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 4th Quarter 2008 sampling event was conducted by Insight Environmental, Inc.

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 1

INSIGHT
Environmental, Engineering and Construction, Inc.

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-73805
Navy Contract No.: Battelle
Sampled By: Chase Brogdon, Andrew Wells
Date: 11/17/08
Weather: clear and sunny

PURGE VOLUME CALCULATION (casing volume):

(120 TD (feet) - 36.50 WL (feet)) X 4^2 D (inches) X 3 # Vols X 0.0408 = 163.53 Calculated Purge Volume Gallons

PURGE METHOD **PUMP INTAKE SETTING**

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

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0813	36.50	0	--	--	--	--	--	--	Purge start
0822	36.50	33	6.08	73.9	5.00	10.22	17.0	241	Clear, no odor
0831	36.50	65	6.59	70.8	0.93	10.02	17.1	220	Clear, no odor
0840	36.50	98	6.71	70.3	0.64	9.89	17.0	217	Clear, no odor
0849	36.50	131	6.85	70.3	-0.05	9.71	17.6	213	Clear, no odor
0858	36.50	164	7.15	70.8	-0.25	8.83	17.8	204	Clear, no odor

Total Purge Volume: 164 (Gallons)

Total Discharge: 3.01 (Casing Volumes)

Approx. Purge Rate: 4.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 807 Purge time start: 813

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

WATER DISPOSAL

Purge water storage: polytank
Purge water disposal: OU1 System-Batelle-JPL

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-1	Sample ID: _____	Type: _____	Type: _____
Sample Time: 0900	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: 6	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 5

INSIGHT
Environmental, Engineering and Construction, Inc.

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-73805
Navy Contract No.: Battelle
Sampled By: Chase Brogdon, Andrew Wells
Date: 11/14/08
Weather: clear and sunny

PURGE VOLUME CALCULATION (casing volume):

(140 (TD (feet)) - 74.35 (WL (feet))) X 4^2 (D (inches)) X 3 (# Vols) X 0.0408 = 128.57 (Calculated Purge Volume) Gallons

PURGE METHOD **PUMP INTAKE SETTING**

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

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0735	74.35	0	--	--	--	--	--	--	Purge start
0742	74.35	26	5.24	51.4	2.15	8.52	17.3	234	Clear, no odor
0749	74.35	51	6.21	51.7	1.32	8.52	16.8	221	Clear, no odor
0756	74.35	77	6.38	51.7	0.57	8.52	16.6	219	Clear, no odor
0803	74.35	102	6.55	53.1	0.21	8.40	16.5	232	Clear, no odor
0811	74.35	129	6.62	54.2	0.34	8.35	16.7	239	Clear, no odor

Total Purge Volume: 129 (Gallons)

Total Discharge: 3.01 (Casing Volumes)

Approx. Purge Rate: 4.0 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0730 Purge time start: 0735

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

WATER DISPOSAL

Purge water storage: polytank
Purge water disposal: OU 1 System – Battelle - JPL

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-5	Sample ID:	Type:	Type:
Sample Time: 0813	Sample Time:	Sample ID:	Sample ID:
No. of Containers: 6	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 6

INSIGHT
Environmental, Engineering and Construction, Inc.

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-73805
Navy Contract No.: Battelle
Sampled By: Chase Brogdon, Andrew Wells
Date: 11/14/08
Weather: clear and sunny

PURGE VOLUME CALCULATION (casing volume):

(245 (TD feet) - 178.33 (WL feet)) X 4^2 (D inches) X 3 (# Vols) X 0.0408 = 130.57 (Calculated Purge Volume) Gallons

PURGE METHOD | **PUMP INTAKE SETTING**

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

Depth in feet (BTOC): _____

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0856	178.33	0	--	--	--	--	--	--	Purge start
0907	178.33	27	6.66	0.145	63.9	10.14	22.9	249	Reddish brown color, no odor
0918	178.33	53	6.70	0.137	42.3	8.45	24.4	233	Reddish brown color, no odor
0929	178.33	80	6.87	0.140	33.4	8.86	22.2	242	Cloudy, no odor
0940	178.33	108	6.81	0.138	25.9	8.25	21.3	267	Cloudy, no odor
0951	178.33	134	6.82	0.138	19.6	7.92	21.6	279	Cloudy, no odor

Total Purge Volume: 134 (Gallons)

Total Discharge: 3.08 (Casing Volumes)

Approx. Purge Rate: 2.50 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 848 Purge time start: 856

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

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: OU 1 System – Battelle - JPL

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-6	Sample ID:	Type:	Type:
Sample Time: 0954	Sample Time:	Sample ID:	Sample ID:
No. of Containers: 6	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 7

INSIGHT
Environmental, Engineering and Construction, Inc.

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

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

PURGE VOLUME CALCULATION (casing volume):

(275 (TD (feet)) - 212.44 (WL (feet))) X 4^2 (D (inches)) X 3 (# Vols) X 0.0408 = 122.52 (Calculated Purge Volume) Gallons

PURGE METHOD | **PUMP INTAKE SETTING**

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

Depth in feet (BTOC): _____

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0824	212.44	0	--	--	--	--	--	--	Purge start
0837	212.44	25	6.19	78.1	6.56	6.89	19.7	200	Clear, no odor
0849	212.44	50	6.37	77.4	18.1	6.92	19.9	220	Clear, no odor
0902	212.44	75	6.70	77.2	26.7	6.97	20.4	209	Clear, no odor
0914	212.44	100	6.83	78.4	4.03	7.02	19.7	234	Clear, no odor
0927	212.44	125	6.89	77.8	2.29	6.98	20.1	248	Clear, no odor

Total Purge Volume: 125 (Gallons)

Total Discharge: 3.06 (Casing Volumes)

Approx. Purge Rate: 2.00 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 755 Purge time start: 824

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

WATER DISPOSAL

Purge water storage: polytank
Purge water disposal: OU 1 System – Battelle - JPL

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-7	Sample ID:	Type:	Type:
Sample Time: 0929	Sample Time:	Sample ID:	Sample ID:
No. of Containers: 6	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 8

INSIGHT
Environmental, Engineering and Construction, Inc.

22632 Golden Springs Dr., Suite 270
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Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-73805
Navy Contract No.: Battelle
Sampled By: Chase Brogdon, Andrew Wells
Date: 11/13/08
Weather: clear and sunny

PURGE VOLUME CALCULATION (casing volume):

(205 (TD feet) - 139.67 (WL feet)) X 4^2 (D inches) X 3 (# Vols) X 0.0408 = 127.94 (Calculated Purge Volume) Gallons

PURGE METHOD **PUMP INTAKE SETTING**

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

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
1008	139.67	0	--	--	--	--	--	--	Purge start
1017	139.67	26	7.14	72.2	2.63	9.10	19.4	297	Clear, no odor
1026	139.67	51	7.17	70.2	1.66	8.66	19.1	291	Clear, no odor
1035	139.67	77	7.13	70.6	0.72	8.57	18.9	294	Clear, no odor
1044	139.67	102	7.14	69.7	0.16	8.38	18.9	296	Clear, no odor
1053	139.67	128	7.20	69.5	-0.21	8.33	19.0	298	Clear, no odor

Total Purge Volume: 128 (Gallons)

Total Discharge: 3.00 (Casing Volumes)

Approx. Purge Rate: 3.00 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 959 Purge time start: 1008

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

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: OU 1 System – Battelle - JPL

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-8	Sample ID:	Type:	Type:
Sample Time: 1059	Sample Time:	Sample ID:	Sample ID:
No. of Containers: 7	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 9

INSIGHT
Environmental, Engineering and Construction, Inc.

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-73805
Navy Contract No.: Battelle
Sampled By: Chase Brogdon, Andrew Wells
Date: 11/17/08
Weather: clear and sunny

PURGE VOLUME CALCULATION (casing volume):

(68 - 29.81) X 4^2 X 3 X 0.0408 = 74.79 Gallons

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

PURGE METHOD **PUMP INTAKE SETTING**

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

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0955	29.81	0	--	--	--	--	--	--	Purge start
1000	29.81	15	7.45	63.5	7.98	11.11	22.1	242	Clear, no odor
1005	29.81	30	7.22	62.1	5.80	10.38	20.5	245	Clear, no odor
1010	29.81	45	7.16	61.8	2.23	9.52	20.0	253	Clear, no odor
1015	29.81	60	7.11	58.6	1.15	9.50	19.9	257	Clear, no odor
1020	29.81	75	6.98	72.1	0.10	9.02	21.0	260	Clear, no odor

Total Purge Volume: 75 (Gallons)

Total Discharge: 3.01 (Casing Volumes)

Approx. Purge Rate: 4.00 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0948 Purge time start: 0955

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

WATER DISPOSAL

Purge water storage: polytank

Purge water disposal: OU 1 – Battelle - JPL

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-9	Sample ID: _____	Type: _____	Type: _____
Sample Time: 1023	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: 6	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 10

INSIGHT
Environmental, Engineering and Construction, Inc.

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-73805
Navy Contract No.: Battelle
Sampled By: Chase Brogdon, Andrew Wells
Date: 11/12/08
Weather: clear and sunny

PURGE VOLUME CALCULATION (casing volume):

(155 (TD feet) - 88.05 (WL feet)) X 4^2 (D inches) X 3 (# Vols) X 0.0408 = 131.11 (Calculated Purge Volume) Gallons

PURGE METHOD **PUMP INTAKE SETTING**

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

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0830	88.05	0	-	--	--	--	--	--	Purge start
0838	88.05	27	5.58	0.124	13.2	7.80	18.0	200	Clear, no odor
0846	88.05	53	6.16	0.119	4.86	7.82	18.2	206	Clear, no odor
0854	88.05	80	6.32	0.119	4.21	7.84	18.6	220	Clear, no odor
0902	88.05	106	6.43	0.121	3.65	7.81	19.0	229	Clear, no odor
0910	88.05	132	6.52	0.122	4.43	7.90	19.4	230	Clear, no odor

Total Purge Volume: 132 (Gallons)

Total Discharge: 3.02 (Casing Volumes)

Approx. Purge Rate: 3.50 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0825 Purge time start: 0830

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

WATER DISPOSAL

Purge water storage: polytank
Purge water disposal: OU 1 – Battelle - JPL

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-10	Sample ID: _____	Type: _____	Type: _____
Sample Time: 0913	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: 6	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 13

INSIGHT
Environmental, Engineering and Construction, Inc.

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-73805
Navy Contract No.: Battelle
Sampled By: Chase Brogdon, Andrew Wells
Date: 11/13/08
Weather: clear and sunny

PURGE VOLUME CALCULATION (casing volume):

(235 (TD feet) - 182.24 (WL feet)) X 4² (D (inches)) X 3 (# Vols) X 0.0408 = 103.33 (Calculated Purge Volume) Gallons

PURGE METHOD | **PUMP INTAKE SETTING**

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

Depth in feet (BTOC): _____

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0809	182.24	0	--	--	--	--	--	--	Purge start
0820	182.24	21	5.96	75.9	8.60	7.55	20.1	260	Clear, no odor
0831	182.24	41	6.45	74.9	8.61	7.38	20.7	246	Clear, no odor
0842	182.24	62	6.69	73.1	4.53	7.50	20.7	248	Clear, no odor
0853	182.24	82	6.67	73.8	3.28	7.65	20.7	248	Clear, no odor
0905	182.24	104	6.67	74.6	1.60	7.68	21.0	257	Clear, no odor

Total Purge Volume: 104 (Gallons)

Total Discharge: 3.02 (Casing Volumes)

Approx. Purge Rate: 2.00 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 0745 Purge time start: 0809

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

WATER DISPOSAL

Purge water storage: polytank
Purge water disposal: Ou 1 – Battelle - JPL

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-13	Sample ID:	Type:	Type:
Sample Time: 0909	Sample Time:	Sample ID:	Sample ID:
No. of Containers: 6	No. of Containers:	Sample Time:	Sample Time:
		No. of Containers:	No. of Containers:

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 15

INSIGHT
Environmental, Engineering and Construction, Inc.

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

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.
Project No: 4-73805
Navy Contract No.: Battelle
Sampled By: Chase Brogdon, Andrew Wells
Date: 11/12/08
Weather: clear and sunny

PURGE VOLUME CALCULATION (casing volume):

(74 (TD feet) - 42.66 (WL feet)) X 4² (D (inches)) X 3 (# Vols) X 0.0408 = 61.38 (Calculated Purge Volume) Gallons

PURGE METHOD **PUMP INTAKE SETTING**

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

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
1013	42.66	0	--	--	--	--	--	--	Purge start
1017	42.66	13	7.15	74.0	13.6	10.83	18.7	267	Clear, no odor
1021	42.66	25	7.24	69.8	5.07	10.52	17.9	264	Clear, no odor
1025	42.66	38	7.21	70.1	2.33	9.97	17.4	261	Clear, no odor
1029	42.66	50	7.28	70.0	1.41	9.64	17.7	261	Clear, no odor
1033	42.66	62	7.31	70.4	3.98	9.57	17.4	269	Clear, no odor

Total Purge Volume: 62 (Gallons)

Total Discharge: 3.03 (Casing Volumes)

Approx. Purge Rate: 4.00 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1000 Purge time start: 1013

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

WATER DISPOSAL

Purge water storage: polytank
Purge water disposal: OU 1 –Battelle - JPL

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-15	Sample ID: _____	Type: _____	Type: _____
Sample Time: 1036	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: 6	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

GROUNDWATER COLLECTION AND SAMPLE LOG
WELL ID # 16

INSIGHT
Environmental, Engineering and Construction, Inc.

