

## **ATTACHMENT 4: FIELD LOGS**

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This attachment contains the groundwater sample collection field logs for the relatively shallow standpipe monitoring wells (MW-5 through MW-8, 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 1<sup>st</sup> Quarter 2012 sampling event was conducted by Battelle and Insight Environmental, Inc.

**GROUNDWATER COLLECTION AND SAMPLE LOG**

WELL ID# MW-5

**Battelle**  
The Business of Innovation  
505 King Avenue  
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.  
 Project No: 100006114  
 Navy Contract No: \_\_\_\_\_  
 Sampled By: David Loern  
 Date: 2-1-12  
 Weather: Sunny/cool

**PURGE VOLUME CALCULATION (casing volume):**

$(140' - 57.67') \times 8233 \times 4^2 \times 3 \times 0.0408 = 161.24$  Gallons  
 TD (feet)      WL (feet)      D (inches)      # Vols      Calculated Purge Volume

**PURGE METHOD**

Bailer - Type: \_\_\_\_\_  Pump - Type: 2" Grundfos

**PUMP INTAKE SETTING**

Depth in feet (BTOC): 125'

**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
1006		Water to	Surface						
1014	57.97	27.2	6.76	0.396	8.21	0.07	13.50	93	Flow Rate 3.4 GPM
1022	57.95	54.4	6.92	0.392	2.89	0.02	13.55	68	
1030	57.93	81.6	6.96	0.395	0.68	0.00	13.60	53	
1038	57.91	108.8	6.99	0.393	0.12	0.00	13.61	42	
1048	57.89	142.8	7.00	0.393	0.12	0.00	13.62	31	
1053	57.88	159.8	7.01	0.394	0.10	0.00	13.63	28	
1058									Stop

Total Purge Volume: 176.8 (Gallons) / 53.75

Total Discharge: 3.29 (Casing Volumes)

Approx. Purge Rate: 3.4 (GMP)

**OBSERVATIONS DURING PUMPING**

NOTES: (well condition, color, clarity, odor): Purge start at: 1006 Purge time start: 1006

Meters: QED MP20, Oakton T-100

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

**WATER DISPOSAL**

Purge water storage: polytank

Purge Water disposal: OU1 System-Battelle-JPL

**WELL SAMPLING**

Sample Depth in feet (BTOC): 125'

Original      Duplicate      Blank      Other (Trip/Source/)  
 Sample ID: MW-5      Sample ID: \_\_\_\_\_      Type: \_\_\_\_\_      Type: \_\_\_\_\_

Sample Time: 1054      Sample Time: \_\_\_\_\_      Sample ID: \_\_\_\_\_      Sample ID: \_\_\_\_\_

No. of Containers: Alpha-5      No. of Containers: \_\_\_\_\_      Sample Time: \_\_\_\_\_      Sample Time: \_\_\_\_\_

No. of Containers: CAS-1      No. of Containers: \_\_\_\_\_      No. of Containers: \_\_\_\_\_

BC-2

# GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-6

**Battelle**  
The Business of Innovation

505 King Avenue  
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.  
 Project No: 100006114  
 Navy Contract No: \_\_\_\_\_  
 Sampled By: David Loera  
 Date: 1-31-12  
 Weather: Sunny / Clear / Cold

**PURGE VOLUME CALCULATION (casing volume):**

$(245' - 166.63') \times 78.37 \times \frac{4^2}{4} \times 3 \times 0.0408 = 153.48$  Gallons  
 TD (feet)      WL (feet)      D (inches)      # Vols      Calculated Purge Volume

**PURGE METHOD**

Bailer - Type: \_\_\_\_\_ X Pump - Type: 2" Grundfos

**PUMP INTAKE SETTING**

Depth in feet (BTOC): 230'

**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
0743		Water to	Surface						
0755	167.38	30	6.53	1.096	13.28	5.52	20.32	126	Flow Rate 2.5 GPM
0804	167.40	52.5	6.61	1.107	5.67	5.52	20.38	119	
0813	167.43	75	6.64	1.100	3.23	5.54	20.34	115	
0824	167.43	102.5	6.65	1.106	1.35	5.49	20.37	119	
0834	167.44	127.5	6.66	1.100	5.21	5.53	20.39	117	
0843	167.45	150	6.66	1.098	1.40	5.55	20.49	100	
0850									Stop

Total Purge Volume: 167.5 (Gallons) / 51.16

Total Discharge: 3.27 (Casing Volumes)

Approx. Purge Rate: 2.5 (GMP)

**OBSERVATIONS DURING PUMPING**

NOTES: (well condition, color, clarity, odor): Purge start at: 0742 Purge time start: 0743

Meters: QED MP 20, Dakton T-100

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

**WATER DISPOSAL**

Purge water storage: polytank

Purge Water disposal: OU1 System-Battelle-JPL

**WELL SAMPLING**

Sample Depth in feet (BTOC): 230'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-6</u>	Sample ID: <u>DUPE-5-1Q12</u>	Type: _____	Type: _____
Sample Time: <u>0845</u>	Sample Time: <u>0845</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: <u>Alpha-5</u>	Sample Time: _____	Sample Time: _____
No. of Containers: <u>CAS-1</u>	No. of Containers: <u>CAS-1</u>	No. of Containers: _____	No. of Containers: _____

