

ATTACHMENT 4: FIELD LOGS

This attachment contains the groundwater sample collection field logs for the relatively shallow standpipe monitoring wells (MW-1, MW-5 through MW-10, MW-13, MW-15, and MW-16), as well as the field data sheets for the Westbay™ multiport wells (MW-3, MW-4, MW-11, MW-12, MW-14, and MW-17 through MW-26). Groundwater sample collection for the 1st Quarter 2008 sampling event was conducted by Insight Environmental, Inc.

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 5



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73805
 Navy Contract No.: Battelle
 Sampled By: Chase Brogdon, Andrew Wells
 Date: 2/11/08
 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):

$$\left(\frac{140}{\text{TD (feet)}} - \frac{70.51}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{136.09}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
722	70.51	0	4.73	64.2	8.86	7.86	14.1	193	Cloudy, no odor
733	70.51	28	5.27	62.9	6.73	8.94	15.3	123	Cloudy, no odor
744	70.51	56	5.44	64.5	1.96	9.56	15.3	133	Cloudy, no odor
755	70.51	84	5.74	64.8	1.29	9.61	15.9	168	Cloudy, no odor
806	70.51	112	5.76	64.3	2.02	9.05	15.7	156	Cloudy, no odor
817	70.51	140	5.82	65.6	0.30	8.23	16.7	133	Cloudy, no odor

Total Purge Volume: 140 (Gallons)

Total Discharge: 3.09 (Casing Volumes)

Approx. Purge Rate: 2.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 658 Purge time start: 722

RECHARGE BEHAVIOR: 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: <u>MW-5</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>0824</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>6</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 6



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73805
 Navy Contract No.: Battelle
 Sampled By: Chase Brogdon, Andrew Wells
 Date: 2/11/08
 Weather: clear

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 Telephone: (909) 396-7662
 Fax: (909) 396-1455

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{245}{\text{TD (feet)}} - \frac{163.34}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{159.92}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
925	163.34	0	5.92	0.10	58.2	9.47	20.9	316	Reddish brown, no odor
947	163.34	32	5.85	0.09	16.6	10.37	20.8	135	Cloudy, no odor
1009	163.34	64	6.51	0.09	4.46	9.90	20.6	219	Cloudy, no odor
1031	163.34	96	6.56	0.09	1.47	9.08	20.7	362	Cloudy, no odor
1053	163.34	128	6.40	0.10	2.43	9.53	21.4	352	Cloudy, no odor
1115	163.34	160	6.48	0.09	0.11	10.13	22.5	388	Cloudy, no odor

Total Purge Volume: 160 (Gallons)

Total Discharge: 3.00 (Casing Volumes)

Approx. Purge Rate: 1.5 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 902 Purge time start: 925

RECHARGE BEHAVIOR: 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): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source / _____)</u>
Sample ID: <u>MW-6</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>1125</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>6</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 7



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73805
 Navy Contract No.: Battelle
 Sampled By: Chase Brogdon, Andrew Wells
 Date: 2/12/08
 Weather: breezy and warm

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PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{275}{\text{TD (feet)}} - \frac{188.65}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{169.11}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
737	188.65	0	5.09	64.5	6.70	8.64	20.8	232	Cloudy, no odor
754	188.65	34	5.30	69.9	7.52	8.74	20.2	191	Clear, no odor
911	188.65	68	5.55	66.5	2.64	8.35	21.1	165	Clear, no odor
828	188.65	102	5.77	67.0	3.59	7.98	21.1	190	Clear, no odor
845	188.65	136	5.82	66.6	1.57	8.22	20.9	157	Clear, no odor
902	188.65	170	6.14	67.3	1.50	6.83	20.4	106	Clear, no odor

Total Purge Volume: 170 (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: 716 Purge time start: 737

RECHARGE BEHAVIOR: 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): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source / _____)</u>
Sample ID: <u>MW-7</u>	Sample ID: <u>DUPE- 6 -1Q08</u>	Type: _____	Type: _____
Sample Time: <u>906</u>	Sample Time: <u>-----</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>6</u>	No. of Containers: <u>6</u>	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 8



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73805
 Navy Contract No.: Battelle
 Sampled By: Chase Brogdon, Andrew Wells
 Date: 2/13/08
 Weather: sunny and clear

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 Fax: (909) 396-1455

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{205}{\text{TD (feet)}} - \frac{112.40}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{181.35}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
958	112.40	0	6.22	65.5	7.38	10.79	19.9	221	Clear, no odor
1009	112.40	37	6.30	64.6	1.61	10.27	20.1	204	Clear, no odor
1020	112.40	74	6.38	65.8	0.31	10.10	20.7	178	Clear, no odor
1031	112.40	111	6.27	67.2	0.18	10.14	20.1	136	Clear, no odor
1042	112.40	148	6.37	66.2	0.52	9.92	20.4	139	Clear, no odor
1053	112.40	185	6.54	67.2	0.05	10.47	20.9	206	Clear, no odor

Total Purge Volume: 185 (Gallons)

Total Discharge: 3.06 (Casing Volumes)

Approx. Purge Rate: 3.50 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 948 Purge time start: 958

RECHARGE BEHAVIOR: 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): _____

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip / Source / _____)</u>
Sample ID: <u>MW-8</u>	Sample ID: <u>DUPE- 7 -1Q08</u>	Type: _____	Type: _____
Sample Time: <u>1053</u>	Sample Time: <u>-----</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>6</u>	No. of Containers: <u>6</u>	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 10



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73805
 Navy Contract No.: Battelle
 Sampled By: Chase Brogdon, Andrew Wells
 Date: 2/14/08
 Weather: cloudy and cold

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PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{155}{\text{TD (feet)}} - \frac{62.56}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{181.03}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
723	62.56	0	4.85	0.10	47.7	8.81	17.6	239	Cloudy, no odor
733	62.56	36	5.26	0.10	8.01	10.44	18.0	114	Cloudy, no odor
743	62.56	72	5.63	0.09	3.96	9.70	17.2	146	Cloudy, no odor
753	62.56	108	5.76	0.10	4.17	10.50	17.1	270	Cloudy, no odor
803	62.56	144	5.95	0.09	2.51	9.55	16.9	248	Cloudy, no odor
813	62.56	182	6.11	0.09	1.27	8.34	17.0	140	Cloudy, no odor

Total Purge Volume: 182 (Gallons)

Total Discharge: 3.02 (Casing Volumes)

Approx. Purge Rate: 4.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 714 Purge time start: 723

RECHARGE BEHAVIOR: 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: <u>MW-10</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>917</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>6</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 13



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73805
 Navy Contract No.: Battelle
 Sampled By: Chase Brogdon, Andrew Wells
 Date: 2/13/08
 Weather: clear and cool

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

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{235}{\text{TD (feet)}} - \frac{\quad}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{\quad}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
730	160.00	0	4.96	0.10	6.66	8.71	18.0	339	Clear, no odor
742	160.00	30	5.24	97.7	2.75	9.70	18.7	171	Clear, no odor
754	160.00	60	5.60	95.9	1.50	9.46	18.9	166	Clear, no odor
806	160.00	90	5.73	96.4	0.68	9.99	18.9	153	Clear, no odor
818	160.00	120	5.90	97.2	1.11	9.70	18.6	166	Clear, no odor
830	160.00	150	6.06	96.0	0.61	9.90	18.1	162	Clear, no odor

Total Purge Volume: 150 (Gallons)

Total Discharge: 3.06 (Casing Volumes)

Approx. Purge Rate: 2.50 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 704 Purge time start: 730

' – ' DO meter not operational for first three measurements

RECHARGE BEHAVIOR: 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): _____

<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>6</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 15



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73805
 Navy Contract No.: Battelle
 Sampled By: Chase Brogdon, Andrew Wells
 Date: 2/14/08
 Weather: partly cloudy and breezy

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 Telephone: (909) 396-7662
 Fax: (909) 396-1455

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{74}{\text{TD (feet)}} - \frac{25.57}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{94.85}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
914	25.57	0	6.49	64.3	20.4	10.16	15.5	227	Clear, no odor
919	25.57	19	6.29	64.4	5.91	9.19	15.9	169	Clear, no odor
924	25.57	38	6.54	65.5	3.32	10.26	14.5	142	Clear, no odor
929	25.57	57	6.48	64.3	1.70	9.86	15.0	133	Clear, no odor
934	25.57	75	6.47	63.8	0.79	9.41	14.9	124	Clear, no odor
939	25.57	95	6.51	63.3	0.88	9.10	15.3	118	Clear, no odor

Total Purge Volume: 95 (Gallons)

Total Discharge: 3.00 (Casing Volumes)

Approx. Purge Rate: 4.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 909 Purge time start: 914

RECHARGE BEHAVIOR: 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): _____

<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>939</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>2</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # 16



Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
 Project No: 4-73805
 Navy Contract No.: Battelle
 Sampled By: Chase Brogdon, Andrew Wells
 Date: 2/12/08
 Weather: sunny and warm

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 Telephone: (909) 396-7662
 Fax: (909) 396-1455

PURGE VOLUME CALCULATION (casing volume):

$$\left(\frac{285}{\text{TD (feet)}} - \frac{213.16}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{140.69}{\text{Calculated Purge Volume}} \text{ Gallons}$$

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
1017	213.16	0	6.38	66.8	4.88	11.70	26.4	226	Clear, no odor
1031	213.16	28	6.49	65.4	0.62	11.32	25.2	191	Clear, no odor
1045	213.16	56	6.54	65.9	0.25	11.84	24.7	193	Clear, no odor
1059	213.16	84	6.67	65.5	-0.07	11.85	24.9	158	Clear, no odor
1113	213.16	112	6.76	65.6	0.21	10.93	25.1	220	Clear, no odor
1128	213.16	141	6.75	67.0	-0.07	11.37	25.3	222	Clear, no odor

Total Purge Volume: 141 (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: 951 Purge time start: 1017

RECHARGE BEHAVIOR: 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: <u>MW-16</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>1128</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>6</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD



Groundwater Sampling Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-3

Sampling Zone No.: 4 to 2

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

Start Time: 1007

Finish Time: 1155

Date: 2/15/08

Page: 1 of 1

Beginning of Session: 14.20 psia

End of Session: 14.22 psia

Water Pressure Inside Casing: _____

Port #	Run #	Surface Function Checks							Position Sampler	Deactivate Set Arm Locate Port	Sample Collection Checks								Water Quality Parameters							
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	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)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	208.98	✓	213.34	✓	213.33	✓	✓	208.99	1050	6.19	2.70	48.4	12.97	18.3	147	
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	116.58	✓	125.92	✓	125.91	✓	✓	116.57	1122	6.39	0.55	50.2	12.47	18.7	130	
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	75.60	✓	84.95	✓	84.97	✓	✓	75.60	1149	6.42	1.35	63.4	12.15	18.7	125	

Notes: port 5: NOT SAMPLED port 4: CLEAR, SLIGHT ODOR port 3: CLEAR, SLIGHT ODOR
 port 2: CLEAR, NO ODOR port 1: NOT SAMPLED

Total Volume: _____



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-4
Sampling Zone No.: 3 to 1
Depth (ft): 513, 392, 322, 240, 150
Beginning of Session: 14.17 psia
End of Session: 14.22 psia

Start Time: 721
Finish Time: 915

Date: 2/5/08
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)	Cond (mmhos)	Dissolved Oxygen	Temp. (°C)
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	64.94	✓	123.68	✓	123.64	✓	✓	64.95	742	5.19	11.6	58.1	9.67	13.7	141
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	29.65	✓	88.41	✓	89.39	✓	✓	29.67	818	5.38	1.39	0.09	13.36	14.7	101
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.30	✓	53.83	✓	53.81	✓	✓	14.24	853	5.82	3.73	54.0	13.14	14.0	116
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.31	✓	53.82	✓	53.83	✓	✓	14.36	912	5.99	6.50	52.2	12.06	14.9	118

Notes:

port 5: NOT SAMPLED port 4: NOT SAMPLED port 3: SLIGHTLY YELLOWISH, SLIGHT ODOR
port 2: CLEAR, NO ODOR port 1: CLEAR, NO ODOR

Total Volume: _____

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Groundwater Sampling Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-11
 Sampling Zone No.: 4701
 Depth (ft): 639, 524, 429, 259, 149
 Beginning of Session: 14.04 psia
 End of Session: 14.03 psia

Start Time: 0959
 Finish Time: 1245

Date: 01/29/08
 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)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)	ORP	
	4	1	✓	✓	✓	✓	✓	✓	✓	✓	190.16	✓	187.09	✓	187.04	✓	✓	190.17	1024	5.81	11.7	41.9	11.5 ⁹	16.2	171		
	3	1	✓	✓	✓	✓	✓	✓	✓	✓	150.66	✓	144.83	✓	144.77	✓	✓	150.70	1050	6.57	22.9	45.3	11.60	15.4	135		
	2	1	✓	✓	✓	✓	✓	✓	✓	✓	76.94	✓	72.77	✓	72.74	✓	✓	76.92	1120	6.61	1.13	50.4	11.71	17.5	135		
	1	1	✓	✓	✓	✓	✓	✓	✓	✓	31.05	✓	31.72	✓	31.71	✓	✓	31.03	1203	7.05	1.05	63.5	14.06	20.0	77		
	1	2	✓	✓	✓	✓	✓	✓	✓	✓	31.03	✓	31.75	✓	31.73	✓	✓	31.04	1240	6.94	0.93	61.2	13.39	18.4	79		

DATE #1

DATE #1

Notes:
 port 5: NOT SAMPLED port 4: CLEAR SLIGHT ODOR port 3: CLEAR STRONG ODOR
 port 2: CLEAR, STRONG ODOR port 1: CLEAR SLIGHT ODOR

Total Volume:



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-12
 Sampling Zone No.: 5 to 1
 Depth (ft): 548, 436, 323, 243, 140
 Beginning of Session: 1395 psia
 End of Session: 1406 psia

Start Time: 0754
 Finish Time: 1110

Date: 01/28/08
 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)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	222.57	✓	206.91	✓	206.92	✓	✓	222.54	815	4.90	4.26	58.8	14.84	13.6	157
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	173.83	✓	162.01	✓	161.96	✓	✓	173.83	839	5.11	0.71	53.3	14.43	14.3	115
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	123.94	✓	113.63	✓	113.63	✓	✓	123.98	921	5.93	16.7	42.7	14.10	14.5	107
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	98.95	✓	79.36	✓	79.36	✓	✓	98.97	958	6.46	2.66	56.0	13.37	15.5	57
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	43.97	✓	39.87	✓	39.87	✓	✓	44.08	1027	6.59	3.62	59.2	14.96	14.5	126
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	43.99	✓	39.88	✓	39.97	✓	✓	44.04	-	-	-	-	-	-	-

Mb/100

Mb/100

Notes:

port 5: CLEAR, NO ODOR port 4: CLEAR, NO ODOR port 3: CLEAR NO ODOR
 port 2: CLEAR, SLIGHT ODOR port 1: CLEAR, NO ODOR

Total Volume: _____



Groundwater Sampling Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-14
Sampling Zone No.: 5+01
Depth (ft): 540, 456, 382, 277, 207
Beginning of Session: 14.00 psia
End of Session: 14.02 psia