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

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

PURGE VOLUME CALCULATION (casing volume):

(285 (TD feet) - 235.64 (WL feet)) X 4^2 (D inches) X 3 (# Vols) X 0.0408 = 96.67 (Calculated Purge Volume) Gallons

PURGE METHOD **PUMP INTAKE SETTING**

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

FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
1020	235.64	0	--	--	--	--	--	--	Purge start
1030	235.64	20	7.08	76.7	4.79	7.63	23.7	194	Clear, no odor
1040	235.64	40	7.29	77.9	1.03	7.76	23.9	211	Clear, no odor
1050	235.64	60	7.22	78.2	-0.26	7.83	23.8	220	Clear, no odor
1100	235.64	80	7.32	78.5	-0.53	7.77	24.6	227	Clear, no odor
1110	235.64	100	7.31	78.1	-0.89	7.79	25.0	220	Clear, no odor

Total Purge Volume: 100 (Gallons)

Total Discharge: 3.10 (Casing Volumes)

Approx. Purge Rate: 2.00 (GPM)

OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Purge start at: 1010 Purge time start: 1020

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

WATER DISPOSAL

Purge water storage: polytank
Purge water disposal: OU 1 – Battelle - JPL

WELL SAMPLING

Sample Depth in feet (BTOC): _____

Original	***Duplicate***	***Blank***	***Other (Trip / Source / _____)***
Sample ID: MW-16	Sample ID: _____	Type: _____	Type: _____
Sample Time: 1114	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: 6	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-3
Sampling Zone No.: 5101
Depth (ft): 653, 558, 346, 252, 172
Beginning of Session: 14.13 psia
End of Session: 14.21 psia

Start Time: 0800
Finish Time: 1115

Date: 10/28/08
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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	
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	248.84	✓	247.56	✓	247.57	✓	✓	248.86	840	5.48	0.49	38.5	1.66	19.3	94	
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	207.34	✓	206.49	✓	206.48	✓	✓	207.34	915	5.45	32.6	43.5	1.99	20.5	143	
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	114.89	✓	117.53	✓	117.56	✓	✓	114.90	942	5.91	0.35	41.4	2.03	21.5	119	
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	73.95	✓	76.39	✓	76.38	✓	✓	73.98	1013	5.72	2.50	51.0	2.46	24.2	143	
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	39.57	✓	41.71	✓	41.72	✓	✓	39.60	1045	5.86	-0.14	61.2	2.46	25.3	165	DUPE
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	39.52	✓	41.69	✓	41.67	✓	✓	39.59	—	5.66	-0.22	61.0	2.46	25.0	171	

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

Total Volume: —

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-4
Sampling Zone No.: 5 to 1
Depth (ft): 513, 392, 322, 240, 150
Beginning of Session: 14.10 psia
End of Session: 14.22 psia

Start Time: 740
Finish Time: 1020

Date: 10/31/08
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14839	✓	198.39	✓	19839	✓	✓	14841	804	6.53	1.89	47.4	—	19.0	33
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	95.62	✓	146.02	✓	146.02	✓	✓	95.65	833	5.49	0.12	45.0	—	19.3	13
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	95.62	✓	146.02	✓	146.02	✓	✓	95.61	—	—	—	—	—	—	-
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	65.03	✓	116.06	✓	116.05	✓	✓	65.04	917	5.74	1.41	50.0	—	19.7	-31
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	29.74	✓	80.40	✓	80.39	✓	✓	29.73	947	5.85	1.41	93.4	—	19.8	-30
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.25	✓	42.22	✓	42.24	✓	✓	14.35	1025	6.23	6.09	52.8	—	19.6	-30

:IMSO <

> 4

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

Total Volume: —

* DO SENSOR NOT OPERATIONAL

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-11
Sampling Zone No.: 5+1
Depth (ft): 639, 524, 429, 259, 149
Beginning of Session: 14.07 psia
End of Session: 14.02 psia

Start Time: 727
Finish Time: 1155

Date: 11/4/08
Page: 1 of 1

Water Pressure Inside Casing: —

	Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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	
	5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	239.86	✓	224.12	✓	224.09	✓	✓	239.89	757	5.55	29.5	43.3	0	16.5	-6	
UPE <	4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	190.18	✓	182.60	✓	182.54	✓	✓	190.20	831	6.01	0.29	25.6	1.47	16.8	-65	> 4
	4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	190.17	✓	182.58	✓	182.52	✓	✓	190.19	905	6.09	-0.23	26.2	1.67	18.5	-68	
	3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	149.19	✓	139.61	✓	139.51	✓	✓	149.20	938	6.03	4.53	45.5	2.04	18.5	-20	
	2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	75.39	✓	66.91	✓	66.92	✓	✓	75.42	1007	6.18	-0.03	49.3	0	18.6	-86	
IMSD <	1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	29.47	✓	27.00	✓	26.89	✓	✓	29.48	1100	6.33	-1.49	63.6	0	22.4	10	> 1
	1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	25.41	✓	27.00	✓	26.89	✓	✓	25.42	—	—	—	—	—	—	—	

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

Total Volume: —

INSIGHT

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: 14.09 psia
End of Session: 14.10 psia

Start Time: 720
Finish Time: 1005

Date: 11/3/08
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	220.37	✓	202.29	✓	202.26	✓	✓	220.40	746	5.23	0.10	52.9		17.4	50
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	171.59	✓	156.84	✓	156.74	✓	✓	171.59	820	5.32	-0.68	53.2		17.8	-39
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	122.29	✓	108.02	✓	108.00	✓	✓	122.30	851	5.67	1.08	45.7		19.5	-6
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	87.35	✓	73.46	✓	73.45	✓	✓	87.34	922	6.86	0.38	55.8		19.3	-81
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	42.86	✓	30.11	✓	30.10	✓	✓	42.84	957	6.12	9.93	61.8		20.2	-47

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

Total Volume: —

* DO SENSOR NON-OPERATIONAL

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-14
Sampling Zone No.: 5 to 1
Depth (ft): ~~540~~, 456, 382, 277, 207
Beginning of Session: 14.06 psia
End of Session: 14.06 psia

Start Time: 0745
Finish Time: 1125

Date: 10/29/08
Page: 1 of 1

Water Pressure Inside Casing: ——

	Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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	
	5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	190.75	✓	177.39	✓	177.39	✓	✓	190.72	815	5.32	8.60	36.7	1.43	18.2	159	
MS/MSD	4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	154.10	✓	141.08	✓	141.07	✓	✓	154.11	851	5.29	0.82	66.8	0.26	19.9	90	MS/MSD
	4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	154.08	✓	141.08	✓	141.07	✓	✓	154.08	—	5.54	0.23	66.5	1.20	20.7	115	
DUPE	3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	121.75	✓	109.02	✓	109.04	✓	✓	121.74	945	5.88	0.99	0.999	2.17	23.0	268	DUPE
	3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	121.70	✓	109.02	✓	109.01	✓	✓	121.70	—	6.60	1.62	0.999	2.01	22.3	96	
	2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	75.86	✓	63.64	✓	63.64	✓	✓	75.67	1041	6.71	6.04	0.093	1.46	22.7	279	
	1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	45.74	✓	34.15	✓	34.14	✓	✓	45.74	1120	8.88	0.60	0.999	1.85	23.8	274	

Notes:
port 5: CLEAR STRONG ODOR. port 4: CLEAR SLIGHT ODOR port 3: CLEAR FAINT ODOR.
port 2: CLEAR NO ODOR. port 1: CLEAR NO ODOR

Total Volume: ——

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-17
Sampling Zone No.: 5 to 1
Depth (ft): ~~726, 582, 486~~, 370, 250
Beginning of Session: 14.07 psia
End of Session: 14.14 psia

Start Time: 0755
Finish Time: 1130

Date: 10/27/06
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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	
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	245.36	✓	238.63	✓	238.90	✓	✓	245.35	0825	5.35	49.0	37.7	0.00	17.4	160	
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	182.94	✓	174.46	✓	174.41	✓	✓	182.92	0856	5.56	-0.70	38.3	1.93	19.4	332	DUPE
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	182.95	✓	174.44	✓	174.41	✓	✓	182.91	—	5.89	-0.52	38.7	2.37	19.9	114	DUPE
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	133.46	✓	122.52	✓	122.53	✓	✓	133.43	0956	5.49	12.6	64.6	2.91	23.5	147	
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	90.61	✓	84.07	✓	84.07	✓	✓	90.84	1034	5.68	2.72	0.999	2.88	23.1	268	
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	38.79	✓	32.93	✓	32.91	✓	✓	38.82	1106	6.15	2.79	44.8	2.58	23.9	166	MS/MSD
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	38.79	✓	32.85	✓	32.68	✓	✓	38.81	—	6.44	2.20	43.5	2.59	21.4	166	MS/MSD

Notes:
port 5: CLOUDY FAINT ODOR port 4: CLEAR FAINT ODOR. port 3: CLEAR NO ODOR
port 2: CLEAR, NO ODOR port 1: CLEAR NO ODOR.

Total Volume: —

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-18
Sampling Zone No.: 5 to 1
Depth (ft): 684, 564, 424, 350, 270
Beginning of Session: 14.00 psia
End of Session: 14.01 psia

Start Time: 0759
Finish Time: 1200

Date: 10/24/06
Page: 1 of 1

Water Pressure Inside Casing: —

	Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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	
	5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	160.39	✓	202.41	✓	202.35	✓	✓	160.39	831	5.23	0.33	34.5	8.00	16.7	43	
DUPE	4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	108.10	✓	150.97	✓	150.97	✓	✓	108.10	909	5.39	2.40	48.4	0.00	20.0	78	DUPE
	4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	108.06	✓	150.95	✓	150.97	✓	✓	108.06	—	5.23	1.42	41.3	0.01	20.7	83	
	3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	97.01	✓	93.23	✓	93.24	✓	✓	97.03	1000	5.36	0.05	57.3	1.39	20.3	115	
	2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.16	✓	51.68	✓	51.66	✓	✓	14.25	1043	5.79	-8.39	56.9	1.50	20.2	142	
MS/MSD	1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.09	✓	25.35	✓	25.34	✓	✓	14.20	1127	6.09	1.33	48.9	1.10	23.7	171	MS/MSD
	1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.14	✓	25.36	✓	25.33	✓	✓	14.19	—	6.19	1.13	48.7	1.64	22.5	168	

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

Total Volume: —

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-19
Sampling Zone No.: 5 to 1
Depth (ft): 498, 444, 392, 314, 242
Beginning of Session: 14.07 psia
End of Session: 14.07 psia

Start Time: 0730
Finish Time: 1020

Date: 10/22/08
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
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	174.02	✓	162.62	✓	162.62	✓	✓	174.03	820	5.01	.0.27	80.0	0.76	19.1	134
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	150.56	✓	139.27	✓	139.27	✓	✓	150.57	849	5.15	.0.68	64.9	8.93	19.3	140
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	127.99	✓	117.64	✓	117.64	✓	✓	127.99	917	5.24	041	48.6	0.00	20.4	101
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	94.09	✓	83.40	✓	83.43	✓	✓	94.10	945	5.56	4.08	0.1	1.45	20.0	254
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	62.97	✓	51.83	✓	51.83	✓	✓	62.99	1013	6.05	2.02	47.9	0.00	20.9	120

Notes:
port 5: CLEAR STRONG ODOR port 4: CLEAR FAINT ODOR port 3: CLEAR FAINT ODOR.
port 2: CLEAR NO ODOR port 1: CLEAR NO ODOR.

Total Volume: —

INSIGHT
Environmental Engineering and Construction, Inc.

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-20
Sampling Zone No.: 5+1
Depth (ft): 900, 700, 562, 392, 230
Beginning of Session: 14.02 psia
End of Session: 14.05 psia

Start Time: 0750
Finish Time: 1120

Date: 10/23/08
Page: 1 of 1

Water Pressure Inside Casing: —

* D.O. SENSOR NOT OPERATIONAL

Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	324.27	✓	322.90	✓	322.90	✓	✓	324.28	8345	5.10	1.15	32.9	—	18.5	-113
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	232.53	✓	232.67	✓	232.64	✓	✓	232.54	907	5.64	0.41	34.5	—	20.6	-116
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	177.67	✓	165.78	✓	165.77	✓	✓	177.68	938	6.08	3.65	46.6	—	21.9	-46
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	103.89	✓	98.77	✓	98.77	✓	✓	103.90	1009	5.91	-1.33	49.6	—	24.6	8
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	103.88	✓	98.75	✓	98.76	✓	✓	103.91	—	6.00	-1.45	48.5	—	23.1	-29
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	33.45	✓	28.43	✓	28.41	✓	✓	33.43	1108	6.86	0.25	67.1	—	25.4	-67

MS/MSD (2)

Notes:
port 5: CLEAR, VERY STRONG ODOR port 4: CLEAR, STRONG ODOR port 3: CLEAR, STRONG ODOR
port 2: CLEAR, SLIGHT ODOR port 1: CLEAR, STRONG ODOR

Total Volume: —

INSIGHT

Groundwater Sampling

Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-20 RESAMPLING
Sampling Zone No.: 5 to 1
Depth (ft): 900, 700, 562, 392, 230
Beginning of Session: 14.13 psia
End of Session: 14.10 psia
Start Time: 0730
Finish Time: 1335

Date: 11/18/08
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
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	324.40	✓	322.12	✓	322.07	✓	✓	324.38	824	6.16	0.38	36.7	7.81	19.4	-82
5	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	324.37	✓	322.10	✓	322.09	✓	✓	324.34	—	7.91	2.03	35.2	8.80	18.7	-93
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	237.64	✓	232.07	✓	232.03	✓	✓	237.65	946	7.97	0.13	40.8	8.82	21.0	-80
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	237.63	✓	232.08	✓	232.04	✓	✓	237.61	—	8.15	0.13	41.4	8.28	24.9	-96
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	177.76	✓	171.13	✓	171.13	✓	✓	177.74	1057	8.12	1.80	57.0	9.20	22.8	-39
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	177.57	✓	171.15	✓	171.13	✓	✓	177.61	—	8.19	0.34	58.2	9.86	20.1	-15
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	103.76	✓	99.15	✓	99.16	✓	✓	103.82	1153	7.61	0.71	0.1	9.62	22.5	119
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	103.77	✓	99.14	✓	99.17	✓	✓	103.77	—	7.27	0.79	78.7	9.59	24.5	153
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	33.53	✓	28.51	✓	28.50	✓	✓	33.53	1254	7.54	0.47	0.1	9.60	22.5	49
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	33.49	✓	28.48	✓	28.48	✓	✓	33.50	—	7.77	0.51	65.0	9.73	22.3	116

Notes:

Total Volume: ____

port 5: CLEAR, STRONG ODOR port 4: CLEAR, STRONG ODOR port 3: CLEAR, STRONG ODOR

port 2: CLEAR, SLIGHT ODOR port 1: CLEAR, SLIGHT ODOR

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-21
Sampling Zone No.: 5-1
Depth (ft): 372, 310, 240, 161, 90
Beginning of Session: 14.09 psia
End of Session: 14.11 psia

Start Time: 0800
Finish Time: 1140

Date: 10/21/04
Page: 1 of 1

Water Pressure Inside Casing: ——

Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	129.37	✓	152.01	✓	152.00	✓	✓	129.37	835	5.25	-7.97	93.5	0.45	15.8	207
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	102.32	✓	125.19	✓	125.21	✓	✓	102.32	915	5.53	-7.65	86.5	0.39	16.9	193
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	100.77	✓	125.21	✓	125.22	✓	✓	100.76	—	—	—	—	—	—	—
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	72.19	✓	95.33	✓	95.33	✓	✓	72.17	1009	6.07	-8.77	0.999	1.26	19.9	278
2	1	✓	✓	✓	✓	✓	✓	✓	–	✓	37.16	✓	61.07	✓	61.09	✓	✓	37.16	1043	6.36	-9.51	0.093	1.81	22.2	294
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.13	✓	29.57	✓	29.59	✓	✓	14.20	1117	6.40	-9.57	0.100	0.73	25.9	316
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.11	✓	29.59	✓	29.60	✓	✓	14.20	—	6.44	-9.48	0.000	1.68	24.4	298

MS/MSD

DUPE

MS/MSD

DUPE

Notes:
port 5: clear faint odor port 4: clear no odor port 3: clear no odor
port 2: clear no odor. port 1: clear no odor

Total Volume: ——

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-22
Sampling Zone No.: 5+1
Depth (ft): 588, 467, 389, 329, 245
Beginning of Session: 14.05 psia
End of Session: 14.07 psia

Start Time: 821
Finish Time: 1110

Date: 10/30/08
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	202.77	✓	191.72	✓	191.74	✓	✓	202.77	845	5.77	-0.66	45.3	0	19.7	-141
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	150.35	✓	140.63	✓	140.63	✓	✓	150.37	915	5.63	-1.08	44.1	0.30	19.9	-24
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	116.52	✓	108.40	✓	108.40	✓	✓	116.53	943	5.55	-1.04	74.7	0	19.6	-63
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	90.45	✓	82.27	✓	82.29	✓	✓	90.46	1012	6.06	-1.27	62.6	0	19.6	-57
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	90.44	✓	82.27	✓	82.27	✓	✓	90.46	1037	6.22	-1.02	63.2	0.87	20.5	44
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	53.68	✓	45.48	✓	45.58	✓	✓	53.72	1107	6.28	10.72	0.096	0	20.7	90

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

Total Volume: —

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #:Battelle

Well ID: MW-23
Sampling Zone No.: 5 to 1
Depth (ft): 542, 445, 319, 254, 174
Beginning of Session: 14.02 psia
End of Session: 14.06 psia

Start Time: 0725
Finish Time: 0945

Date: 11/10/08
Page: 1 of 1

Water Pressure Inside Casing: →

Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	205.07	✓	200.99	✓	200.91	✓	✓	205.05	0800	7.41	0.13	57.5	7.60	16.4	182
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	162.99	✓	159.02	✓	159.02	✓	✓	162.99	824	7.02	.068	435	7.75	16.4	106
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	108.37	✓	105.91	✓	105.91	✓	✓	108.37	852	7.44	.059	442.6	7.70	17.1	111
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	80.14	✓	77.64	✓	77.63	✓	✓	80.13	914	7.34	.081	0.099	8.16	16.0	176
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	45.36	✓	43.15	✓	43.16	✓	✓	45.34	943	7.81	2.67	0.133	8.65	18.9	164

Notes:
port 5: CLEAR STRONG ODOR port 4: CLEAR STRONG ODOR port 3: CLEAR STRONG ODOR
port 2: CLEAR FAINT ODOR port 1: CLEAR NO ODOR.