**GROUNDWATER COLLECTION AND SAMPLE LOG**

WELL ID# MW-7

**Battelle**

*The Business of Innovation*

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.  
 Project No: 100006114  
 Navy Contract No: \_\_\_\_\_  
 Sampled By: David Loera  
 Date: 1-30-12  
 Weather: Sunny/cool

505 King Avenue  
 Columbus, Ohio 43201

**PURGE VOLUME CALCULATION (casing volume):**

$(275' - 198.45') \times \frac{76.55}{4} \times 3 \times 0.0408 = 149.92$  Gallons  
TD (feet)      WL (feet)      D (inches)      # Vols      Calculated Purge Volume

**PURGE METHOD**

**PUMP INTAKE SETTING**

Bailer - Type: \_\_\_\_\_  Pump - Type: 2" Grundfos

Depth in feet (BTOC): 265'

**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
0832		Water to surface							
0849	198.77	34	7.05	0.560	6.04	0.09	23.64	54	Flow Rate 2.0 GPM
0900	198.76	56	7.11	0.563	2.15	0.08	23.70	53	
0910	198.76	76	7.14	0.562	3.52	0.07	23.76	52	
0920	198.76	96	7.14	0.560	1.38	0.07	23.74	57	
0930	198.76	116	7.14	0.560	1.25	0.07	23.76	59	
0939	198.76	134	7.14	0.559	1.20	0.07	23.83	61	
0946	198.76	148	7.15	0.560	1.12	0.07	23.84	62	
0948									Stop

Total Purge Volume: 152 (Gallons) / 49.97

Total Discharge: 3.04 (Casing Volumes)

Approx. Purge Rate: 2.0 (GMP)

**OBSERVATIONS DURING PUMPING**

NOTES: (well condition, color, clarity, odor): Purge start at: 0831 Purge time start: 0832

Meters: QED MP20, Dakton T-100

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

**WATER DISPOSAL**

Purge water storage: polytank

Purge Water disposal: OU1 System-Battelle-JPL

**WELL SAMPLING**

Sample Depth in feet (BTOC): 265'

<b>Original</b>	<b>Duplicate</b>	<b>Blank</b>	<b>Other (Trip/Source/)</b>
Sample ID: <u>MW-7</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>0947</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
No. of Containers: <u>CAS-1</u>	No. of Containers: _____	No. of Containers: _____	No. of Containers: _____

# GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-8

**Battelle**  
The Business of Innovation  
505 King Avenue  
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.  
 Project No: 100006114  
 Navy Contract No: \_\_\_\_\_  
 Sampled By: David Loera  
 Date: 2-1-12  
 Weather: Sunny/Cold

**PURGE VOLUME CALCULATION (casing volume):**

$(205' - 124.99' ) \times 3 \times 0.0408 = 156.70$  Gallons  
TD (feet) WL (feet) D (inches) # Vols Calculated Purge Volume

**PURGE METHOD**

Bailer - Type: \_\_\_\_\_ X Pump - Type: 2" Grundfos

**PUMP INTAKE SETTING**

Depth in feet (BTOC): 195'

**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		Water to	Surface						
0822	125.25	40.3	6.32	0.366	0.29	0.77	16.61	102	Flow Rate 3.1 GPM
0832	125.25	71.3	6.59	0.370	0.55	0.37	16.64	97	
0840	125.24	96.1	6.39	0.369	0.75	0.37	16.66	108	
0856	125.19	145.7	7.16	0.373	0.59	0.36	16.69	65	
0859	125.19	155	7.17	0.370	0.38	0.36	16.69	65	
0902									stop

Total Purge Volume: 164.3 (Gallons) / 52.23  
 Total Discharge: 3.15 (Casing Volumes)  
 Approx. Purge Rate: 3.1 (GMP)

**OBSERVATIONS DURING PUMPING**

NOTES: (well condition, color, clarity, odor): Purge start at: 0809 Purge time start: 0809  
Meters: Dakton T-100, QED MP 20

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

**WATER DISPOSAL**

Purge water storage: polytank  
 Purge Water disposal: OU1 System-Battelle-JPL

**WELL SAMPLING**

Sample Depth in feet (BTOC): 195'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-8</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>0900</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
No. of Containers: <u>CAS-1</u>	No. of Containers: _____	No. of Containers: _____	No. of Containers: _____

# GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-10

**Battelle**  
The Business of Innovation  
505 King Avenue  
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.  
 Project No: 100006114  
 Navy Contract No: \_\_\_\_\_  
 Sampled By: David Loera  
 Date: 2-1-12  
 Weather: Sunny/Warm

**PURGE VOLUME CALCULATION (casing volume):**

$(155' - 73.82') \times 81.18' \times 4^2 \times 3 \times 0.0408 = 158.98$  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): 140'