Start Time: 718
Finish Time: 1604

Date: 2/4/08
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)	Cond (umhos)	Dissolved Oxygen	Temp. (oC)
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	191.27	✓	183.74	✓	183.72	✓	✓	191.26	747	5.38	1.62	43.1	10.68	13.6	101
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	154.62	✓	147.32	✓	147.31	✓	✓	154.62	809	5.58	0.55	71.5	11.82	14.2	87
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	123.36	✓	115.23	✓	115.23	✓	✓	123.34	834	5.82	1.99	0.09	9.01	14.0	123
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	77.57	✓	69.51	✓	69.49	✓	✓	77.53	905	6.09	5.51	0.094	10.85	16.1	208
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	47.50	✓	39.11	✓	39.10	✓	✓	47.49	940	6.64	5.66	0.097	11.82	17.2	225
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	46.93	✓	39.07	✓	39.07	✓	✓	46.93	-	-	-	-	-	-	-

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Notes:

port 5: CLEAR, STRONG H₂S ODOR port 4: CLEAR, NO ODOR 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

JPL Pasadena
Contract #: Battelle

Well ID: MW-17
 Sampling Zone No.: 4 to 2
 Depth (ft): 720, 582, 468, 370, 290
 Beginning of Session: 14.04 psia
 End of Session: 14.12 psia

Start Time: 0740
 Finish Time: 0950

Date: 01/31/08
 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)	Cond (mmhos)	Dissolved Oxygen
4	1	✓	✓	✓	✓	✓	✓	✓	✓	183.55	✓	179.98	✓	179.97	✓	✓	183.58	0811	5.18	1.25	39.1	12.13	12.5	122
3	1	✓	✓	✓	✓	✓	✓	✓	✓	134.09	✓	127.40	✓	127.40	✓	✓	134.14	854	5.11	39.0	35.1	11.78	13.2	128
2	1	✓	✓	✓	✓	✓	✓	✓	✓	91.57	✓	89.83	✓	89.84	✓	✓	91.53	0900	5.39	4.38	0.0	13.31	13.2	208
2	2	✓	✓	✓	✓	✓	✓	✓	✓	91.54	✓	89.85	✓	89.84	✓	✓	91.54	-	-	-	-	-	-	-

MS/MSD

MS/MSD

Notes:
 port 5: NOT SAMPLED port 4: CLEAR, NO ODDOR port 3: CLEAR, NO ODDOR
 port 2: CLEAR, NO ODDOR port 1: NOT SAMPLED

Total Volume: _____



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-18
 Sampling Zone No.: 5 TO 2
 Depth (ft): 684, 564, 424, 330, 270
 Beginning of Session: 14.04 psia
 End of Session: 14.04 psia

Start Time: 1025
 Finish Time: 1300

Date: 01/31/08
 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)	Cond (mmhos)	Dissolved Oxygen
5	1	✓	✓	✓	✓	✓	✓	✓	✓	159.36	✓	207.01	✓	206.99	✓	✓	159.36	1050	6.19	1.62	37.2	13.47	21.0	157
4	1	✓	✓	✓	✓	✓	✓	✓	✓	108.48	✓	155.97	✓	155.97	✓	✓	109.52	1138	6.12	6.21	55.9	14.20	19.9	215
3	1	✓	✓	✓	✓	✓	✓	✓	✓	97.54	✓	98.85	✓	98.84	✓	✓	97.53	1220	6.21	0.86	66.3	12.97	19.4	233
2	1	✓	✓	✓	✓	✓	✓	✓	✓	14.20	✓	56.13	✓	56.17	✓	✓	14.31	1251	6.40	1.78	64.5	12.42	19.1	238

Notes:
 port 5: CLEAR STRONG ODOR port 4: CLEAR SLIGHT ODOR port 3: CLEAR STRONG ODOR
 port 2: CLEAR, SLIGHT ODOR port 1: NOT SAMPLED

Total Volume: _____



Groundwater Sampling Multi-Port Well Field Data Sheet

JPL Pasadena Contract # Battelle

Well ID: MW-19 Sampling Zone No.: 5701 Depth (ft): 498, 444, 392, 314, 242 Beginning of Session: 14.10 psia End of Session: 14.13 psia

Start Time: 0840 Finish Time: 1030

Date: 02/01/08 Page: 1 of 1

Water Pressure Inside Casing: _____

Table with columns for Port #, Run #, Surface Function Checks, Position Sampler, Sample Collection Checks, and Water Quality Parameters. Includes handwritten data for 5 runs.

Notes:

port 5: CLEAR, STRONG ODOR port 4: CLEAR, SLIGHT ODOR port 3: CLEAR, SLIGHT ODOR port 2: CLOUDY, SLIGHT ODOR port 1: CLEAR, NO ODOR

Total Volume: _____



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-20
 Sampling Zone No.: 5701
 Depth (ft): 900, 700, 562, 392, 230
 Beginning of Session: 13.94 psia
 End of Session: 14.01 psia

Start Time: 0732
 Finish Time: 1115

Date: 01/30/06
 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)	Cond (mmhos)	Dissolved Oxygen	Temp. (oC)
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	329.96	✓	325.27	✓	325.30	✓	✓	329.98	0807	5.57	10.62	33.7	12.96	12.3	-46
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	243.29	✓	236.96	✓	236.96	✓	✓	243.33	0817	5.80	2.79	37.1	14.62	13.2	-58
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	183.46	✓	177.99	✓	177.99	✓	✓	183.46	0932	5.84	3.69	62.1	12.93	14.6	101
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	109.62	✓	103.50	✓	103.51	✓	✓	109.66	1005	5.74	0.94	70.7	12.60	15.1	107
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	39.44	✓	32.06	✓	33.05	✓	✓	39.41	1045	5.81	0.53	67.8	13.20	16.1	152
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	39.41	✓	31.96	✓	31.94	✓	✓	39.42	-	-	-	-	-	-	-

MW/ PASD

MW/ PASD

Notes:

port 5: CLEAR, STRONG ODOR port 4: CLEAR, VERY STRONG ODOR. port 3: CLEAR, NO ODOR
 port 2: CLEAR, SLIGHT ODOR port 1: CLEAR SLIGHT ODOR

Total Volume: _____



Groundwater Sampling Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-21
Sampling Zone No.: 5701
Depth (ft): 372, 310, 240, 161, 90
Beginning of Session: 14.12 psia
End of Session: 14.03 psia

Start Time: 820
Finish Time: 1110

Date: 1/23/08
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)	Cond (microhm)	Dissolved Oxygen	Temp. (°C)
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	129.56	✓	155.60	✓	165.65	✓	✓	129.60	845	5.05	2.32	0.1	14.90	15.8	194
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	102.54	✓	128.80	✓	128.81	✓	✓	102.54	912	5.83	4.30	82.7	15.32	15.3	157
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	72.41	✓	98.90	✓	98.90	✓	✓	72.43	942	6.16	3.12	0.9	14.99	14.8	152
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	72.42	✓	98.90	✓	98.91	✓	✓	72.42	-	-	-	-	-	-	-
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	38.42	✓	64.62	✓	64.63	✓	✓	38.42	1033	6.47	0.51	0.105	16.59	16.3	230
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.05	✓	33.17	✓	33.14	✓	✓	14.10	1105	6.77	1.68	0.091	16.07	15.5	246

Notes:

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

Total Volume: _____

15/MSD <

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Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-22
Sampling Zone No.: 3701
Depth (ft): 588, 467, 389, 329, 245
Beginning of Session: 13.96 psia
End of Session: 14.04 psia

Start Time: 0733
Finish Time: 0912

Date: 01/29/08
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)	Cond (mmhos)	Dissolved Oxygen
3	1	✓	✓	✓	✓	✓	✓	✓	✓	116.81	✓	113.71	✓	113.74	✓	✓	116.85	0751	4.85	0.44	84.2	12.29	13.9	136
2	1	✓	✓	✓	✓	✓	✓	✓	✓	90.75	✓	87.59	✓	87.61	✓	✓	90.77	0821	5.58	0.67	61.5	12.06	12.9	80
1	1	✓	✓	✓	✓	✓	✓	✓	✓	54.01	✓	49.94	✓	49.95	✓	✓	54.09	0901	5.93	14.4	0.090	12.28	14.4	108

Notes:

port 5: NOT SAMPLED port 4: NOT SAMPLED 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

JPL Pasadena
Contract #: Battelle

Well ID: MW-23
 Sampling Zone No.: 4701
 Depth (ft): 542, 445, 319, 254, 174
 Beginning of Session: 14.13 psia
 End of Session: 14.14 psia

Start Time: 7:18
 Finish Time: 9:35

Date: 2/8/08
 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)	Cond (mmhos)	Dissolved Oxygen	Temp. (°C)	ORP
4	1	✓	✓	✓	✓	✓	✓	✓	✓	163.31	✓	166.80	✓	166.79	✓	✓	163.77	737	5.35	1.62	44.9	11.11	15.8	89	
3	1	✓	✓	✓	✓	✓	✓	✓	✓	109.09	✓	113.96	✓	113.94	✓	✓	109.05	801	5.58	5.66	42.7	10.27	15.9	66	
2	1	✓	✓	✓	✓	✓	✓	✓	✓	80.87	✓	85.84	✓	85.81	✓	✓	80.84	831	5.63	2.00	0.1	11.02	16.3	63	
1	1	✓	✓	✓	✓	✓	✓	✓	✓	46.31	✓	51.46	✓	51.45	✓	✓	46.27	909	5.85	4.78	0.094	12.39	18.8	179	
1	2	✓	✓	✓	✓	✓	✓	✓	✓	46.08	✓	51.43	✓	51.44	✓	✓	46.07	-	-	-	-	-	-	-	

Notes:
 port 5: NOT SAMPLED port 4: CLEAR, STRONG ODOR port 3: CLEAR, NO ODOR
 port 2: CLEAR, NO ODOR port 1: CLEAR, NO ODOR

Total Volume: _____

15/MSD <

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Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-24
 Sampling Zone No.: 4 + 1
 Depth (ft): 678, 554, 435, 373, 279
 Beginning of Session: 14.11 psia
 End of Session: 14.10 psia

Start Time: 732
 Finish Time: 1020

Date: 2/7/08
 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)	Cond (µmhos)	Dissolved Oxygen	Temp. (°C)
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	181.84	✓	173.31	✓	173.30	✓	✓	181.85	753	5.48	1.30	39.5	8.56	17.1	8
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	130.65	✓	123.51	✓	123.50	✓	✓	130.65	821	5.62	0.77	41.3	9.03	17.2	48
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	103.74	✓	96.89	✓	96.89	✓	✓	103.77	854	5.76	2.45	57.3	9.51	17.7	65
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	103.73	✓	96.88	✓	96.88	✓	✓	103.74	914	5.91	2.19	60.7	10.91	18.9	80
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	63.40	✓	57.18	✓	57.16	✓	✓	63.38	950	6.00	45.9	64.7	13.21	19.7	79
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	63.37	✓	57.17	✓	57.17	✓	✓	63.35	1015	6.23	3.96	65.0	9.10	20.3	141

20PE <
20PE <

> 2
> 1

Notes:

port 5: NOT SAMPLED port 4: CLEAR, STRONG ODOR port 3: CLEAR, FAINT ODOR
 port 2: CLEAR, NO ODOR port 1: SLIGHTLY YELLOWISH, NO ODOR

Total Volume: _____



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-25
Sampling Zone No.: 5 to 1
Depth (ft): 713, 633, 503, 423, 358
Beginning of Session: 14.29 psia
End of Session: 14.29 psia

Start Time: 725
Finish Time: 1050

Date: 2/6/08
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)	Cond (mmhos)	Dissolved Oxygen
5	1	✓	✓	✓	✓	✓	✓	✓	✓	208.58	✓	207.19	✓	207.16	✓	✓	208.51	756	5.64	0.72	55.6	10.34	13.9	-54
4	1	✓	✓	✓	✓	✓	✓	✓	✓	173.99	✓	170.68	✓	170.62	✓	✓	173.98	832	5.62	0.81	75.8	8.83	15.5	95
3	1	✓	✓	✓	✓	✓	✓	✓	✓	117.60	✓	117.21	✓	117.17	✓	✓	117.61	901	5.75	0.71	78.3	8.89	16.1	87
2	1	✓	✓	✓	✓	✓	✓	✓	✓	82.77	✓	86.12	✓	86.12	✓	✓	82.79	931	5.99	0.49	78.0	12.81	15.4	74
2	2	✓	✓	✓	✓	✓	✓	✓	✓	82.76	✓	86.36	✓	86.42	✓	✓	82.75	-	-	-	-	-	-	-
1	1	✓	✓	✓	✓	✓	✓	✓	✓	54.45	✓	59.87	✓	59.87	✓	✓	54.41	1026	6.17	12.7	0.1	11.85	16.5	60
1	2	✓	✓	✓	✓	✓	✓	✓	✓	54.38	✓	59.86	✓	59.86	✓	✓	54.36	1047	6.35	9.88	0.1	12.58	16.9	88

Notes:

port 5: CLEAR, STRONG ODOR port 4: CLEAR, NO ODOR port 3: CLEAR, NO ODOR
port 2: CLEAR, NO ODOR port 1: CLEAR, NO ODOR

Total Volume:

15/MS? <

NOPE <

> 2

> 1



Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-26
Sampling Zone No.: 2 to 1
Depth (ft): 215, 135
Beginning of Session: 14.22 psia
End of Session: 14.16 psia

Start Time: 1128
Finish Time: 1220

Date: 2/6/08
Page: 1 of 1

Water Pressure Inside Casing: _____

Table with columns: Port #, Run #, Function Checks (Shoe Out, Vacuum Check, Valve Open, Evacuate Container, Valve Closed, Shoe in, Arm In, Deactivate Set Arm, Locate Port), Sample Collection Checks (Arm out, Pressure in MP, Shoe Out, Zone Pressure, Open Valve, Zone Pressure, Close Valve, Shoe In, Pressure in MP), Water Quality Parameters (Time, pH, Turb. (NTU), Cond (mmhos), Dissolved Oxygen, Temp. (oC), ORP). Rows 1 and 2 contain data.

Notes:

Total Volume: _____

port 2: CLEAR, NO ODOUR port 1: CLEAR, NO ODOUR

ATTACHMENT 5: WATER LEVEL MEASUREMENTS

This attachment contains water level measurements for the Westbay™ multiport JPL monitoring wells obtained during the 1st quarter of 2008. Water level measurements were recorded before the sampling event on January 21, 2008 (deep multiport wells) and January 22, 2008 (shallow wells). Water level measurements were recorded before the sampling event on February 18, 2008. Water levels in the shallow wells were measured using a Solinst™ water level meter. In the deep multiport wells, the hydraulic head at each sampling port was measured with a Westbay™ pressure-transducer probe. Water level measurements were conducted by Insight Environmental, Inc.

