

APPENDIX A

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-1



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 / Mark Swindells
 Date: 5/30/03
 Weather: Clear; hot

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

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{119.77}{\text{TD (feet)}} - \frac{21.10}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{193.2}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
907	21.2	30	7.45	61.8	2.44	8.02	17.76	0.00	
914	21.1	60	7.42	61.6	0.32	11.52	17.39	0.00	
921	21.1	90	7.40	59.2	0.83	12.40	17.57	0.00	
928	21.1	120	7.33	61.8	1.29	12.37	17.70	0.00	
935	21.1	150	7.40	61.6	1.19	12.13	17.86	0.00	
942	21.1	180			2.02				
		200							

Total Purge Volume: 200 (Gallons)

Total Discharge: 3.05 (Casing Volumes)

Approx. Purge Rate: 4.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at 852 Purge time start:900

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

WATER DISPOSAL

Purge water storage: Water buffalo

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source / _____)</u>
Sample ID: <u> MW-1 </u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u> 950 </u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u> 3+1+1+1 </u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-5



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 / Mark Swindells
 Date: 5/28/03
 Weather: Clear, warm

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

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{140.12}{\text{TD (feet)}} - \frac{47.42}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{181.5}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
749	47.6	30	7.72	44.6	10.43	12.57	19.15	0.00	Rust-Colored, Clearing Quickly
755	47.5	60	7.64	40.0	8.14	12.09	19.29	0.00	
804	47.4	90	7.69	39.6	8.30	14.18	18.34	0.00	
810	47.4	120	7.62	39.3	4.02	12.66	18.02	0.00	
816	47.4	150	7.56	38.4	3.35	14.45	18.49	0.00	
822	47.4	180	7.53	39.2	5.98	14.75	18.72	0.00	
825	47.4	190	7.41	39.6	2.64	12.46	19.03	0.00	

Total Purge Volume: 190 (Gallons)

Total Discharge: 3.13 (Casing Volumes)

Approx. Purge Rate: 5.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at 734 Purge time start:743

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

WATER DISPOSAL

Purge water storage: Water buffalo to Polytant #15

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source / _____)</u>
Sample ID: <u> MW-5 </u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u> 830 </u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u> 3+1+1+1+2 </u>	Sample Time: _____	No. of Containers: _____	Sample Time: _____

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-6



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/Mark Swindells
 Date: 5/29/03
 Weather: Clear; warm

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

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{244.78}{\text{TD (feet)}} - \frac{168.59}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{149.2}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
929	168.7	30	7.63	110.0	53.1	13.54	21.30	0.00	
941	168.6	60	7.52	108.5	40.9	13.32	21.71	0.00	
953	168.6	90	7.24	105.4	19.8	11.74	22.26	0.00	
1005	168.6	120	7.27	105.2	8.68	12.72	22.51	0.00	
1017	168.6	150	7.32	106.4	8.17	13.37	21.88	0.00	

Total Purge Volume: 150 (Gallons)

Total Discharge: 3.00 (Casing Volumes)

Approx. Purge Rate: 2.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start: 906 Purge time Start: 917

Start: 845

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

WATER DISPOSAL

Purge water storage: Water Buffalo to Polytank # 15

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>MS/MSD</u>	<u>Blank</u>	<u>Other (Trip / Source /)</u>
Sample ID: <u> MW-6 </u>	Sample ID: <u> MW-6 </u>	Type: _____	Type: _____
Sample Time: <u> 1025 </u>	Sample Time: <u> 1025 </u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u> 3+1+1+1 </u>	No. of Containers: <u> 3+1+1+1 </u>	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-7



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 / Mark Swindells
 Date: 5/29/03
 Weather: Clear, Hot

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

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{274.65}{\text{TD (feet)}} - \frac{187.83}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{170.0}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
1110	188.1	25	7.82	54.4	1.57	12.63	23.56	0.00	
1120	188.0	50	7.82	51.5	1.43	11.63	23.88	0.00	
1130	187.9	75	7.77	51.4	5.44	11.68	23.09	0.00	
1140	187.9	160	7.86	51.3	6.37	12.60	22.60	0.00	
1150	187.9	125	7.80	51.3	2.57	11.22	22.98	0.00	
1200	187.9	150	7.85	50.9	2.99	12.02	23.20	0.00	
1210	187.9	175	7.74	51.0	1.20	9.81	24.37	0.00	

Total Purge Volume: 175 (Gallons)

Total Discharge: 3.03 (Casing Volumes)

Approx. Purge Rate: 2.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge Start: 1052 Purge Start: 1100

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

WATER DISPOSAL

Purge water storage: Water Buffalo to Polytank #15

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>MS / MSD</u>	<u>Additional Sampling</u>	<u>Other</u>
Sample ID: <u> MW-7 </u>	Sample ID: <u> MW-7 </u>	Type: _____	Type: _____
Sample Time: <u> 1220 </u>	Sample Time: <u> 1220 </u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u> 3+1+1+1 </u>	No. of Containers: <u> 3+1+1+1 </u>	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-8



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 / Mark Swindells
 Date: 5/28/03
 Weather: Cool; Hot