**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
1209		Water to surface							
1216	73.86	11.9	6.72	0.369	0.00	3.77	19.08	124	Flow Rate 1.7 GPM
1228	73.86	32.3	6.22	0.378	0.00	3.60	19.11	160	
1240	73.86	52.7	6.96	0.372	0.00	3.43	19.14	121	
1252	73.86	73.1	6.96	0.378	0.00	3.63	19.15	122	
1304	73.86	93.5	6.98	0.369	0.00	3.58	19.15	119	
1316	73.86	113.9	6.98	0.373	0.00	3.59	19.17	120	
1328	73.86	134.3	6.98	0.373	0.00	3.68	19.17	121	
1340	73.86	154.3	6.99	0.372	0.00	3.73	19.16	120	

Total Purge Volume: 166.2 (Gallons) / 152.99

Total Discharge: 3.14 (Casing Volumes)

Approx. Purge Rate: 1.7 (GMP)

**OBSERVATIONS DURING PUMPING**

NOTES: (well condition, color, clarity, odor): Purge start at: 1209 Purge time start: 1209 Stop: 1347  
Meters: QED MP 20, Oakton T-100

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

**WATER DISPOSAL**

Purge water storage: polytank

Purge Water disposal: OU1 System-Battelle-JPL

**WELL SAMPLING**

Sample Depth in feet (BTOC): 140'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-10</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>1343</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
No. of Containers: <u>CAS-1</u> <u>BC-2</u>	No. of Containers: _____		No. of Containers: _____

**ORIGINAL FIELD RECORD**

# GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-13

**Battelle**  
The Business of Innovation

505 King Avenue  
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.  
 Project No: 100006114  
 Navy Contract No: \_\_\_\_\_  
 Sampled By: David Loera  
 Date: 1-31-12  
 Weather: Sunny/cool

**PURGE VOLUME CALCULATION (casing volume):**

$(235' - 169.23^{65.77}) \times 4^2 \times 3 \times 0.0408 = 128.80$  Gallons  
 TD (feet)      WL (feet)      D (inches)      # Vols      Calculated Purge Volume

**PURGE METHOD**

Bailer - Type: \_\_\_\_\_  Pump - Type: 2" Grundfos

**PUMP INTAKE SETTING**

Depth in feet (BTOC): 220'

**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
0953		Water	to	surface					
1003	169.33	26	6.72	0.582	0.49	5.95	21.65	108	Flow Rate 2.6 GPM
1011	169.33	46.8	6.83	0.588	0.31	6.02	21.71	105	
1019	169.33	67.6	6.86	0.589	0.17	5.99	21.74	105	
1027	169.33	88.4	6.87	0.593	0.10	5.98	21.74	107	
1034	169.33	106.6	6.88	0.587	0.08	6.00	21.78	111	
1041	169.33	124.8	6.88	0.587	0.05	6.04	21.78	109	
1047									Stop

Total Purge Volume: 140.4 (Gallons) / 42.93

Total Discharge: 3.27 (Casing Volumes)

Approx. Purge Rate: 2.6 (GMP)

**OBSERVATIONS DURING PUMPING**

NOTES: (well condition, color, clarity, odor); Purge start at: 0952 Purge time start: 0953

Meters: QED MP 20, Oyster T-100

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

**WATER DISPOSAL**

Purge water storage: polytank

Purge Water disposal: OU1 System-Battelle-JPL

**WELL SAMPLING**

Sample Depth in feet (BTOC): 220'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-13</u>	Sample ID: <u>DUPE-6-1Q12</u>	Type: _____	Type: _____
Sample Time: <u>1043</u>	Sample Time: <u>1043</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: <u>Alpha-5</u>	Sample Time: _____	Sample Time: _____
No. of Containers: <u>CAS-1</u>	No. of Containers: <u>CAS-1</u>	No. of Containers: _____	No. of Containers: _____

# GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-15

**Battelle**  
The Business of Innovation

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.  
 Project No: 100006114  
 Navy Contract No: \_\_\_\_\_  
 Sampled By: David Louva  
 Date: 1-31-12  
 Weather: Sunny/Warm

505 King Avenue  
Columbus, Ohio 43201

**PURGE VOLUME CALCULATION (casing volume):**

(74' - 32.58 <sup>41.42</sup>) X 4<sup>2</sup> X 3 X 0.0408 = 81.12 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): 54'

**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
<u>1419</u>		<u>water</u>	<u>to</u>	<u>Surface</u>					
<u>1424</u>	<u>33.50</u>	<u>15</u>	<u>6.42</u>	<u>0.388</u>	<u>0.03</u>	<u>1.22</u>	<u>16.62</u>	<u>100</u>	<u>Flow Rate 3.0 GPM</u>
<u>1429</u>	<u>33.53</u>	<u>30</u>	<u>7.03</u>	<u>0.391</u>	<u>0.00</u>	<u>0.06</u>	<u>16.57</u>	<u>59</u>	
<u>1434</u>	<u>33.55</u>	<u>45</u>	<u>7.14</u>	<u>0.392</u>	<u>0.00</u>	<u>0.05</u>	<u>16.58</u>	<u>53</u>	
<u>1439</u>	<u>33.57</u>	<u>60</u>	<u>7.17</u>	<u>0.391</u>	<u>0.00</u>	<u>0.04</u>	<u>16.60</u>	<u>50</u>	
<u>1444</u>	<u>33.56</u>	<u>75</u>	<u>7.21</u>	<u>0.394</u>	<u>0.00</u>	<u>0.05</u>	<u>16.58</u>	<u>48</u>	
<u>1447</u>									<u>stop</u>

