APPENDIX A

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # MW-5

GEOFON INCORPORATED

22632 Golden Springs Dr., Suite 27
Diamond Bar, CA 9176
Telephone: (909) 396-7662
Fax: (909) 396-1455

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 04-4428.10
Navy Contract No.: N68711-01-D-6008, D.O. No. 0001
Sampled By: Leo W. Williamson / Dale Erbes
Date: 2/19/03
Weather: Clear and cool

PURGE VOLUME CALCULATION (casing volume)

(140.0 TD (feet) - 71.75 WL (feet)) X 4^2 D (inches) X 3 # Vols X 0.0408 = 135 Calculated Purge Volume Gallons

PURGE METHOD

☐ Bailer – Type: _____ ☐ Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

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 (° C)	ORP (mV)	Comments
735	71.9	30	7.65	77.1	1.23	8.81	12.87	-98	Rust-Colored, Clearing Quickly
747	71.9	60	7.52	74.7	0.33	10.76	14.52	-101	
759	71.9	90	7.49	75.8	0.18	11.73	15.08	-78	
811	71.9	120	7.50	75.3	0.08	11.52	15.89	-58	
823	71.9	150	7.46	76.6	0.06	11.07	16.59	-72	

Total Purge Volume: 150 (Gallons)

Total Discharge: 3.33 (Casing Volumes)

Approx. Purge Rate: 2.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Rusty-Colored water initially, clearing up quickly

Start: 700

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

WATER DISPOSAL

Purge water storage: 600 Gallon Onsite Polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	*Duplicate*	*Blank*	*Other (Trip / Source /)*
Sample ID: MW-5	Sample ID:	Type:	Type:
Sample Time: 840	Sample Time:	Sample ID:	Sample ID:
No. of Containers: 3+1+1	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # MW-6

GEOFON INCORPORATED

22632 Golden Springs Dr., Suite 27
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Telephone: (909) 396-7662
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Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 04-4428.10
Navy Contract No.: N68711-01-D-6008, D.O. No. 0001
Sampled By: Leo W. Williamson / Dale Erbes
Date: 2/20/03
Weather: Clear, Windy and warm

PURGE VOLUME CALCULATION (casing volume):

(245.0 (TD (feet)) - 183.87 (WL (feet))) X 4^2 (D (inches)) X 3 (# Vols) X 0.0408 = 120 (Calculated Purge Volume) Gallons

PURGE METHOD / PUMP INTAKE SETTING

☐ Bailer – Type: _____ ☐ 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 (° C)	ORP (mV)	Comments
858	183.9	20	7.25	103.0	0.14	14.57	20.05	60	
911	183.9	40	7.23	102.0	0.12	14.31	19.85	112	
924	183.9	60	7.22	101.0	0.09	12.46	20.70	124	
937	183.9	80	7.20	100.0	0.59	11.40	21.26	36	
950	183.9	100	7.26	101.0	0.87	11.30	21.10	66	
1003	183.9	120	7.21	98.0	0.33	11.22	22.10	43	

Total Purge Volume: 120 (Gallons)

Total Discharge: 3.00 (Casing Volumes)

Approx. Purge Rate: 1.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Clear, No Odor

Start: 845

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

WATER DISPOSAL

Purge water storage: 600 Gallon Onsite Polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	*Duplicate*	*Blank*	*Other (Trip / Source / _____)*
Sample ID: MW-6	Sample ID: _____	Type: _____	Type: _____
Sample Time: 1025	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: 3+1+1	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # MW-7

GEOFON INCORPORATED

22632 Golden Springs Dr., Suite 27
Diamond Bar, CA 9176
Telephone: (909) 396-7662
Fax: (909) 396-1455

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 04-4428.10
Navy Contract No.: N68711-01-D-6008, D.O. No. 0001
Sampled By: Leo W. Williamson / Dale Erbes
Date: 2/24/03
Weather: Cool, overcast and slightly windy

PURGE VOLUME CALCULATION (casing volume):

(275.0 (TD (feet)) - 213.12 (WL (feet))) X 4^2 (D (inches)) X 3 (# Vols) X 0.0408 = 121 (Calculated Purge Volume) Gallons

PURGE METHOD

☐ Bailer – Type: _____ ☐ Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

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 (° C)	ORP (mV)	Comments
1223	213.2	20	7.82	47.0	0.17	11.48	17.63	-63	
1236	213.2	40	7.88	47.8	0.12	11.53	17.28	-14	
1250	213.2	60	7.80	46.5	0.08	11.90	18.33	-28	
1303	213.2	80	7.82	47.5	0.07	12.03	18.84	-36	
1316	213.2	100	7.85	47.8	0.07	12.12	18.66	-37	
1329	213.2	120	7.87	48.0	0.05	12.06	18.82	-36	
1335	213.2	130	7.83	48.2	0.06	12.24	18.91	-33	

Total Purge Volume: 130 (Gallons)

Total Discharge: 3.22 (Casing Volumes)

Approx. Purge Rate: 1.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Clear, No Odor Start: 1210

Note: Samples for EPA Method 8315 were collected. They are re-samples for the last quarter as those exceeded their hold time.