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

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{204.86}{\text{TD (feet)}} - \frac{112.82}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{180.3}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
1002	112.9	30	7.40	44.3	0.95	12.10	21.65	0.00	
1014	113.0	60	7.56	44.2	0.29	12.48	21.37	0.00	
1026	112.9	90	7.62	42.9	0.13	12.86	20.94	0.00	
1038	112.9	120	7.68	43.7	0.04	12.62	21.33	0.00	
1050	112.9	150	7.74	43.3	0.02	12.52	21.48	0.00	
1102	112.9	180	7.75	43.8	0.09	12.93	21.35	0.00	
1105	112.9	190	7.73	43.1	0.04	13.38	20.51	0.00	

Total Purge Volume: 190 (Gallons)

Total Discharge: 3.17 (Casing Volumes)

Approx. Purge Rate: 2.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge Start: 945 Purge Time Start: 950

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

WATER DISPOSAL

Purge water storage: Water Buffalo to Polytank #15

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source / _____)</u>
Sample ID: <u> MW-8 </u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u> 1115 </u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u> 3+1+1+1 </u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-9



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 / Mark Swindells
 Date: 5/30/03
 Weather: Clear; Hot

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

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{68.07}{\text{TD (feet)}} - \frac{17.00}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{100.0}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
1129	17.1	20	7.67	50.5	8.37	16.57	20.51	0.00	
1133	17.0	40	7.47	51.0	8.99	14.87	20.87	0.00	
1137	17.0	60	7.39	49.9	8.73	14.65	20.24	0.00	
1141	17.0	80	7.27	50.3	8.82	14.41	20.55	0.00	
1145	17.0	100	7.22	50.9	8.99	13.86	20.62	0.00	

Total Purge Volume: 100 (Gallons)

Total Discharge: 3.00 (Casing Volumes)

Approx. Purge Rate: 5.00 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge Start: 1045 Purge Time Start: 1125

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

WATER DISPOSAL

Purge water storage: Water Buffalo

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source / _____)</u>
Sample ID: <u> MW-9 </u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u> 1155 </u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u> 3+1+1+1 </u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-10



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 / Mark Swindells
 Date: 5/30/03
 Weather: Clear and cool

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

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{153.77}{\text{TD (feet)}} - \frac{65.97}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{171.9}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
658	66.2	30	7.54	99.9	1.91	9.44	19.62	0.00	
704	66.1	60	7.58	100.2	0.67	9.56	19.13	0.00	
710	66.0	90	7.30	99.8	0.56	9.14	19.36	0.00	
716	66.0	120	7.34	100.4	0.48	9.47	19.35	0.00	
722	66.0	150	7.23	100.2	0.24	9.89	19.40	0.00	
728	66.0	180	7.16	99.1	0.18	9.96	19.37	0.00	

Total Purge Volume: 180 (Gallons)

Total Discharge: _____ (Casing Volumes)

Approx. Purge Rate: 5.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge Start: 646 Purge Start Time: 652

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

WATER DISPOSAL

Purge water storage: Water Buffalo

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source / _____)</u>
Sample ID: <u> MW-10 </u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u> 735 </u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u> 3+1+1+1+2 </u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-13



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 / Mark Swindells
 Date: 5/29/03
 Weather: Clear, Hot

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

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{73.91}{\text{TD (feet)}} - \frac{27.60}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{90.7}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
1254	27.8	20	7.90	58.1				0.00	
1258	27.7	40	7.87	57.1				0.00	
1302	27.6	60	7.77	55.5				0.00	
1306	27.6	80	7.74	55.4				0.00	
1310	27.6	100	7.72	54.7				0.00	

Total Purge Volume: 150 (Gallons)

Total Discharge: 1.02 (Casing Volumes)

Approx. Purge Rate: 3.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Begin Purge at 726 Begin Timing at 730

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

WATER DISPOSAL

Purge water storage: Water Buffalo to Polytank #1

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source / _____)</u>
Sample ID: <u> MW-13 </u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u> 830 </u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u> 3+1+1+1+2+2 </u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-15



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 / Mark Swindells
 Date: 5/29/03
 Weather: Clear, Hot

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 Diamond Bar, CA 91765
 Telephone: (909) 396-7662
 Fax: (909) 396-1455

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{73.91}{\text{TD (feet)}} - \frac{27.60}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{90.7}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
1254	27.8	20	7.90	58.1	3.33	13.60	20.37	0.00	
1258	27.7	40	7087	57.1	4.24	13.88	19.52	0.00	
1302	27.6	60	7077	55.5	4.21	11.80	19.03	0.00	
1306	27.6	80	7.74	55.4	4.26	12.55	18.77	0.00	
1310	27.6	100	7.72	54.7	4.61	10.25	19.16	0.00	

Total Purge Volume: 100 (Gallons)

Total Discharge: 3.11 (Casing Volumes)

Approx. Purge Rate: 5.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge Start: 1245 Purge Time Start: 1250

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

WATER DISPOSAL

Purge water storage: Water Buffalo to Water Tank # 15

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source / _____)</u>
Sample ID: <u> MW-15 </u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u> 1315 </u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u> 3+1+1+1 </u>	Sample Time: _____	No. of Containers: _____	Sample Time: _____

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-16



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 / Mark Swindells
 Date: 5/27/03
 Weather: Clear; Warm

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

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{284.86}{\text{TD (feet)}} - \frac{212.05}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{142.6}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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)	Salinity (%)	Comments
957	212.1	30	7.65	69.9	1.82	18.68	22.80	0.00	
1009	212.2	60	7.89	52.1	0.21	12.57	22.52	0.00	
1021	212.1	90	7.84	50.0	0.17	11.96	21.92	0.00	
1033	212.1	120	7.81	49.9	0.14	14.54	22.82	0.00	
1045	212.1	150	7.71	50.8	0.11	10.64	23.18	0.00	