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-3
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. + MSL): 1,100.34
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	739	752
Pressure (psia)	14.02	14.07
Temperature (°C)	16.18	17.45

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	653	246.65	251.63	246.62	19.25	741	104.83	995.51
4	558	205.41	210.57	205.40	20.58	743	104.56	995.78
3	346	113.32	122.37	113.31	20.81	745	96.04	1004.30
2	252	72.49	81.24	72.51	20.34	747	96.92	1003.42
1	172	37.73	48.12	37.74	19.10	749	93.33	1007.01

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-4
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. +MSL): 1,082.84
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	1235	1248
Pressure (psia)	14.10	14.07
Temperature (°C)	16.62	19.65

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	513	144.63	202.61	144.65	20.15	1237	78.11	1004.73
4	392	92.00	150.26	91.98	20.74	1239	77.88	1004.96
3	322	61.50	120.36	61.53	20.78	1241	76.86	1005.98
2	240	25.81	84.85	25.83	20.35	1243	76.78	1006.06
1	150	14.13	48.54	14.15	19.96	1245	70.55	1012.29

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-11
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,139.30
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	845	900
Pressure (psia)	13.99	13.98
Temperature (°C)	18.71	18.65

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	639	237.74	228.16	237.88	19.28	849	144.91	994.39
4	524	188.26	186.31	188.38	20.15	851	126.46	1012.84
3	429	147.37	143.81	147.42	20.07	853	129.51	1009.79
2	259	75.02	105.47	75.10	19.84	855	47.96	1091.34
1	149	26.45	30.76	26.62	18.77	857	110.31	1028.99

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-12
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,102.14
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	1216	1229
Pressure (psia)	14.01	14.03
Temperature (°C)	17.52	17.74

Screen No.	Depth (Ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	548	205.71	206.23	205.69	18.85	1218	104.55	997.59
4	436	157.03	161.01	157.03	19.66	1220	96.87	1005.27
3	323	107.89	112.48	107.89	19.45	1222	95.83	1006.31
2	243	73.05	78.19	73.04	18.88	1224	94.94	1007.20
1	140	28.09	37.81	28.13	18.16	1226	85.09	1017.05

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-14
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,173.47
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	716	718
Pressure (psia)	13.96	14.03
Temperature (°C)	17.97	19.21

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	540	181.84	182.10	180.95	19.13	720	152.10	1021.37
4	456	152.45	145.69	152.47	20.01	724	152.10	1021.37
3	382	120.26	113.59	120.28	19.98	726	152.15	1021.32
2	277	74.58	67.93	74.58	19.66	728	152.49	1020.98
1	207	44.06	37.75	44.08	19.35	730	152.12	1021.35

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-17
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,191.21
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	1004	1018
Pressure (psia)	14.15	14.11
Temperature (°C)	15.55	15.88

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	726	244.43	242.89	244.57	17.18	1007		
								198.30
4	582	182.14	178.18	182.23	18.26	1009		
								203.58
3	468	132.70	125.80	132.71	18.11	1011		
								210.42
2	370	90.17	87.98	90.18	17.25	1013		
								199.67
1	250	38.01	36.91	38.00	16.38	1015		
								197.49

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-18
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: _____
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,225.41
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	1028	1040
Pressure (psia)	13.98	13.98
Temperature (°C)	15.46	16.80

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)	
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)					
5	684	157.44	205.17	157.46	19.92	1030			
									242.92
4	564	105.32	154.20	105.45	20.02	1032			
									240.51
3	424	44.46	96.95	44.57	19.42	1034			
									232.59
2	330	14.18	54.50	14.28	18.19	1036			
									236.52
1	270	14.15	27.77	14.14	17.32	1038			
									238.19

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-19
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. +MSL): 1,142.94
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	943	956
Pressure (psia)	14.02	14.07
Temperature (°C)	15.29	16.71

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)	
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)					
5	498	173.21	164.77	173.38	16.52	945			
								150.22	992.72
4	444	149.82	141.37	149.96	17.32	947			
								150.20	992.74
3	392	127.13	119.92	127.23	17.70	949			
								147.69	995.25
2	314	93.35	85.64	93.41	17.89	951			
								148.77	994.17
1	242	62.18	54.59	62.28	17.66	953			
								148.41	994.53

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-20
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,165.05
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	1053	1109
Pressure (psia)	13.98	14.02
Temperature (°C)	15.26	17.09

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)	
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)					
5	900	328.48	324.54	328.49	19.08	1058			
									183.54
4	700	241.96	236.01	241.99	21.06	1101			
									187.78
3	562	182.14	174.25	182.14	20.81	1103			
									192.26
2	392	108.49	101.96	108.48	18.65	1105			
									189.03
1	230	38.13	31.14	38.00	17.51	1107			
									190.41

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-21
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,059.10
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	740	756
Pressure (psia)	14.04	14.09
Temperature (°C)	17.18	18.65

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	372	124.31	257.54	124.31	18.45	744		
4	310	99.51	128.90	99.61	18.98	748		
3	240	67.30	101.73	67.39	19.08	750		
2	161	32.83	39.68	33.00	18.90	752		
1	90	14.00	33.19	14.00	18.74	754		

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-22
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,176.98
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	803	819
Pressure (psia)	14.01	14.03
Temperature (°C)	17.11	19.81

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	588	201.53	195.84	201.57	19.32	808	168.52	1008.46
4	467	149.20	144.83	149.32	20.44	810	165.20	1011.78
3	389	115.42	112.77	115.53	20.53	812	161.16	1015.82
2	329	89.38	86.60	89.35	20.56	814	161.53	1015.45
1	245	52.53	49.01	52.64	20.23	816	164.26	1012.73

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-23
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,108.84
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	649	705
Pressure (psia)	13.97	14.07
Temperature (°C)	19.02	19.66

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	542	201.93	205.08	202.00	19.36	654	101.11	1007.73
4	445	162.22	163.15	162.19	20.05	656	100.84	1008.00
3	319	107.65	110.30	107.72	20.25	658	96.77	1012.07
2	254	79.47	82.02	79.45	20.16	701	97.01	1011.83
1	174	44.77	47.33	44.73	19.98	703	97.04	1011.80

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-24
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,200.94
 Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	821	837
Pressure (psia)	13.96	14.01
Temperature (°C)	17.45	20.38

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	678	234.36	221.97	234.38	20.14	826	198.12	1002.82
4	554	180.74	169.89	180.86	20.79	828	194.27	1006.67
3	435	129.17	119.89	129.19	20.95	830	190.62	1010.32
2	373	102.39	93.01	102.44	21.05	832	190.63	1010.31
1	279	61.53	52.75	61.61	20.85	834	189.51	1011.43

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-25
 Project No: 4-73803 Probe Type: Westbay
 Date: 1/21/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. + MSL): 934.52

Weather: partly cloudy and cool

Ambient Readings	Start	Finish
Time	1127	1140
Pressure (psia)	14.16	14.18
Temperature (°C)	16.61	19.41

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	713	205.21	207.28	205.17	19.24	1129	267.47	667.05
4	633	170.64	171.17	170.72	20.21	1131	270.78	663.74
3	503	114.58	118.40	114.61	20.60	1133	262.52	672.00
2	423	79.73	87.08	79.75	20.39	1135	254.77	679.75
1	358	51.52	60.09	51.58	20.13	1137	252.04	682.48

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-3
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. + MSL): 1,100.34
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1010	1030
Pressure (psia)	14.14	14.13
Temperature (°C)	16.10	17.87

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	653	246.72	253.44	246.73	20.06	1020	100.93	999.41
4	558	205.44	210.40	205.45	21.71	1022	105.23	995.11
3	346	113.52	120.84	113.49	21.80	1024	99.84	1000.50
2	252	70.44	70.49	70.45	21.01	1026	122.00	978.34
1	172	35.72	35.72	35.71	19.52	1028	122.21	978.13

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-4
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. +MSL): 1,082.84
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	648	700
Pressure (psia)	14.12	14.12
Temperature (°C)	13.76	19.42

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	513	144.88	169.97	144.99	19.06	650		
							153.45	929.39
4	392	90.19	115.28	90.18	20.01	652		
							158.62	924.22
3	322	59.69	84.98	59.69	20.49	654		
							158.53	924.31
2	240	23.99	49.28	23.99	20.47	656		
							158.89	923.95
1	150	14.22	39.38	14.22	19.99	658		
							91.73	991.11

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-11
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,139.30
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	901	913
Pressure (psia)	14.05	14.09
Temperature (°C)	20.02	18.04

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	639	237.63	236.65	237.67	19.80	903	125.46	1013.84
4	524	188.07	189.00	188.07	20.83	905	120.39	1018.91
3	429	147.13	147.84	147.29	20.70	907	120.35	1018.95
2	259	73.60	74.85	73.66	19.72	909	118.73	1020.57
1	149	26.34	29.23	26.43	18.75	911	113.98	1025.32

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-12
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,102.14
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1250	1302
Pressure (psia)	14.10	14.11
Temperature (°C)	20.38	17.69

Screen No.	Depth (Ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	548	218.38	216.51	218.37	21.24	1252	81.04	1021.10
4	436	169.88	168.90	169.85	21.51	1254	78.88	1023.26
3	323	120.32	119.93	120.39	20.24	1256	78.85	1023.29
2	243	85.60	85.29	85.62	18.84	1258	78.76	1023.38
1	140	40.75	42.85	40.70	18.06	1300	73.67	1028.47

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-14
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,173.47
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	738	850
Pressure (psia)	14.08	14.08
Temperature (°C)	17.58	19.35

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	540	188.65	187.69	188.73	19.73	740	139.48	1033.99
4	456	153.17	153.12	153.13	20.23	742	135.23	1038.24
3	382	117.97	117.88	117.92	20.29	744	142.53	1030.94
2	277	74.48	73.28	74.35	19.94	746	140.43	1033.04
1	207	43.85	42.75	43.85	19.59	748	140.86	1032.61

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-17
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,191.21
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1051	1103
Pressure (psia)	13.78	14.07
Temperature (°C)	16.44	16.14

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	726	244.37	245.57	244.47	18.32	1053	191.26	999.95
4	582	181.99	183.71	182.02	19.39	1055	189.97	1001.24
3	468	132.64	132.78	132.65	18.76	1057	193.47	997.74
2	370	89.98	91.73	89.99	17.99	1059	190.17	1001.04
1	250	38.02	41.63	38.01	16.89	1101	185.75	1005.46

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-18
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: _____
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,225.41
 Weather: clear and warm

Ambient Readings	Start	Finish
Time		
Pressure (psia)		
Temperature (°C)		

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	684	158.45	211.45	158.40	19.58	1115		
								196.18
4	564	105.35	157.65	105.48	20.54	1117		
								200.30
3	424	42.51	95.77	42.51	19.92	1119		
								203.06
2	330	14.23	53.77	14.23	17.91	1121		
								205.95
1	270	14.19	28.65	14.18	17.94	1123		
								203.90

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Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-19
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. +MSL): 1,142.94
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	948	1000
Pressure (psia)	14.13	14.13
Temperature (°C)	17.39	16.93

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	498	173.25	172.48	173.26	18.02	950	132.69	1010.25
4	444	149.78	149.09	149.77	18.57	952	132.65	1010.29
3	392	127.30	126.54	127.28	18.87	954	132.67	1010.27
2	314	93.40	92.54	93.42	18.90	956	133.11	1009.83
1	242	62.13	61.45	62.12	18.22	958	132.83	1010.11

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-20
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,165.05
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	1137	1153
Pressure (psia)	14.10	14.06
Temperature (°C)	18.01	17.58

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	900	328.49	328.05	328.45	21.36	1140		
4	700	241.76	240.91	241.76	22.33	1143		
3	562	181.81	180.36	181.87	21.02	1146		
2	392	108.22	106.80	108.16	20.00	1149		
1	230	37.82	35.50	37.80	18.03	1151		
							180.63	984.42

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-21
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,059.10
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	800	811
Pressure (psia)	14.15	14.09
Temperature (°C)	17.18	18.88

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	372	126.32	139.92	126.41	18.82	802	81.85	977.25
4	310	97.34	111.78	97.34	19.40	804	84.77	974.33
3	240	69.49	82.23	69.57	19.48	806	82.94	976.16
2	161	33.03	46.08	33.02	19.24	808	87.34	971.76
1	90	14.20	24.86	14.18	19.00	809	65.29	993.81

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-22
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,176.98
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	818	831
Pressure (psia)	14.09	14.07
Temperature (°C)	17.10	20.16

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	588	204.64	201.44	201.66	19.67	820	155.78	1021.20
4	467	149.11	149.60	149.20	20.81	823	154.38	1022.60
3	389	115.45	116.24	115.45	21.04	825	153.34	1023.64
2	329	89.34	90.18	89.44	20.99	827	153.46	1023.52
1	245	52.55	53.39	52.58	20.63	829	154.33	1022.65

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-23
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,108.84
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	706	718
Pressure (psia)	14.12	14.11
Temperature (°C)	16.70	19.88

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	542	204.24	206.30	204.26	19.82	708	98.64	1010.20
4	445	162.31	163.88	162.27	20.78	710	99.50	1009.34
3	319	105.52	105.49	105.51	20.87	712	108.21	1000.63
2	254	77.33	77.30	77.31	20.50	714	108.24	1000.60
1	174	42.50	42.58	42.56	20.26	718	108.34	1000.50

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-24
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (Ft. + MSL): 1,200.94
 Weather: clear and warm

Ambient Readings	Start	Finish
Time	844	856
Pressure (psia)	14.06	14.11
Temperature (°C)	18.16	21.18

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	678	234.38	231.65	234.30	20.52	846	176.02	1024.92
4	554	180.67	178.96	180.68	21.41	848	173.58	1027.36
3	435	129.19	128.12	129.17	21.50	850	171.86	1029.08
2	373	102.84	102.99	102.91	21.55	852	167.84	1033.10
1	279	61.46	60.42	61.48	21.43	854	172.05	1028.89

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-25
 Project No: 4-73803 Probe Type: Westbay
 Date: 2/18/08 Serial No.: 2508
 Personnel: Chase Brogdon, Andrew Wells
 Datum: TOC Casing Size/Type: 1.5" Westbay
 Elevation of Datum (ft. + MSL): 934.52

Weather: clear and warm

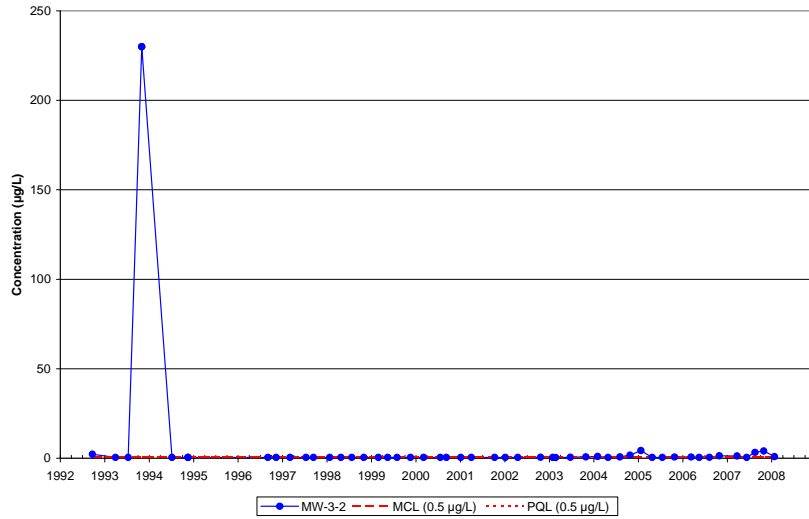
Ambient Readings	Start	Finish
Time	1208	1220
Pressure (psia)	14.21	14.19
Temperature (°C)	18.41	20.05

Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	713	205.04	205.87	205.07	20.29	1210	270.84	663.68
4	633	170.55	170.81	170.55	21.31	1212	271.72	662.80
3	503	112.12	112.10	112.10	21.18	1214	277.17	657.35
2	423	79.52	82.01	79.58	20.73	1216	266.59	667.93
1	358	51.30	54.76	51.36	20.51	1218	264.45	670.07

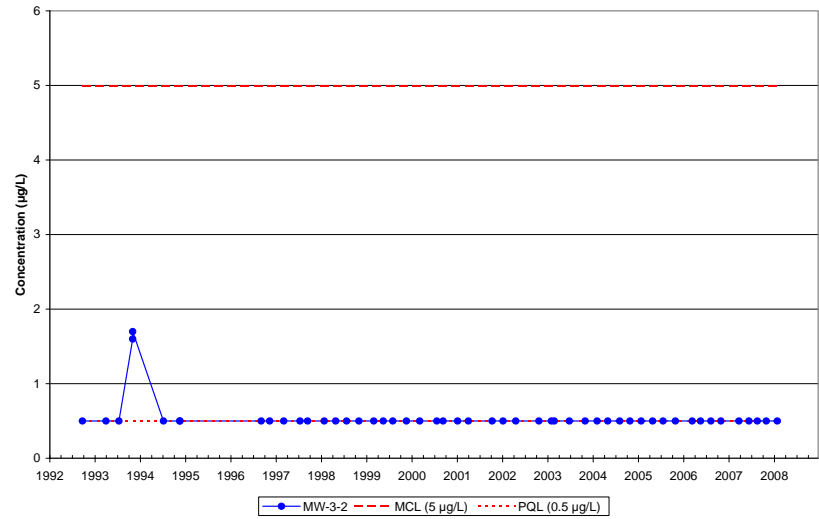
ATTACHMENT 6: TIME-SERIES CONCENTRATION PLOTS

This attachment contains time-series concentrations plots for perchlorate and VOCs in critical wells within the JPL monitoring well network. In general, critical wells have been determined based on the presence of perchlorate and VOC concentrations at levels that exceed cleanup goals or wells that are directly influenced by the operation of the OU-1 treatment system. These plots provide a graphical representation of perchlorate and VOC concentrations trends over time with respect to the cleanup goals for each chemical.

