APPENDIX A

WELL SAMPLING LOG FORMS FOR SHALLOW WELLS AND GROUNDWATER SAMPLING FIELD DATA SHEETS FOR DEEP MULTI-PORT WELLS

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 5

GEOFON INCORPORATED
22632 Golden Springs Dr., Suite 270
Diamond Bar, CA 91765
Telephone: (909) 396-7662
Fax: (909) 396-1455

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-12812
Navy Contract No.: N68711-01-D-6008, D.O. No. 0012
Sampled By: Marco M. & J. Jones
Date: 8/16/04
Weather: Cool & cloudy

PURGE VOLUME CALCULATION (casing volume):

(140 - 68.10) X 4^2 X 3 X 0.0408 = 140.81 Gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE METHOD **PUMP INTAKE SETTING**

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (º C)	ORP (mV)	Comments
0648	68.10	0	5.43	32.2	28.5	5.8	16.5	275	Light yellow in color and odorless
0659		27.5	5.93	27.2	7.92	6.0	16.5	258	Clear and odorless
0710		55	6.16	27.1	3.27	5.8	16.7	259	
0721		82.5	6.38	27.0	1.79	5.8	16.8	255	
0732		110	6.44	27.1	1.56	6.0	17.1	259	
0743		137.5	6.80	27.2	1.72	6.0	17.6	251	
0745	68.10	145	6.82	27.1	1.45	5.8	17.8	253	

Total Purge Volume: 145 (Gallons)

Total Discharge: 3.11 (Casing Volumes)

Approx. Purge Rate: 2.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at 0626 Purge time start: 0648 Control Box: 260

Clear and odorless

RECHARGE BEHAVIOR: **X** Fast recharging
Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source /)***
Sample ID: MW- 5	Sample ID: Dupe-5-3Q04	Type:	Type:
Sample Time: 0750	Sample Time: ------	Sample ID:	Sample ID:
No. of Containers: 5	No. of Containers: 5	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 6

GEOFON INCORPORATED
22632 Golden Springs Dr., Suite 270
Diamond Bar, CA 91765
Telephone: (909) 396-7662
Fax: (909) 396-1455

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-12812
Navy Contract No.: N68711-01-D-6008, D.O. No. 0012
Sampled By: Marco M. & J. Jones
Date: 8/16/04
Weather: Hot & sunny

PURGE VOLUME CALCULATION (casing volume):

(245 - 177.70) X 4^2 X 3 X 0.0408 = 131.80 Gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE METHOD **PUMP INTAKE SETTING**

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (º C)	ORP (mV)	Comments
1237	177.70	0	7.72	61.0	11.5	7.1	23.7	261	
1250		26	7.13	59.1	8.45	6.8	23.0	254	
1303		52	7.57	59.6	5.49	6.8	22.7	241	
1316		78	7.69	59.1	2.28	6.1	22.9	243	
1329		104	7.69	59.5	1.71	7.0	22.9	243	
1342		130	7.74	60.0	1.94	6.2	22.6	238	
1343	177.70	132	7.66	59.7	2.43	5.9	23.7	239	

Total Purge Volume: 132 (Gallons)

Total Discharge: 3.00 (Casing Volumes)

Approx. Purge Rate: 2.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at 1233 Purge time start: 1237

Clear and odorless

RECHARGE BEHAVIOR: **X** Fast recharging
Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***MS/MSD***	***Blank***	***Other (Trip / Source /)***
Sample ID: MW- 6	Sample ID:	Type:	Type:
Sample Time: 1348	Sample Time:	Sample ID:	Sample ID:
No. of Containers: 5	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 7

GEOFON INCORPORATED
22632 Golden Springs Dr., Suite 270
Diamond Bar, CA 91765
Telephone: (909) 396-7662
Fax: (909) 396-1455

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-12812
Navy Contract No.: N68711-01-D-6008, D.O. No. 0012
Sampled By: Marco M. & J. Jones
Date: 8/3/04
Weather: Cool & sunny

PURGE VOLUME CALCULATION (casing volume):

(275 (TD feet) - 203.90 (WL feet)) X 4^2 (D (inches)) X 3 (# Vols) X 0.0408 = 139.24 (Calculated Purge Volume) Gallons