Total Purge Volume: 84 (Gallons) / 27.04

Total Discharge: 3.12 (Casing Volumes)

Approx. Purge Rate: 3.0 (GMP)

**OBSERVATIONS DURING PUMPING**

NOTES: (well condition, color, clarity, odor): Purge start at: 1419 Purge time start: 1419  
Meters: QED MP 20 Dakon T-100

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

**WATER DISPOSAL**

Purge water storage: polytank

Purge Water disposal: OU1 System-Battelle-JPL

**WELL SAMPLING**

Sample Depth in feet (BTOC): 54'

<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>1447</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-1</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
No. of Containers: <u>CAS-1</u>	No. of Containers: _____	No. of Containers: _____	No. of Containers: _____



# GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID# MW-16

**Battelle**  
The Business of Innovation

505 King Avenue  
Columbus, Ohio 43201

Project Name: Quarterly Monitoring at JPL, Pasadena, CA.  
 Project No: 100006114  
 Navy Contract No: \_\_\_\_\_  
 Sampled By: David Loera  
 Date: 1-31-12  
 Weather: Sunny/Warm

**PURGE VOLUME CALCULATION (casing volume):**

285' TD (feet) - 221.77' WL (feet) <sup>63.23</sup> ) X 4<sup>2</sup> D (inches) X 3 # Vols X 0.0408 = 123.83 Gallons  
 Calculated Purge Volume

**PURGE METHOD**

Bailer - Type: \_\_\_\_\_ X Pump - Type: 2" Grundfos

**PUMP INTAKE SETTING**

Depth in feet (BTOC): 265'

**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
<u>1212</u>		<u>Water to surface</u>							
<u>1223</u>	<u>221.82</u>	<u>20.9</u>	<u>7.02</u>	<u>0.541</u>	<u>0.27</u>	<u>0.97</u>	<u>23.86</u>	<u>28</u>	<u>Flow Rate 1.9 GPM</u>
<u>1234</u>	<u>221.82</u>	<u>41.8</u>	<u>7.19</u>	<u>0.542</u>	<u>0.26</u>	<u>0.80</u>	<u>23.87</u>	<u>48</u>	
<u>1244</u>	<u>221.80</u>	<u>60.8</u>	<u>7.21</u>	<u>0.540</u>	<u>0.14</u>	<u>0.78</u>	<u>23.84</u>	<u>56</u>	
<u>1254</u>	<u>221.81</u>	<u>79.8</u>	<u>7.21</u>	<u>0.542</u>	<u>0.04</u>	<u>0.76</u>	<u>23.82</u>	<u>70</u>	
<u>1304</u>	<u>221.81</u>	<u>98.8</u>	<u>7.22</u>	<u>0.541</u>	<u>0.01</u>	<u>0.75</u>	<u>23.86</u>	<u>77</u>	
<u>1314</u>	<u>221.81</u>	<u>117.8</u>	<u>7.23</u>	<u>0.543</u>	<u>0.00</u>	<u>0.73</u>	<u>23.84</u>	<u>81</u>	
<u>1321</u>									<u>Stop</u>

Total Purge Volume: 131.1 (Gallons) / 41.28

Total Discharge: 3.18 (Casing Volumes)

Approx. Purge Rate: 1.9 (GMP)

**OBSERVATIONS DURING PUMPING**

NOTES: (well condition, color, clarity, odor); Purge start at: 1212 Purge time start: 1212

Motors: QED MP 20, Daktron T-100

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

**WATER DISPOSAL**

Purge water storage: polytank

Purge Water disposal: OU1 System-Battelle-JPL

**WELL SAMPLING**

Sample Depth in feet (BTOC): 265'

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other (Trip/Source/)</u>
Sample ID: <u>MW-16</u>	Sample ID: <u>DUPE-7-1Q12</u>	Type: _____	Type: _____
Sample Time: <u>1318</u>	Sample Time: <u>1318</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>Alpha-5</u>	No. of Containers: <u>Alpha-5</u>	Sample Time: _____	Sample Time: _____
No. of Containers: <u>CAS-1</u>	No. of Containers: <u>CAS-1</u>	No. of Containers: _____	No. of Containers: _____









**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: 14.08 psia  
End of Session: 14.26 psia

Start Time: 0750  
Finish Time: 1000

Date: 2/15/12  
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 (m/mhos)	Dissolved Oxygen
5	1	✓	✓	✓	✓	✓	✓	✓	✓	217.58	✓	192.63	✓	192.61	✓	✓	217.57	816	5.49	0.65	50.2	9.19	14.0	41
4	1	✓	✓	✓	✓	✓	✓	✓	✓	168.78	✓	154.71	✓	154.68	✓	✓	168.79	839	5.48	0.27	52.1	9.15	13.8	29
3	1	✓	✓	✓	✓	✓	✓	✓	✓	120.51	✓	108.01	✓	107.89	✓	✓	120.54	903	5.59	0.10	49.3	10.73	13.9	30
2	1	✓	✓	✓	✓	✓	✓	✓	✓	87.13	✓	74.74	✓	74.74	✓	✓	87.11	934	5.84	1.80	62.2	11.28	13.4	25
1	1	✓	✓	✓	✓	✓	✓	✓	✓	80.56	✓	37.14	✓	37.15	✓	✓	80.56	957	5.82	11.9	42.8	9.31	12.8	50