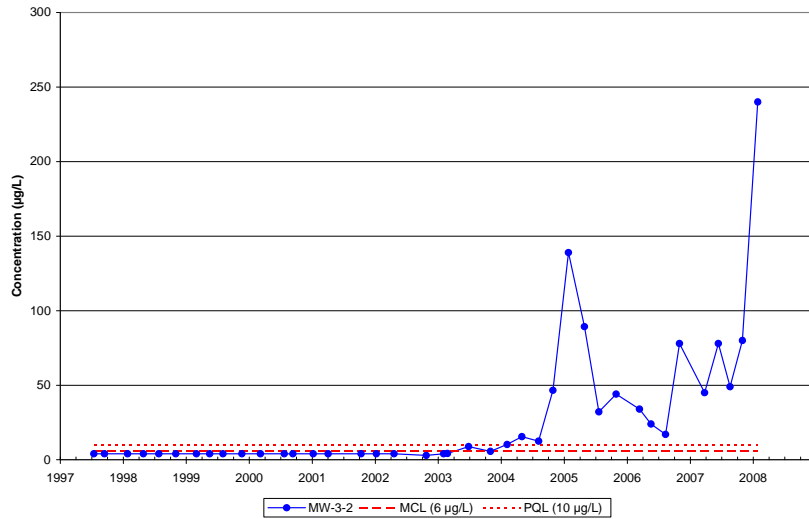
MW-3-2 Carbon tetrachloride Concentrations 1992 to Present



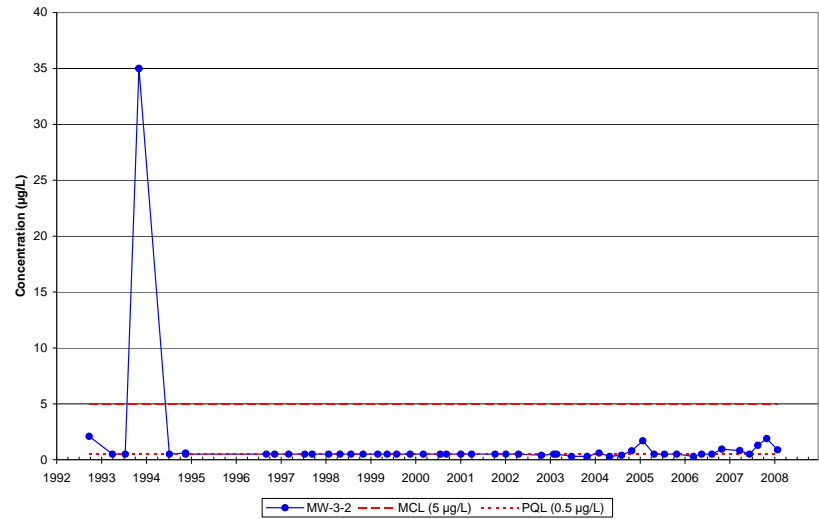
MW-3-2 Tetrachloroethene (PCE) Concentrations 1992 to Present



MW-3-2 Perchlorate Concentrations 1997 to Present

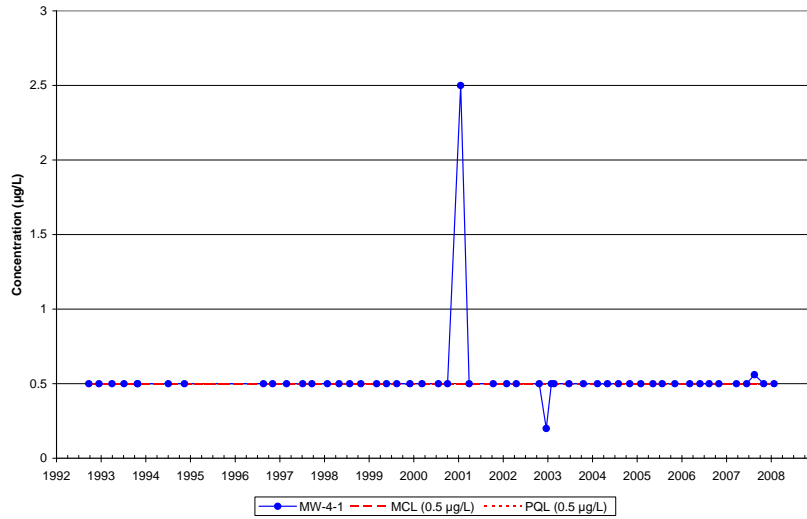


MW-3-2 Trichloroethene (TCE) Concentrations 1992 to Present

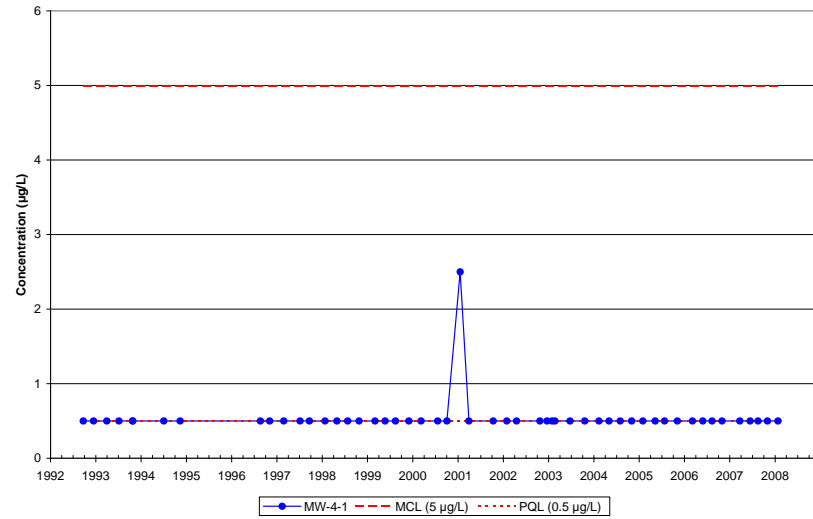


VOCs and Perchlorate Time Series Plots for MW-3-2

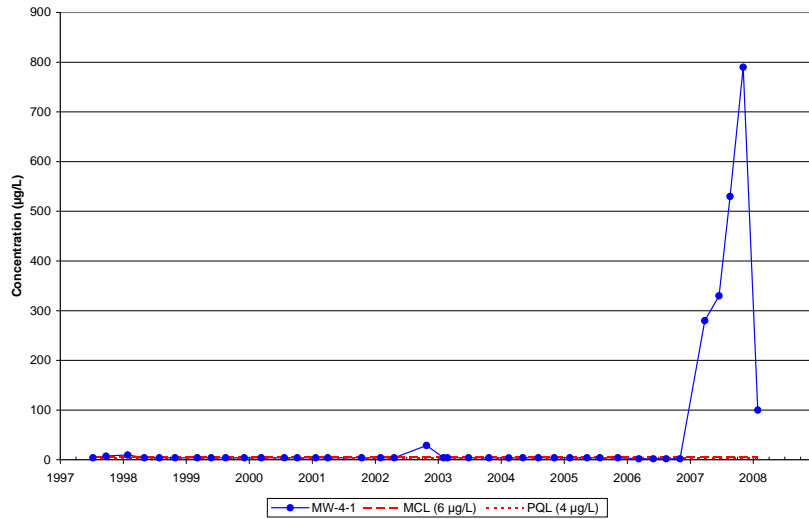
MW-4-1 Carbon tetrachloride Concentrations 1992 to Present



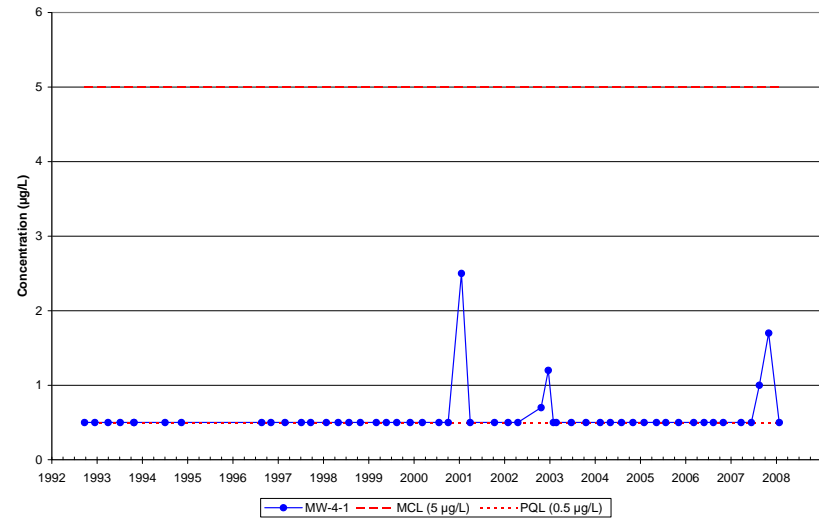
MW-4-1 Tetrachloroethene (PCE) Concentrations 1992 to Present



MW-4-1 Perchlorate Concentrations 1997 to Present

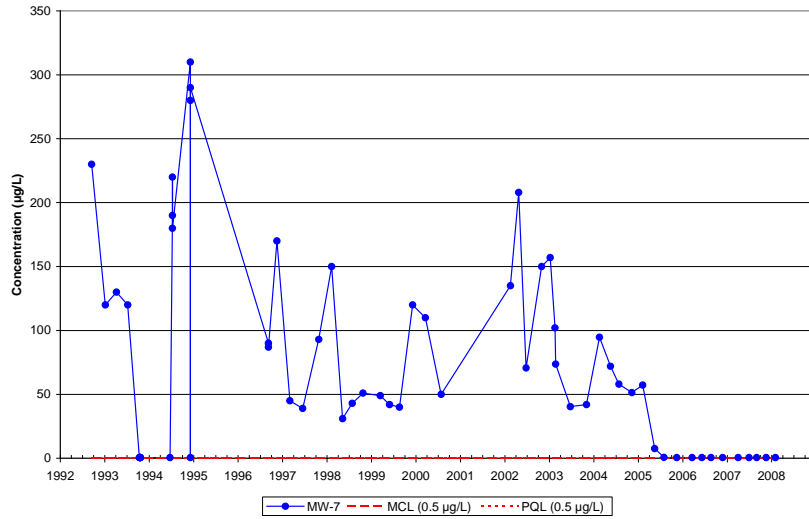


MW-4-1 Trichloroethene (TCE) Concentrations 1992 to Present

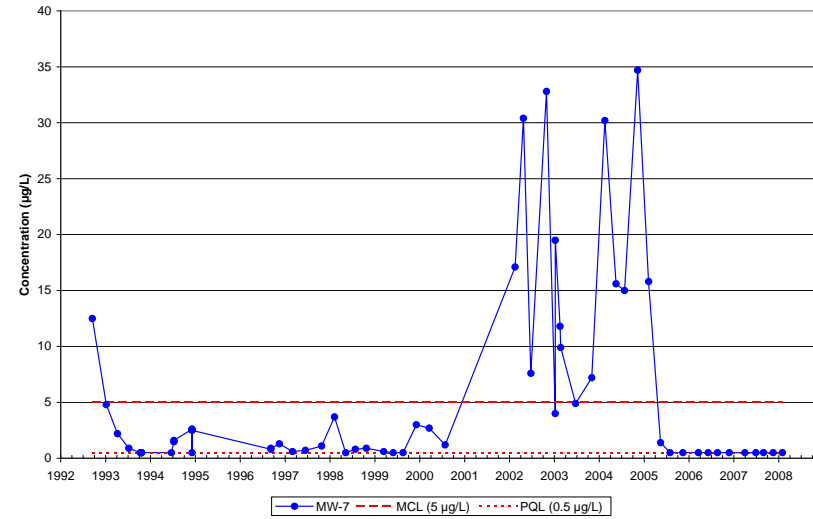


VOCs and Perchlorate Time Series Plots for MW-4-1

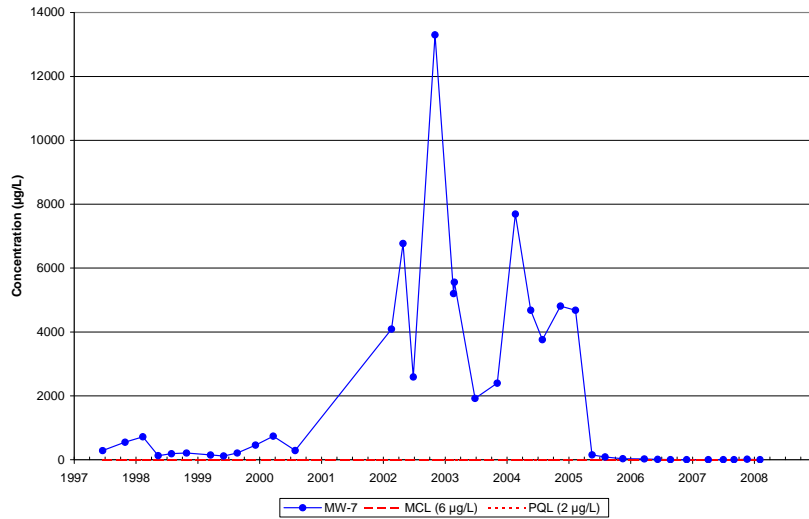
MW-7 Carbon tetrachloride Concentrations 1992 to Present