PURGE METHOD **PUMP INTAKE SETTING**

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (º C)	ORP (mV)	Comments
0724	203.90	0	4.96	44.4	16.2	4.8	18.8	219	Yellow in color and odorless
0738		28	5.81	38.8	6.84	5.5	19.9	208	Clear and odorless
0752		56	6.64	38.5	4.33	5.9	20.3	207	
0807		84	7.04	38.3	3.33	6.4	20.6	205	
0821		112	7.27	39.2	3.11	6.1	20.1	206	
0835	203.90	140	7.41	39.5	2.18	6.5	21.1	206	

Total Purge Volume: 140 (Gallons)

Total Discharge: 3.02 (Casing Volumes)

Approx. Purge Rate: 2.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at 0720 Purge time start: 0724

Clear and odorless

RECHARGE BEHAVIOR: **X** Fast recharging
Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: drums (3-55 gallon)

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***MS/MSD***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW- 7	Sample ID: _____	Type: _____	Type: _____
Sample Time: 0839	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: 5	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 8

GEOFON INCORPORATED
22632 Golden Springs Dr., Suite 270
Diamond Bar, CA 91765
Telephone: (909) 396-7662
Fax: (909) 396-1455

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-12812
Navy Contract No.: N68711-01-D-6008, D.O. No. 0012
Sampled By: Marco M. & J. Jones
Date: 8/17/04
Weather: sunny & warm

PURGE VOLUME CALCULATION (casing volume):

(205 TD (feet) - 134.00 WL (feet)) X 4² D (inches) X 3 # Vols X 0.0408 = 139.05 Calculated Purge Volume Gallons

PURGE METHOD **PUMP INTAKE SETTING**

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (º C)	ORP (mV)	Comments
0823	134	0	7.04	29.4	5.33	6.4	19.3	235	
0832		27	7.13	29.6	2.77	6.4	19.1	218	
0841		54	7.23	29.6	2.04	6.9	19.5	219	
0850		81	7.31	29.5	1.89	6.7	19.3	211	
0859		108	7.36	29.7	1.21	7.4	19.6	221	
0908		135	7.39	29.6	1.11	6.7	19.6	216	
0910	134	141	7.38	29.4	1.19	6.6	19.9	213	

Total Purge Volume: 141 (Gallons)

Total Discharge: 3.04 (Casing Volumes)

Approx. Purge Rate: 3.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at 0822 Purge time start: 0823 Control Box: 382

Clear and odorless

RECHARGE BEHAVIOR: **X** Fast recharging
Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***MS/MSD***	***Blank***	***Other (Trip / Source /)***
Sample ID: MW- 8	Sample ID _____	Type: _____	Type: _____
Sample Time: 0914	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: 5	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 10

GEOFON INCORPORATED
22632 Golden Springs Dr., Suite 270
Diamond Bar, CA 91765
Telephone: (909) 396-7662
Fax: (909) 396-1455

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-12812
Navy Contract No.: N68711-01-D-6008, D.O. No. 0012
Sampled By: Marco M. & J. Jones
Date: 8/17/04
Weather: Sunny & hot

PURGE VOLUME CALCULATION (casing volume):

(155 - 83.21) X 4^2 X 3 X 0.0408 = 140.59 Gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE METHOD **PUMP INTAKE SETTING**

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (º C)	ORP (mV)	Comments
0941	83.21	0	7.27	66.4	15.1	6.2	22.0	240	
0950		27	7.28	72.3	5.43	6.1	21.2	225	
1000		57	7.34	73.5	3.53	6.0	21.3	224	
1009		84	7.41	73.9	2.51	6.5	21.6	220	
1019		114	7.44	74.4	1.46	6.2	21.6	220	Cloudy and odorless
1028	83.21	141	7.54	75.1	1.01	6.0	24.0	225	Clear and odorless

Total Purge Volume: 141 (Gallons)

Total Discharge: 3.01 (Casing Volumes)

Approx. Purge Rate: 3.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at 0939 Purge time start: 0941

Clear and odorless

RECHARGE BEHAVIOR: **X** Fast recharging
Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source /)***
Sample ID: MW- 10	Sample ID: Dupe-6-3Q04	Type:	Type:
Sample Time: 1035	Sample Time: ---------	Sample ID:	Sample ID:
No. of Containers: 5	No. of Containers: 5	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 13