Total Purge Volume: 150 (Gallons)

Total Discharge: 3.05 (Casing Volumes)

Approx. Purge Rate: 2.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge Start: 930 Purge Time Start: 945

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

WATER DISPOSAL

Purge water storage: Water Buffalo to Polytank #1

Purge water disposal: _____

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original
 Sample ID: MW-16 Sample ID: _____
 Sample Time: 1050 Sample Time: _____
 No. of Containers: 3+1+1+1+2+2 No. of Containers: _____

Additional Sampling
 Type: _____ Type: _____
 Sample ID: _____ Sample ID: _____
 Sample Time: _____ Sample Time: _____
 No. of Containers: _____ No. of Containers: _____



Groundwater Sampling

Multi-Port Well Field Data Sheet **1**

JPL Pasadena

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

Well ID: MW-21

Sampling Zone No.: 5/4/3/2/1

Depth (ft): 372/320/240/161/90

Beginning of Session: 14.18

End of Session: 14.16

Start Time: 7:35

Finish Time: 12:55

Date: 4/17/03

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	Airm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In.	Pressure in MP	Time	PH	Turb. (NTU)
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	129.87	755	7.93	0.11	17.15	78.8
5	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	129.95	814	7.85	0.08	17.03	79.4
5	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	129.31	853	7.82	0.06	17.62	81.7
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	102.06	912	7.65	0.14	18.23	70.8
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	102.08	932	7.60	0.22	18.53	69.3
4	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	102.14	950	7.56	0.24	18.51	70.1
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	72.45	1015	7.84	0.14	19.31	100.4
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	71.95	1035	7.89	0.22	19.62	100.2
3	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	71.90	1058	7.82	0.31	19.35	99.8
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	37.94	1117	7.90	2.31	18.81	104.3
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	37.89	1145	7.88	1.77	18.62	102.1
2	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	37.91	1200	7.84	0.93	18.79	101.4
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.16	1212	8.02	4.37	18.84	100.1
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.19	1227	7.96	3.51	18.89	100.6
1	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.17	1247	8.04	2.74	18.93	100.4

Notes:

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

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

Total Volume: _____

444



Groundwater Sampling
 Multi-Port Well Field Data Sheet

JPL Pasadena

Contract #: N68711-01-D-6008

Delivery Order #: 0001

Well ID: MW-4

Sampling Zone No.: 5/4/2/1

Depth (ft): 513/392/322/240/150

Beginning of Session: 14.16

End of Session: 14.15

Start Time: 705

Finish Time: 1330

Date: 4/21/03

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 (uMhos/cm ²)
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	138.11	734	7.85	8.92	17.07	38.7
5	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	138.09	750	7.77	6.26	16.08	33.9
5	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	138.08	807	7.71	4.86	16.44	34.5
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	86.30	828	7.43	2.18	16.25	37.6
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	86.28	855	7.51	2.15	17.36	37.2
4	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	86.25	920	7.46	1.94	17.63	37.4
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	55.26	955	7.64	25.4	18.31	43.3
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	55.24	1011	7.60	20.3	17.95	41.7
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	19.98	1039	7.41	2.71	16.74	97.1
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	19.98	1103	7.38	1.22	16.49	98.8
2	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	19.98	1127	7.37	1.04	16.67	98.7
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.20	1212	7.84	1.34	16.03	48.8
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.19	1232	7.93	0.86	15.97	47.8
1	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.20	1300	7.91	0.54	16.21	47.7
1	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.19	1325	7.88	0.31	16.31	47.9

Notes:

PORT 5: CLEAR, NO ODOR PORT 4: CLEAR, NO ODOR
 PORT 3: YELLOWISH COLOR, SLIGHT H₂S ODOR PORT 2: CLEAR, STRONG H₂S ODOR
 PORT 1: CLEAR, NO ODOR

Total Volume: _____



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena

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

Well ID: MW-4

Sampling Zone No.: 5/4/3/2 240
Depth (ft): 513/310/302/270

Beginning of Session: _____
End of Session: _____

Water Pressure Inside Casing: _____

Start Time: 645
Finish Time: _____

Date: 5/1/03
Page: 1 of 1

(2+)

Port #	Run #	Surface Function Checks					Position Sampler	Sample Collection Checks					Water Quality Parameters									
		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)
5	1	✓	✓	✓	✓	✓	✓	✓	138.27	✓	206.99	✓	206.98	✓	✓	138.22	841	7.78	5.62	16.93	37.9	5
5	2	✓	✓	✓	✓	✓	✓	138.22	✓	206.98	✓	206.01	✓	✓	138.21	905	7.74	3.16	17.11	38.4		
4	1	✓	✓	✓	✓	✓	✓	85.10	✓	154.59	✓	154.59	✓	✓	85.12	931	7.46	4.91	17.21	37.2	4	
4	2	✓	✓	✓	✓	✓	✓	85.09	✓	154.57	✓	154.58	✓	✓	85.09	952	7.42	1.82	17.33	37.4		
3	1	✓	✓	✓	✓	✓	✓	54.61	✓	124.73	✓	124.75	✓	✓	54.63	1016	7.82	36.1	17.54	42.8	3	
3	2	✓	✓	✓	✓	✓	✓	54.62	✓	124.74	✓	124.78	✓	✓	54.68	1039	7.63	19.2	17.59	43.2		
2	1	✓	✓	✓	✓	✓	✓	19.45	✓	89.74	✓	89.77	✓	✓	19.49	1104	7.33	3.17	17.33	96.4	2	
2	2	✓	✓	✓	✓	✓	✓	19.48	✓	89.75	✓	89.74	✓	✓	19.51	1141	7.28	1.98	17.44	97.1		
2	3	✓	✓	✓	✓	✓	✓	19.53	✓	89.70	✓	89.75	✓	✓	19.49	1203	7.34	0.64	17.59	97.2		