MS/MSD

Notes:

port 5: CLEAN H<sub>2</sub>O w/ NO O<sub>2</sub> port 4: CLEAN H<sub>2</sub>O w/ STRONG O<sub>2</sub> port 3: CLEAN H<sub>2</sub>O w/ STRONG O<sub>2</sub>  
port 2: CLEAN H<sub>2</sub>O w/ NO O<sub>2</sub> port 1: CLEAN H<sub>2</sub>O w/ STRONG O<sub>2</sub>

EB: 0950

Total Volume:











**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: 14.06 psia  
 End of Session: 14.06 psia

Start Time: 0830  
 Finish Time: 1050

Date: 2/3/12  
 Page: 1 of 1

Water Pressure Inside Casing: —A—

Port #	Run #	Surface Function Checks							Position Sampler	Arm out	Sample Collection Checks							Water Quality Parameters						
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In			Deactivate Set Arm Locate Port	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Cond (mmhos)	Dissolved Oxygen
5	1	/	✓	/	/	✓	/	✓	/	132.18	✓	150.82	✓	150.82	✓	✓	172.17	900	5.07	0.12	74.2	10.36	14.7	112
4	1	✓	✓	/	/	✓	/	/	/	148.51	✓	127.42	✓	127.48	✓	✓	198.50	925	5.45	0.59	70.7	10.46	15.1	65
3	1	✓	✓	✓	✓	✓	✓	✓	✓	125.90	/	115.87	✓	115.89	✓	✓	125.93	943	5.54	0.57	69.4	10.30	15.2	71
2	1	✓	✓	✓	✓	✓	✓	✓	✓	93.11	✓	82.58	✓	82.56	✓	✓	93.09	1009	5.59	6.77	0.095	10.31	15.2	177
2	2	✓	✓	✓	✓	✓	/	✓	✓	82.65	✓	82.58	✓	82.58	✓	✓	82.67	1027	5.85	7.26	0.096	10.16	15.4	170
1	1	✓	✓	✓	✓	✓	✓	✓	✓	60.71	/	55.41	✓	55.41	✓	✓	60.72	1048	6.10	0.49	58.0	10.38	15.2	80

?C has sample

**Notes:**  
 port 5: CLEAN H<sub>2</sub>O w/ SLIGHT ODOR port 4: CLEAN H<sub>2</sub>O w/ NO ODOR port 3: CLEAN H<sub>2</sub>O w/ NO ODOR  
 port 2: CLEAN H<sub>2</sub>O w/ NO ODOR port 1: CLEAN H<sub>2</sub>O w/ NO ODOR

Total Volume: —A—

EB: 1040

















## **ATTACHMENT 5: WATER LEVEL MEASUREMENTS**

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This attachment contains water level measurements for the JPL relatively shallow standpipe monitoring wells (MW-1, MW-5 through MW-9, MW-10, MW-13, MW-15, and MW-16) and the Westbay™ multiport wells (MW-3, MW-4, MW-11, MW-12, MW-14, and MW-17 through MW-26) obtained during the 1<sup>st</sup> Quarter 2012. Water level measurements were recorded before the sampling event on January 27, 2012 for the relatively shallow standpipe monitoring wells and for the Westbay™ multiport wells. Water level measurements were recorded after the sampling event on February 16, 2012 for the relatively shallow standpipe monitoring wells and the Westbay™ multiport wells. Water levels for 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™ MOSDAX sampling 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: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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	944	956
Pressure (psia)	14.19	14.18
Temperature (°C)	17.47	18.36

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	236.97	237.75	236.96	20.11	950	137.25	963.09
4	558	195.69	196.70	195.65	21.29	951	136.95	963.39
3	346	103.50	116.59	103.64	21.35	953	109.76	990.58
2	252	62.70	76.38	62.69	20.76	954	108.53	991.81
1	172	27.93	47.00	27.95	19.82	955	96.31	1004.03

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-4  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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	13.29	1341
Pressure (psia)	14.17	14.16
Temperature (°C)	21.73	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	513	148.49	199.30	148.51	21.94	1335	85.91	996.93
4	392	95.93	146.92	95.93	21.96	1336	85.75	997.09
3	322	65.41	116.60	65.42	21.55	1338	85.69	997.15
2	240	29.73	81.94	29.75	21.12	1340	83.65	999.19
1	150	14.27	49.16	14.25	20.62	1341	69.28	1013.56

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-11  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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	911	920
Pressure (psia)	14.14	14.17
Temperature (°C)	19.81	18.23

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	639	235.76	216.59	235.81	19.82	914		
								171.95
4	524	186.27	181.38	186.29	20.45	915		
								138.18
3	429	145.36	140.15	145.39	20.34	916		
								138.29
2	259	71.82	69.99	71.82	19.57	918		
								130.15
1	149	24.51	32.89	24.50	18.73	919		
								105.74