GEOFON INCORPORATED
22632 Golden Springs Dr., Suite 270
Diamond Bar, CA 91765
Telephone: (909) 396-7662
Fax: (909) 396-1455

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-12812
Navy Contract No.: N68711-01-D-6008, D.O. No. 0012
Sampled By: Marco M. & J. Jones
Date: 8/17/04
Weather: Sunny & cool

PURGE VOLUME CALCULATION (casing volume):

(235 - 176.85) X 4^2 X 3 X 0.0408 = 113.88 Gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE METHOD **PUMP INTAKE SETTING**

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (º C)	ORP (mV)	Comments
0659	176.85	0	5.01	46.1	19.0	5.5	20.4	251	
0708		22.5	5.67	40.4	8.44	5.3	20.6	229	
0717		45	6.08	40.4	4.64	5.7	20.4	219	
0726		67.5	6.47	40.4	4.22	5.9	20.9	215	
0735		90	6.56	40.1	2.94	5.4	21.1	214	
0744		112.5	6.73	40.1	3.53	5.2	21.4	220	
0745	176.85	115	6.83	40.1	1.88	5.8	21.4	212	

Total Purge Volume: 115 (Gallons)

Total Discharge: 3.03 (Casing Volumes)

Approx. Purge Rate: 2.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at 0654 Purge time start: 0659 Control Box: 385

Clear & Odorless

RECHARGE BEHAVIOR: **X** Fast recharging
Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***MS/MSD***	***Blank***	***Other (Trip / Source /)***
Sample ID: MW- 13	Sample ID:	Type:	Type:
Sample Time: 0750	Sample Time:	Sample ID:	Sample ID:
No. of Containers: 5	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 15

GEOFON INCORPORATED
22632 Golden Springs Dr., Suite 270
Diamond Bar, CA 91765
Telephone: (909) 396-7662
Fax: (909) 396-1455

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-12812
Navy Contract No.: N68711-01-D-6008, D.O. No. 0012
Sampled By: Marco M. & J. Jones
Date: 8/16/04
Weather: Sunny & Warm

PURGE VOLUME CALCULATION (casing volume):

(74 - 43.43) X 4^2 X 3 X 0.0408 = 59.87 Gallons
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

PURGE METHOD **PUMP INTAKE SETTING**

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (º C)	ORP (mV)	Comments
0848	43.43	0	7.00	43.8	23.7	5.3	20.2	235	Rust in color and odorless
0854		12	7.28	55.8	12.5	7.4	19.6	232	Clear and odorless
0900		24	7.19	43.0	9.10	6.0	18.4	248	
0906		36	7.39	43.3	3.65	7.7	18.8	244	
0912		48	7.43	42.9	1.71	7.2	19.1	245	
0916	43.43	60	7.53	42.9	1.35	7.4	20.5	238	

Total Purge Volume: 60 (Gallons)

Total Discharge: 3.01 (Casing Volumes)

Approx. Purge Rate: 2.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at 0834 Purge time start: 0848 Control Box: 240

Clear & odorless

RECHARGE BEHAVIOR: **X** Fast recharging
Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***MS/MSD***	***Blank***	***Other (Trip / Source /)***
Sample ID: MW- 15	Sample ID: MW-15	Type:	Type:
Sample Time: 0919	Sample Time: 0919	Sample ID:	Sample ID:
No. of Containers: 2	No. of Containers: 2	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 16

GEOFON INCORPORATED
22632 Golden Springs Dr., Suite 270
Diamond Bar, CA 91765
Telephone: (909) 396-7662
Fax: (909) 396-1455

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-12812
Navy Contract No.: N68711-01-D-6008, D.O. No. 0012
Sampled By: Marco M., & J. Jones
Date: 8/16/04
Weather: Sunny & warm

PURGE VOLUME CALCULATION (casing volume):

(285 (TD feet) - 229.92 (WL feet)) X 4² (D (inches)) X 3 (# Vols) X 0.0408 = 107.87 (Calculated Purge Volume) Gallons

PURGE METHOD **PUMP INTAKE SETTING**

☐ Bailer – Type: _____ **X** Pump – Type: 2" Grundfos Depth in feet (BTOC): _____