Total Volume: →

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena
Contract #: Battelle

Well ID: MW-24
Sampling Zone No.: 5 to 1
Depth (ft): 678, 554, 435, 373, 279
Beginning of Session: 14.09 psia
End of Session: 14.06 psia

Start Time: 735
Finish Time: 1105

Date: 11/5/08
Page: 1 of 1

Water Pressure Inside Casing: ——

Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	234.36	✓	217.93	✓	217.92	✓	✓	234.39	806	5.31	1.98	50.7	0	18.2	81
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	180.65	✓	165.87	✓	165.86	✓	✓	180.66	845	5.87	-0.27	30.8	1.81	19.0	-107
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	129.03	✓	115.65	✓	115.65	✓	✓	129.03	925	5.98	-0.54	39.0	2.13	19.6	-49
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	129.02	✓	115.66	✓	115.66	✓	✓	129.01	952	6.13	0.93	39.7	0	19.1	-102
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	102.11	✓	88.68	✓	88.68	✓	✓	102.10	1026	6.29	1.93	54.8	0	19.6	-85
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	62.00	✓	48.41	✓	48.40	✓	✓	61.96	1101	6.32	11.9	71.8	1.36	19.9	-7

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

Total Volume: ——

INSIGHT

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: 14.23 psia
End of Session: 14.26 psia

Start Time: 0800
Finish Time: 1050

Date: 11/06/08
Page: 1 of 1

Water Pressure Inside Casing: _____

Port #	Run #	Surface Function Checks: 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	Sample Collection Checks: 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
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	207.20	✓	204.93	✓	204.97	✓	✓	207.17	840	6.43	0.324	57.3	7.60	18.5	-97
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	172.62	✓	168.69	✓	168.69	✓	✓	172.63	913	6.73	-0.67	86.3	7.63	18.9	152
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	116.23	✓	115.84	✓	115.82	✓	✓	116.23	945	7.14	-1.02	80.3	7.72	20.2	187
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	81.39	✓	84.69	✓	84.68	✓	✓	81.37	1015	7.83	-0.38	81.9	7.92	19.5	199
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	53.51	✓	58.54	✓	58.54	✓	✓	53.50	1044	7.75	20.7	0.093	8.13	20.4	215

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

Total Volume: _____

INSIGHT

Groundwater Sampling
Multi-Port Well Field Data Sheet

JPL Pasadena 4800 OAK GROVE DR.
Contract #:Battelle

Well ID: MW-26
Sampling Zone No.: 2 to 1
Depth (ft): 215, 135
Beginning of Session: 14.12 psia
End of Session: 14.15 psia

Start Time: 0725
Finish Time: 0840

Date: 11/07/08
Page: 1 of 1

Water Pressure Inside Casing: —

Port #	Run #	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
MS/MSD	2	1	✓	✓	✓	✓	✓	✓	✓	✓	71.66	✓	71.66	✓	71.64	✓	✓	71.65	750	3.61	0.99	0.0	9.16	21.0	383	MS/MSD
	2	2	✓	✓	✓	✓	✓	✓	✓	✓	71.61	✓	71.64	✓	71.60	✓	✓	71.61	—	6.31	5.15	58.3	9.40	20.1	181	
	1	1	✓	✓	✓	✓	✓	✓	✓	✓	37.07	✓	35.67	✓	35.63	✓	✓	36.00	0830	6.99	1.00	0.101	8.34	20.4	196	

Notes:

Total Volume: —

port 2: CLEAR NO ODOR port 1: CLEAR NO ODOR

ATTACHMENT 5: WATER LEVEL MEASUREMENTS

This attachment contains water level measurements for the Westbay™ multiport JPL monitoring wells obtained during the 4th quarter of 2008. Water level measurements were recorded before the sampling event on October 20, 2008, and after the sampling event on November 19, 2008. Water levels results for the shallow wells were measured using a Solinst™ water level meter and the results are provided with the field logs (Attachment 4). In the deep multiport wells, the hydraulic head at each sampling port was measured with a Westbay™ MOSDAX sampling probe. Water level measurements were conducted by Insight Environmental, Inc.

INSIGHT
Environmental, Engineering and Construction, Inc.

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

Pre-Event Shallow Well Sounding Log

Project Name: JPL GW Monitoring 4Q08 | **Project No.: 4-73805**

WELL #	*DATE*	*TIME*	*DEPTH (FT.)*
MW-1	10/20/2008	1358	37.21
MW-5	10/20/2008	WELL IS BLOCKED	WELL IS BLOCKED
MW-6	10/20/2008	748	177.43
MW-7	10/20/2008	926	210.38
MW-8	10/20/2008	802	137.80
MW-9	10/20/2008	1352	29.31
MW-10	10/20/2008	709	86.59
MW-13	10/20/2008	555	180.81
MW-15	10/20/2008	805	42.19
MW-16	10/20/2008	920	234.00

INSIGHT
Environmental, Engineering and Construction, Inc.
22632 Golden Springs Drive, Suite 270
Diamond Bar, CA 91765
Telephone (909)396-7662 Fax (909)396-1455

Post-Event Shallow Well Sounding Log

Project Name: JPL GW Monitoring 4Q08 | **Project No.: 4-73805**

WELL #	DATE	TIME	DEPTH (FT.)
MW-1	11/19/2008	959	36.39
MW-5	11/19/2008	632	74.73
MW-6	11/19/2008	601	178.75
MW-7	11/19/2008	621	213.19
MW-8	11/19/2008	617	140.19
MW-9	11/19/2008	1003	29.71
MW-10	11/19/2008	551	67.59
MW-13	11/19/2008	613	182.79
MW-15	11/19/2008	609	62.00
MW-16	11/19/2008	627	235.81

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and warm

Well ID: MW-3
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (ft. + MSL): 1,100.34

Ambient Readings	Start	Finish
Time	958	1013
Pressure (psia)	14.18	14.17
Temperature (°C)	20.48	17.04

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	653	246.71	247.89	246.70	21.10	1001		
							113.83	986.51
4	558	205.43	206.82	205.43	22.09	1003		
							113.58	986.76
3	346	113.23	117.81	113.25	21.97	1005		
							106.93	993.41
2	252	72.42	76.69	72.42	21.06	1007		
							107.79	992.55
1	172	37.64	42.02	37.64	18.85	1009		
							107.77	992.57

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,082.84
Weather: clear and warm

Well ID: MW-4
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	818	830
Pressure (psia)	14.13	14.16
Temperature (°C)	18.58	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	513	145.61	198.67	145.63	20.03	820		
							87.27	995.57
4	392	92.95	146.33	92.98	21.26	822		
							87.01	995.83
3	322	62.47	116.32	62.49	21.19	824		
							86.25	996.59
2	240	26.74	80.66	26.75	20.90	826		
							86.52	996.32
1	150	14.27	17.82	14.27	20.38	828		
							141.49	941.35

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and warm

Well ID: MW-11
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,139.30

Ambient Readings	Start	Finish
Time	837	850
Pressure (psia)	14.12	14.23
Temperature (°C)	18.82	17.98

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	237.00	224.45	237.01	19.81	839		
							153.77	985.53
4	524	187.53	182.94	187.51	20.66	842		
							134.53	1004.77
3	429	146.68	139.96	146.64	20.50	845		
							138.69	1000.61
2	259	73.05	67.37	73.02	19.39	847		
							136.15	1003.15
1	149	25.67	27.50	25.68	18.69	849		
							118.13	1021.17

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,102.14
Weather: clear and warm

Well ID: MW-12
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1408	1420
Pressure (psia)	14.14	14.13
Temperature (°C)	24.17	17.62

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	217.42	202.52	217.45	21.82	14		
							113.41	988.73
4	436	168.88	157.13	168.87	21.57	1412		
							106.12	996.02
3	323	119.82	108.34	119.73	20.30	1414		
							105.68	996.46
2	243	84.88	73.86	84.87	18.87	1416		
							105.23	996.91
1	140	39.97	30.66	39.98	17.52	1418		
							101.89	1000.25

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,173.47
Weather: clear and warm

Well ID: MW-14
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	739	751
Pressure (psia)	14.08	14.31
Temperature (°C)	19.02	19.27

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	187.94	177.61	187.99	19.86	741		
							162.74	1010.73
4	456	151.46	141.31	151.48	20.38	743		
							162.48	1010.99
3	382	119.27	109.29	119.27	20.32	745		
							162.35	1011.12
2	277	73.52	63.88	73.53	19.95	747		
							162.11	1011.36
1	207	43.05	34.43	43.04	19.52	749		
							160.05	1013.42

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,191.21
Weather: clear and warm

Well ID: MW-17
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1108	1125
Pressure (psia)	14.11	14.15
Temperature (°C)	17.47	16.21

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	726	244.15	239.04	244.14	20.19	1111		
							207.09	984.12
4	582	181.79	174.58	181.80	20.02	1115		
							211.80	979.41
3	468	132.36	122.97	132.35	18.52	1117		
							216.86	974.35
2	370	89.82	84.44	89.81	17.79	1119		
							207.75	983.46
1	250	37.63	33.12	37.65	16.85	1121		
							206.14	985.07

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Well ID: MW-18
Probe Type: Westbay
Serial No.:
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,225.41
Note: clear and warm

Ambient Readings	Start	Finish
Time	1140	1156
Pressure (psia)	14.13	14.11
Temperature (°C)	18.24	16.65

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	684	157.71	202.35	157.73	20.13	1143		
							249.78	975.63
4	564	105.58	151.21	105.59	20.72	1146		
							247.76	977.65
3	424	44.68	93.44	44.68	19.78	1149		
							241.03	984.38
2	330	14.24	51.81	14.25	17.46	1151		
							243.07	982.34
1	270	14.23	25.53	14.24	17.09	1153		
							243.70	981.71

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,142.94
Weather: clear and warm

Well ID: MW-19
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1047	1100
Pressure (psia)	14.13	14.17
Temperature (°C)	18.18	16.74

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	498	172.93	161.33	172.94	18.36	1049		
							158.41	984.53
4	444	149.52	137.94	149.52	18.84	1051		
							158.37	984.57
3	392	127.96	116.60	127.96	18.95	1053		
							155.60	987.34
2	314	93.14	82.41	93.12	18.91	1055		
							156.48	986.46
1	242	61.83	51.42	61.84	18.45	1057		
							155.97	986.97

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,165.05
Weather: clear and warm

Well ID: MW-20
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1211	1228
Pressure (psia)	14.10	14.15
Temperature (°C)	18.30	17.21

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	900	323.08	322.83	323.07	20.91	1216		
							187.76	977.29
4	700	236.44	232.42	236.44	22.14	1218		
							196.34	968.71
3	562	176.69	165.61	176.66	21.54	1220		
							212.47	952.58
2	392	102.76	98.83	102.75	19.92	1222		
							196.53	968.52
1	230	32.57	28.48	32.56	17.61	1224		
							196.83	968.22

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,059.10
Weather: clear and warm

Well ID: MW-21
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	900	913
Pressure (psia)	14.24	14.20
Temperature (°C)	17.29	18.72

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	126.04	151.79	126.09	18.45	904		
							54.67	1004.43
4	310	99.32	124.96	99.31	19.39	906		
							54.57	1004.53
3	240	69.23	95.08	69.26	19.44	908		
							53.50	1005.60
2	161	34.80	60.87	34.83	19.17	910		
							53.42	1005.68
1	90	14.27	17.94	14.24	18.90	912		
							81.46	977.64

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and warm

Well ID: MW-22
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,176.98

Ambient Readings	Start	Finish
Time	713	726
Pressure (psia)	14.10	14.12
Temperature (°C)	19.45	19.98

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	201.59	192.10	201.58	20.67	715		
							177.35	999.63
4	467	149.24	141.00	149.26	21.28	718		
							174.24	1002.74
3	389	115.47	108.79	115.46	21.26	720		
							170.55	1006.43
2	329	89.46	82.65	89.44	21.06	722		
							170.86	1006.12
1	245	52.53	45.84	52.53	20.43	723		
							171.78	1005.20

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,108.84
Weather: clear and warm

Well ID: MW-23
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	654	709
Pressure (psia)	14.07	14.15
Temperature (°C)	18.58	19.95

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	203.93	201.36	203.93	20.57	658		
							109.92	998.92
4	445	161.94	159.45	161.93	21.13	700		
							109.61	999.23
3	319	107.44	106.33	107.43	21.02	702		
							106.16	1002.68
2	254	79.13	78.09	79.12	20.72	704		
							106.31	1002.53
1	174	44.37	43.80	44.39	20.29	706		
							105.41	1003.43

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,200.94
Weather: clear and warm

Well ID: MW-24
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	936	948
Pressure (psia)	14.11	14.14
Temperature (°C)	17.66	21.11

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	233.20	218.19	233.21	20.05	939		
							207.19	993.75
4	554	179.53	166.11	179.52	21.07	941		
							203.34	997.60
3	435	127.94	115.90	127.98	21.21	943		
							200.17	1000.77
2	373	100.98	89.01	101.02	21.26	945		
							200.21	1000.73
1	279	60.34	48.97	60.34	21.18	947		
							198.58	1002.36

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. + MSL): 934.52
Weather: clear and warm

Well ID: MW-25
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1250	1303
Pressure (psia)	14.20	14.23
Temperature (°C)	20.51	19.99

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	204.38	205.01	204.40	21.40	1253		
							272.80	661.72
4	633	170.04	168.76	170.00	21.75	1255		
							276.43	658.09
3	503	113.73	115.85	113.74	21.36	1257		
							268.49	666.03
2	423	79.02	84.71	79.01	20.74	1259		
							260.33	674.19
1	358	50.73	58.59	50.72	20.20	1301		
							255.59	678.93

INSIGHT, Inc.
Piezometric Pressure/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 10/20/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and warm

Well ID: MW-26
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (ft. + MSL): 1,059.08

Ambient Readings	Start	Finish
Time	1330	1334
Pressure (psia)	14.13	14.16
Temperature (°C)	23.42	19.93

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)				
2	215	71.82	71.86					
				71.87	22.06	1331		
							81.82	977.26
1	135	37.36	36.05					
				37.32	20.81	1332		
							84.43	974.65

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. + MSL): 1,100.34
Weather: clear and warm

Well ID: MW-3
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1015	1027
Pressure (psia)	14.13	14.16
Temperature (°C)	21.44	17.89