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

WATER DISPOSAL

Purge water storage: 600 Gallon Onsite Polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	*MS / MSD*	*Additional Sampling*	*Other*
Sample ID: MW-7	Sample ID: DUPE-6-1Q03	Type: Resample	Type: _____
Sample Time: 1350	Sample Time: 1350	Sample ID: 53	Sample ID: _____
No. of Containers: 3+1+1	No. of Containers: 3+1+1	Sample Time: 1350	Sample Time: _____
		No. of Containers: 1	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # MW-8

GEOFON INCORPORATED

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Telephone: (909) 396-7662
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Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 04-4428.10
Navy Contract No.: N68711-01-D-6008, D.O. No. 0001
Sampled By: Leo W. Williamson / Dale Erbes
Date: 2/24/03
Weather: Overcast, cool and slight rain

PURGE VOLUME CALCULATION (casing volume):

(205.0 (TD (feet)) - 137.52 (WL (feet))) X 4^2 (D (inches)) X 3 (# Vols) X 0.0408 = 132 (Calculated Purge Volume) Gallons

PURGE METHOD

☐ Bailer – Type: _____ ☐ Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

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 (° C)	ORP (mV)	Comments
731	137.6	20	7.73	55.4	2.23	12.18	15.92	-77	
747	137.6	40	7.62	48.5	1.02	12.55	16.74	-32	
803	137.6	60	7.54	47.9	0.40	12.87	16.95	-72	
819	137.6	80	7.52	47.6	0.65	12.70	17.17	-48	
835	137.6	100	7.51	48.0	0.45	12.55	16.82	-69	
851	137.6	120	7.57	47.4	0.67	12.57	16.14	-55	
907	137.6	140	7.57	47.6	0.25	12.61	16.26	-47	

Total Purge Volume: 140 (Gallons)

Total Discharge: 3.18 (Casing Volumes)

Approx. Purge Rate: 1.25 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Clear, No Odor

Start: 715

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

WATER DISPOSAL

Purge water storage: 600 Gallon Onsite Polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-8	Sample ID: _____	Type: _____	Type: _____
Sample Time: 930	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: 3+1+1	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # MW-10

GEOFON INCORPORATED

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Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 04-4428.10
Navy Contract No.: N68711-01-D-6008, D.O. No. 0001
Sampled By: Leo W. Williamson / Dale Erbes
Date: 2/20/03
Weather: Clear and warm

PURGE VOLUME CALCULATION (casing volume):

(155.0 - 88.90) X 4^2 X 3 X 0.0408 = 130 Gallons

TD (feet) — WL (feet) — D (inches) — # Vols — Calculated Purge Volume

PURGE METHOD

☐ Bailer – Type: _____ ☐ Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

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 (° C)	ORP (mV)	Comments
1105	88.9	20	7.33	104.0	7.14	14.61	21.12	150	
1113	89.0	40	7.31	102.0	6.55	14.17	20.54	103	
1121	89.0	60	7.27	99.0	4.33	13.83	21.04	58	
1129	89.0	80	7.25	103.0	0.64	13.71	21.41	77	
1139	89.0	100	7.21	107.0	0.17	12.91	21.64	65	
1145	89.0	120	7.19	104.0	0.05	12.98	21.39	68	
1153	89.0	140	7.21	103.0	0.05	12.94	21.97	75	

Total Purge Volume: 140 (Gallons)

Total Discharge: 3.23 (Casing Volumes)

Approx. Purge Rate: 2.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Clear, No Odor

Start: 1055

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

WATER DISPOSAL

Purge water storage: 600 Gallon Onsite Polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	*Duplicate*	*Blank*	*Other (Trip / Source / _____)*
Sample ID: MW-10	Sample ID: _____	Type: _____	Type: _____
Sample Time: 1210	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: 3+1+1	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # MW-13

GEOFON INCORPORATED

22632 Golden Springs Dr., Suite 27
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Telephone: (909) 396-7662
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Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 04-4428.10
Navy Contract No.: N68711-01-D-6008, D.O. No. 0001
Sampled By: Leo W. Williamson / Dale Erbes
Date: 2/20/03
Weather: Clear, Windy and slight rain