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (º C)	ORP (mV)	Comments
1114	229.92	0	7.61	32.6	5.29	7.7	27.2	243	
1125		22	7.57	32.6	2.23	7.5	25.3	238	
1136		44	7.84	32.9	1.98	8.0	24.4	228	
1147		66	7.80	33.1	1.09	7.3	25.8	243	
1158		88	7.84	32.3	0.84	7.6	24.9	240	
1209	229.92	110	7.93	32.7	0.90	8.2	27.2	226	

Total Purge Volume: 110 (Gallons)

Total Discharge: 3.06 (Casing Volumes)

Approx. Purge Rate: 2.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at 1105 Purge time start: 1114 Control Box: 397

Clear & odorless

RECHARGE BEHAVIOR: **X** Fast recharging
Slow recharging (80% recharge did not occur after two hours)

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***MS/MSD***	***Blank***	***Other (Trip / Source /)***
Sample ID: MW- 16	Sample ID:	Type:	Type:
Sample Time: 1212	Sample Time:	Sample ID:	Sample ID:
No. of Containers: 5	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-3
Sampling Zone No.: 4 to 2
Depth (ft): 558, 346, & 252
Beginning of Session: 13.94
End of Session: 13.96

Start Time: 654
Finish Time: 820

Date: **8/11/04**
Page: 1 of 1

Water Pressure Inside Casing: ------

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
4	1	X	X	X	X	X	X	X	X	X	210.37	X	208.89	X	208.87	X	X	210.38	708	5.20	6.78	19.4	30.3
3	1	X	X	X	X	X	X	X	X	X	118.41	X	119.76	X	119.76	X	X	118.11	732	6.36	5.53	19.8	29.6
3	2	X	X	X	X	X	X	X	X	X	118.02	X	119.76	X	119.76	X	X	118.09	757	6.85	5.96	19.7	29.7
2	1	X	X	X	X	X	X	X	X	X	77.26	X	78.89	X	78.90	X	X	77.17	817	7.18	7.26	21.1	28.9

Notes:
port 4: clear & odorless port 3: clear & odorless port 2: clear & odorless

Total Volume: -------

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-4
Sampling Zone No.: 3 to 1
Depth (ft): 322, 240, & 150
Beginning of Session: 14.02
End of Session: 14.02

Start Time: 640
Finish Time: 753

Date: **8/9/04**
Page: 1 of 1

Water Pressure Inside Casing: -------

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
3	1	X	X	X	X	X	X	X	X	X	57.33	X	118.08	X	118.07	X	X	57.37	655	5.07	11.90	20.0	33.6
2	1	X	X	X	X	X	X	X	X	X	21.54	X	82.62	X	82.61	X	X	21.59	717	6.30	10.55	20.2	68.3
1	1	X	X	X	X	X	X	X	X	X	14.08	X	45.02	X	45.05	X	X	14.18	744	7.14	15.80	20.1	29.8

Notes:
port 3: yellowish in color & odorless port 2: clear & odorless port 1: clear & odorless

Total Volume: -------

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-11
Sampling Zone No.: 4 to 1
Depth (ft): 524, 429, 259, & 149
Beginning of Session: 13.98
End of Session: 13.93

Start Time: 832
Finish Time: 1028

Date: **8/9/04**
Page: 1 of 1

Water Pressure Inside Casing: --------

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
4	1	X	X	X	X	X	X	X	X	X	198.17	X	184.36	X	184.30	X	X	198.08	855	7.44	1.32	21.9	17.2
3	1	X	X	X	X	X	X	X	X	X	156.59	X	141.46	X	141.30	X	X	156.51	926	7.72	22.10	23.4	27.2
2	1	X	X	X	X	X	X	X	X	X	82.83	X	69.26	X	69.22	X	X	82.80	852	7.93	3.57	23.2	30.1
1	1	X	X	X	X	X	X	X	X	X	35.83	X	29.36	X	29.36	X	X	35.79	1018	7.99	5.77	24.1	36.5

Notes:
port 4: clear & odorless port 3: clear & odorless port 2: clear & odorless

port 1:clear & odorless

Total Volume: ------

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-12
Sampling Zone No.: 5 to 1
Depth (ft): 548, 436, 323, 243, & 140
Beginning of Session: 13.97
End of Session: 13.94