Notes: PORT 5: CLEAR, NO ODOR
PORT 3: YELLOWISH COLOR, SLIGHT H₂S ODOR
PORT 4: CLEAR, NO ODOR
PORT 2:

Total Volume: _____



Groundwater Sampling ③
Multi-Port Well Field Data Sheet

JPL Pasadena

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

Well ID: MW-19

Sampling Zone No.: 5/4/3/2/1
Depth (ft): 498/444/392/314/242
Beginning of Session: 14.07
End of Session: 14.10

Start Time: 750
Finish Time: 1415

Date: 4/22/03
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	Shoe Arm In	Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)
5	1	✓	✓	✓	✓	✓	✓	✓	80.77	✓	171.07	✓	171.08	✓	80.69	827	817	6.30	17.85	63.4	5
5	2	✓	✓	✓	✓	✓	✓	80.67	✓	171.06	✓	171.05	✓	80.67	853	808	4.22	18.02	64.2		
5	3	✓	✓	✓	✓	✓	✓	80.63	✓	171.06	✓	171.08	✓	80.63	914	814	3.84	18.14	64.4		
4	1	✓	✓	✓	✓	✓	✓	58.11	✓	147.68	✓	147.65	✓	58.10	947	773	0.93	18.86	45.6		
4	2	✓	✓	✓	✓	✓	✓	57.54	✓	147.67	✓	147.68	✓	57.58	1016	773	0.54	19.23	45.3		
3	1	✓	✓	✓	✓	✓	✓	35.35	✓	125.06	✓	125.09	✓	35.38	1051	802	0.66	19.35	101.2	3	
3	2	✓	✓	✓	✓	✓	✓	34.80	✓	125.05	✓	125.10	✓	34.79	1122	815	3.03	19.41	100.8		
2	1	✓	✓	✓	✓	✓	✓	14.28	✓	90.92	✓	90.91	✓	14.29	1205	819	3.14	19.32	100.4		
2	2	✓	✓	✓	✓	✓	✓	14.23	✓	90.90	✓	90.90	✓	14.24	1237	815	4.64	18.41	100.6	2	
2	3	✓	✓	✓	✓	✓	✓	14.26	✓	90.92	✓	90.89	✓	14.25	1307	817	6.23	17.84	100.2		
1	1	✓	✓	✓	✓	✓	✓	14.23	✓	60.06	✓	60.02	✓	14.30	1351	767	26.2	17.69	34.6	1	
1	2	✓	✓	✓	✓	✓	✓	14.25	✓	60.05	✓	60.04	✓	14.27	1406	777	28.3	17.12	32.7		

Notes:

PORT 5: CLEAR, NO ODOR
 PORT 3: CLEAR, NO ODOR
 PORT 1: SLIGHTLY TURBID (YELLOWISH), NO ODOR
 PORT 4: CLEAR, NO ODOR
 PORT 2: CLEAR, NO ODOR

Total Volume: _____



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena

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

Well ID: MW-14

Sampling Zone No.: 5/4/3/2/1

Depth (ft): 540/456/382/277/207

Beginning of Session: 14.24

End of Session: 14.26

Start Time: 720

Finish Time: 1345

Date: 4/23/03

Page: 1 OF 1

Water Pressure Inside Casing: _____

Port #	Run #	Surface Function Checks				Position Sampler	Sample Collection Checks						Water Quality Parameters							
		Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed		Shoe Out	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)
5	1	✓	✓	✓	✓	✓	✓	147.33	✓	182.42	✓	182.45	✓	147.29	801	8.18	0.54	17.71	32.1	5
5	2	✓	✓	✓	✓	✓	✓	147.28	✓	182.45	✓	182.45	✓	147.24	824	8.14	0.35	17.87	32.5	5
4	1	✓	✓	✓	✓	✓	✓	110.61	✓	146.00	✓	146.01	✓	110.57	857	8.56	0.22	19.79	53.5	4
4	2	✓	✓	✓	✓	✓	✓	110.58	✓	145.01	✓	145.98	✓	110.56	925	7.92	0.14	19.84	54.9	4
3	1	✓	✓	✓	✓	✓	✓	79.29	✓	113.94	✓	113.96	✓	79.30	1005	8.47	0.74	18.57	101.1	3
3	2	✓	✓	✓	✓	✓	✓	79.28	✓	113.90	✓	113.89	✓	79.26	1051	8.51	0.22	18.36	100.4	3
3	3	✓	✓	✓	✓	✓	✓	78.24	✓	113.93	✓	113.92	✓	78.21	1109	8.53	0.17	19.01	100.8	3
2	1	✓	✓	✓	✓	✓	✓	32.33	✓	68.16	✓	68.20	✓	32.36	1146	7.72	0.24	19.16	96.7	2
2	2	✓	✓	✓	✓	✓	✓	32.30	✓	68.19	✓	68.19	✓	32.34	1217	7.78	0.11	19.25	97.2	2
1	1	✓	✓	✓	✓	✓	✓	14.18	✓	37.39	✓	37.32	✓	14.19	1248	7.91	0.61	19.31	109.2	1
1	2	✓	✓	✓	✓	✓	✓	14.17	✓	37.38	✓	37.35	✓	14.20	1315	7.81	0.15	19.14	111.2	1