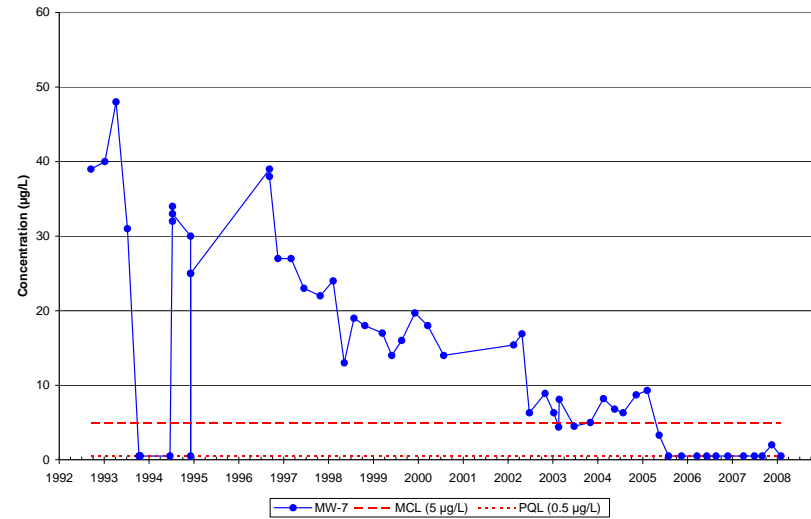
MW-7 Tetrachloroethene (PCE) Concentrations 1992 to Present



MW-7 Perchlorate Concentrations 1997 to Present

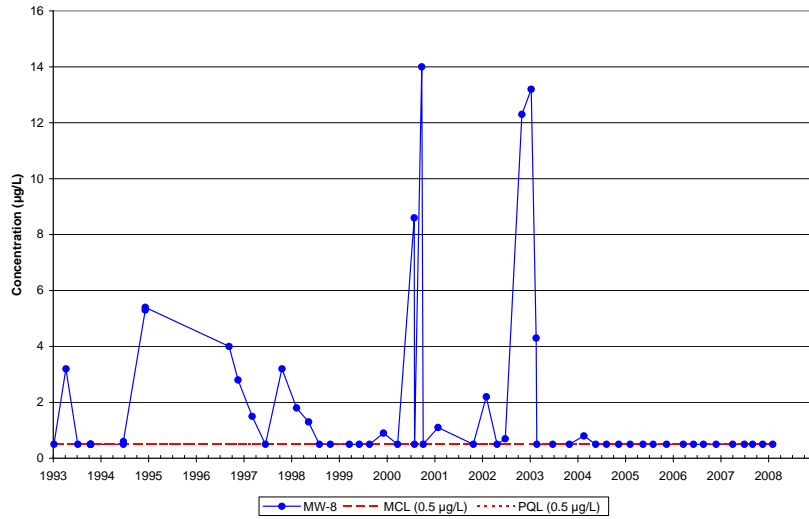


MW-7 Trichloroethene (TCE) Concentrations 1992 to Present

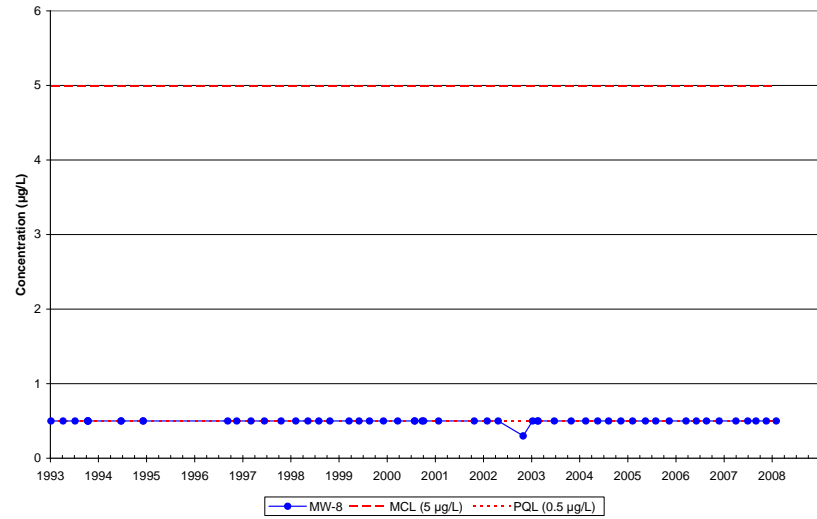


VOCs and Perchlorate Time Series Plots for MW-7

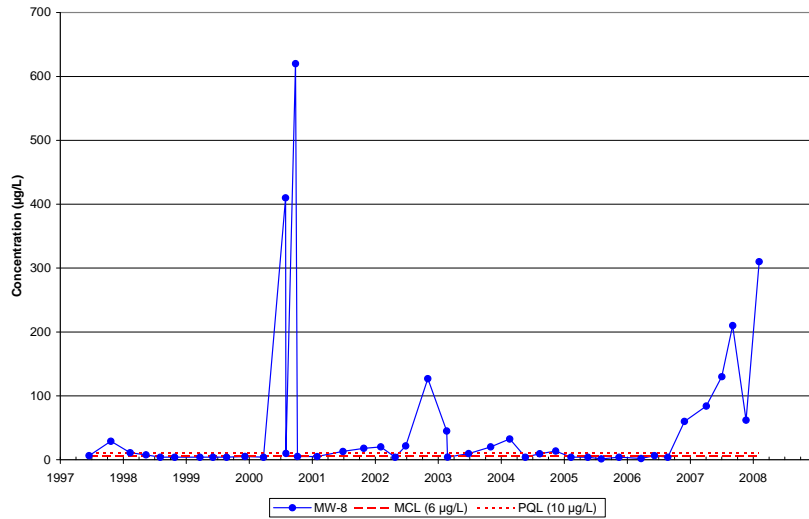
MW-8 Carbon tetrachloride Concentrations 1993 to Present



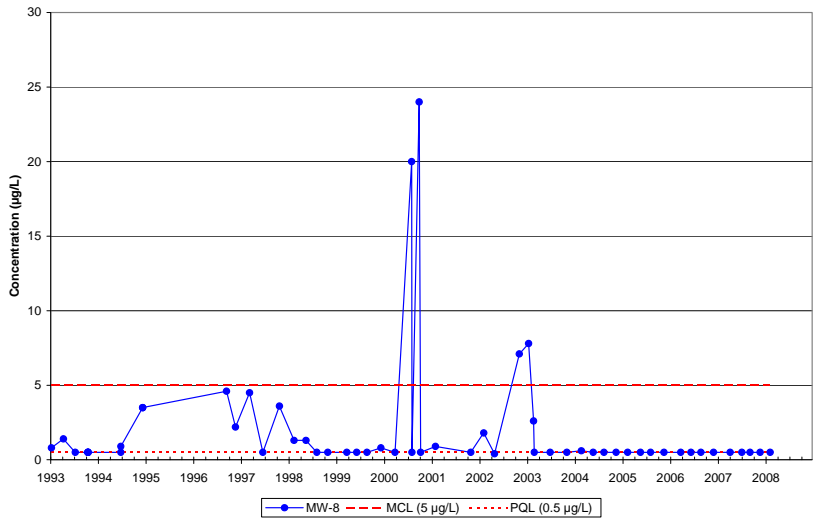
MW-8 Tetrachloroethene (PCE) Concentrations 1993 to Present



MW-8 Perchlorate Concentrations 1997 to Present

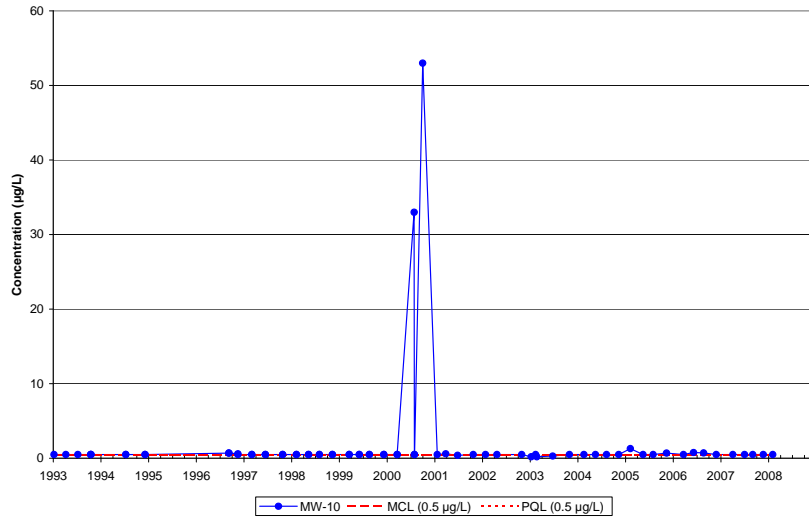


MW-8 Trichloroethene (TCE) Concentrations 1993 to Present

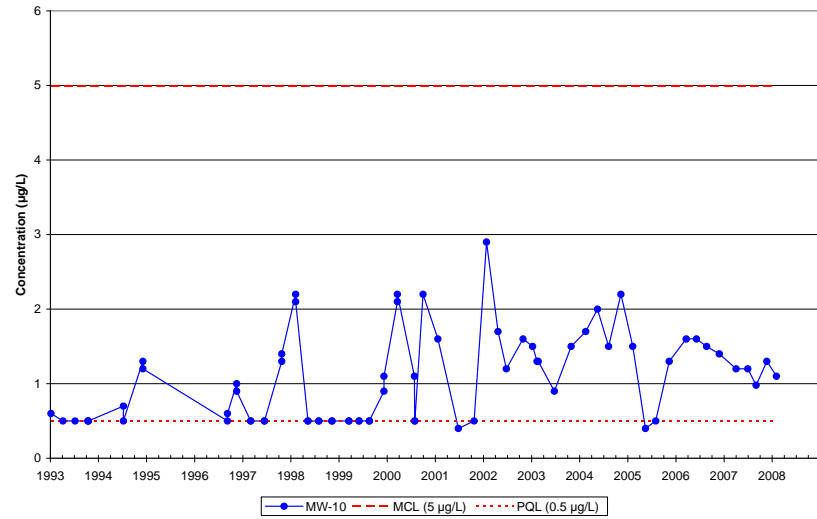


VOCs and Perchlorate Time Series Plots for MW-8

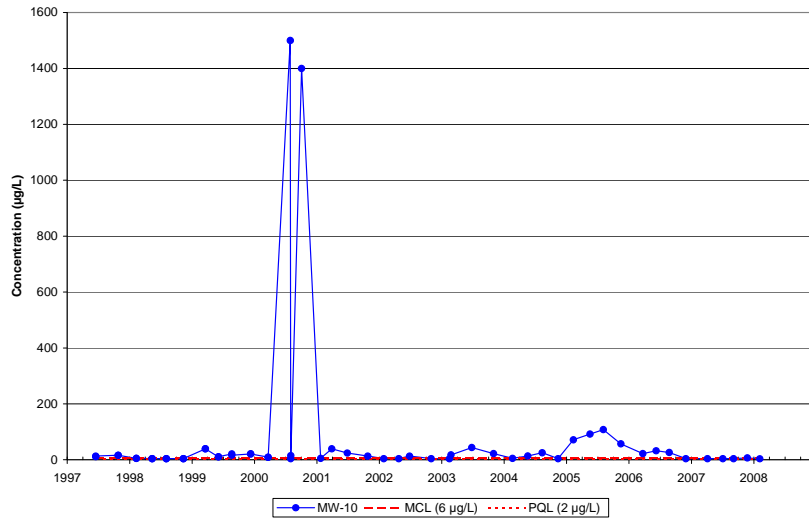
MW-10 Carbon tetrachloride Concentrations 1993 to Present



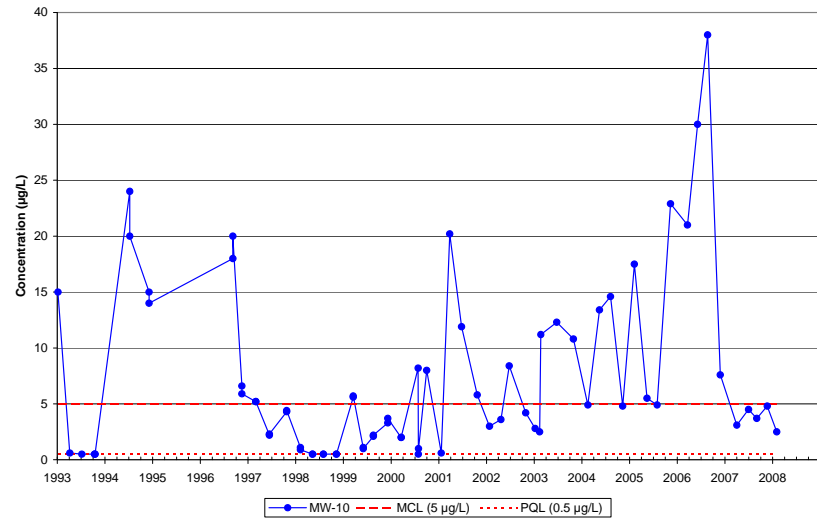
MW-10 Tetrachloroethene (PCE) Concentrations 1993 to Present