PURGE VOLUME CALCULATION (casing volume):

(235.0 (TD (feet)) - 184.05 (WL (feet))) X 4^2 (D (inches)) X 3 (# Vols) X 0.0408 = 100 (Calculated Purge Volume) Gallons

PURGE METHOD

☐ Bailer – Type: _____ ☐ Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

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 (° C)	ORP (mV)	Comments
705	184.1	20	7.83	79.8	0.93	11.51	17.15	-74	
720	184.1	40	7.84	79.6	1.24	11.71	17.41	-32	
735	184.1	60	7.86	80.1	0.31	10.87	18.92	-7	
750	184.1	80	7.84	80.0	0.22	10.65	18.61	-14	
805	184.1	100	7.79	79.7	0.18	10.59	18.27	-17	

Total Purge Volume: 100 (Gallons)

Total Discharge: 3.00 (Casing Volumes)

Approx. Purge Rate: 1.33 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Clear, No Odor

Start: 650

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

WATER DISPOSAL

Purge water storage: 600 Gallon Onsite Polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-13	Sample ID: _____	Type: _____	Type: _____
Sample Time: 820	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: 3+1+1	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # MW-15

GEOFON INCORPORATED

22632 Golden Springs Dr., Suite 27
Diamond Bar, CA 9176
Telephone: (909) 396-7662
Fax: (909) 396-1455

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 04-4428.10
Navy Contract No.: N68711-01-D-6008, D.O. No. 0001
Sampled By: Leo W. Williamson / Dale Erbes
Date: 2/20/03
Weather: Clear, warm and sunny

PURGE VOLUME CALCULATION (casing volume):

(74.0 - 28.50) X 4^2 X 3 X 0.0408 = 90 Gallons

TD (feet) — WL (feet) — D (inches) — # Vols — Calculated Purge Volume

PURGE METHOD

☐ Bailer – Type: _____ ☐ Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

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 (° C)	ORP (mV)	Comments
1255	30.1	20	7.58	60.5	2.47	16.05	19.70	-46	
1302	30.1	40	7.67	59.9	1.59	15.82	19.33	-19	
1309	30.1	60	7.70	60.7	2.09	16.02	19.10	-49	
1316	30.1	80	7.61	58.5	2.14	16.06	19.08	-51	
1323	30.1	100	7.59	58.8	1.23	15.92	19.44	-48	

Total Purge Volume: 100 (Gallons)

Total Discharge: 3.33 (Casing Volumes)

Approx. Purge Rate: 3.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Clear, No Odor

Start: 1345

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

WATER DISPOSAL

Purge water storage: 600 Gallon Onsite Polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-15	Sample ID: _____	Type: _____	Type: _____
Sample Time: 1340	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: 1+1	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # MW-16

GEOFON INCORPORATED

22632 Golden Springs Dr., Suite 27
Diamond Bar, CA 9176
Telephone: (909) 396-7662
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Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 04-4428.10
Navy Contract No.: N68711-01-D-6008, D.O. No. 0001
Sampled By: Leo W. Williamson / Dale Erbes
Date: 2/24/03
Weather: Cold, overcast and slightly windy

PURGE VOLUME CALCULATION (casing volume):

(285.0 (TD (feet)) - 236.05 (WL (feet))) X 4^2 (D (inches)) X 3 (# Vols) X 0.0408 = 96 (Calculated Purge Volume) Gallons

PURGE METHOD

☐ Bailer – Type: _____ ☐ Pump – Type: 2" Grundfos

PUMP INTAKE SETTING

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 (° C)	ORP (mV)	Comments
1010	236.1	20	7.66	57.6	0.19	13.71	20.17	-21	
1025	236.1	40	7.69	57.9	0.08	13.40	20.75	-18	
1040	236.1	60	7.75	58.1	0.09	13.37	20.37	-21	
1055	236.1	80	7.78	58.2	0.04	13.22	20.62	-23	
1110	236.1	100	7.74	57.9	0.06	13.07	20.38	-21	

Total Purge Volume: 100 (Gallons)

Total Discharge: 3.12 (Casing Volumes)

Approx. Purge Rate: 1.33 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Clear, No Odor Start: 955

Note: Samples for EPA Method 8315 were collected. They are re-samples for the last quarter as those exceeded their hold time

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

WATER DISPOSAL

Purge water storage: 600 Gallon Onsite Polytank

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***MS / MSD***	***Additional Sampling***	***Additional Sampling***
Sample ID: MW-16	Sample ID: MW-16	Type: Resample + MS/MSD	Type: Duplicate
Sample Time: 1150	Sample Time: 1150	Sample ID: 55	Sample ID: 56
No. of Containers: 3+1+1	No. of Containers: 3+1+1	Sample Time: 1150	Sample Time: 1150
		No. of Containers: 3	No. of Containers: 1