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	245.56	247.07	245.58	21.95	1017		
							115.61	984.73
4	558	204.28	206.01	204.27	22.53	1019		
							115.33	985.01
3	346	114.16	182.24	114.16	22.23	1021		
							-41.83	1142.17
2	252	71.26	75.74	71.26	20.36	1023		
							109.87	990.47
1	172	36.38	41.01	36.47	19.12	1025		
							109.99	990.35

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,082.84
Weather: clear and warm

Well ID: MW-4
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	753	805
Pressure (psia)	14.13	14.18
Temperature (°C)	18.57	19.77

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	145.57	197.94	145.52	19.51	755		
							88.95	993.89
4	392	92.92	145.59	92.97	20.84	757		
							88.72	994.12
3	322	62.46	115.57	62.49	20.91	759		
							87.98	994.86
2	240	26.70	79.88	26.71	20.75	801		
							88.31	994.53
1	150	14.26	41.60	14.25	20.34	803		
							86.63	996.21

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and warm

Well ID: MW-11
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,139.30

Ambient Readings	Start	Finish
Time	940	953
Pressure (psia)	14.09	14.15
Temperature (°C)	21.66	18.13

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	236.61	223.67	236.64	20.83	942		
							155.50	983.80
4	524	187.06	182.23	187.05	21.34	944		
							136.10	1003.20
3	429	146.24	139.24	146.28	21.02	946		
							140.28	999.02
2	259	72.66	66.54	72.67	19.77	948		
							138.00	1001.30
1	149	25.35	26.67	25.33	18.72	950		
							119.98	1019.32

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,102.14
Weather: clear and warm

Well ID: MW-12
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1357	1410
Pressure (psia)	14.12	14.12
Temperature (°C)	23.67	18.37

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	217.20	201.76	217.21	21.92	1359		
							115.11	987.03
4	436	168.53	156.33	168.56	22.05	1401		
							107.92	994.22
3	323	119.37	107.48	119.38	21.23	1403		
							107.62	994.52
2	243	84.55	72.94	84.57	20.24	1405		
							107.30	994.84
1	140	39.60	29.61	39.62	19.26	1407		
							104.26	997.88

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,173.47
Weather: clear and warm

Well ID: MW-14
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	819	831
Pressure (psia)	14.11	14.10
Temperature (°C)	19.36	19.23

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	187.66	177.47	187.63	20.00	821		
							163.13	1010.34
4	456	151.10	141.14	151.10	20.53	823		
							162.94	1010.53
3	382	118.97	109.07	118.94	20.42	825		
							162.93	1010.54
2	277	73.36	63.60	73.30	19.95	827		
							162.83	1010.64
1	207	42.60	33.92	42.67	19.57	824		
							161.30	1012.17

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,191.21
Weather: clear and warm

Well ID: MW-17
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1128	1140
Pressure (psia)	14.07	14.13
Temperature (°C)	21.68	16.51

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	243.95	238.20	243.93	20.01	1130		
							208.93	982.28
4	582	181.61	173.69	181.60	20.43	1132		
							213.76	977.45
3	468	132.15	121.70	132.17	19.43	1134		
							219.70	971.51
2	370	89.63	83.33	89.62	18.09	1136		
							210.22	980.99
1	250	37.41	31.95	37.45	17.31	1138		
							208.75	982.46

INSIGHT, Inc.

Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Well ID: MW-18
Probe Type: Westbay
Serial No.:
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,225.41
Note: clear and warm

Ambient Readings	Start	Finish
Time	1152	1204
Pressure (psia)	14.06	14.11
Temperature (°C)	22.19	21.56

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	157.66	201.66	157.64	21.78	1154		
							251.21	974.20
4	564	105.52	150.26	105.55	21.63	1156		
							249.79	975.62
3	424	44.61	92.39	44.64	20.46	1158		
							243.29	982.12
2	330	14.25	50.71	14.23	19.27	1200		
							245.45	979.96
1	270	14.21	24.38	14.20	19.13	1202		
							246.19	979.22

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. +MSL): 1,142.94
Weather: clear and warm

Well ID: MW-19
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1040	1052
Pressure (psia)	14.13	14.17
Temperature (°C)	19.14	17.12

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	172.77	160.49	172.80	18.90	1042		
							160.35	982.59
4	444	149.39	137.09	149.38	19.14	1044		
							160.33	982.61
3	392	126.83	115.80	126.84	19.19	1046		
							157.45	985.49
2	314	92.99	81.57	92.99	19.14	1048		
							158.42	984.52
1	242	61.71	50.51	61.70	18.67	1050		
							158.07	984.87

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,165.05
Weather: clear and warm

Well ID: MW-20
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1230	1243
Pressure (psia)	14.06	14.09
Temperature (°C)	25.43	17.48

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	322.45	322.20	322.43	22.79	1233		
							189.12	975.93
4	700	234.78	232.25	234.83	23.07	1235		
							196.64	968.41
3	562	175.99	164.96	176.01	22.03	1237		
							213.87	951.18
2	392	102.33	98.16	102.34	19.97	1239		
							197.98	967.07
1	230	31.93	27.87	31.92	17.94	1240		
							198.14	966.91

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena | Well ID: MW-21
Project No: 4-73805 | Probe Type: Westbay
Date: 11/19/08 | 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	842	854
Pressure (psia)	14.17	14.17
Temperature (°C)	19.56	18.72

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	123.91	190.04	123.93	19.71	844		
							-33.73	1092.83
4	310	99.16	124.45	99.12	20.08	846		
							55.58	1003.52
3	240	69.09	94.55	69.07	19.86	848		
							54.56	1004.54
2	161	34.66	60.31	34.67	19.20	850		
							54.56	1004.54
1	90	14.21	28.95	14.23	18.82	852		
							55.90	1003.20

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and warm

Well ID: MW-22
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (Ft. + MSL): 1,176.98

Ambient Readings	Start	Finish
Time	728	740
Pressure (psia)	14.07	14.12
Temperature (°C)	18.28	20.08

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	201.49	191.46	201.50	19.41	730		
							178.76	998.22
4	467	149.19	140.43	149.14	20.53	732		
							175.49	1001.49
3	389	115.33	108.26	115.33	20.77	734		
							171.70	1005.28
2	329	89.33	82.11	89.31	20.78	736		
							172.03	1004.95
1	245	52.42	45.07	52.42	20.49	738		
							173.48	1003.50

INSIGHT, Inc.
Piezometric Pressures/Levels
Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena | Well ID: MW-23
Project No: 4-73805 | Probe Type: Westbay
Date: 11/19/08 | 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	707	720
Pressure (psia)	14.11	14.15
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	542	203.78	200.69	203.79	19.10	709		
							111.56	997.28
4	445	161.81	158.80	161.80	20.18	711		
							111.20	997.64
3	319	107.39	105.72	107.23	20.46	713		
							107.66	1001.18
2	254	78.98	77.48	79.02	20.35	715		
							107.81	1001.03
1	174	44.25	42.97	44.26	20.07	718		
							107.42	1001.42

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (Ft. + MSL): 1,200.94
Weather: clear and warm

Well ID: MW-24
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	908	920
Pressure (psia)	14.07	14.08
Temperature (°C)	18.85	21.14

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	678	232.99	217.47	233.02	20.60	910		
							208.76	992.18
4	554	179.35	165.45	179.36	21.27	912		
							204.77	996.17
3	435	127.70	115.21	127.72	21.35	914		
							201.67	999.27
2	373	101.03	88.26	101.00	21.35	916		
							201.84	999.10
1	279	61.05	84.70	61.03	21.20	918		
							116.06	1084.88

INSIGHT, Inc.
Piezometric Pressures/Levels

Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Elevation of Datum (ft. + MSL): 934.52
Weather: clear and warm

Well ID: MW-25
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay

Ambient Readings	Start	Finish
Time	1307	1320
Pressure (psia)	14.18	14.20
Temperature (°C)	23.72	19.96

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	204.11	204.92	204.14	22.55	1309		
							272.96	661.56
4	633	169.68	168.67	169.68	22.48	1311		
							276.59	657.93
3	503	113.47	115.80	113.44	21.93	1313		
							268.56	665.96
2	423	78.68	84.65	78.68	21.29	1315		
							260.43	674.09
1	358	52.54	73.73	52.58	20.69	1317		
							220.62	713.90

INSIGHT, Inc.
Piezometric Pressure/Levels

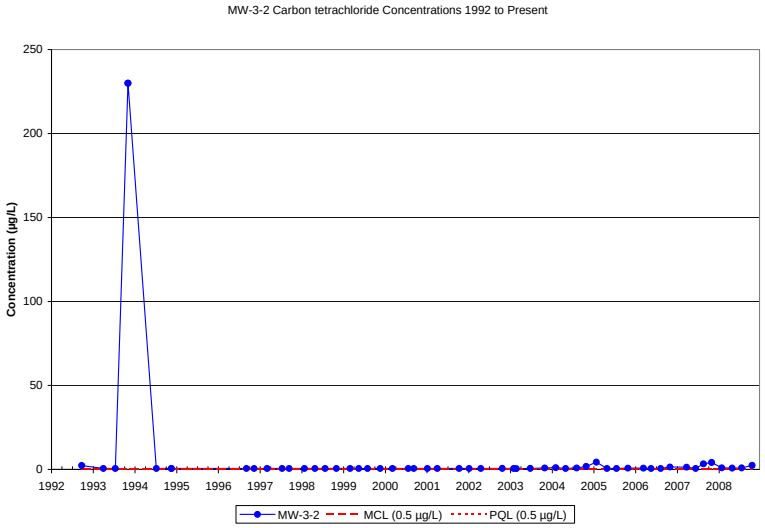
Field Data Sheet for Multi-Port Monitoring Wells

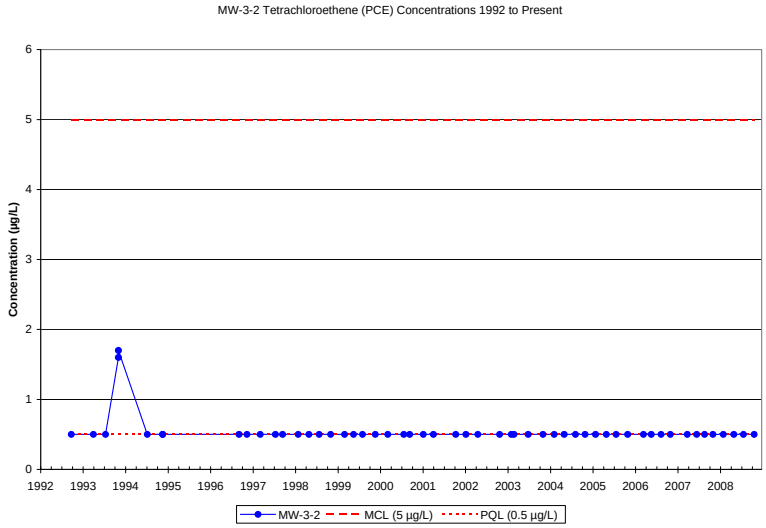
Project Name: JPL Pasadena
Project No: 4-73805
Date: 11/19/08
Personnel: Chase Brogdon, Andrew Wells
Datum: TOC
Weather: clear and warm

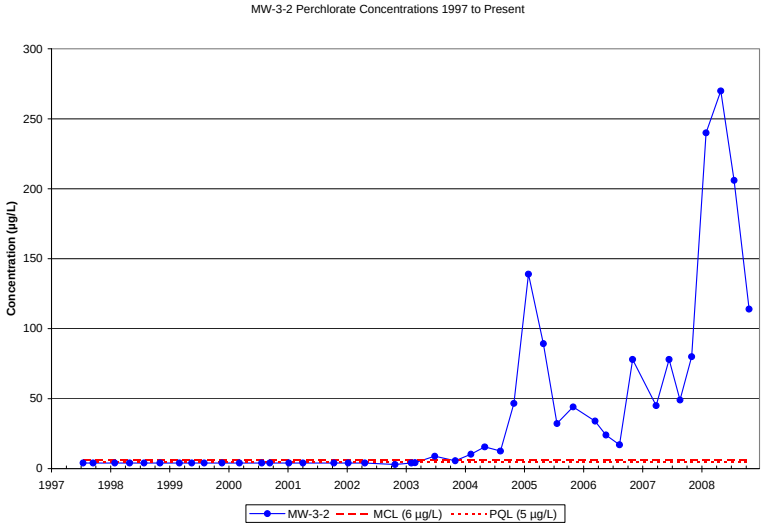
Well ID: MW-26
Probe Type: Westbay
Serial No.: 2508
Casing Size/Type: 1.5" Westbay
Elevation of Datum (ft. + MSL): 1,059.08

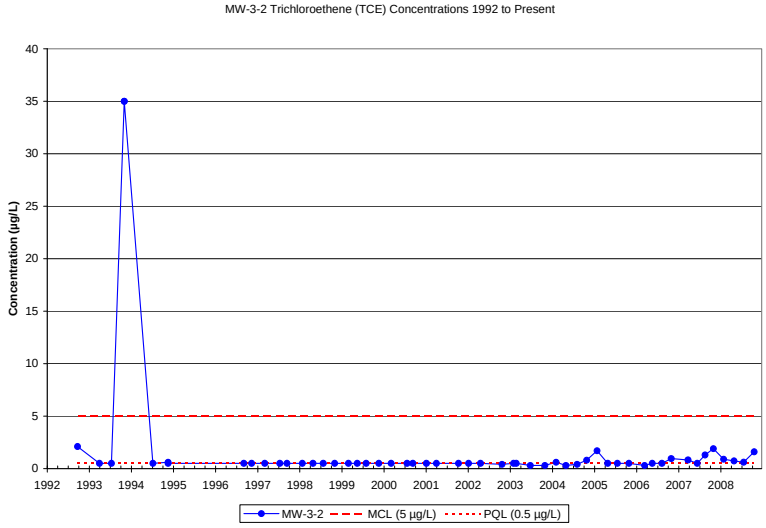
Ambient Readings	Start	Finish
Time	1330	1335
Pressure (psia)	14.09	14.15
Temperature (°C)	23.88	19.68

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)				
2	215	71.17	71.19					
				71.16	21.97	1332		
							83.27	975.81
1	135	36.67	35.40					
				36.60	20.94	1334		
							85.84	973.24