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-12  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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	1350	1401
Pressure (psia)	14.16	14.16
Temperature (°C)	20.44	17.46

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	216.21	193.71	216.13	20.54	1353			
								133.78	968.36
4	436	167.49	155.42	167.44	20.90	1354			
								110.11	992.03
3	323	118.40	108.67	118.29	20.29	1356			
								104.97	997.17
2	243	83.47	75.43	83.49	18.79	1358			
								101.65	1000.49
1	140	38.58	37.54	38.62	18.28	1359			
								86.06	1016.08

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-14  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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	756	807
Pressure (psia)	14.11	14.12
Temperature (°C)	18.52	19.33

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	185.38	182.50	185.36	20.04	801			
								151.52	1021.95
4	456	148.83	146.28	148.83	20.57	802			
								151.08	1022.39
3	382	116.69	114.21	116.62	20.40	803			
								151.07	1022.40
2	277	70.94	68.81	70.93	19.89	805			
								150.81	1022.66
1	207	40.51	39.28	40.47	19.58	806			
								148.93	1024.54

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-17  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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	1112	1123
Pressure (psia)	14.15	14.18
Temperature (°C)	18.95	16.40

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	241.10	229.90	241.14	19.24	1115		
							228.26	962.95
4	582	178.74	167.47	178.74	19.44	1117		
							228.29	962.92
3	468	129.31	127.78	129.31	18.66	1119		
							205.86	985.35
2	370	86.75	87.78	86.77	18.01	1120		
							200.14	991.07
1	250	34.68	34.65	34.67	16.78	1123		
							202.71	988.50



# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-18  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 Serial No.: 2508  
 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	1139	1149
Pressure (psia)	14.12	14.09
Temperature (°C)	21.04	17.59

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	162.38	200.14	162.39	21.32	1143		
								254.85
4	564	110.27	149.94	110.25	21.36	1145		
								250.66
3	424	49.32	95.40	49.38	20.49	1146		
								236.49
2	330	14.28	58.29	14.20	19.21	1147		
								228.10
1	270	14.20	33.20	14.21	18.30	1148		
								225.98

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-19  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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	1043	1057
Pressure (psia)	14.17	14.10
Temperature (°C)	7.20	16.79

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	171.41	151.60	171.40	18.52	1047			
								180.95	961.99
4	444	147.96	128.24	147.99	18.90	1049			
								180.84	962.10
3	392	125.43	116.20	125.43	19.01	1051			
								156.62	986.32
2	314	91.59	82.86	91.59	18.85	1052			
								155.53	987.41
1	242	60.34	55.64	60.32	17.76	1055			
								146.33	996.61

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-20  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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	1159	1219
Pressure (psia)	14.12	14.11
Temperature (°C)	18.87	17.29

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	321.70	326.79	321.69	21.97	1205		
4	700	234.93	234.12	234.95	21.78	1211		
3	562	175.17	177.22	175.13	21.22	1213		
2	392	101.49	106.88	101.42	19.31	1215		
1	230	31.14	37.09	31.13	17.81	1216		

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-21  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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	821	831
Pressure (psia)	14.20	14.22
Temperature (°C)	17.53	18.61

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	125.66	156.28	125.66	18.69	824		
		44.22	1014.88					
4	310	98.69	19.42	98.71	19.16	825		
		297.96	761.14					
3	240	68.59	99.57	68.62	19.18	826		
		43.05	1016.05					
2	161	34.30	65.49	34.28	18.89	828		
		42.67	1016.43					
1	90	14.23	34.35	14.22	18.66	830		
		43.51	1015.59					

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-22  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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	734	746
Pressure (psia)	14.07	14.12
Temperature (°C)	18.92	19.89

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	588	200.50	191.15	200.60	20.21	738	179.48	997.50
4	467	148.10	141.68	148.14	20.91	739	172.60	1004.38
3	389	114.43	112.24	114.34	20.99	740	162.52	1014.46
2	329	88.32	86.09	88.30	20.85	742	162.85	1014.13
1	245	51.43	50.47	51.47	20.16	744	161.03	1015.95

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-23  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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	712	724
Pressure (psia)	14.16	14.15
Temperature (°C)	18.61	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	203.56	200.78	203.59	20.48	716	111.47	997.37
4	445	161.54	158.89	161.50	20.96	718	111.11	997.73
3	319	106.99	109.00	106.98	20.79	720	100.20	1008.64
2	254	78.83	81.05	78.81	20.45	721	99.68	1009.16
1	174	44.10	48.68	44.09	20.12	723	94.36	1014.48

**INSIGHT, Inc.**  
**Piezometric Pressures/Levels**

**Field Data Sheet for Multi-Port Monitoring Wells**

Project Name: JPL Pasadena Well ID: MW-24  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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

<b>Ambient Readings</b>	Start	Finish
Time	843	900
Pressure (psia)	14.11	14.16
Temperature (°C)	17.97	21.58

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	678	232.77	213.69	232.77	19.91	849	217.57	983.37
4	554	179.02	164.64	179.04	21.06	852	206.73	994.21
3	435	127.53	117.91	127.48	21.26	854	195.53	1005.41
2	373	100.64	91.83	100.61	21.29	855	193.70	1007.24
1	279	59.92	54.40	59.91	21.52	858	186.05	1014.89