ORIGINAL FIELD RECORD

GEOFON INCORPORATED

(1)

Groundwater Sampling

Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-21
Sampling Zone No.: 5/4/3/2/1
Depth (ft): 371'/310'/241'/160'/91'
Start Time: 700
Finish Time: 1425

Date: 1/29/03

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Beginning of Session: 14.26

Water Pressure Inside Casing:

End of Session: 14.28

	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	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)~~ ms/m
PORT 5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	122.73	✓	143.41	✓	143.40	✓	✓	122.71	750	8.11	1.12	14.24	30.6
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	122.70	✓	143.39	✓	143.41	✓	✓	122.69	832	8.09	1.31	14.36	31.2
PORT 4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	102.69	✓	122.10	✓	122.10	✓	✓	102.71	907	8.02	0.34	15.22	33.5
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	102.71	✓	122.05	✓	122.07	✓	✓	102.70	1140	8.04	0.36	15.41	33.7
PORT 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	73.30	✓	92.12	✓	92.10	✓	✓	73.28	1222	7.98	0.97	19.16	101.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	72.37	✓	92.09	✓	92.09	✓	✓	73.32	1240	7.95	0.07	19.54	99.0
PORT 2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	37.92	✓	57.72	✓	57.72	✓	✓	37.89	1305	7.69	0.52	20.18	102.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	37.92	✓	57.72	✓	57.72	✓	✓	37.89	1322	7.67	0.63	20.24	100.0
PORT 1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.28	✓	26.03	✓	26.03	✓	✓	14.29	1344	8.03	1.82	21.64	70.1
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.26	✓	26.00	✓	25.99	✓	✓	14.25	1400	7.99	1.64	21.78	69.8

Notes:

PORT 5: NO ODOR, CLEAR
PORT 4: NO ODOR, CLEAR
PORT 3: NO ODOR, CLEAR
PORT 2: NO ODOR, CLEAR
PORT 1: NO ODOR, CLEAR

Total Volume: _____

GEOFON INCORPORATED

(2)

Groundwater Sampling
Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-20
Sampling Zone No.: 5/4/3/2/1
Depth (ft): 900'/700'/562'/392'/230'
Start Time: 645
Finish Time: 1310

Date: 1/30/03

Page: 1 OF 1

Beginning of Session: 14.31

Water Pressure Inside Casing:

End of Session: 14.30

	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	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~~) mS/m
PORT 5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	303.71	✓	320.81	✓	320.81	✓	✓	303.70	736	4.29	1.03	15.90	33.7
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	304.98	✓	320.80	✓	320.80	✓	✓	305.01	814	4.21	0.87	16.13	30.7
PORT 4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	217.92	✓	235.73	✓	235.67	✓	✓	217.93	849	4.39	4.71	18.68	30.7
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	217.90	✓	235.73	✓	235.67	✓	✓	217.91	926	4.20	5.14	19.17	28.8
PORT 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	157.76	✓	174.53	✓	174.53	✓	✓	157.79	945	4.19	0.20	19.42	53.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	157.80	✓	174.52	✓	174.53	✓	✓	157.83	1047	4.28	0.31	20.43	51.4
PORT 2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	83.68	✓	99.99	✓	99.99	✓	✓	83.69	1127	4.25	0.08	21.88	32.3
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	83.64	✓	99.97	✓	99.97	✓	✓	83.58	1135	4.31	0.11	21.74	33.9
PORT 1	1	✓	✓	✓	✓	✓	✓	✓	✓	X	14.32	✓	29.02	✓	29.02	✓	✓	14.32	1211	4.30	0.34	22.08	98.4
	2	✓	✓	✓	✓	✓	X	✓	✓	✓	14.25	✓	29.02	✓	29.00	✓	✓	14.30	1224	4.42	0.37	22.11	98.1
	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.29	✓	29.00	✓	29.01	✓	✓	14.31	1237	4.37	0.38	22.14	97.7
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.29	✓	29.03	✓	29.00	✓	✓	14.30	1255	4.34	0.41	22.21	97.9

Notes:
PORT 5: SLIGHT H_2S ODOR; CLEAR
PORT 4: MILD H_2S ODOR; CLEAR
PORT 3: SLIGHT H_2S ODOR; CLEAR
PORT 2: NO ODOR; CLEAR
PORT 1: NO ODOR; CLEAR

Total Volume: _____

GEOFON INCORPORATED

(3)

Groundwater Sampling
Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-19
Sampling Zone No.: 5/4/3/2/1
Depth (ft): 497'/443'/391'/313'/241'
Start Time: 720
Finish Time: 1200