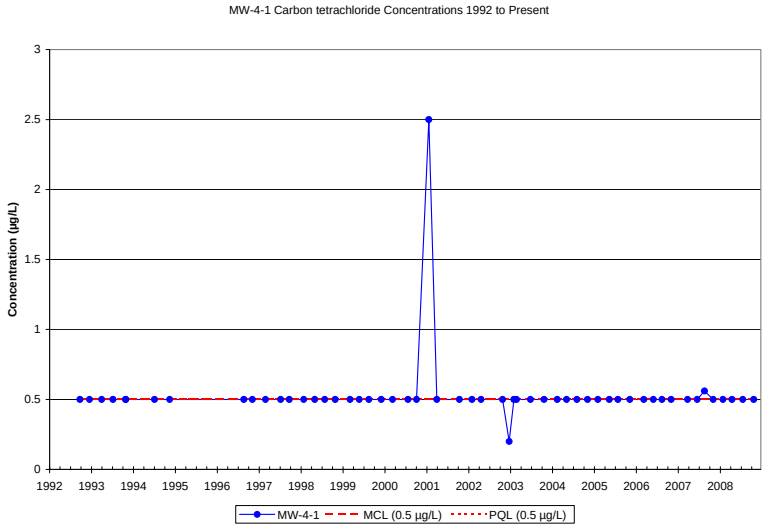


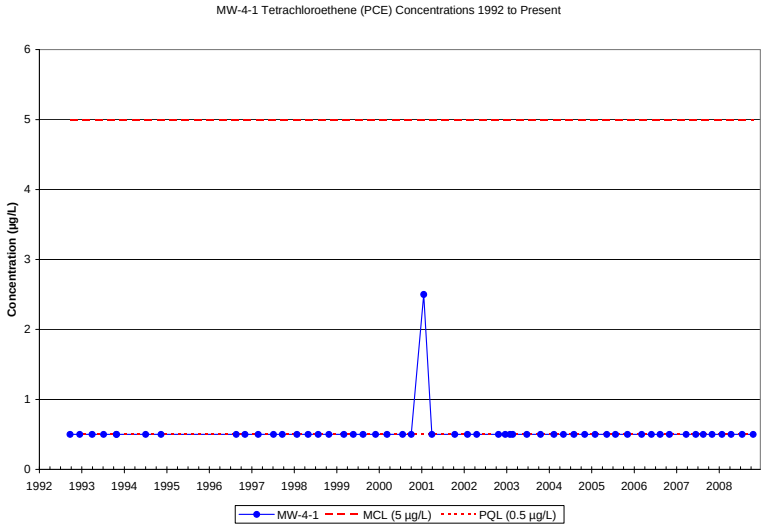


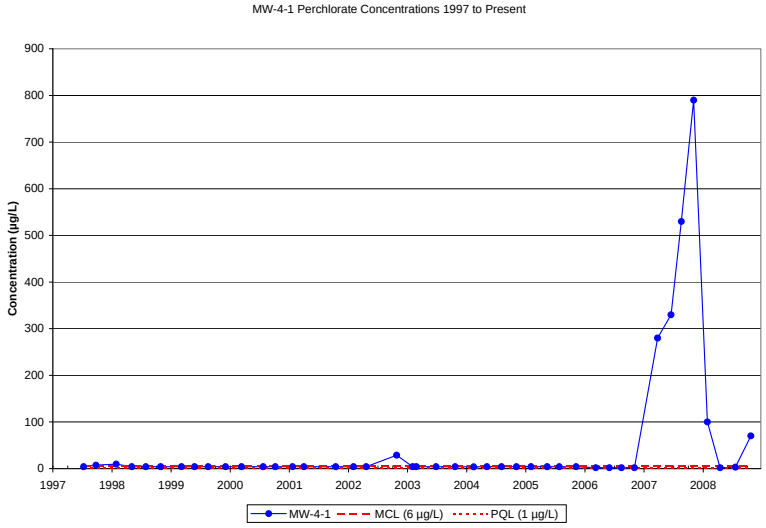


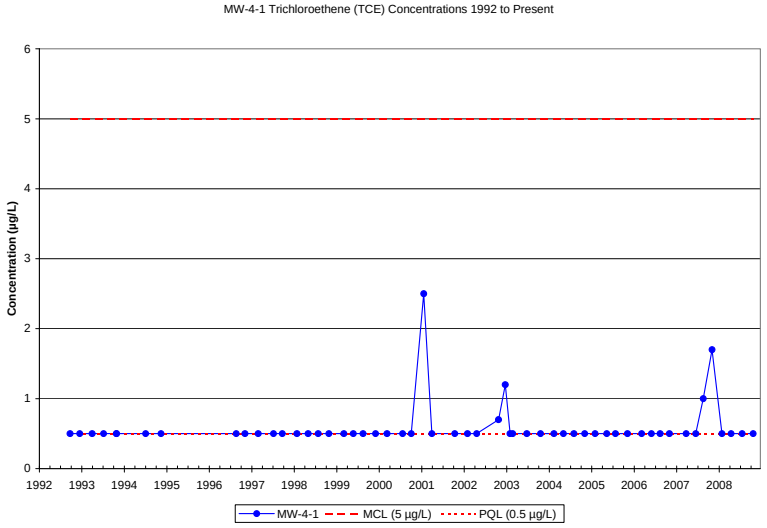


VOCs and Perchlorate Time Series Plots for MW-3-2

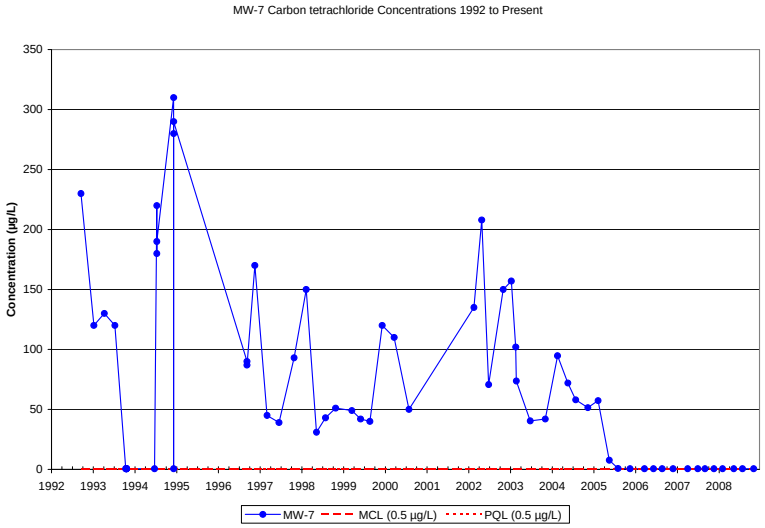


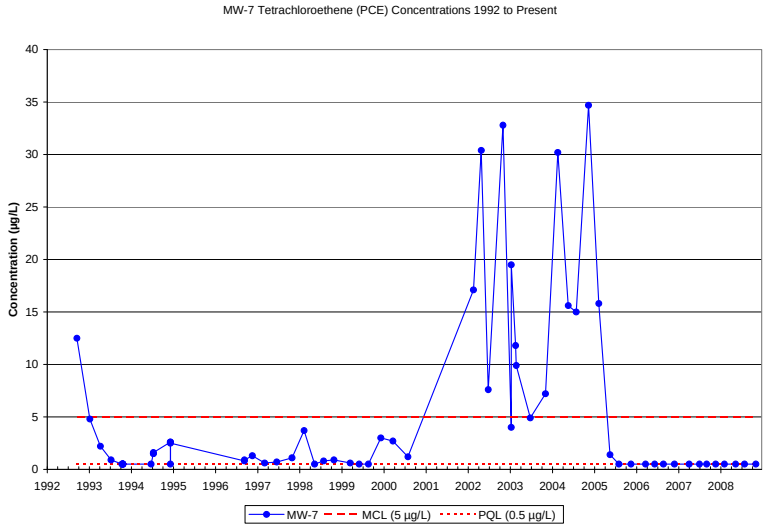


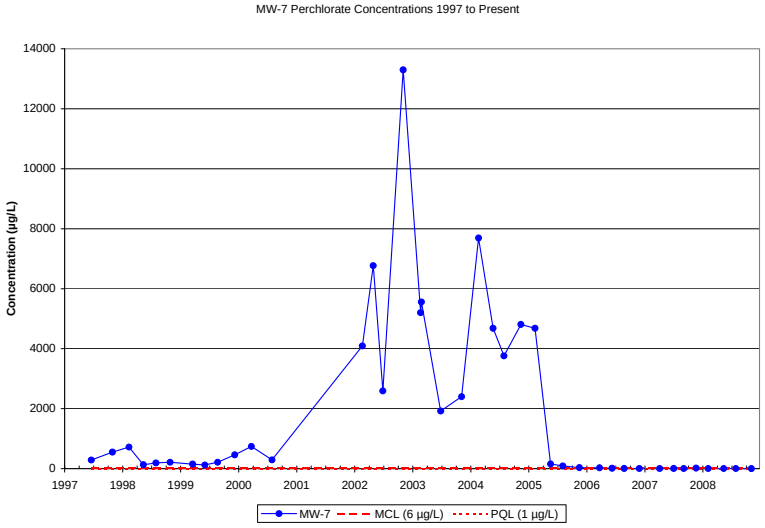


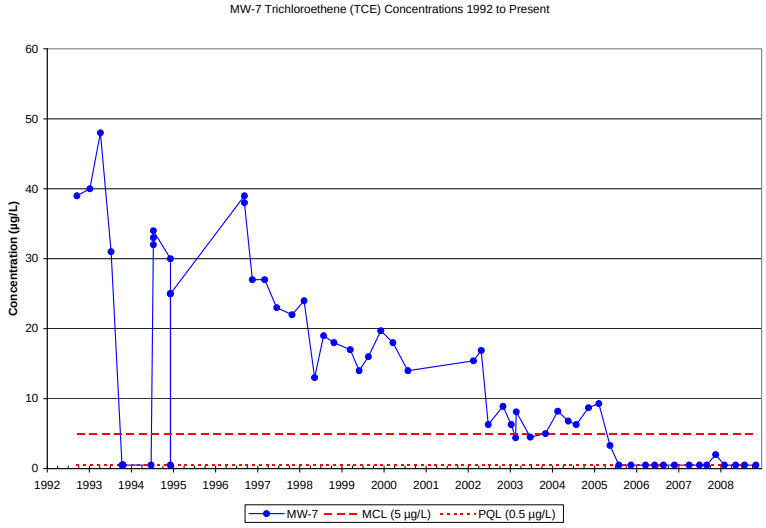


VOCs and Perchlorate Time Series Plots for MW-4-1

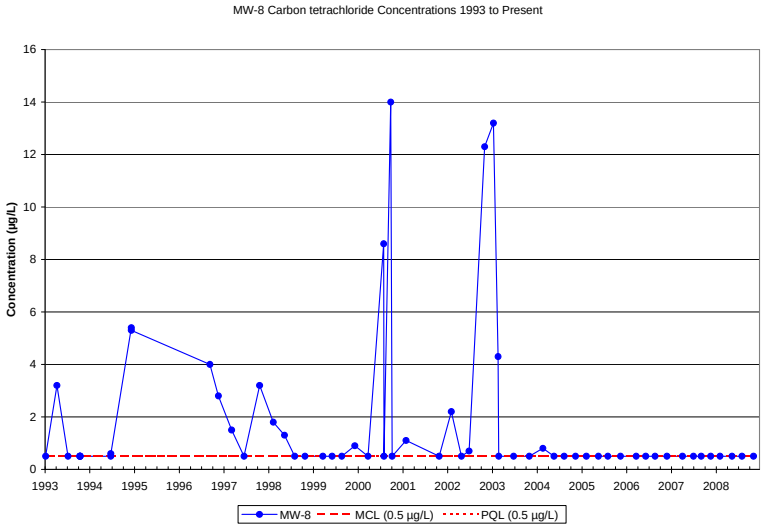


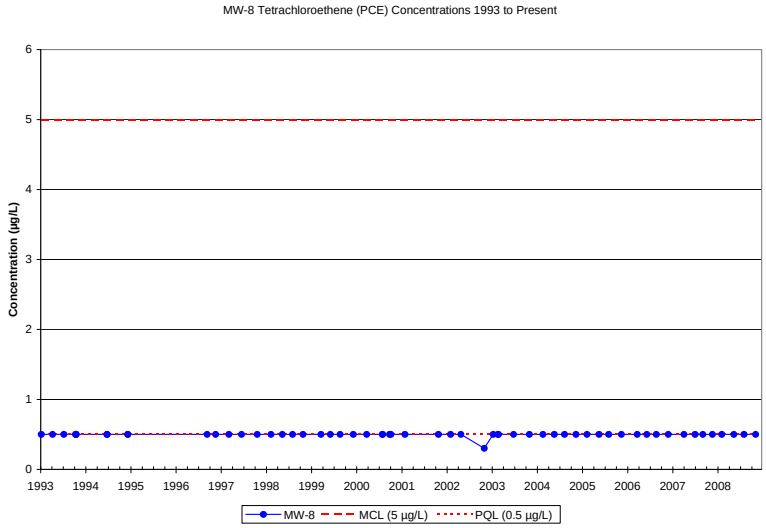


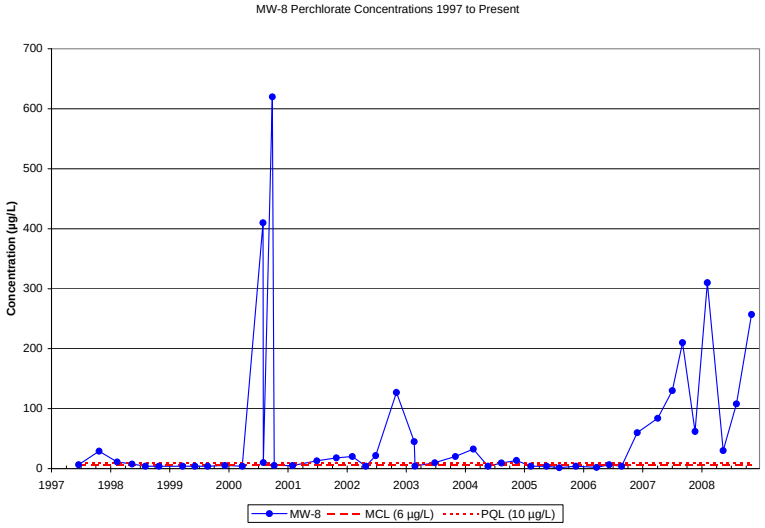


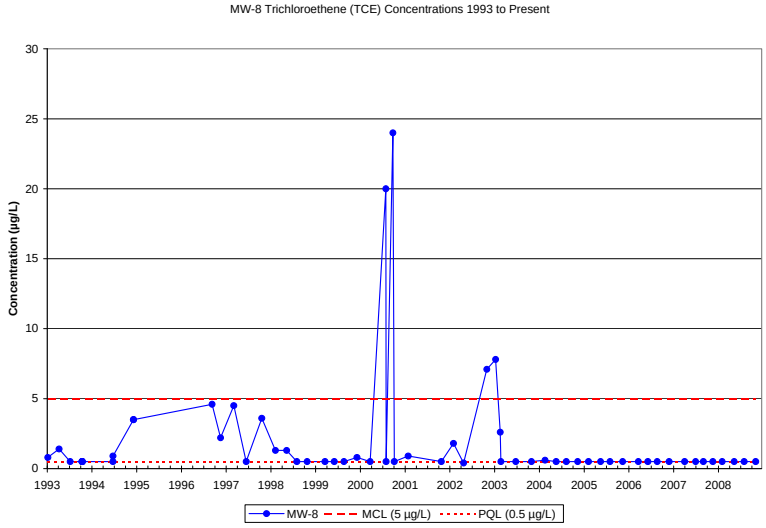


VOCs and Perchlorate Time Series Plots for MW-7

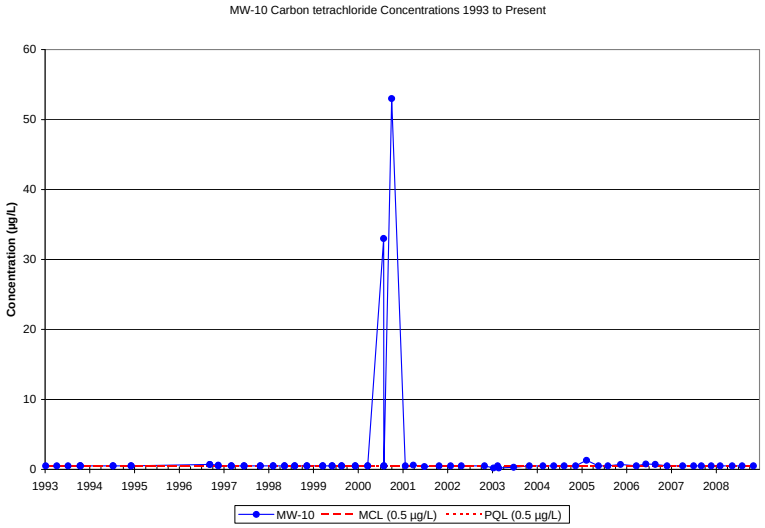


