1143	6.33	0	18.2	0.471		90 gal.

Notes: WELL SAMPLED @ 1144

SOTA Environmental Technology, Inc.

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: JPL Pasadena
Project No: 00HW019
Date: 2/22/02
Personnel: MES

Well ID: MW-7
Equipment: SUBMERSIBLE PUMP 3½" GRUNDFOS REDIFLO *
Contractor: SOTA ENVIR. TECH.

	Before	Ref. Point	After
Depth to Water (ft.)			
Depth to Sediment (ft.)			
Thickness of Sediment (ft.)			

* SEE NOTES

Depth of Well (ft.) 275'
Diameter of Casing (ft.) 4"
Water Column Height (ft.) ~50' * SEE NOTES

Casing Volume (gal.) = π(Casing Diam.[ft.]/2)^2 (Water Column Ht.[ft.]) 7.48 gal./ft^3) = 33 gal.

Casing Volumes Purged 3 * SEE NOTES

Total Volume Purged (gal.) 103 gal.

Time	Pump Rate (gpm)	Volume Purged (gal.)	pH	Turbidity (NTU)	Temperature (°C)	Conductivity (mS/cm)	Comments
1127	4.8	5	7.82	-1	20.1	0.441	WATER IS CLEAR NO ODOR
1130	4.9	19	7.85	0	19.9	0.440	
1133		34	7.92	27	19.9	0.440	
1136		49	7.86	-1	19.9	0.441	
1139		64	7.87	0	19.8	0.441	
1142		78	7.90	0	19.8	0.441	
1145		93	7.86	-1	19.7	0.442	
1147		103	7.89	0	19.7	0.441	

Notes: * WELL HEAD NOT ACCESSIBLE FOR WATER LEVEL MEASUREMENTS DUE TO PILOT TREATMENT SYSTEM INSTALLATION. WATER LEVEL ESTIMATED BASED ON PREVIOUS MEASUREMENTS FOR CALCULATING PURGE VOLUME.