Date: 2/3/03

Page: 1 OF 1

Beginning of Session: 14.37

Water Pressure Inside Casing:

End of Session: 14.36

	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	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)~~ mS/m
PORT 5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	80.40	✓	161.17	✓	161.17	✓	✓	80.41	737	7.39	6.61	16.01	76.4
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	80.36	✓	161.14	✓	161.14	✓	✓	80.33	800	7.35	8.01	16.14	73.2
PORT 4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	57.27	✓	137.75	✓	137.77	✓	✓	57.27	830	7.74	0.81	14.74	40.2
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	56.73	✓	137.76	✓	137.75	✓	✓	56.75	900	7.81	0.93	14.93	38.7
	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	56.70	✓	137.75	✓	137.77	✓	✓	56.71	914	7.82	1.47	15.26	38.4
PORT 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	34.06	✓	115.16	✓	115.15	✓	✓	34.07	1040	7.49	6.44	16.76	101.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	34.04	✓	115.13	✓	115.13	✓	✓	34.04	1058	7.55	7.07	16.93	100.0
PORT 2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.42	✓	80.86	✓	80.85	✓	✓	14.41	953	7.45	8.38	17.78	99.2
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.36	✓	80.85	✓	80.85	✓	✓	14.41	1013	7.43	8.71	17.50	101.0
PORT 1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.36	✓	48.97	✓	48.97	✓	✓	14.40	1125	8.08	47.2	17.92	31.2
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.36	✓	48.98	✓	48.97	✓	✓	14.38	1143	8.12	74.2	18.01	30.9

Notes:
PORT 5: NO ODOR, CLEAR
PORT 4: NO ODOR, CLEAR
PORT 3: NO ODOR, CLEAR
PORT 3: NO ODOR, CLEAR
PORT 1: NO ODOR, SLIGHTLY TURBID

Total Volume: _____

GEOFON INCORPORATED

(4)

Groundwater Sampling

Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-17
Sampling Zone No.: 4/3/2
Depth (ft): 582' / 467' / 370'

Start Time: 715
Finish Time: 1145

Date: 2/4/03

Page: 1 OF 1

Beginning of Session: 14.32

Water Pressure Inside Casing:

End of Session: 14.30

	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	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)~~ mS/m
PORT 4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	105.38	✓	176.69	✓	176.69	✓	✓	104.90	850	8.53	2.03	15.38	33.7
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	105.23	✓	176.68	✓	176.69	✓	✓	104.91	920	8.60	2.30	15.69	32.5
PORT 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	54.62	✓	126.16	✓	126.13	✓	✓	54.64	942	8.53	7.29	15.97	39.6
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	54.63	✓	126.16	✓	126.13	✓	✓	54.62	1003	8.54	7.56	16.52	40.1
PORT 2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.29	✓	84.94	✓	84.83	✓	✓	14.31	1029	8.57	2.49	18.31	44.1
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.27	✓	84.83	✓	84.82	✓	✓	14.29	1052	8.51	3.07	18.79	44.4
	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.29	✓	84.83	✓	84.82	✓	✓	14.32	1107	8.47	4.82	18.76	45.0

Notes:
PORT 4: NO ODOR, CLEAR
PORT 3: NO ODOR, CLEAR
PORT 2: NO ODOR, CLEAR

Total Volume: _____

GEOFON INCORPORATED

(5)

Groundwater Sampling
Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-18
Sampling Zone No.: 5/4/3/2
Depth (ft): 683'/563'/424'/330'

Start Time: 725
Finish Time: 1050

Date: 2/5/03

Page: 1 OF 1

Beginning of Session: 14.24

Water Pressure Inside Casing:

End of Session: 14.22

	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	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~~) mS/m
PORT 5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	159.37	✓	204.72	✓	204.64	✓	✓	159.34	745	9.19	0.54	15.60	31.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	159.43	✓	204.70	✓	204.65	✓	✓	159.30	815	8.97	0.67	16.68	29.3
PORT 4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	107.08	✓	153.19	✓	153.18	✓	✓	107.07	846	8.75	0.24	17.11	41.7
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	107.09	✓	153.18	✓	153.18	✓	✓	107.04	908	8.62	1.19	17.29	41.9
PORT 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	46.07	✓	93.44	✓	93.45	✓	✓	46.07	933	8.33	0.10	17.40	58.8
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	46.05	✓	93.46	✓	93.46	✓	✓	46.05	952	8.24	0.12	17.87	56.3
PORT 2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.26	✓	51.19	✓	51.20	✓	✓	14.32	1017	8.32	0.93	17.90	48.1
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.22	✓	51.18	✓	51.18	✓	✓	14.22	1036	8.18	1.30	17.72	48.7