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-25  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 1/27/12 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	1243	1258
Pressure (psia)	14.24	14.25
Temperature (°C)	21.40	19.90

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	210.78	216.16	210.78	21.51	1246	247.17	687.35
4	633	176.30	182.43	176.31	21.81	1249	244.99	689.53
3	503	120.07	126.88	120.06	20.81	1253	243.14	691.38
2	423	85.30	92.20	85.31	20.63	1254	243.15	691.37
1	358	57.07	63.71	57.10	20.25	1256	243.87	690.65







**INSIGHT, Inc.**  
**Piezometric Pressures/Levels**

**Field Data Sheet for Multi-Port Monitoring Wells**

Project Name: JPL Pasadena Well ID: MW-3  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	941	951
Pressure (psia)	14.13	14.15
Temperature (°C)	16.48	18.00

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	236.44	236.77	236.44	21.59	943	139.37	960.97
4	558	195.19	195.71	195.18	2.18	945	139.09	961.25
3	346	103.02	115.86	103.04	22.00	947	111.31	989.03
2	252	62.15	75.61	62.16	21.30	948	110.17	990.17
1	172	27.38	46.31	27.39	19.54	949	97.76	1002.58

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-4  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	1322	1332
Pressure (psia)	14.14	14.17
Temperature (°C)	17.77	19.80

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	513	148.63	198.60	148.58	21.08	1324		
							87.45	995.39
4	392	96.10	146.26	96.08	21.47	1326		
							87.20	995.64
3	322	65.53	115.90	65.51	21.89	1327		
							87.24	995.60
2	240	29.82	81.25	29.84	21.00	1328		
							85.18	997.66
1	150	14.26	48.16	14.27	20.45	1330		
							71.52	1011.32

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-11  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	905	915
Pressure (psia)	14.10	14.13
Temperature (°C)	20.80	17.14

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	639	235.54	215.79	235.54	20.46	907		
							173.70	965.60
4	524	186.09	180.87	186.06	20.98	909		
							139.26	1000.04
3	429	145.23	139.61	145.23	20.82	911		
							139.45	999.85
2	259	71.61	69.47	71.62	17.96	912		
							131.26	1008.04
1	149	24.28	32.68	24.32	17.35	913		
							106.14	1033.16

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-12  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	1304	1315
Pressure (psia)	14.12	14.14
Temperature (°C)	19.57	17.66

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	548	216.01	192.80	215.97	20.25	1307			
								135.79	966.35
4	436	167.27	154.78	167.31	20.85	1309			
								111.50	990.64
3	323	118.12	108.01	118.15	20.40	1311			
								106.40	995.74
2	243	83.29	74.75	83.33	19.48	1313			
								103.13	999.01
1	140	38.92	50.33	38.95	18.61	1314			
								56.46	1045.68

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-14  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	745	755
Pressure (psia)	14.08	14.12
Temperature (°C)	17.50	18.94

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	185.18	182.02	185.20	18.51	747		
							152.56	1020.91
4	456	148.66	145.82	148.68	19.55	748		
							152.08	1021.39
3	382	116.47	113.75	116.47	19.70	749		
							152.06	1021.41
2	277	70.76	68.35	70.77	19.51	751		
							151.80	1021.67
1	207	40.27	38.81	40.26	19.08	753		
							149.95	1023.52

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-17  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	1031	1041
Pressure (psia)	14.09	14.10
Temperature (°C)	15.51	16.24

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	241.03	228.94	241.05	16.86	1033	230.34	960.87
4	582	178.70	166.45	178.71	18.82	1035	230.51	960.70
3	468	129.30	126.95	129.29	18.47	1037	207.63	983.58
2	370	86.77	86.90	86.75	17.81	10.38	202.03	989.18
1	250	34.59	40.61	34.59	16.84	1039	188.82	1002.39



# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-18  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	1055	1105
Pressure (psia)	14.07	14.07
Temperature (°C)	16.80	16.64

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	162.31	199.29	162.33	18.87	1057		
								256.70
4	564	110.21	149.09	110.22	20.43	1059		
								252.51
3	424	49.29	94.64	49.33	19.68	1101		
								238.13
2	330	14.26	57.44	14.26	18.19	1102		
								229.95
1	270	14.20	32.26	14.21	17.04	1103		
								228.04

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-19  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	1007	1016
Pressure (psia)	14.10	14.13
Temperature (°C)	15.83	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	498	171.34	150.55	171.36	17.30	1009	183.21	959.73
4	444	147.98	127.20	147.97	17.99	1010	183.08	959.86
3	392	125.36	115.48	125.38	18.30	1013	158.12	984.82
2	314	91.56	82.15	91.55	18.57	1014	157.01	985.93
1	242	60.23	54.93	60.26	17.76	1015	147.81	995.13

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-20  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	1126	1139
Pressure (psia)	14.11	14.09
Temperature (°C)	17.71	17.27

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	900	321.59	326.14	321.61	19.99	1129	180.15	984.90
4	700	234.98	233.27	234.99	21.87	1131	194.40	970.65
3	562	175.19	175.90	175.19	21.37	1133	188.75	976.30
2	392	101.54	106.13	101.49	20.00	1135	179.71	985.34
1	230	31.11	36.30	31.12	17.93	1137	178.81	986.24