Notes:
 PORT 5: CLEAR, NO ODOR
 PORT 3: CLEAR, NO ODOR
 PORT 1: CLEAR, NO ODOR
 PORT 4: CLEAR, SLIGHT H₂S ODOR
 PORT 2: CLEAR, NO ODOR

Total Volume: _____



Groundwater Sampling 5
Multi-Port Well Field Data Sheet

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

Beginning of Session: 14.21

End of Session: 14.18

Start Time: 650

Finish Time: 1150

Date: 4/24/03

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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	305.02	320.83	320.80	715	7.45	0.24	13.64	35.7
5	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	306.01	320.85	320.82	749	7.50	0.13	15.34	34.6
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	218.38	243.64	243.57	821	7.78	5.58	17.61	31.3
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	218.28	243.63	243.57	845	7.82	0.85	15.91	29.9
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	158.17	182.58	182.57	911	8.29	0.17	17.47	54.4
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	158.20	182.56	182.58	933	8.24	0.11	17.44	54.8
3	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	157.63	182.59	182.58	953	8.27	0.08	17.39	55.9
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	83.04	107.84	107.82	1012	8.35	0.06	18.32	36.1
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	83.02	107.83	107.82	1031	8.29	0.06	17.92	36.6
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.22	36.43	36.41	1056	8.06	0.43	18.04	47.5
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.24	36.45	36.44		8.08	0.21	17.93	48.1
1	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.26	36.48	36.46	1137	8.11	0.12	17.68	48.9

Notes:

PORT 5: CLEAR, MILD H₂S ODOR
PORT 3: CLEAR, SLIGHT H₂S ODOR
PORT 1: CLEAR, NO ODOR

PORT 4: CLEAR, MILD H₂S ODOR
PORT 2: CLEAR, SLIGHT H₂S ODOR

Total Volume: _____



Groundwater Sampling
Multi-Port Well Field Data Sheet

6

JPL Pasadena

Contract #: N68711-01-D-6008

Delivery Order #: 0001

Well ID: MW-17

Sampling Zone No.: 5/4/3/2/1

Depth (ft): 126/502/468/370/250

Beginning of Session: 14.13

End of Session: 14.18

Start Time: 650

Finish Time: 1245

Date: 4/28/03

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Water Pressure Inside Casing: _____

Port #	Run #	Surface Function Checks				Position Sampler				Sample Collection Checks						Water Quality Parameters							
		Vacuum Check Valve Closed	Shoe Out	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 (microhos) microhos
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	248.40	✓	248.40	✓	✓	167.92	722	7.76	430	16.35	37.9	35
5	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	248.45	✓	248.40	✓	✓	167.81	250	7.72	331.0	17.25	35.8	35
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	186.63	✓	186.62	✓	✓	108.22	820	7.88	4.64	17.42	34.1	4
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	186.63	✓	186.60	✓	✓	106.11	845	7.81	4.65	17.51	34.8	4
4	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	186.60	✓	186.62	✓	✓	106.07	911	7.75	4.53	17.81	37.3	3
4	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	186.61	✓	186.60	✓	✓	106.05	935	7.84	3.57	18.06	35.1	3
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	136.34	✓	136.30	✓	✓	55.42	1006	7.76	8.49	17.92	40.9	2
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	136.32	✓	136.31	✓	✓	55.37	1028	7.66	8.98	17.65	42.4	2
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	95.97	✓	95.98	✓	✓	14.29	1054	7.66	2.07	12.88	43.2	1
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	95.98	✓	95.98	✓	✓	14.30	1120	7.64	1.44	18.02	43.7	1
2	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	95.98	✓	95.96	✓	✓	14.32	1140	7.69	1.02	18.12	43.0	1
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	45.77	✓	45.75	✓	✓	14.25	1204	7.43	4.53	17.74	42.4	1
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	45.78	✓	45.74	✓	✓	14.26	1220	7.37	0.28	17.75	45.1	1

Notes:

PORT 5: MILKY COLOR, NO ODOR

PORT 3: CLEAR, NO ODOR

PORT 1: CLEAR, NO ODOR

PORT 4: CLEAR, SOME DISSOLVED SOLIDS, NO ODOR

PORT 2: CLEAR, NO ODOR

Total Volume: _____



Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena

Contract #: N68711-01-D-6008

Delivery Order #: 0001

Well ID: MW-24

Sampling Zone No.: 5/4/3/2/1

Depth (ft): 678/554/435/373/279

Beginning of Session: 17.09

Water Pressure Inside Casing: _____

Start Time: 700

Finish Time: _____

Date: 4/29/03

Page: 1 of 1

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/cm ² mS/cm)					
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	168.22	756	226.99	226.97	✓	168.18	756	0.33	17.74	42.2	
5	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	168.22	830	226.99	226.99	✓	168.12	830	0.30	18.02	40.6	
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	114.02	901	174.16	174.20	✓	114.15	901	0.42	18.14	30.1	
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	114.21	927	174.15	174.17	✓	114.18	927	2.81	18.22	29.8	
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	62.46	1012	123.63	123.65	✓	62.47	1012	2.49	18.41	35.2	
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	62.43	1031	123.63	123.64	✓	62.43	1031	0.87	18.60	37.3	
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	36.36	1104	97.14	97.16	✓	36.40	1104	1.94	18.69	49.7	
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	36.38	1135	97.14	97.18	✓	36.37	1135	2.26	19.13	50.2	
2	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	36.31	1201	97.11	97.15	✓	36.31	1201	2.28	19.22	48.7	
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.22	1235	57.81	57.77	✓	14.28	1235	7.63	2.48	19.37	
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.19	1259	57.78	57.75	✓	14.23	1259	7.77	4.73	19.53	
1	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.20	1323	57.80	57.78	✓	14.23	1323	7.72	6.24	19.66	
1	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.18	1349	57.79	57.76	✓	14.21	1349	7.98	19.84	55.4	

Notes:

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

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

Total Volume: _____



Groundwater Sampling (8)
Multi-Port Well Field Data Sheet

JPL Pasadena

Contract #: N68711-01-D-6008

Delivery Order #: 0001

Well ID: MW-23

Sampling Zone No.: 5/4/3/2/1

Depth (ft): 542/445/319/254/174

Beginning of Session: 14.14

End of Session: 14.16

Start Time: 640

Finish Time: _____

Date: 4/30/03

Page: 1 of 1

Water Pressure Inside Casing: _____

Port #	Run #	Surface Function Checks						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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	209.17	✓	✓	✓	159.29	717	8.10	2.17	19.22	47.7
5	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	209.14	✓	✓	✓	159.24	744	8.15	1.29	19.45	48.3
5	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	209.11	✓	✓	✓	159.19	809	8.12	0.89	19.52	48.6
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	167.28	✓	✓	✓	117.12	835	8.52	0.34	19.50	36.2
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	167.27	✓	✓	✓	116.99	853	8.61	0.12	19.63	36.6
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	113.69	✓	✓	✓	62.08	913	8.55	0.78	18.86	42.4
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	113.68	✓	✓	✓	62.08	932	8.34	0.32	19.08	44.0
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	85.60	✓	✓	✓	33.72	951	8.10	0.09	18.60	95.1
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	85.62	✓	✓	✓	33.73	1007	8.21	0.05	18.87	99.7
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	51.59	✓	✓	✓	14.29	1037	8.18	3.05	19.22	102.4
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	51.58	✓	✓	✓	14.26	1056	8.15	15.3	19.41	101.3

Notes: PORT 5: SLIGHT H₂S ODOR, SOME EFFERVESCENCE, NO ODOR PORT 4: CLEAR, NO ODOR, SLIGHT EFFERVE SCENCE
 PORT 3: CLEAR, NO ODOR PORT 2: CLEAR, NO ODOR
 PORT 1: CLEAR, NO ODOR

Total Volume: _____



Groundwater Sampling

Multi-Port Well Field Data Sheet 9

JPL Pasadena

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

Well ID: MW-3

Sampling Zone No.: 5/4/3/2/1

Depth (ft): 653/558/346/252/172

Beginning of Session: 14.18

End of Session: 14.17

Start Time: 6:45

Finish Time: 11:45

Date: 5/1/03

Page: 1 OF 1

Water Pressure Inside Casing: _____

Port #	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	Shoe Arm In	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 (microhos) mg/lon
5	✓	✓	✓	✓	✓	✓	✓	✓	179.94	✓	257.95	✓	257.93	✓	179.91	719	7.82	0.56	18.64	35.5	5	
5	✓	✓	✓	✓	✓	✓	✓	✓	199.93	✓	257.96	✓	257.95	✓	179.96	742	9.75	0.41	18.69	36.2	5	
4	✓	✓	✓	✓	✓	✓	✓	✓	138.58	✓	217.13	✓	217.12	✓	138.51	807	9.80	0.75	18.52	29.0	4	
4	✓	✓	✓	✓	✓	✓	✓	✓	138.55	✓	217.13	✓	217.13	✓	139.68	940	9.06	0.67	18.92	32.2	4	
3	✓	✓	✓	✓	✓	✓	✓	✓	46.29	✓	127.67	✓	127.66	✓	46.30	959	8.91	0.14	19.62	42.9	3	
3	✓	✓	✓	✓	✓	✓	✓	✓	46.24	✓	127.67	✓	127.67	✓	46.27	918	8.82	0.11	18.70	44.7	3	
2	✓	✓	✓	✓	✓	✓	✓	✓	14.29	✓	87.12	✓	87.10	✓	14.34	1006	8.75	0.76	19.11	47.1	2	
2	✓	✓	✓	✓	✓	✓	✓	✓	14.27	✓	87.07	✓	87.07	✓	14.31	1027	8.50	0.95	19.00	47.4	2	
2	✓	✓	✓	✓	✓	✓	✓	✓	14.25	✓	87.09	✓	87.06	✓	14.29	1044	8.26	1.35	19.59	46.7	2	
1	✓	✓	✓	✓	✓	✓	✓	✓	14.24	✓	54.51	✓	54.48	✓	14.29	1103	8.28	10.93	19.64	52.8	1	
1	✓	✓	✓	✓	✓	✓	✓	✓	14.25	✓	54.53	✓	54.51	✓	14.27	1123	8.33	20.4	19.44	55.2	1	