Notes:
PORT 5: NO ODOR, CLEAR
PORT 4: NO ODOR, CLEAR
PORT 4: NO ODOR, CLEAR
PORT 2: NO ODOR, CLEAR

Total Volume: _____

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Groundwater Sampling
Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-4
Sampling Zone No.: 3/2/1
Depth (ft): 322'/242'/152'

Start Time: 650
Finish Time: 925

Date: 2/6/03

Page: 1 OF 1

Beginning of Session: 14.27

Water Pressure Inside Casing:

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	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~~) mS/m
PORT 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	54.16	✓	114.58	✓	114.56	✓	✓	54.14	711	8.07	19.1	14.18	46.5
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	54.14	✓	114.56	✓	114.58	✓	✓	54.14	728	7.98	20.7	14.42	39.9
PORT 2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	18.39	✓	78.97	✓	78.97	✓	✓	18.42	752	7.99	3.23	14.73	86.9
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	18.40	✓	78.96	✓	78.96	✓	✓	18.40	809	7.95	9.32	14.83	89.5
PORT 1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.26	✓	41.12	✓	41.13	✓	✓	14.31	845	8.20	6.59	15.05	41.5
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.26	✓	41.14	✓	41.12	✓	✓	14.31	902	8.17	7.58	15.16	40.8
	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.26	✓	41.13	✓	41.11	✓	✓	14.31	922	8.12	8.11	15.24	40.9

Notes:
PORT 3: NO ODOR; CLEAR
PORT 2: NO ODOR; CLEAR
PORT 1: NO ODOR; CLEAR

Total Volume: _____

GEOFON INCORPORATED

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Groundwater Sampling
Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-3
Sampling Zone No.: 4/3/2
Depth (ft): 560'/349'/255'

Start Time: 640
Finish Time: 930

Date: 2/6/03

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Beginning of Session: 14.31

Water Pressure Inside Casing:

End of Session: 14.29

	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	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~~) m S/m
PORT 4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	137.71	✓	206.94	✓	206.92	✓	✓	137.83	1027	8.82	0.92	18.83	31.3
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	137.46	✓	206.92	✓	206.92	✓	✓	137.31	1050	8.71	0.94	19.02	31.1
PORT 3	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	45.19	✓	116.59	✓	116.60	✓	✓	45.20	1111	8.29	1.76	18.82	47.0
	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	45.20	✓	116.58	✓	116.59	✓	✓	45.19	1129	8.31	1.52	18.24	45.4
PORT 2	5	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.28	✓	75.68	✓	75.67	✓	✓	14.34	1146	8.45	2.63	18.33	40.8
	6	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.27	✓	75.66	✓	75.66	✓	✓	14.33	1200	8.43	1.54	18.57	42.2
	7																						
	8																						
	9																						
	10																						
	11																						
	12																						

Notes:
PORT 4: NO ODOR; CLEAR
PORT 3: NO ODOR, CLEAR
PORT 2: NO ODOR; CLEAR

Total Volume: _____

GEOFON INCORPORATED

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Groundwater Sampling

Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-14
Sampling Zone No.: 5/4/3/2/1
Depth (ft): 542'/458'/385'/280'/210'
Start Time: 715
Finish Time: 1115

Date: 2/10/03

Page: 1 OF 1

Beginning of Session: 14.26

Water Pressure Inside Casing:

End of Session: 14.24

	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	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~~) mS/m
PORT 5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	139.39	✓	175.47	✓	175.47	✓	✓	139.34	730	8.85	2.95	12.61	43.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	139.25	✓	175.45	✓	175.44	✓	✓	139.33	753	8.99	3.83	12.5	32.1
PORT 4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	103.20	✓	139.02	✓	139.02	✓	✓	103.22	817	8.45	0.12	14.31	57.2
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	103.21	✓	139.01	✓	139.03	✓	✓	103.17	843	8.36	0.14	15.47	56.3
	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	103.17	✓	139.01	✓	139.01	✓	✓	103.16	903	8.22	0.17	15.38	57.0
PORT 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	70.42	✓	106.91	✓	106.92	✓	✓	70.42	932	8.29	0.11	17.18	99.9
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	70.39	✓	106.90	✓	106.93	✓	✓	70.39	950	8.25	0.34	18.05	99.9
PORT 2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	24.56	✓	61.21	✓	61.24	✓	✓	24.61	1010	8.10	0.08	18.59	95.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	24.58	✓	61.23	✓	61.25	✓	✓	24.59	1025	8.01	0.09	18.05	93.0
PORT 1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.25	✓	30.90	✓	30.92	✓	✓	14.31	1045	7.90	6.19	19.15	109.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.23	✓	30.89	✓	30.91	✓	✓	14.27	1103	7.85	7.24	19.50	114.0