Start Time: 911
Finish Time: 1059

Date: **8/11/04**
Page: 1 of 1

Water Pressure Inside Casing: --------

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
5	1	X	X	X	X	X	X	X	X	X	201.86	X	204.59	X	204.55	X	X	201.88	925	7.23	8.28	23.4	29.2
4	1	X	X	X	X	X	X	X	X	X	152.47	X	158.88	X	158.81	X	X	152.58	948	7.60	6.16	22.4	33.0
3	1	X	X	X	X	X	X	X	X	X	104.56	X	110.31	X	110.28	X	X	104.29	1007	7.90	6.76	22.5	26.7
2	1	X	X	X	X	X	X	X	X	X	69.38	X	75.92	X	75.91	X	X	69.33	1028	8.51	7.26	22.8	34.4
1	1	X	X	X	X	X	X	X	X	X	24.82	X	33.05	X	33.04	X	X	24.81	1050	7.99	9.21	24.5	33.8

Notes:
port 5: clear & odorless port 4: clear & odorless port 3: clear & odorless

port 2: clear & odorless port 1: clear & odorless

Total Volume: ------

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-14
Sampling Zone No.: 5 to 1
Depth (ft): 540, 456, 382, 277, & 207
Beginning of Session: 13.99
End of Session: 14.01

Start Time: 1107
Finish Time: 1415

Date: **8/2/04**
Page: 1 of 1

Water Pressure Inside Casing: -------

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
5	1	X	X	X	X	X	X	X	X	X	184.67	X	178.59	X	178.56	X	X	184.47	1147	7.61	2.59	25.7	22.7
4	1	X	X	X	X	X	X	X	X	X	147.96	X	142.32	X	142.29	X	X	147.69	1221	7.65	1.67	28.4	15.5
3	1	X	X	X	X	X	X	X	X	X	115.34	X	110.27	X	110.25	X	X	115.17	1306	7.75	2.17	26.6	74.4
2	1	X	X	X	X	X	X	X	X	X	69.42	X	64.85	X	64.83	X	X	69.19	1337	8.02	4.66	24.3	80.7
1	1	X	X	X	X	X	X	X	X	X	39.43	X	34.98	X	34.95	X	X	38.98	1404	8.02	8.06	27.4	86.4

Notes:
port 5: clear & odorless port 4: clear & odorless port 3: clear & odorless

port 2: clear & odorless port 1:clear & odorless

Total Volume: ------

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-17
Sampling Zone No.: 4 to 2
Depth (ft): 582, 468, & 370
Beginning of Session: 13.94
End of Session: 13.99

Start Time: 937
Finish Time: 1119

Date: **8/5/04**
Page: 1 of 1

Water Pressure Inside Casing: ---------

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
4	1	X	X	X	X	X	X	X	X	X	170.71	X	177.57	X	177.56	X	X	107.45	1014	7.76	6.00	21.6	21.3
3	1	X	X	X	X	X	X	X	X	X	57.94	X	126.07	X	126.05	X	X	57.72	1042	7.78	8.81	21.2	36.6
2	1	X	X	X	X	X	X	X	X	X	14.88	X	87.16	X	87.16	X	X	14.91	1108	7.82	6.21	23.1	46.3

Notes:
port 4: clear & odorless port 3: clear & odorless port 2: clear & odorless

Total Volume: ------

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-18
Sampling Zone No.: 5 to 2
Depth (ft): 684, 564, 424, & 330
Beginning of Session: 13.93
End of Session: 13.97

Start Time: 950
Finish Time: 1149

Date: **8/3/04**
Page: 1 of 1

Water Pressure Inside Casing: --------

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
5	1	X	X	X	X	X	X	X	X	X	159.63	X	205.65	X	205.60	X	X	159.57	1006	8.00	2.29	21.5	20.1
4	1	X	X	X	X	X	X	X	X	X	107.23	X	154.60	X	154.59	X	X	107.12	1041	8.11	5.28	22.5	26.2
3	1	X	X	X	X	X	X	X	X	X	46.49	X	96.83	X	96.83	X	X	46.06	1108	8.00	1.31	21.9	36.3
2	1	X	X	X	X	X	X	X	X	X	14.38	X	56.28	X	56.29	X	X	14.23	1137	8.10	8.83	24.2	31.6