Notes: PORT 5: CLEAR, SLIGHT H₂S ODOR, SOME EFFERESCENCE Total Volume: _____
PORT 3: CLEAR, SLIGHT H₂S ODOR, SLIGHT EFFERESCENCE
PORT 1: CLEAR, NO ODOR
PORT 2: CLEAR, NO ODOR



Groundwater Sampling
Multi-Port Well Field Data Sheet

10

JPL Pasadena

Contract #: N68711-01-D-6008

Delivery Order #: 0001

Well ID: MW - 11

Sampling Zone No.: 514/3/2/1

Depth (ft): 629/574/429/259/149

Beginning of Session: 14.10

End of Session: 14.14

Start Time: 640

Finish Time:

Date: 5/6/03

Page: 1 OF 1

Water Pressure Inside Casing:

Port #	Run #	Surface Function Checks					Position Sampler	Sample Collection Checks					Water Quality Parameters									
		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)
5	1	✓	✓	✓	✓	✓	✓	✓	172.76	✓	234.51	✓	234.42	✓	✓	172.75	721	692	4.95	17.52	31.3	5
5	2	✓	✓	✓	✓	✓	✓	✓	172.74	✓	234.48	✓	234.40	✓	✓	172.72	745	681	1.74	16.50	33.7	5
4	1	✓	✓	✓	✓	✓	✓	✓	123.13	✓	190.32	✓	190.28	✓	✓	123.14	811	817	0.55	17.24	22.9	4
4	2	✓	✓	✓	✓	✓	✓	✓	123.14	✓	190.34	✓	190.14	✓	✓	123.13	834	805	0.08	17.71	23.5	4
3	1	✓	✓	✓	✓	✓	✓	✓	83.15	✓	148.10	✓	147.90	✓	✓	83.19	857	828	47.9	17.93	38.9	3
3	2	✓	✓	✓	✓	✓	✓	✓	83.17	✓	148.06	✓	147.94	✓	✓	83.18	924	827	33.9	17.43	39.7	3
3	3	✓	✓	✓	✓	✓	✓	✓	82.62	✓	148.09	✓	147.93	✓	✓	82.71	943	830	23.5	18.10	38.8	3
2	1	✓	✓	✓	✓	✓	✓	✓	14.22	✓	76.66	✓	76.60	✓	✓	14.26	1005	819	2.08	17.92	43.6	2
2	2	✓	✓	✓	✓	✓	✓	✓	14.18	✓	76.64	✓	76.57	✓	✓	14.26	1022	814	1.81	17.46	44.0	2
1	1	✓	✓	✓	✓	✓	✓	✓	14.19	✓	35.75	✓	35.72	✓	✓	14.24	1041	784	1.37	17.28	52.7	1
1	2	✓	✓	✓	✓	✓	✓	✓	14.16	✓	35.74	✓	35.75	✓	✓	14.24		777	0.36			1

Notes:

PORT 5: CLEAR SLIGHT H₂S ODOR

PORT 3: SLIGHTLY TURBID, NO ODOR

PORT 1: CLEAR,

PORT 4: CLEAR, SLIGHT H₂S ODOR

PORT 2: CLEAR, NO ODOR

Total Volume:



Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena

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

Well ID: MWJ-12

Sampling Zone No.: 5/4/3/2/1

Depth (ft): 548/436/323/243/40

Beginning of Session: 14.14
 End of Session: 14.15

Start Time: 6:30

Finish Time: 11:20

Date: 5/7/03

Page: 1 OF 1

Water Pressure Inside Casing: _____

Port #	Run #	Surface Function Checks						Sample Collection Checks							Water Quality Parameters									
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Position Sampler 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 (microhos) m s/m	
																								✓
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	204.17	✓	213.07	✓	203.02	✓	204.05	719	7.75	2.22	15.62	30.1	1
5	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	204.16	✓	213.08	✓	213.05	✓	204.08	744	7.89	1.53	15.68	30.4	2
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	155.34	✓	166.63	✓	166.57	✓	155.34	908	7.82	0.63	16.02	33.6	3
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	155.31	✓	166.59	✓	166.43	✓	155.34	826	7.78	0.31	16.13	34.0	1
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	107.04	✓	118.28	✓	118.28	✓	107.05	850	7.94	0.44	16.53	32.1	2
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	107.02	✓	118.27	✓	118.26	✓	107.00	913	7.93	0.49	15.82	32.0	3
3	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	107.00	✓	118.26	✓	118.28	✓	106.98	932	7.95	0.46	16.13	32.3	
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	71.06	✓	84.22	✓	84.20	✓	71.07	954	7.71	1.46	16.22	36.2	2
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	71.05	✓	84.20	✓	84.21	✓	71.06	1013	7.77	1.16	16.37	36.7	1
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	26.09	✓	44.81	✓	44.81	✓	26.07	1010	7.69	13.2	16.48	41.6	1
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	26.07	✓	44.79	✓	44.82	✓	26.05	1055	7.37	7.52	17.19	42.3	3

Notes:

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

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

Total Volume: _____



Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena

Contract #: N68711-01-D-6008

Delivery Order #: 0001

Well ID: MW-22

Sampling Zone No.: 5/4/3/2/1

Depth (ft): 588/467/389/329/245

Beginning of Session: 14.10

End of Session: 14.12

Start Time: 6:40

Finish Time: 11:15

Date: 5/8/03

Page: 1 OF 1

Water Pressure Inside Casing: _____

Port #	Run #	Surface Function Checks					Position Sampler	Sample Collection Checks							Water Quality Parameters						
		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)
5	1	✓	✓	✓	✓	✓	✓	✓	202.48	✓	200.10	✓	202.08	✓	202.43	72.3	9.01	0.61	17.44	24.4	5
5	2	✓	✓	✓	✓	✓	✓	202.44	✓	200.11	✓	200.08	✓	202.45	74.9	8.86	0.20	16.22	24.0		
4	1	✓	✓	✓	✓	✓	✓	150.02	✓	148.21	✓	148.20	✓	149.99	81.2	7.81	0.14	16.91	24.3	4	
4	2	✓	✓	✓	✓	✓	✓	150.02	✓	148.22	✓	148.19	✓	149.98	83.7	7.84	0.07	17.04	23.8		
3	1	✓	✓	✓	✓	✓	✓	116.19	✓	115.21	✓	115.19	✓	116.17	85.5	7.68	0.75	17.28	33.0	3	
3	2	✓	✓	✓	✓	✓	✓	116.17	✓	115.19	✓	115.20	✓	116.17	91.7	7.79	0.09	17.41	34.0		
2	1	✓	✓	✓	✓	✓	✓	90.11	✓	89.27	✓	89.26	✓	90.12	93.5	7.95	0.13	16.87	34.4	2	
2	2	✓	✓	✓	✓	✓	✓	90.14	✓	89.27	✓	89.25	✓	90.11	95.5	7.90	0.07	16.74	35.5		
1	1	✓	✓	✓	✓	✓	✓	53.66	✓	53.10	✓	53.11	✓	53.65	101.7	7.31	2.32	16.86	77.1	1	
1	2	✓	✓	✓	✓	✓	✓	53.63	✓	53.09	✓	53.10	✓	53.64	103.8	7.72	0.58	17.18	79.8		
1	3	✓	✓	✓	✓	✓	✓	53.66	✓	53.10	✓	53.11	✓	53.60	110.1	7.77	0.17	17.26	78.2		

Notes:

PORT 5: CLEAR, SLIGHT ORGANIC/H₂S ODDR
 PORT 3: CLEAR, NO ODDR
 PORT 1: CLEAR, NO ODDR
 PORT 4: CLEAR, SLIGHT H₂S ODDR
 PORT 2: CLEAR, SLIGHT H₂S ODDR

Total Volume: _____



Groundwater Sampling
Multi-Port Well Field Data Sheet

(13)

JPL Pasadena

Contract #: N68711-01-D-6008

Delivery Order #: 0001

Well ID: MW - 18

Sampling Zone No.: 5/4/3/2/1

Depth (ft): 684/564/424/330/270

Beginning of Session: 14.09

End of Session: _____

Start Time: 6:50

Finish Time: _____

Date: 5/13/03

Page: 1 OF 1

Water Pressure Inside Casing: _____

Port #	Run #	Surface Function Checks					Sample Collection Checks					Water Quality Parameters									
		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)
5	1	✓	✓	✓	✓	✓	✓	✓	162.20	✓	214.71	✓	214.67	✓	✓	160.19	733	7.85	0.11	17.90	30.0
5	2	✓	✓	✓	✓	✓	✓	✓	160.16	✓	214.72	✓	214.63	✓	✓	160.17	758	*	0.14	18.34	30.1
4	1	✓	✓	✓	✓	✓	✓	✓	108.88	✓	164.03	✓	164.04	✓	✓	108.90	825	*	0.71	18.60	39.2
4	2	✓	✓	✓	✓	✓	✓	✓	108.86	✓	164.03	✓	164.02	✓	✓	108.87	854	*	0.63	18.79	41.1
4	3	✓	✓	✓	✓	✓	✓	✓	108.05	✓	164.02	✓	164.04	✓	✓	108.85	916	*	0.44	19.01	41.1
3	1	✓	✓	✓	✓	✓	✓	✓	46.84	✓	105.60	✓	105.61	✓	✓	46.84	940	*	0.31	18.93	55.1
3	2	✓	✓	✓	✓	✓	✓	✓	46.83	✓	105.60	✓	105.58	✓	✓	46.85	1001	*	0.22	19.05	54.7
2	1	✓	✓	✓	✓	✓	✓	✓	14.25	✓	63.96	✓	63.94	✓	✓	14.29	1023	*	0.44	19.24	48.5
2	2	✓	✓	✓	✓	✓	✓	✓	14.24	✓	63.95	✓	63.93	✓	✓	14.28	1043	*	0.54	19.41	46.2
1	1	✓	✓	✓	✓	✓	✓	✓	14.22	✓	37.85	✓	37.84	✓	✓	14.25	1102	*	0.73	19.54	40.8
1	2	✓	✓	✓	✓	✓	✓	✓	14.21	✓	37.87	✓	37.86	✓	✓	14.24	1123	*	0.18	19.90	41.0

Notes:

PORT 5: CLEAR, NO ODOR

PORT 3: CLEAR, NO ODOR

PORT 1: CLEAR, NO ODOR

PORT 4: CLEAR, NO ODOR

PORT 2: CLEAR, NO ODOR

* NOTE: Bathing low, pH Readings were fluctuating and were not recorded.

Total Volume: _____