MW-10 Perchlorate Concentrations 1997 to Present

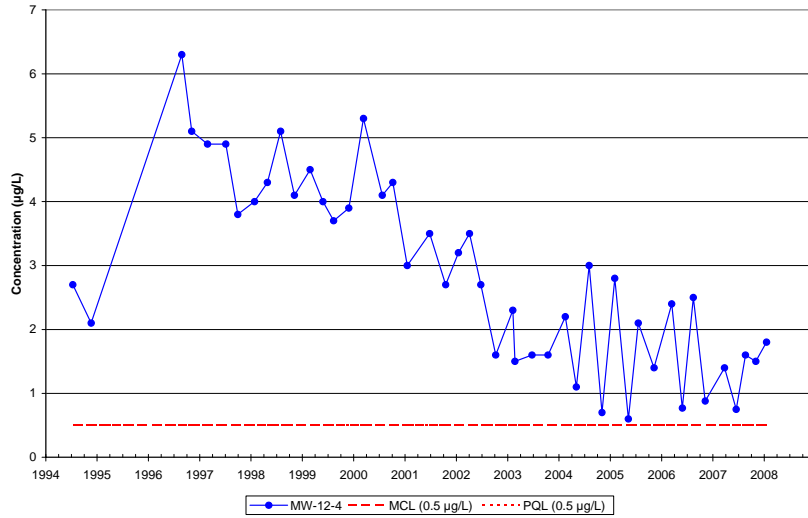


MW-10 Trichloroethene (TCE) Concentrations 1993 to Present

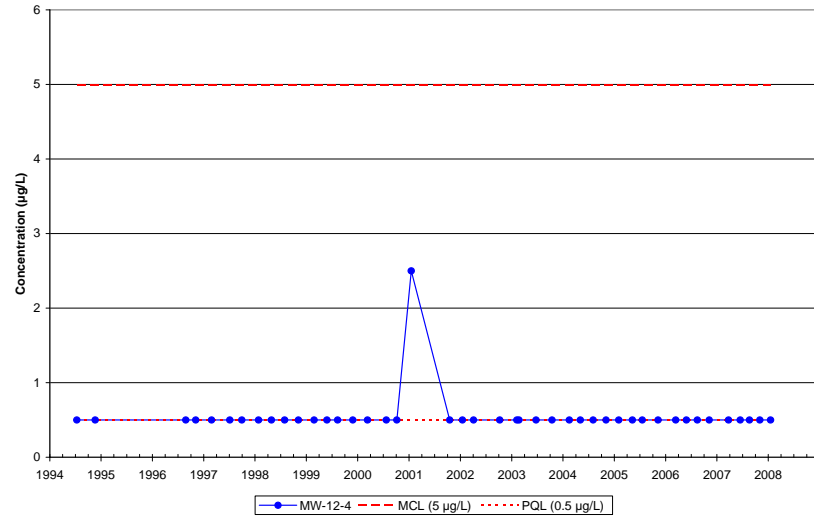


VOCs and Perchlorate Time Series Plots for MW-10

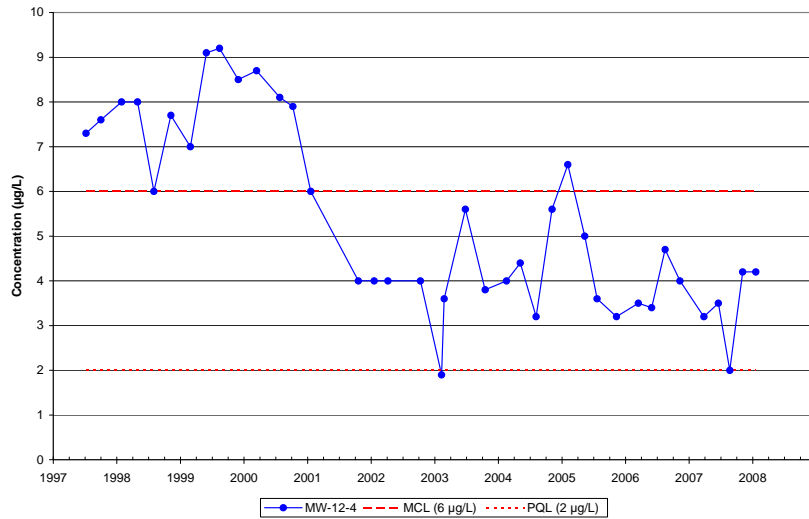
MW-12-4 Carbon tetrachloride Concentrations 1994 to Present



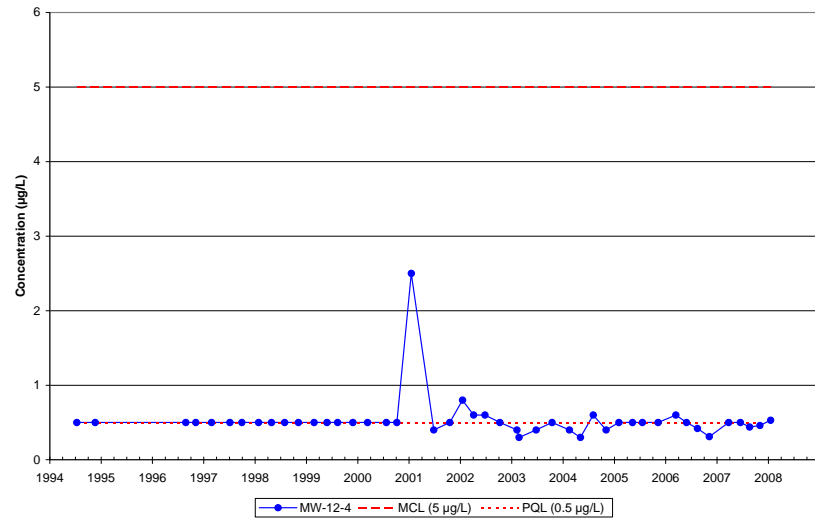
MW-12-4 Tetrachloroethene (PCE) Concentrations 1994 to Present



MW-12-4 Perchlorate Concentrations 1997 to Present

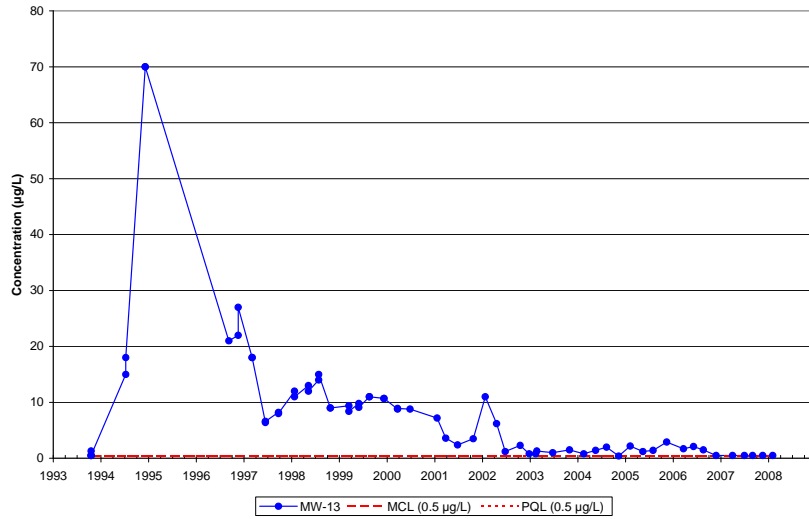


MW-12-4 Trichloroethene (TCE) Concentrations 1994 to Present

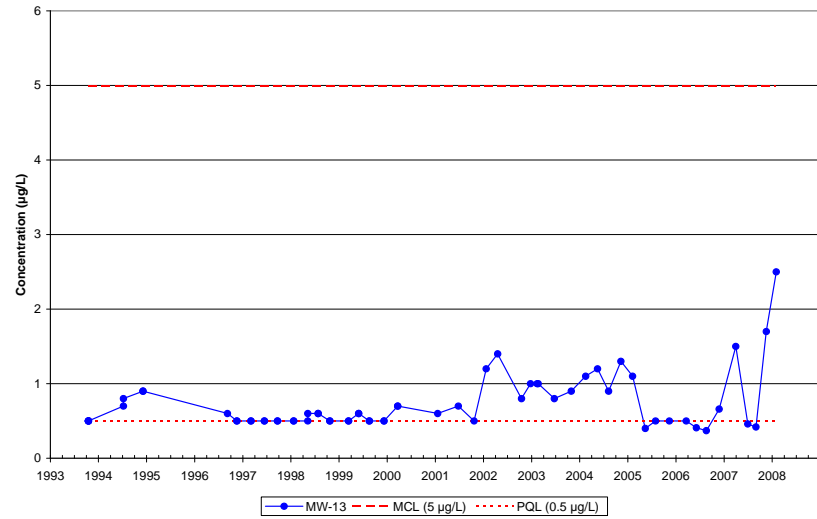


VOCs and Perchlorate Time Series Plots for MW-12-4

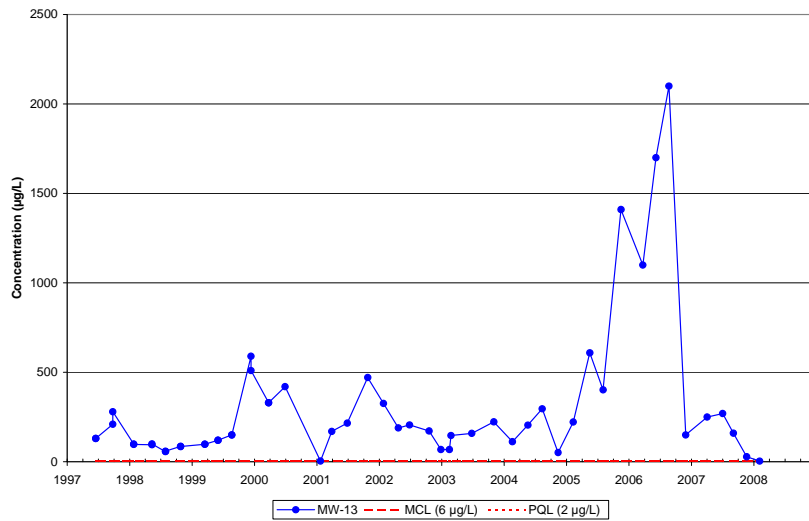
MW-13 Carbon tetrachloride Concentrations 1993 to Present



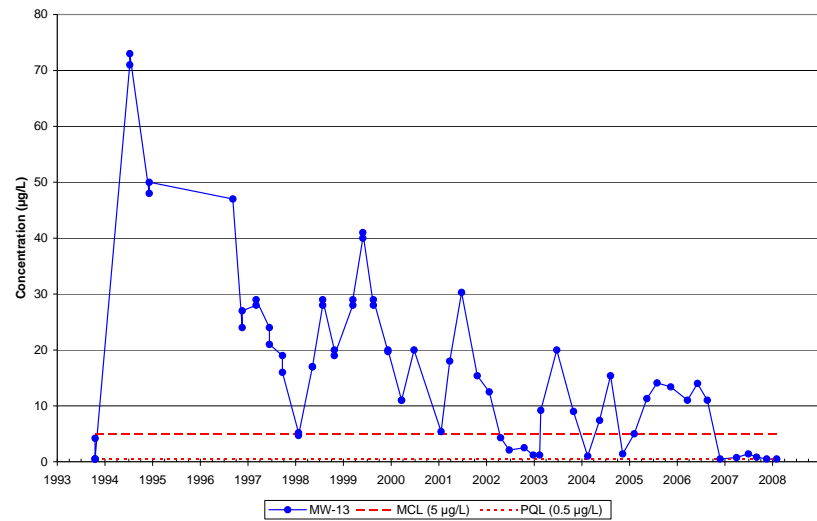
MW-13 Tetrachloroethene (PCE) Concentrations 1993 to Present



MW-13 Perchlorate Concentrations 1997 to Present

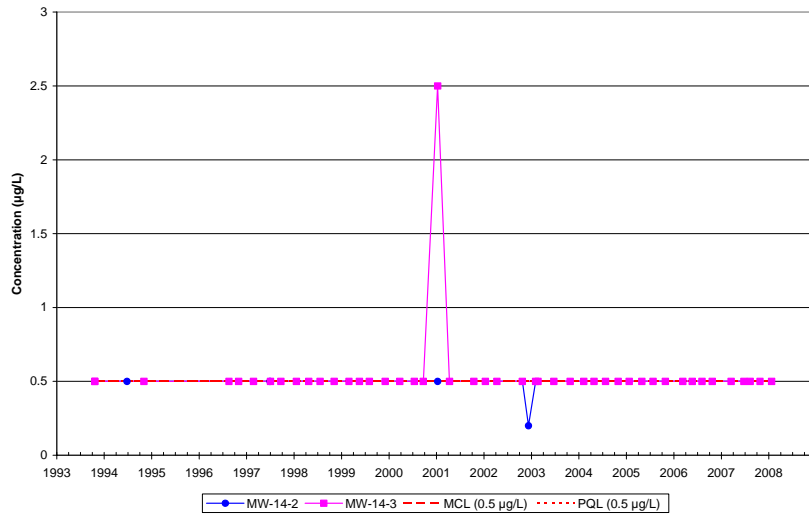


MW-13 Trichloroethene (TCE) Concentrations 1993 to Present

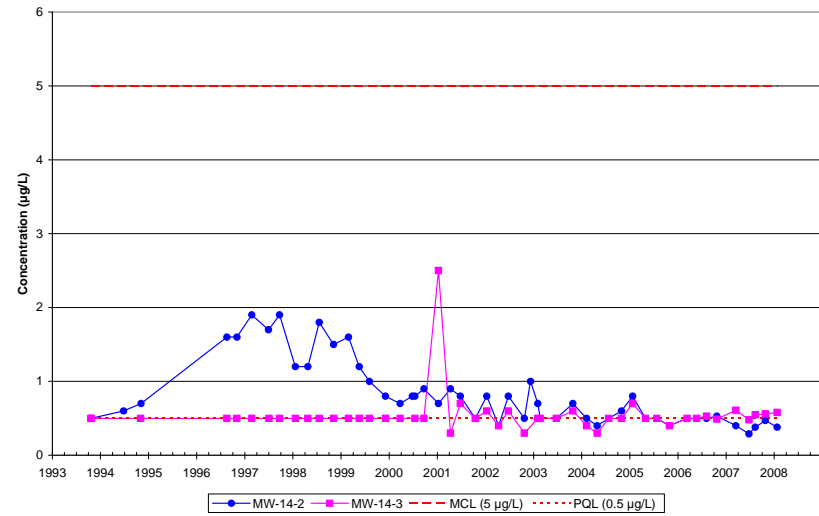


VOCs and Perchlorate Time Series Plots for MW-13

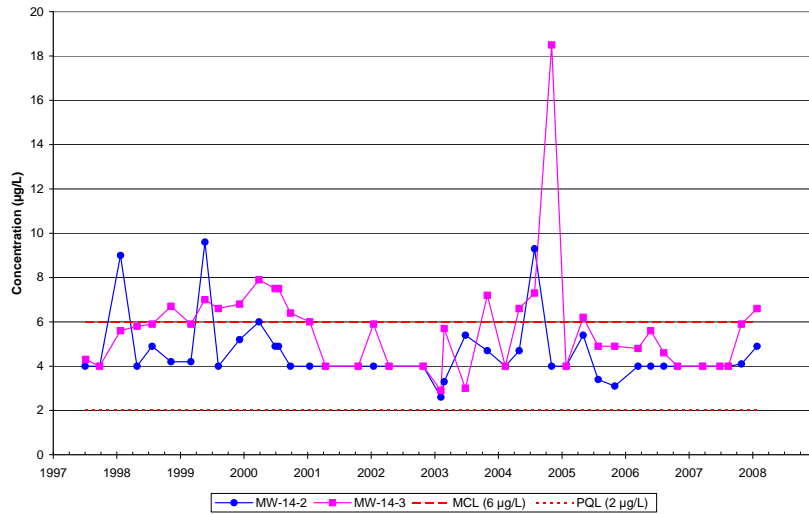
MW-14-2 and MW-14-3 Carbon tetrachloride Concentrations 1993 to Present



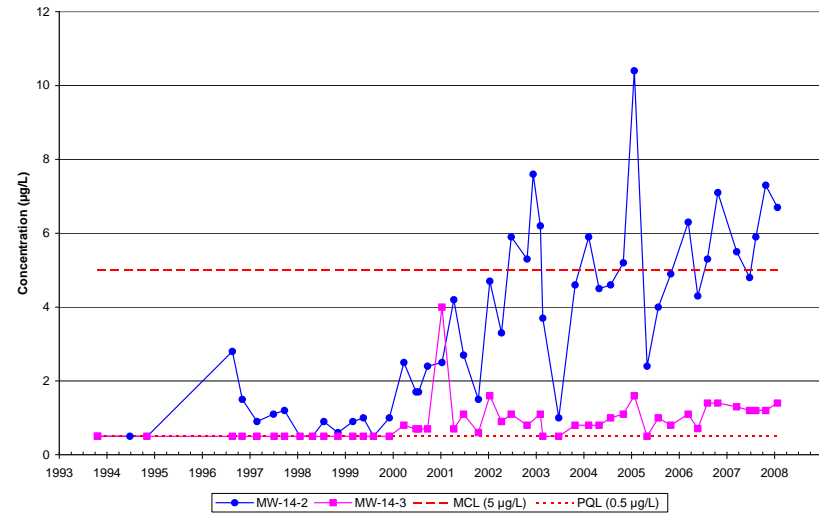
MW-14-2 and MW-14-3 Tetrachloroethene (PCE) Concentrations 1993 to Present