Notes:

port 4: clear & odorless port 3: clear & odorless port 2: clear & odorless

Total Volume: -----

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-19
Sampling Zone No.: 5 to 1
Depth (ft): 498, 444, 392, 314, & 242
Beginning of Session: 14.23
End of Session: 14.01

Start Time: 652
Finish Time: 857

Date: **8/5/04**
Page: 1 of 1

Water Pressure Inside Casing: --------

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
5	1	X	X	X	X	X	X	X	X	X	145.17	X	164.08	X	164.10	X	X	145.17	705	5.33	9.92	18.5	50.1
4	1	X	X	X	X	X	X	X	X	X	121.55	X	140.70	X	140.70	X	X	121.50	732	6.47	6.47	18.3	43.7
3	1	X	X	X	X	X	X	X	X	X	99.25	X	119.04	X	119.02	X	X	98.91	755	6.94	23.40	19.7	50.9
2	1	X	X	X	X	X	X	X	X	X	65.17	X	84.89	X	84.89	X	X	64.98	816	7.13	30.80	19.2	72.2
1	1	X	X	X	X	X	X	X	X	X	34.31	X	54.07	X	54.08	X	X	34.07	839	7.48	12.10	18.9	32.6

Notes:

port 5: clear & odorless port 4: clear & odorless port 3: clear & odorless

port 2: slight yellow in color & odorless port 1: clear & odorless

Total Volume: -------

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-20
Sampling Zone No.: 5 to 1
Depth (ft): 900, 700, 562, 392, & 230
Beginning of Session: 13.97
End of Session: 13.97

Start Time: 704
Finish Time: 939

Date: **8/4/04**
Page: 1 of 1

Water Pressure Inside Casing: --------

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
5	1	X	X	X	X	X	X	X	X	X	309.97	X	325.02	X	325.02	X	X	309.64	712	5.11	5.93	16.5	32.7
5	2	X	X	X	X	X	X	X	X	X	309.89	X	325.04	X	325.06	X	X	309.62	745	6.84	5.85	17.2	21.4
4	1	X	X	X	X	X	X	X	X	X	222.52	X	235.05	X	235.01	X	X	222.61	817	7.50	9.54	18.2	21.9
3	1	X	X	X	X	X	X	X	X	X	162.91	X	168.66	X	168.65	X	X	162.47	844	6.72	5.94	19.0	38.1
2	1	X	X	X	X	X	X	X	X	X	88.57	X	101.77	X	101.77	X	X	88.45	908	7.19	5.19	19.7	25.3
1	1	X	X	X	X	X	X	X	X	X	18.37	X	31.59	X	31.55	X	X	18.19	930	7.41	7.15	20.2	40.8

Notes:

Total Volume: -------

port 5: clear & odorless port 4: clear & odorless port 3: clear & odorless

port 2: clear & odorless port 1:clear & odorless

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-21
Sampling Zone No.: 5 to 1
Depth (ft): 372, 310, 240, 161, & 90
Beginning of Session: 14.04
End of Session: 14.05

Start Time: 724
Finish Time: 1012

Date: **8/2/04**
Page: 1 of 1

Water Pressure Inside Casing: -------

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
5	1	X	X	X	X	X	X	X	X	X	129.79	X	153.23	X	153.22	X	X	129.52	741	4.92	6.45	19.3	62.2
4	1	X	X	X	X	X	X	X	X	X	103.43	X	126.39	X	126.38	X	X	103.46	812	6.72	0.81	19.2	52.2
4	2	X	X	X	X	X	X	X	X	X	101.43	X	126.39	X	126.39	X	X	101.45	836	7.17	1.39	19.3	51.8
3	1	X	X	X	X	X	X	X	X	X	73.29	X	96.50	X	96.51	X	X	73.56	901	7.29	3.21	19.9	83.2
2	1	X	X	X	X	X	X	X	X	X	37.86	X	62.31	X	62.33	X	X	37.81	926	7.64	2.65	21.4	95.6
1	1	X	X	X	X	X	X	X	X	X	14.22	X	31.07	X	31.08	X	X	14.20	950	7.66	8.46	23.5	73.1
1	2	X	X	X	X	X	X	X	X	X	14.37	X	31.09	X	31.09	X	X	14.41	1007	7.46	4.17	22.3	72.3