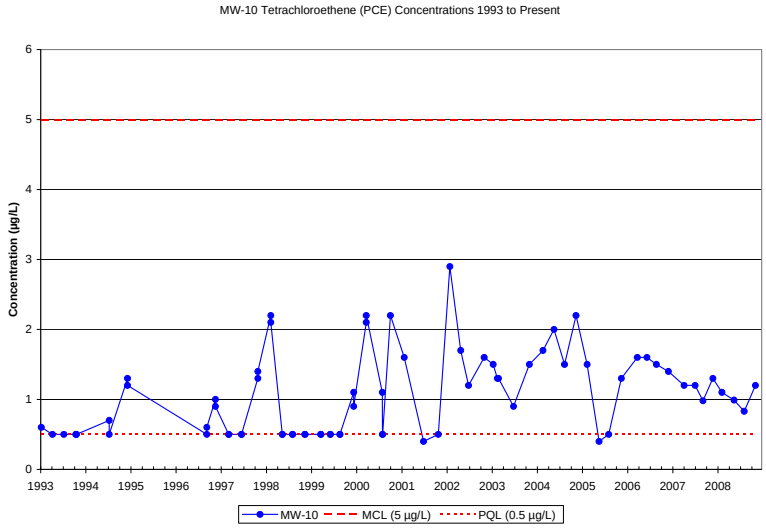


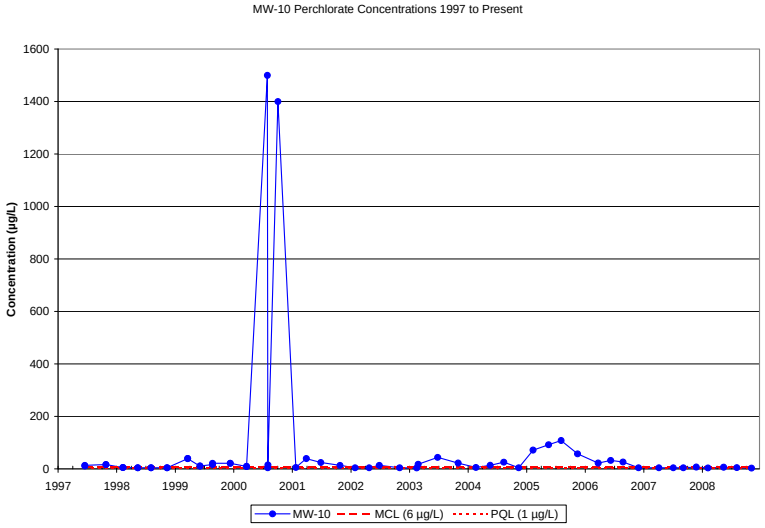


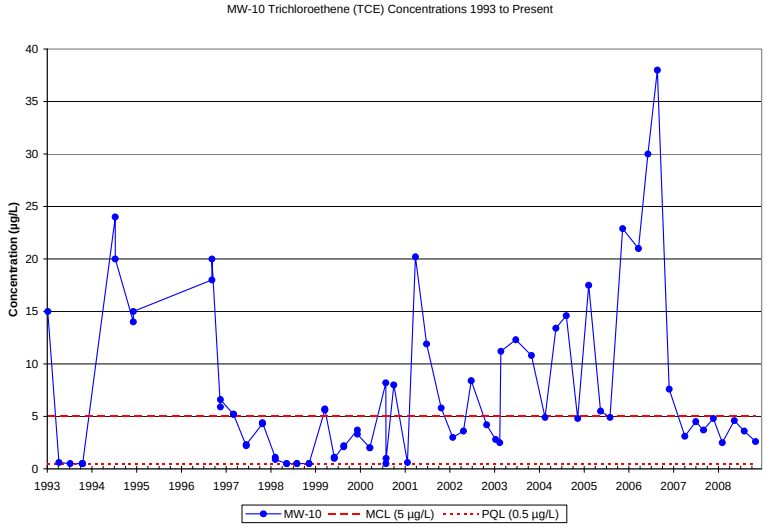


VOCs and Perchlorate Time Series Plots for MW-8

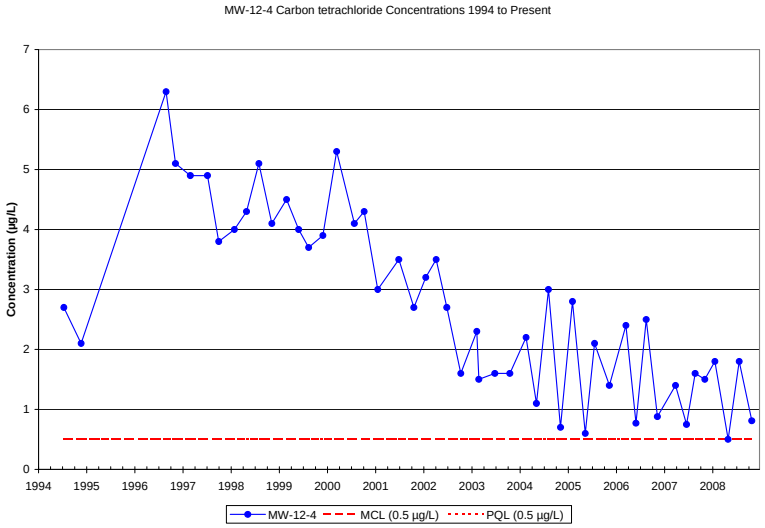


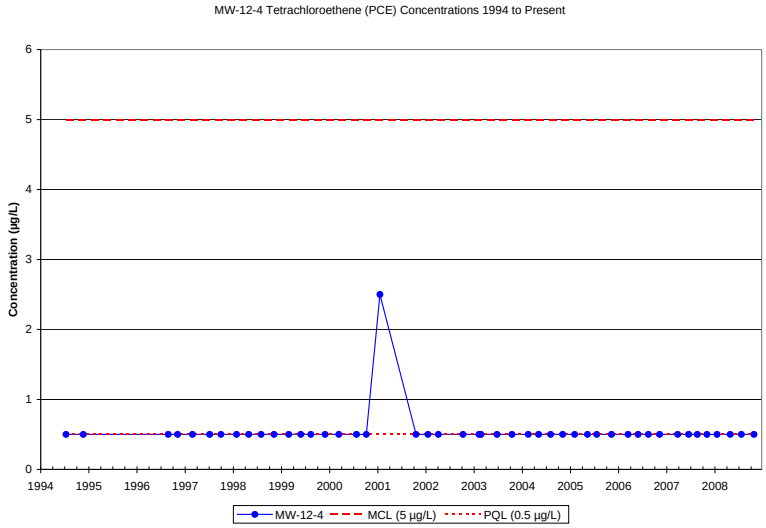


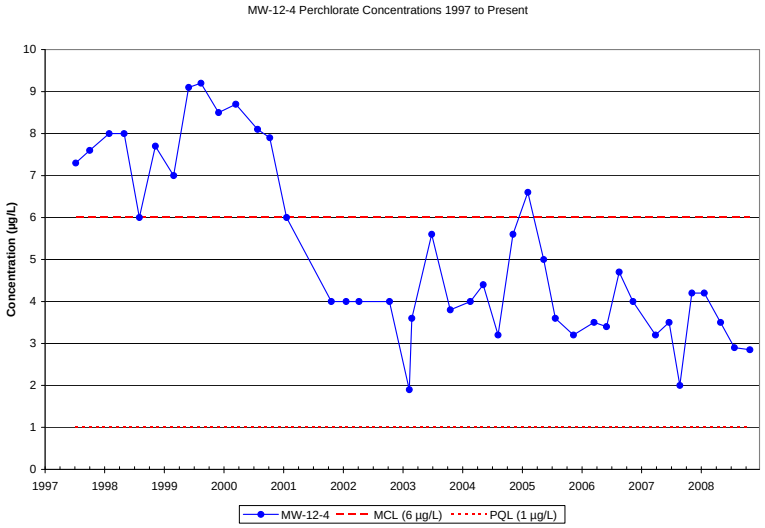


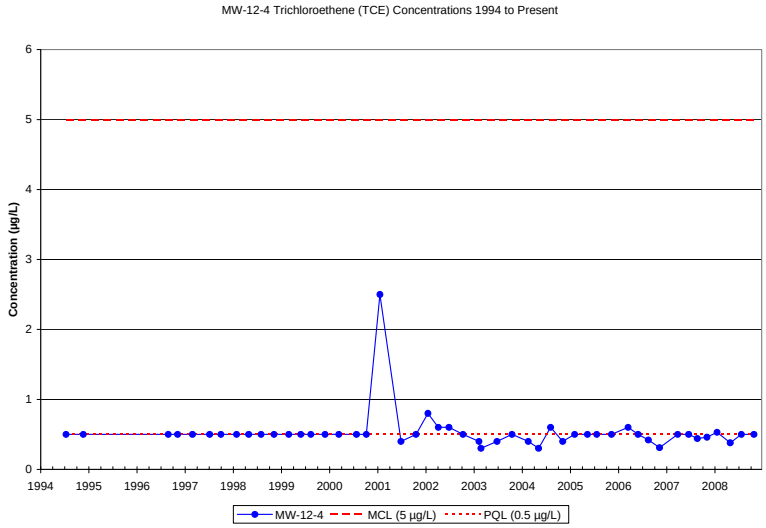


VOCs and Perchlorate Time Series Plots for MW-10

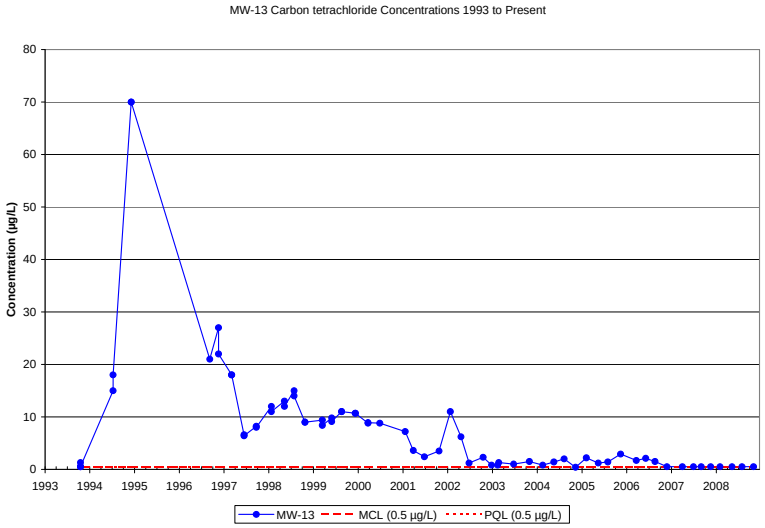


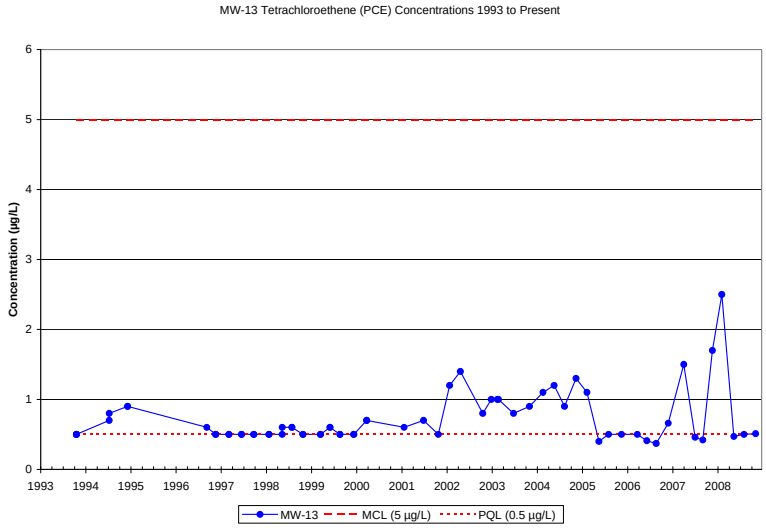


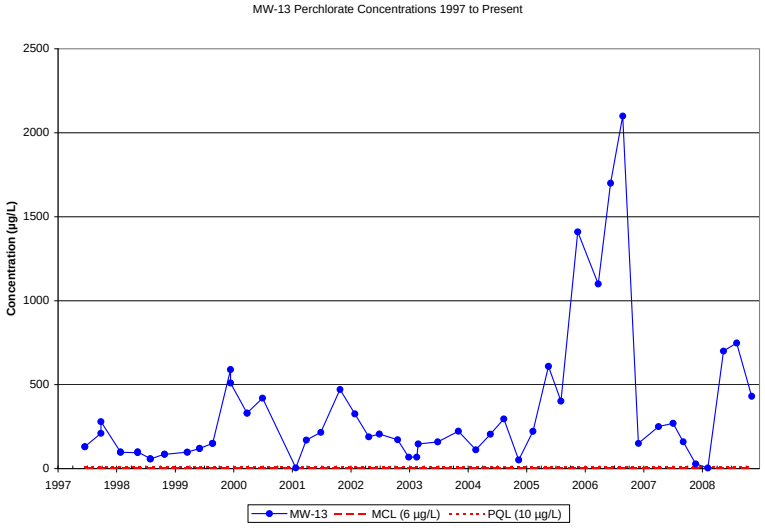


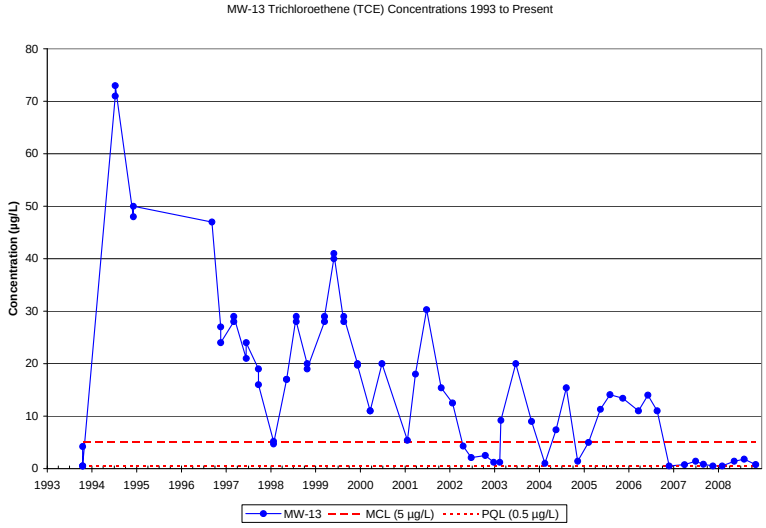


VOCs and Perchlorate Time Series Plots for MW-12-4

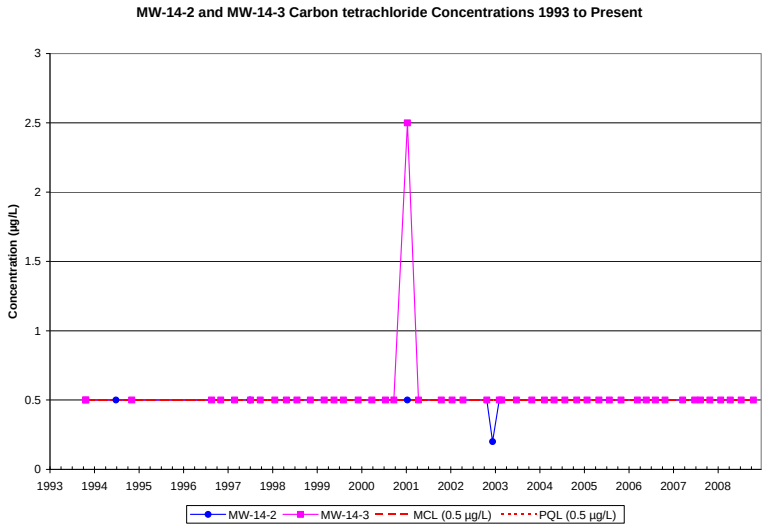