Notes:
PORT 5: Slight H_2S ODOR, CLEAR
PORT 4: No odor, CLEAR
PORT 3: No odor, CLEAR
PORT 2: No ODOR, Clear
PORT 1: NO ODOR, CLEAR

Total Volume: _____

GEOFON INCORPORATED

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Groundwater Sampling
Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-12
Sampling Zone No.: 5/4/3/2/1
Depth (ft): 551'/435'/320'/244'/140'
Start Time: 640
Finish Time: 1055

Date: 2/14/03

Page: 1 OF 1

Beginning of Session: 14.26

End of Session: 14.27

Water Pressure Inside Casing:

	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	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)~~ mS/m
PORT 5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	198.33	✓	202.91	✓	202.88	✓	✓	198.21	709	8.59	4.94	14.83	51.6
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	198.33	✓	202.91	✓	202.88	✓	✓	198.24	732	8.60	7.08	15.02	38.4
PORT 4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	149.49	✓	156.27	✓	156.22	✓	✓	149.49	758	8.41	0.22	13.98	48.5
PORT 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	101.11	✓	107.23	✓	107.24	✓	✓	100.09	829	8.47	2.51	16.59	41.5
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	101.20	✓	107.23	✓	107.23	✓	✓	101.18	836	8.43	3.46	16.32	42.1
PORT 2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	66.85	✓	72.75	✓	72.72	✓	✓	65.98	913	8.47	1.05	16.92	48.8
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	65.98	✓	72.72	✓	72.71	✓	✓	65.01	934	8.48	1.34	17.07	49.2
	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	65.97	✓	72.74	✓	72.74	✓	✓	65.02	955	8.51	1.46	17.22	48.9
PORT 1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	20.29	✓	30.55	✓	30.51	✓	✓	20.28	1015	8.25	1.72	18.77	57.5
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	20.28	✓	30.53	✓	30.51	✓	✓	20.31	1025	8.25	5.32	17.56	57.4

Notes:
PORT 5: NO ODOR, CLEAR
PORT 4: NO ODOR, CLEAR
PORT 3: NO ODOR, CLEAR
PORT 2: NO ODOR, CLEAR
PORT 1: NO ODOR, CLEAR

Total Volume: _____

GEOFON INCORPORATED

(10)

Groundwater Sampling

Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-23
Sampling Zone No.: 4/3/2/1
Depth (ft): 445'/320'/255'/175'
Start Time: 700
Finish Time: 1000

Date: 2/17/03

Page: 1 OF 2

Beginning of Session: 14.18

End of Session: 14.19

Water Pressure Inside Casing:

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	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~~) mS/m
PORT 4 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	116.45	✓	158.75	✓	158.75	✓	✓	116.41	718	8.78	0.35	16.69	56.7
PORT 4 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	116.37	✓	158.73	✓	158.72	✓	✓	116.38	734	8.73	0.12	17.28	58.9
PORT 3 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	61.53	✓	105.05	✓	105.06	✓	✓	61.55	757	8.77	12.8	17.31	44.5
PORT 3 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	61.50	✓	105.06	✓	105.06	✓	✓	61.53	820	8.65	2.67	17.82	43.5
PORT 3 3	✓	✓	✓	✓	✓	✓	✓	✓	✓	61.51	✓	105.06	✓	105.07	✓	✓	61.52	840	8.64	1.12	18.30	43.2
PORT 2 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	33.17	✓	76.76	✓	76.79	✓	✓	33.18	900	8.19	0.12	18.42	96.7
PORT 2 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	33.16	✓	76.77	✓	76.78	✓	✓	33.14	914	7.98	0.52	18.79	99.7
PORT 1 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.27	✓	41.69	✓	41.68	✓	✓	14.34	936	8.13	4.86	19.28	95.2
PORT 1 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.29	✓	41.71	✓	41.70	✓	✓	14.32	952	7.94	5.77	19.07	98.7

Notes:

PORT 4: CLEAR, NO ODOR
PORT 3: CLEAR, NO ODOR, SOME EFFERVESCENCE
PORT 2: CLEAR, NO ODOR
PORT 1: CLEAR, NO ODOR

Total Volume: _____

GEOFON INCORPORATED

(11)

Groundwater Sampling
Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-24
Sampling Zone No.: 4/3/2/1
Depth (ft): 555'/435'/374'/279'
Start Time: 1045
Finish Time: 1320