Notes:

port 5: clear & fish odor port 4: clear & fish odor port 3: clear & odorless

port 2: clear & odorless port 1:clear & odorless

Total Volume: ------

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-22
Sampling Zone No.: 3 to 1
Depth (ft): 389, 329, 245
Beginning of Session: 13.91
End of Session: 13.96

Start Time: 651
Finish Time: 839

Date: **8/12/04**
Page: 1 of 1

Water Pressure Inside Casing: ------

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
3	1	X	X	X	X	X	X	X	X	X	115.50	X	109.51	X	109.51	X	X	115.55	710	5.18	5.79	20.1	39.9
3	2	X	X	X	X	X	X	X	X	X	115.67	X	109.51	X	109.51	X	X	115.52	736	6.44	6.28	20.4	40.2
2	1	X	X	X	X	X	X	X	X	X	89.31	X	83.45	X	83.40	X	X	89.45	757	7.02	6.56	20.8	35.1
1	1	X	X	X	X	X	X	X	X	X	52.96	X	47.19	X	47.19	X	X	52.72	827	7.16	60.90	20.1	74.8

Notes:
port 3: clear & odorless
port 2: clear & odorless
port 1: brownish, yellow in color & odorless

Total Volume: --------

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-23
Sampling Zone No.: 4 to 1
Depth (ft): 445, 319, 254, & 174
Beginning of Session: 13.99
End of Session: 14.00

Start Time: 645
Finish Time: 841

Date: **8/10/04**
Page: 1 of 1

Water Pressure Inside Casing: -------

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
4	1	X	X	X	X	X	X	X	X	X	165.72	X	160.77	X	160.77	X	X	165.76	657	5.08	6.25	20.9	29.9
3	1	X	X	X	X	X	X	X	X	X	111.16	X	107.53	X	107.53	X	X	111.31	721	5.75	12.70	21.2	27.8
2	1	X	X	X	X	X	X	X	X	X	83.73	X	79.40	X	79.41	X	X	83.70	751	6.22	6.41	22.1	64.3
2	2	X	X	X	X	X	X	X	X	X	82.59	X	79.42	X	79.41	X	X	82.42	812	6.80	6.06	21.7	65.4
1	1	X	X	X	X	X	X	X	X	X	48.59	X	45.51	X	45.51	X	X	48.50	832	6.97	7.59	23.9	80.3

Notes:

port 4: clear & strong odor port 3: clear & strong odor

port 2: clear & strong odor port 1:clear & slight odor

Total Volume: -------

GEOFON INCORPORATED

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0012

Well ID: MW-24
Sampling Zone No.: 4 to 1
Depth (ft): 554, 435, 373, & 299
Beginning of Session: 13.94
End of Session: 13.99

Start Time: 919
Finish Time: 1110

Date: **8/10/04**
Page: 1 of 1

Water Pressure Inside Casing: -------

Port #	Run #	Surface Function Checks							Position Sampler	Arm out	Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	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	Turb. (NTU)	Temp. (oC)	Cond (mmhos)
4	1	X	X	X	X	X	X	X	X	X	143.74	X	167.55	X	167.55	X	X	143.81	938	7.68	6.32	25.2	21.3
3	1	X	X	X	X	X	X	X	X	X	92.21	X	117.34	X	117.34	X	X	92.30	1001	8.19	7.50	25.9	24.2
2	1	X	X	X	X	X	X	X	X	X	65.54	X	90.69	X	90.69	X	X	65.36	1024	8.36	8.55	25.3	30.2
1	1	X	X	X	X	X	X	X	X	X	24.75	X	51.11	X	51.09	X	X	24.73	1044	8.06	6.28	25.3	35.4
1	2	X	X	X	X	X	X	X	X	X	24.39	X	51.03	X	51.12	X	X	24.33	1101	7.70	7.78	24.9	35.6

Notes:

Total Volume: --------

port 4: clear & odorless port 3: clear & odorless

port 2: clear & odorless port 1:clear & odorless