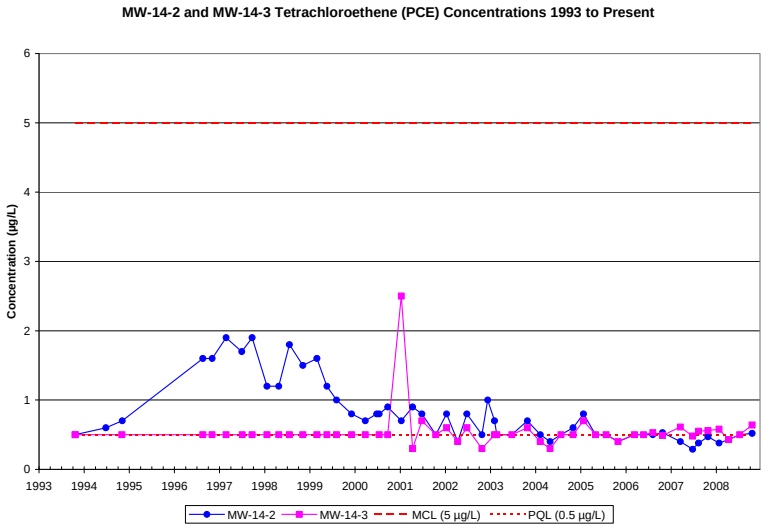


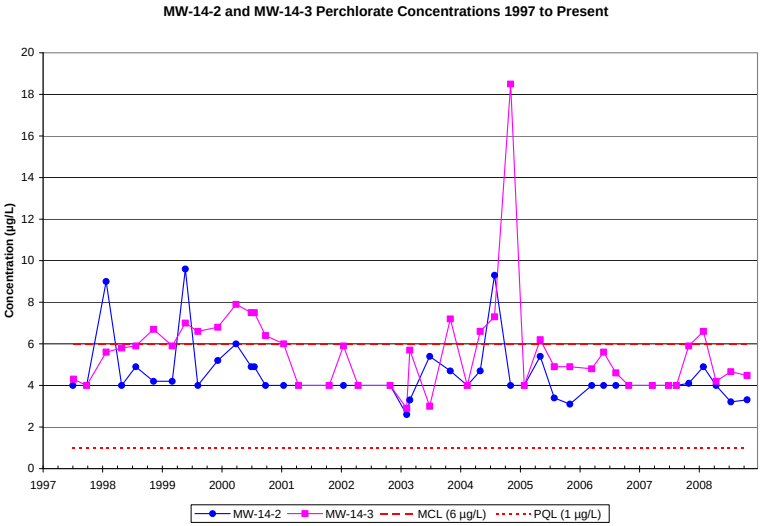


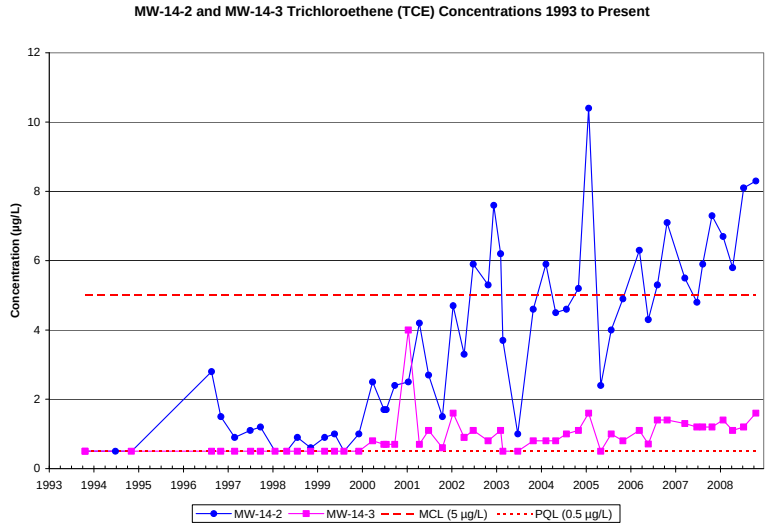


VOCs and Perchlorate Time Series Plots for MW-13

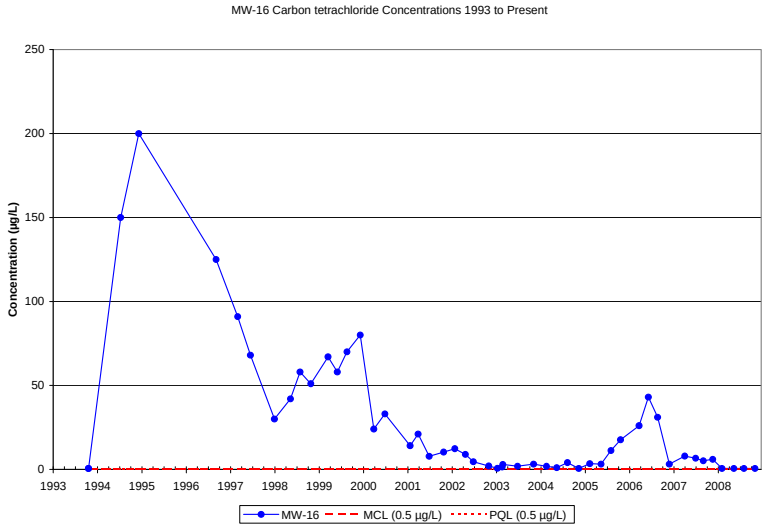


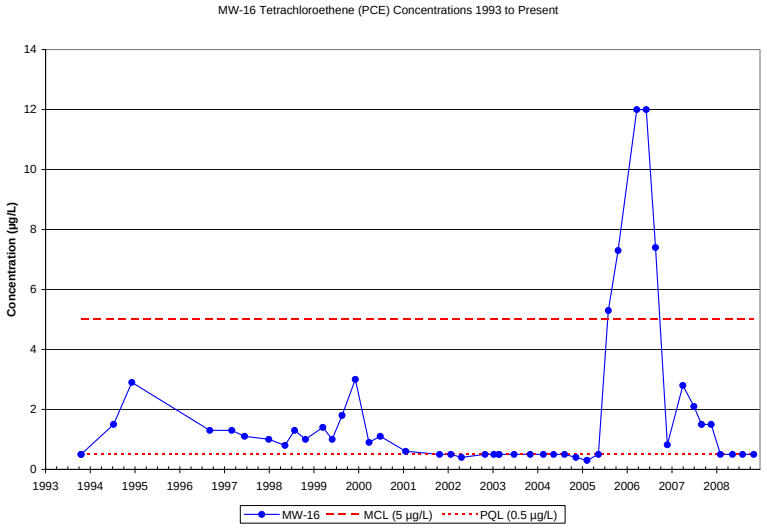


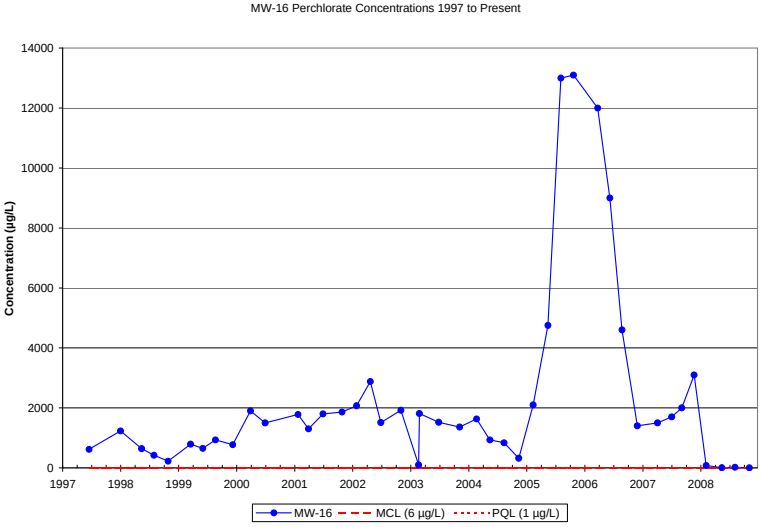


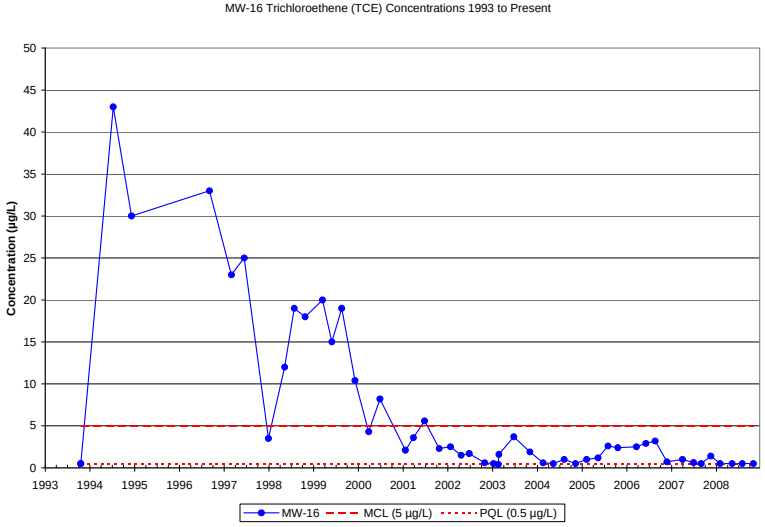


VOCs and Perchlorate Time Series Plots for MW-14-2 and MW-14-3

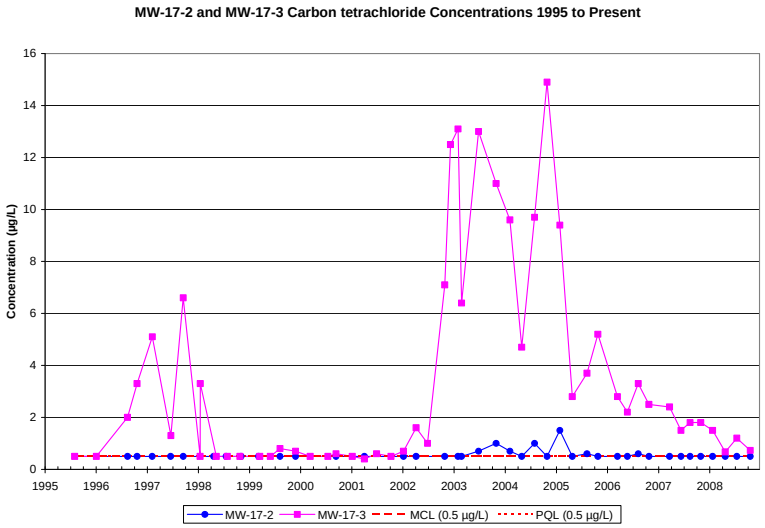


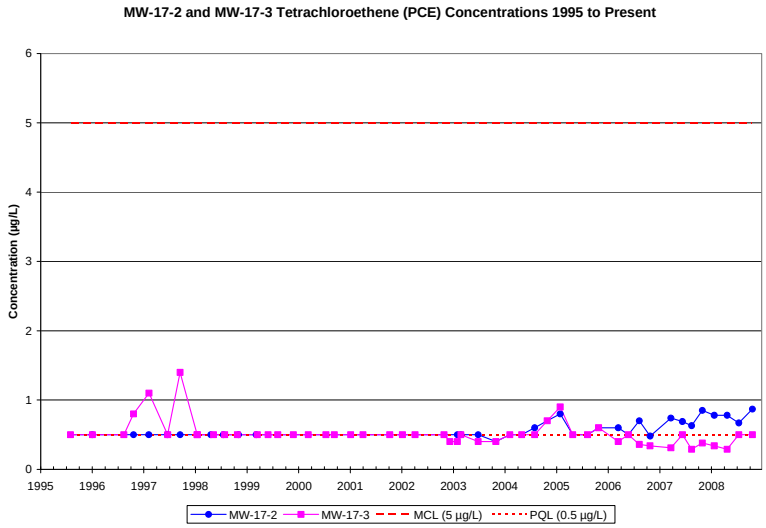


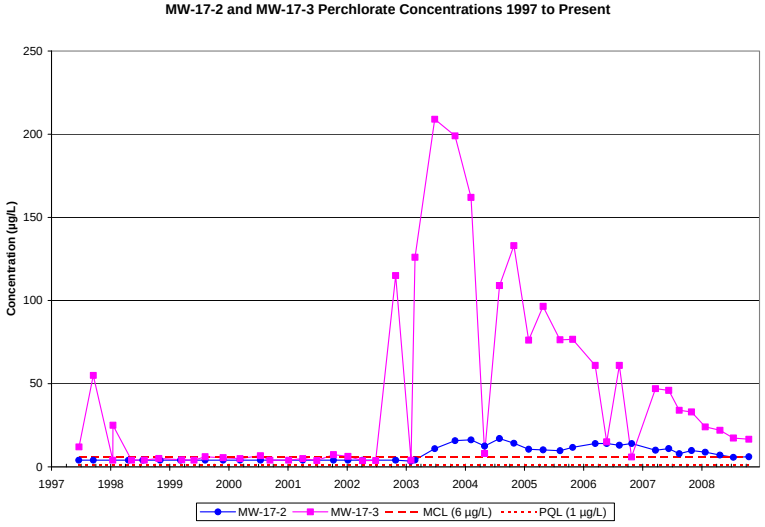


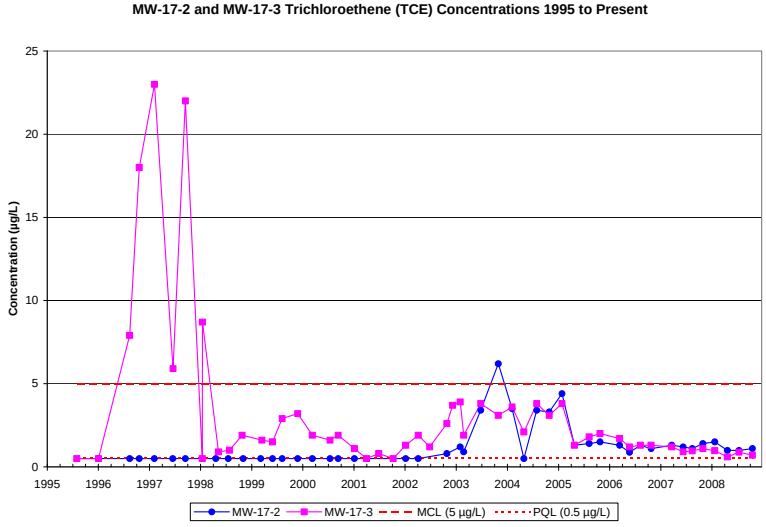


VOCs and Perchlorate Time Series Plots for MW-16

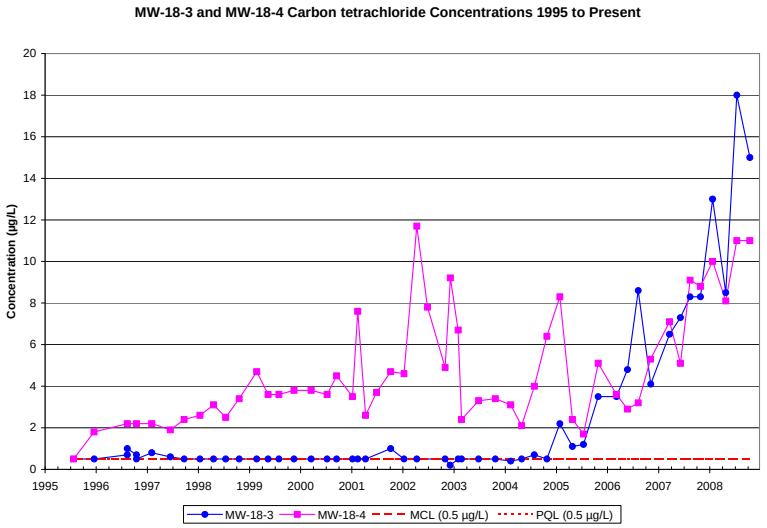


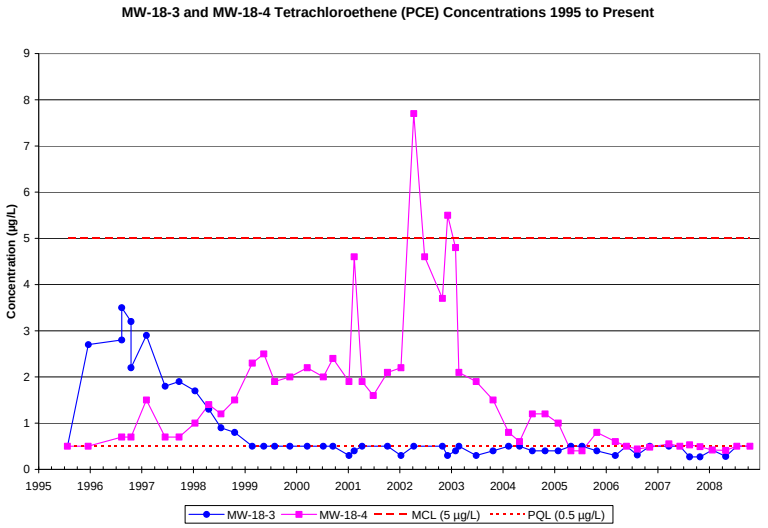