Date: 2/17/03

Page: 2 OF 2

Beginning of Session: 14.24

Water Pressure Inside Casing:

End of Session: 14.23

	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	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)
PORT 4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	113.54	✓	165.62	✓	165.62	✓	✓	113.46	1055	8.94	0.17	20.06	31.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	113.50	✓	165.63	✓	165.61	✓	✓	113.55	1114	8.92	0.22	21.00	30.4
PORT 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	61.65	✓	114.88	✓	114.85	✓	✓	61.67	1136	9.07	4.18	21.59	34.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	61.64	✓	114.85	✓	114.86	✓	✓	61.64	1156	9.13	4.99	20.92	33.3
PORT 2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	34.67	✓	87.90	✓	87.92	✓	✓	34.63	1216	9.09	3.85	20.15	40.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	34.59	✓	87.90	✓	87.90	✓	✓	34.60	1233	8.86	1.68	19.77	47.1
PORT 1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.28	✓	47.15	✓	47.14	✓	✓	14.31	1250	8.46	0.97	19.52	59.2
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.25	✓	47.6	✓	47.15	✓	✓	14.31	1306	8.40	3.78	19.58	61.9

Notes:
PORT 4: CLEAR, NO ODOR
PORT 3: CLEAR, SLIGHT H_2S ODOR
PORT 2: CLEAR, NO ODOR
PORT 1: CLEAR, NO ODOR

Total Volume: _____

GEOFON INCORPORATED

(12)

Groundwater Sampling

Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-22
Sampling Zone No.: 3/2/1
Depth (ft): 388'/329'/243'

Start Time: 650
Finish Time: 945

Date: 2/18/03

Page: 1 of 2

Beginning of Session: 14.16

Water Pressure Inside Casing:

End of Session: 14.19

	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	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)
PORT 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	46.21	✓	107.48	✓	107.48	✓	✓	46.20	704	8.69	0.11	14.79	60.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	46.17	✓	107.48	✓	107.48	✓	✓	46.18	726	8.75	1.63	16.02	54.4
PORT 2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	20.50	✓	81.40	✓	81.40	✓	✓	20.51	750	8.78	1.24	14.69	53.3
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	20.01	✓	81.38	✓	81.40	✓	✓	20.02	814	8.69	0.77	16.28	52.9
	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	19.98	✓	81.38	✓	81.40	✓	✓	20.01	830	8.73	0.85	15.44	53.4
PORT 1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.32	✓	43.64	✓	43.61	✓	✓	14.37	854	8.42	21.7	14.70	104.0
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.31	✓	43.63	✓	43.64	✓	✓	14.30	918	8.44	20.4	15.72	106.0
	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.30	✓	43.63	✓	43.63	✓	✓	14.37	935	8.36	18.3	16.36	109.0

Notes:
PORT 3: CLEAR, SLIGHT H_2S ODOR
PORT 2: CLEAR, NO ODOR
PORT 1: CLEAR, NO ODOR

Total Volume: _____

GEOFON INCORPORATED

(13)

Groundwater Sampling
Field Data Sheet for Multi-Port Well

JPL Pasadena
Contract #: N68711-01-D-6008
Delivery Order #: 0001

Well ID: MW-11
Sampling Zone No.: 4/3/2/1
Depth (ft): 519'/425'/254'/145'

Start Time: 1025
Finish Time: 1255

Date: 2/18/03

Page: 2 OF 2

Beginning of Session: 14.23

End of Session: 14.22

Water Pressure Inside Casing:

	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	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)~~ mS/m
PORT 4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	122.32	✓	182.57	✓	182.50	✓	✓	122.34	1046	8.97	0.99	18.20	26.6
PORT 3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	81.32	✓	139.46	✓	139.24	✓	✓	81.31	1109	8.62	21.3	18.41	40.1
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	81.30	✓	139.43	✓	139.41	✓	✓	81.29	1134	8.44	20.0	18.94	40.6
PORT 2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.26	✓	67.17	✓	67.13	✓	✓	14.30	1157	8.51	3.66	18.75	43.2
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.29	✓	67.16	✓	67.11	✓	✓	14.32	1212	8.64	4.58	18.03	43.7
PORT 1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.24	✓	28.72	✓	28.70	✓	✓	14.25	1232	8.53	0.14	18.27	54.3
	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.24	✓	28.74	✓	28.71	✓	✓	14.25	1245	8.52	0.10	18.48	54.8

Notes:
PORT 4: CLEAR, MILD H_2S ODOR
PORT 3: CLEAR, SLIGHT H_2S ODOR
PORT 2: CLEAR, SLIGHT H_2S ODOR
PORT 1: CLEAR, NO ODOR

Total Volume: _____