MW-14-2 and MW-14-3 Perchlorate Concentrations 1997 to Present

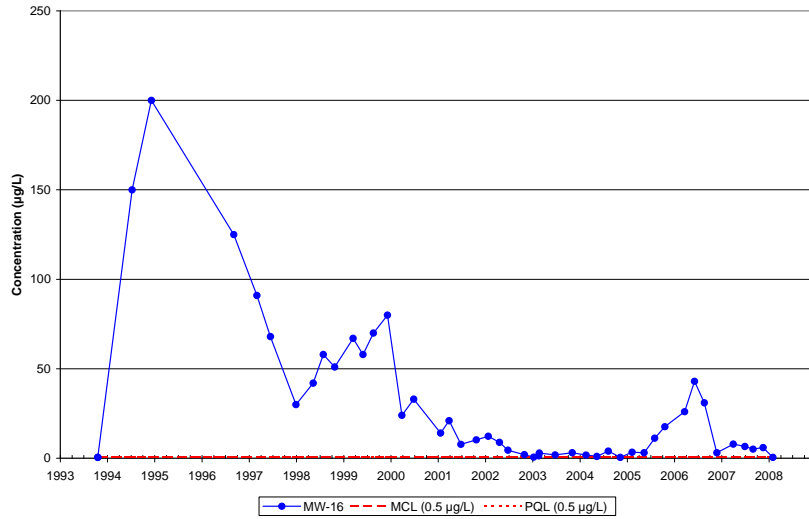


MW-14-2 and MW-14-3 Trichloroethene (TCE) Concentrations 1993 to Present

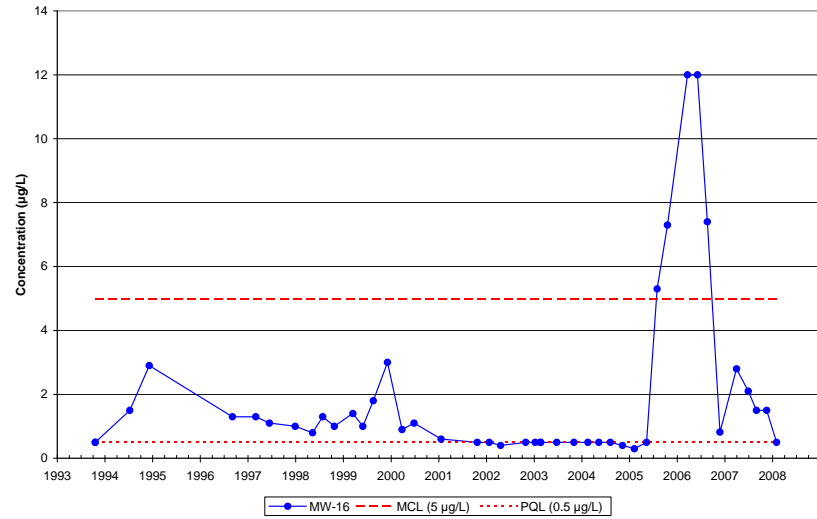


VOCs and Perchlorate Time Series Plots for MW-14-2 and MW-14-3

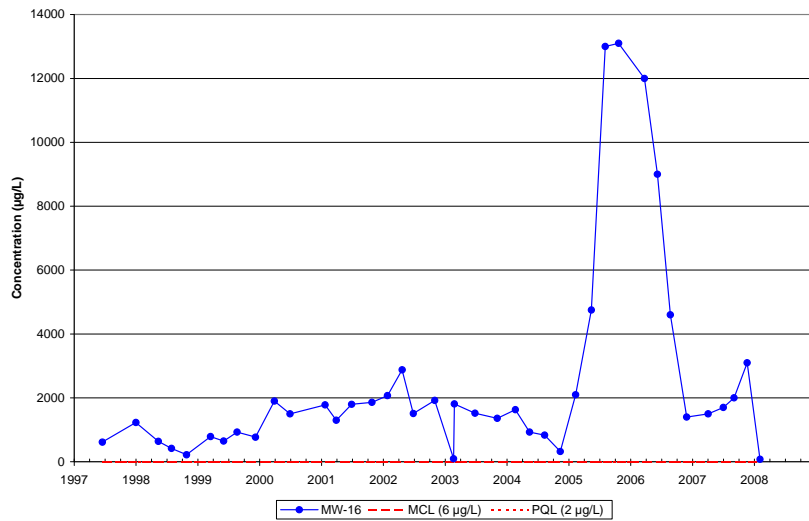
MW-16 Carbon tetrachloride Concentrations 1993 to Present



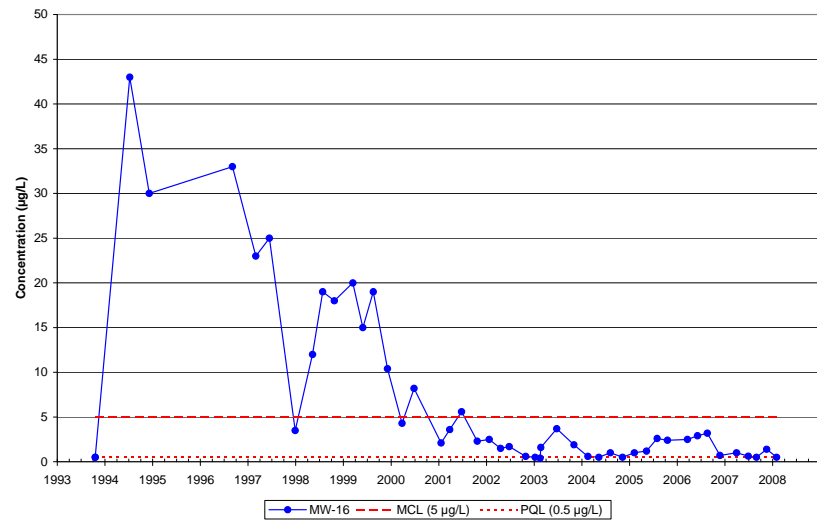
MW-16 Tetrachloroethene (PCE) Concentrations 1993 to Present



MW-16 Perchlorate Concentrations 1997 to Present

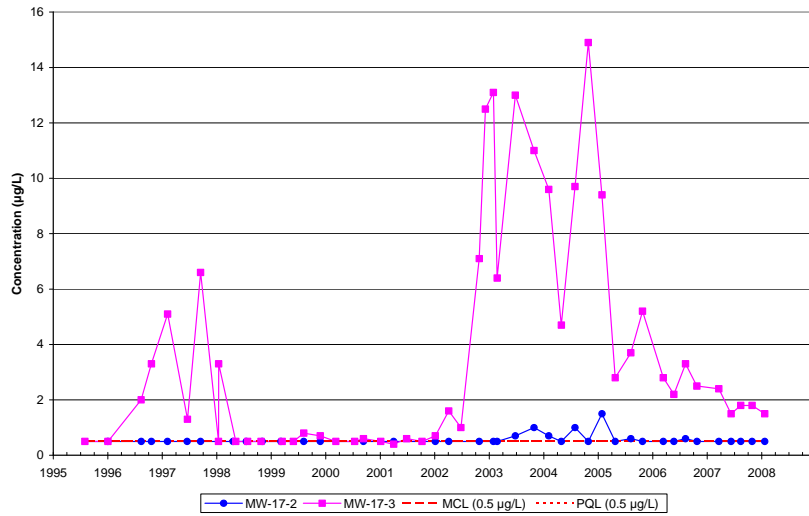


MW-16 Trichloroethene (TCE) Concentrations 1993 to Present

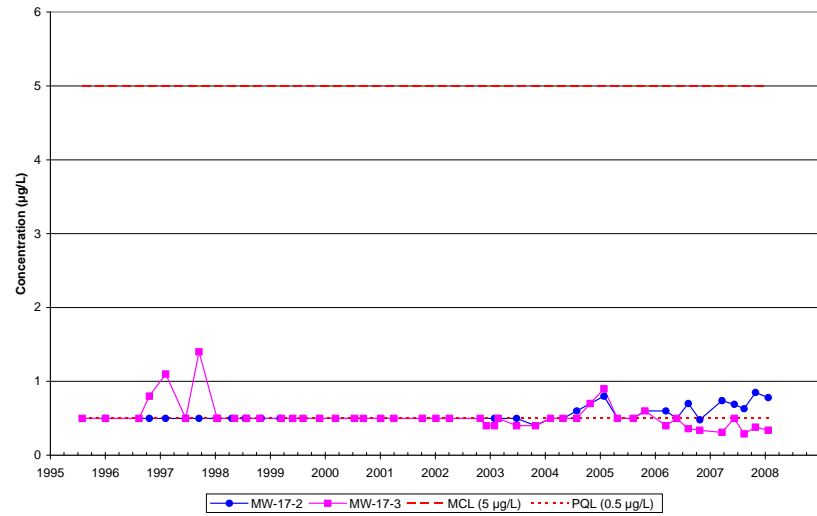


VOCs and Perchlorate Time Series Plots for MW-16

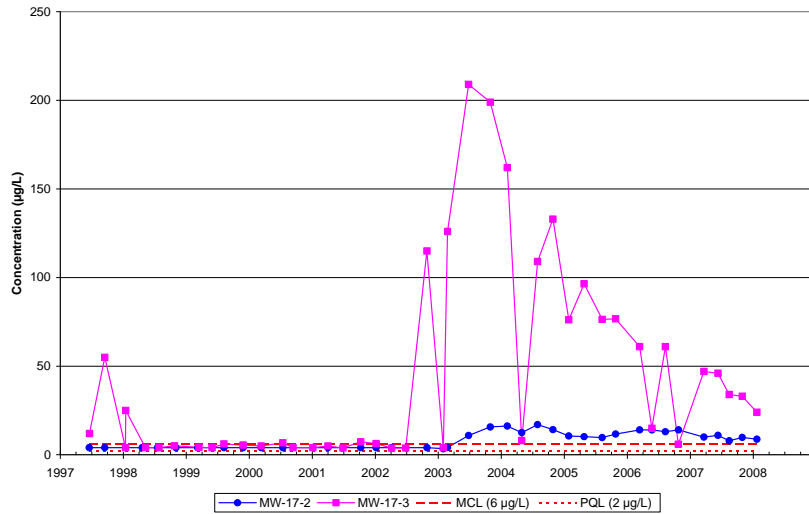
MW-17-2 and MW-17-3 Carbon tetrachloride Concentrations 1995 to Present



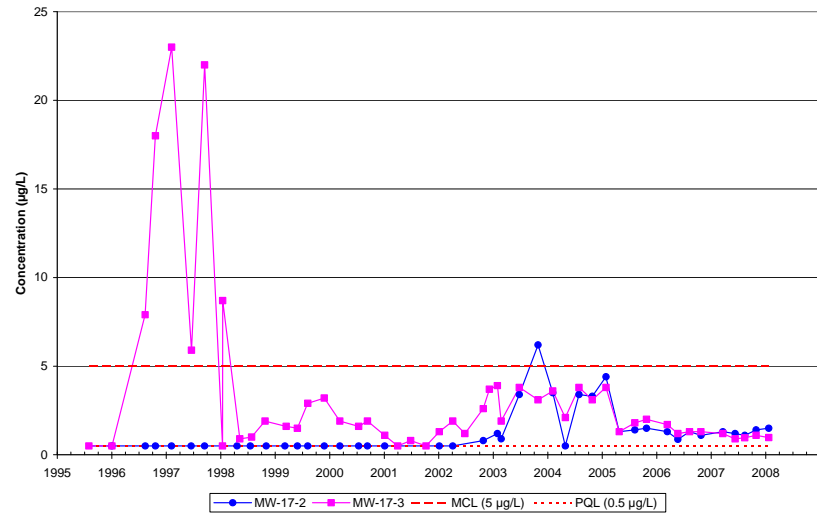
MW-17-2 and MW-17-3 Tetrachloroethene (PCE) Concentrations 1995 to Present



MW-17-2 and MW-17-3 Perchlorate Concentrations 1997 to Present

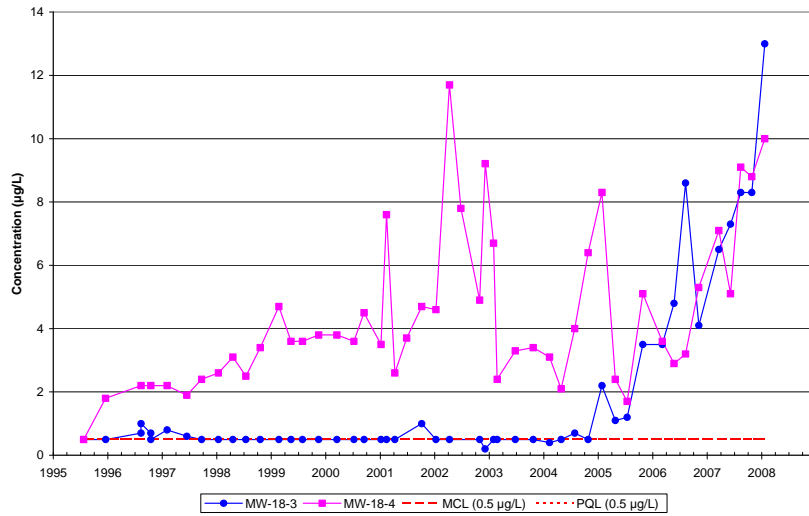


MW-17-2 and MW-17-3 Trichloroethene (TCE) Concentrations 1995 to Present

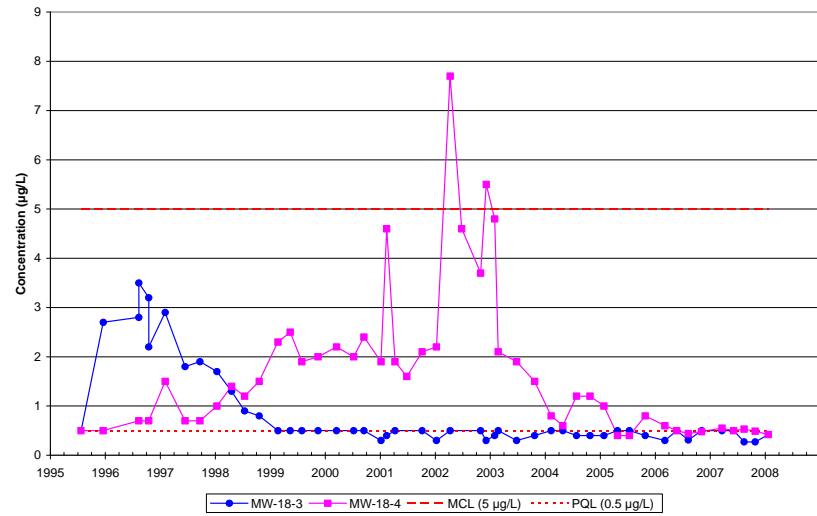


VOCs and Perchlorate Time Series Plots for MW-17-2 and MW-17-3

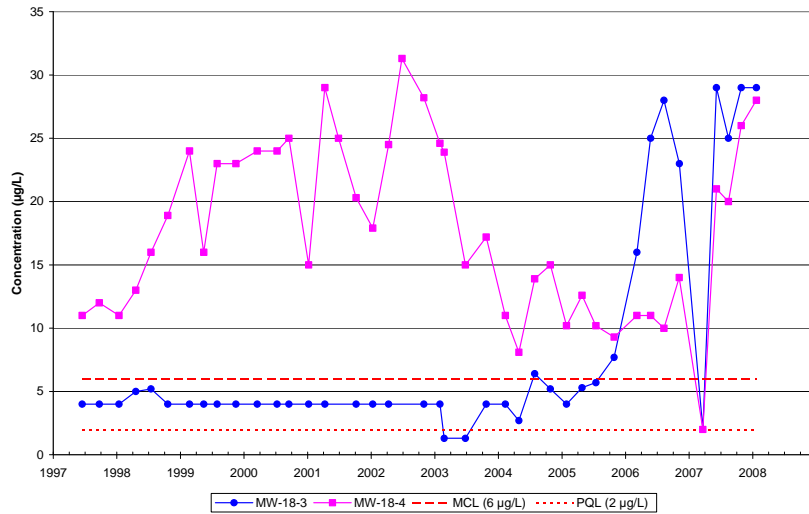
MW-18-3 and MW-18-4 Carbon tetrachloride Concentrations 1995 to Present