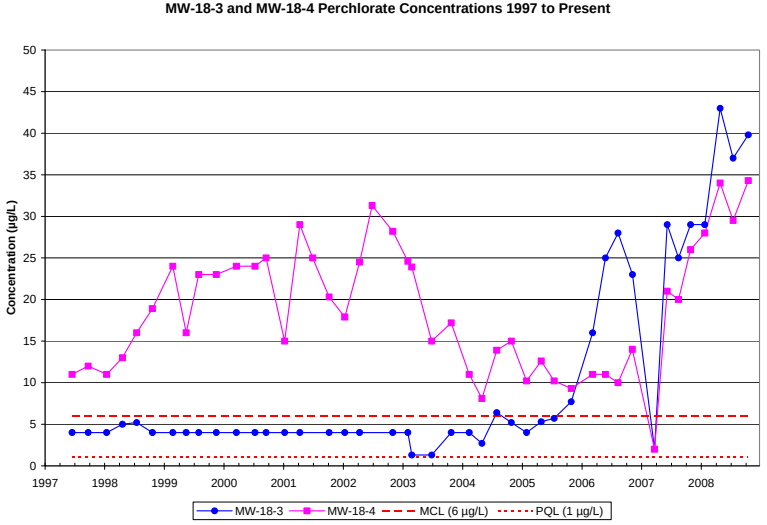


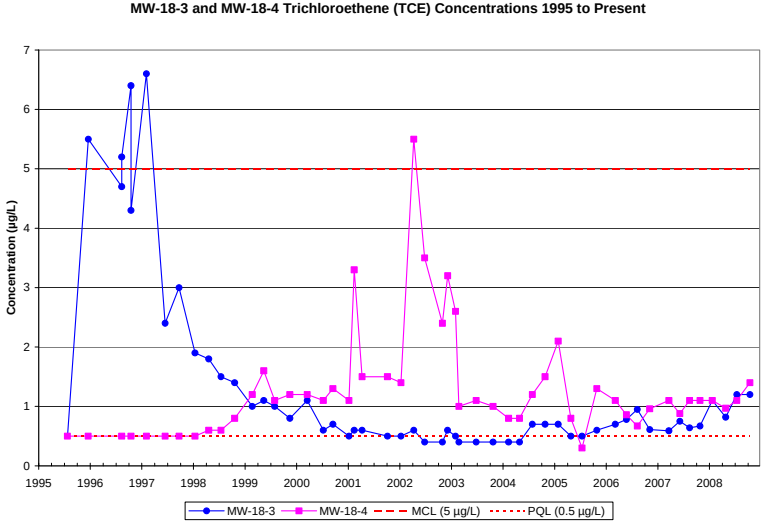


VOCs and Perchlorate Time Series Plots for MW-17-2 and MW-17-3

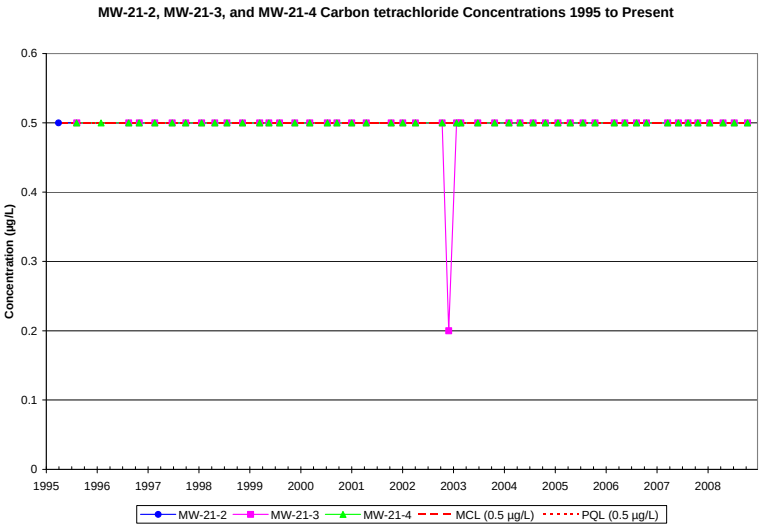


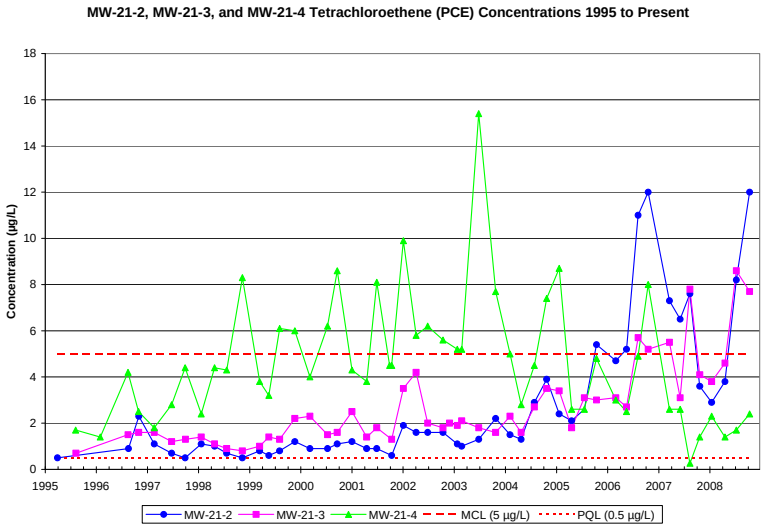


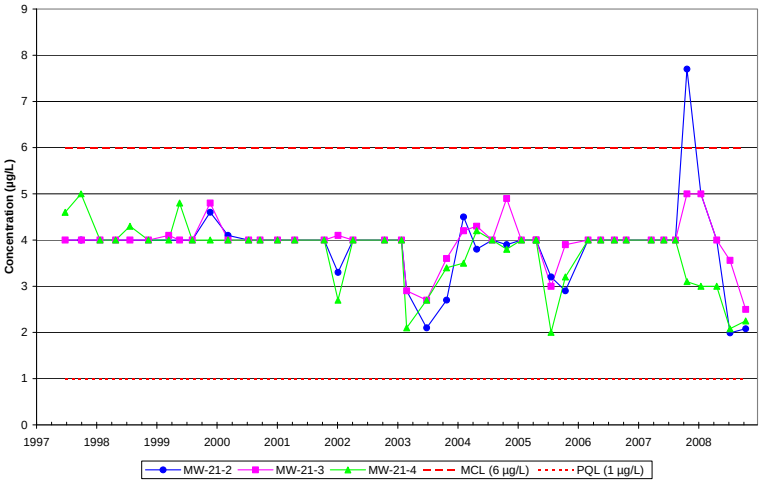


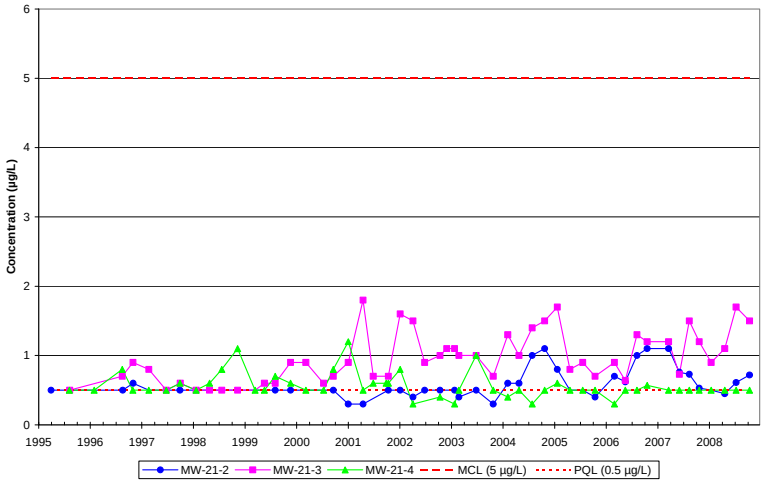


VOCs and Perchlorate Time Series Plots for MW-18-3 and MW-18-4

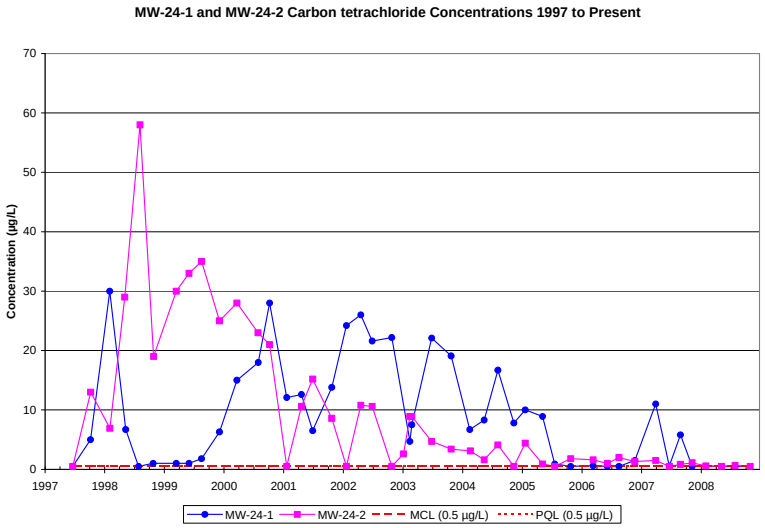


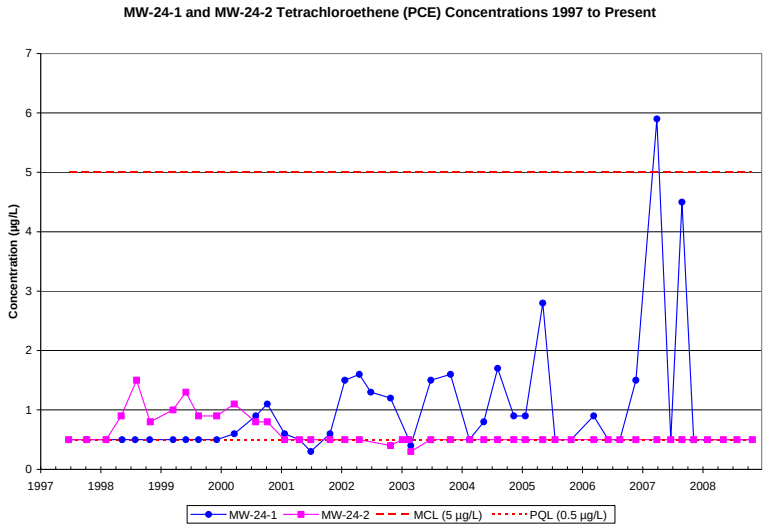


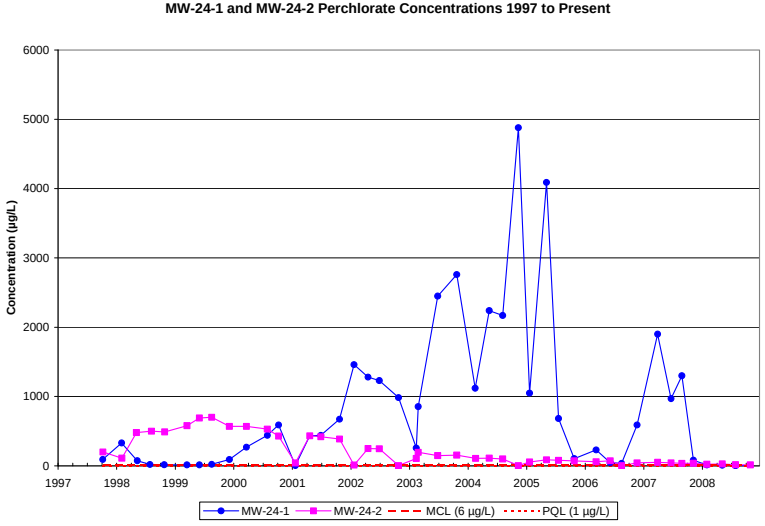


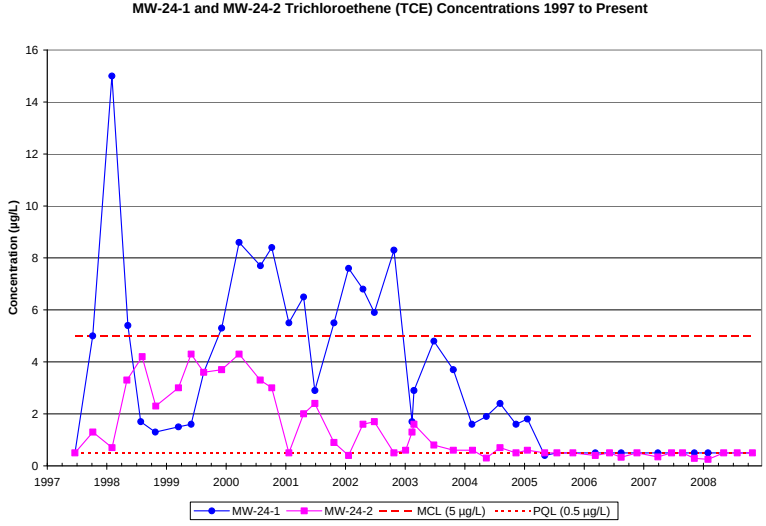


VOCs and Perchlorate Time Series Plots for MW-21-2, MW-21-3 and MW-21-4









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