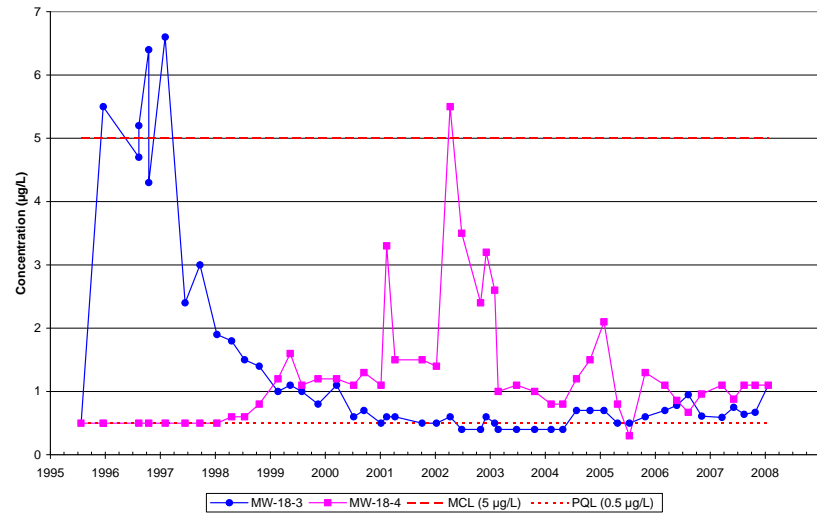
MW-18-3 and MW-18-4 Tetrachloroethene (PCE) Concentrations 1995 to Present



MW-18-3 and MW-18-4 Perchlorate Concentrations 1997 to Present

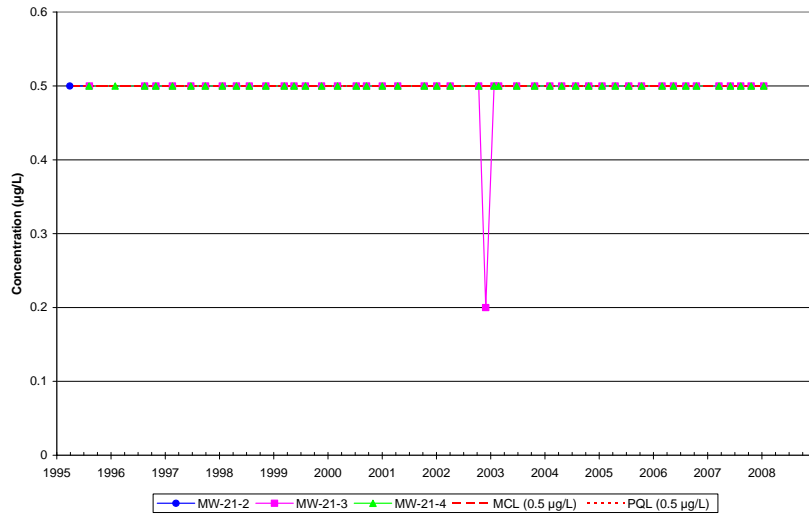


MW-18-3 and MW-18-4 Trichloroethene (TCE) Concentrations 1995 to Present

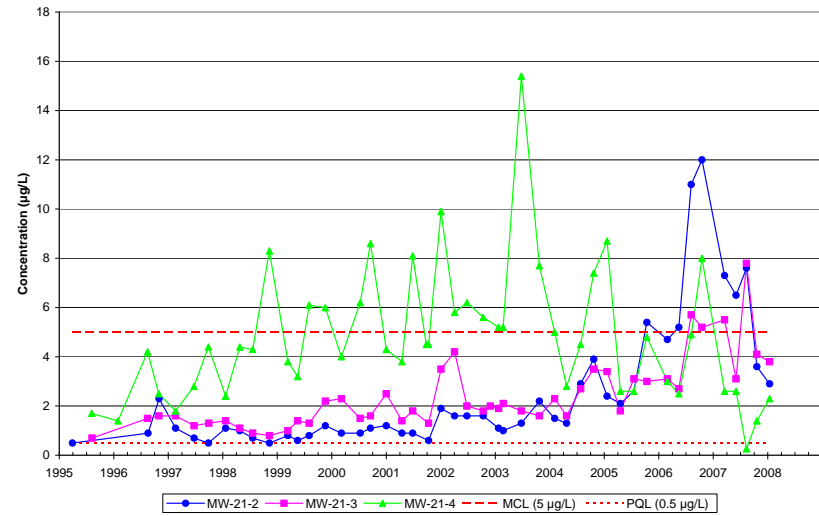


VOCs and Perchlorate Time Series Plots for MW-18-3 and MW-18-4

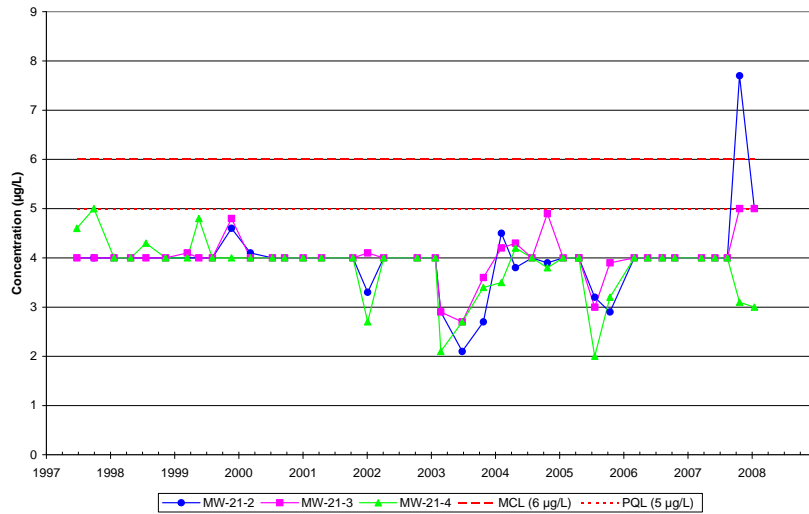
MW-21-2, MW-21-3, and MW-21-4 Carbon tetrachloride Concentrations 1995 to Present



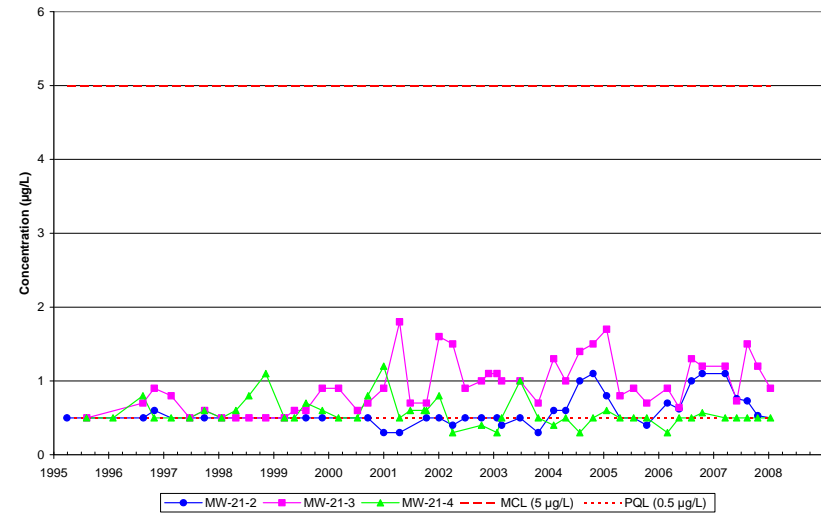
MW-21-2, MW-21-3, and MW-21-4 Tetrachloroethene (PCE) Concentrations 1995 to Present



MW-21-2, MW-21-3, and MW-21-4 Perchlorate Concentrations 1997 to Present

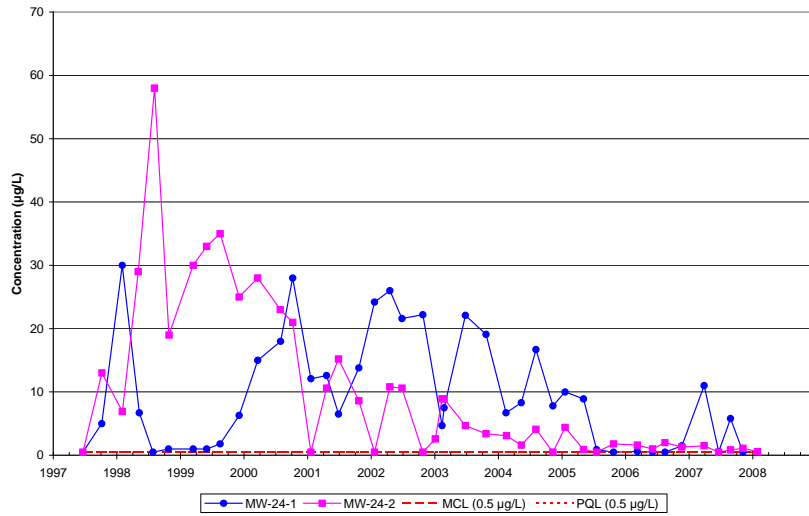


MW-21-2, MW-21-3, and MW-21-4 Trichloroethene (TCE) Concentrations 1995 to Present

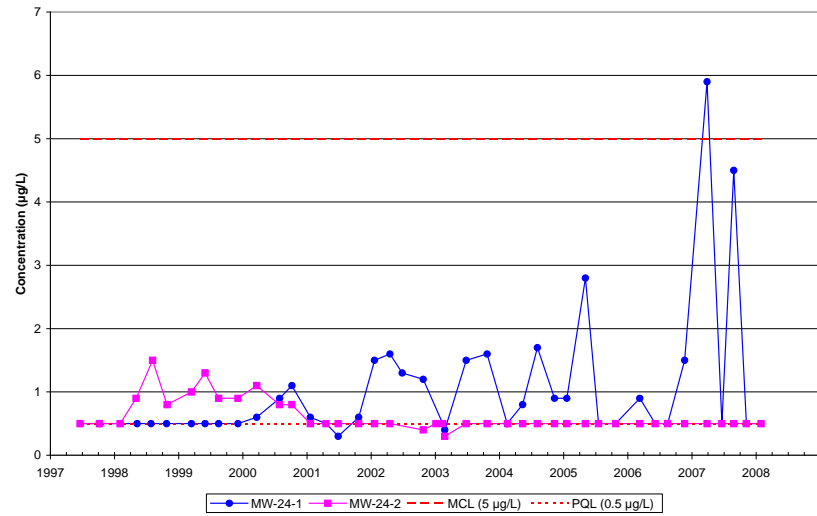


VOCs and Perchlorate Time Series Plots for MW-21-2, MW-21-3 and MW-21-4

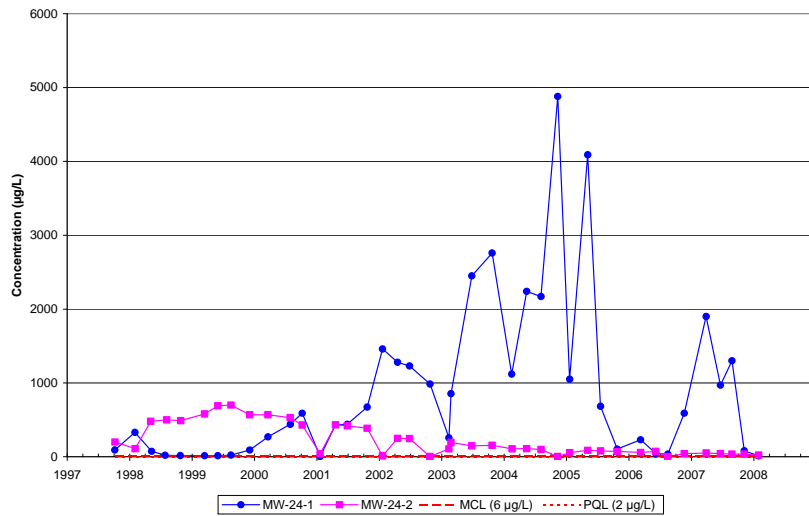
MW-24-1 and MW-24-2 Carbon tetrachloride Concentrations 1997 to Present



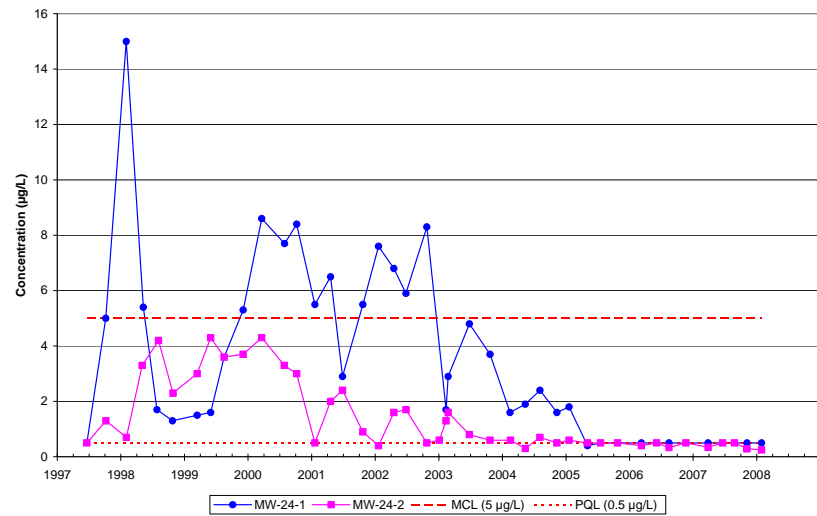
MW-24-1 and MW-24-2 Tetrachloroethene (PCE) Concentrations 1997 to Present



MW-24-1 and MW-24-2 Perchlorate Concentrations 1997 to Present



MW-24-1 and MW-24-2 Trichloroethene (TCE) Concentrations 1997 to Present



VOCs and Perchlorate Time Series Plots for MW-24-1 and MW-24-2