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-21  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	806	816
Pressure (psia)	14.18	14.18
Temperature (°C)	17.39	18.69

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	372	125.56	155.69	125.60	18.16	808		
								45.54
4	310	98.61	128.85	98.58	18.89	809		
								45.46
3	240	68.56	99.01	68.56	19.09	810		
								44.30
2	161	34.15	64.91	34.13	18.99	812		
								43.97
1	90	14.23	15.66	14.23	18.82	814		
								86.59

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-22  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	725	735
Pressure (psia)	14.06	14.08
Temperature (°C)	12.22	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	588	200.49	190.43	200.48	17.90	727	181.11	995.87
4	467	148.10	141.05	148.00	19.40	728	174.03	1002.95
3	389	114.31	111.66	14.30	19.93	729	163.84	1013.14
2	329	88.29	85.51	88.29	20.12	731	164.16	1012.82
1	245	51.39	49.90	51.40	20.00	733	162.32	1014.66

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-23  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

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	542							
							#DIV/0!	#DIV/0!
4	445							
							#DIV/0!	#DIV/0!
3	319							
							#DIV/0!	#DIV/0!
2	254							
							#DIV/0!	#DIV/0!
1	174							
							#DIV/0!	#DIV/0!

No Readings as Vehicle Blocked Access

**INSIGHT, Inc.**  
**Piezometric Pressures/Levels**

**Field Data Sheet for Multi-Port Monitoring Wells**

Project Name: JPL Pasadena Well ID: MW-24  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	841	851
Pressure (psia)	14.11	14.10
Temperature (°C)	17.23	21.39

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	232.63	212.85	232.62	20.83	843	219.51	981.43
4	554	178.97	163.40	178.98	21.24	844	209.59	991.35
3	435	127.41	117.26	127.40	21.31	846	197.03	1003.91
2	373	100.45	91.19	100.50	21.33	848	195.18	1005.76
1	279	59.78	53.63	59.80	21.30	849	187.83	1013.11

# INSIGHT, Inc.

## Piezometric Pressures/Levels

### Field Data Sheet for Multi-Port Monitoring Wells

Project Name: JPL Pasadena Well ID: MW-25  
 Project No: 4-73806 Probe Type: Westbay  
 Date: 2/16/12 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 cool

Ambient Readings	Start	Finish
Time	1158	1208
Pressure (psia)	14.22	14.24
Temperature (°C)	18.34	19.98

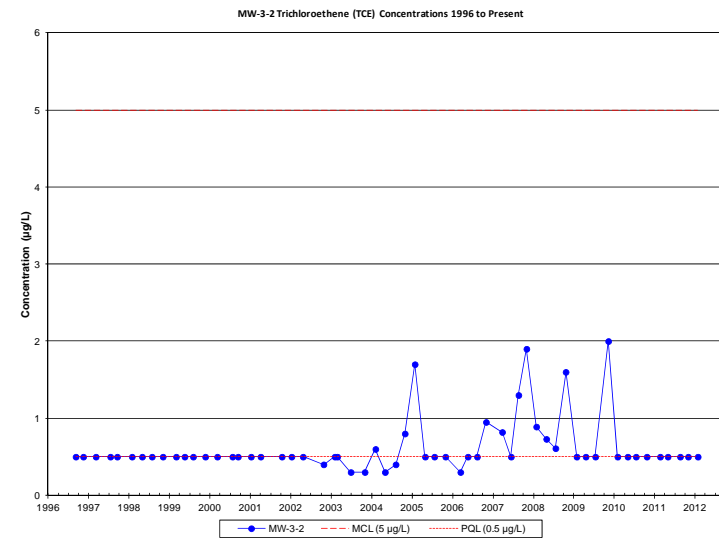
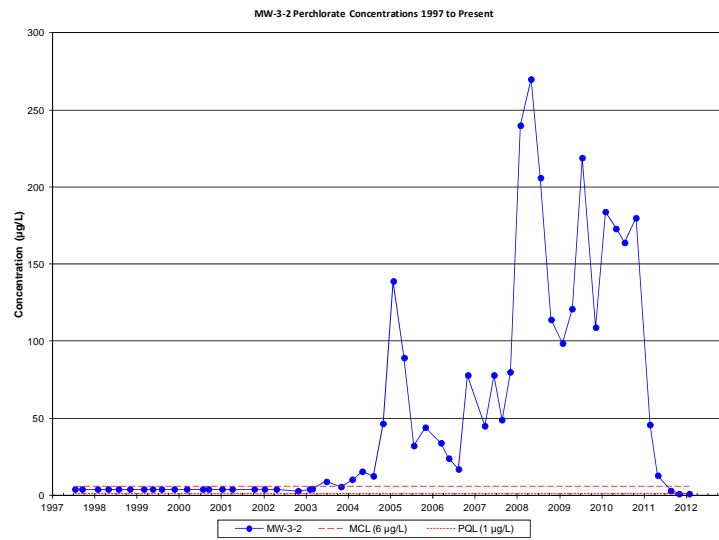
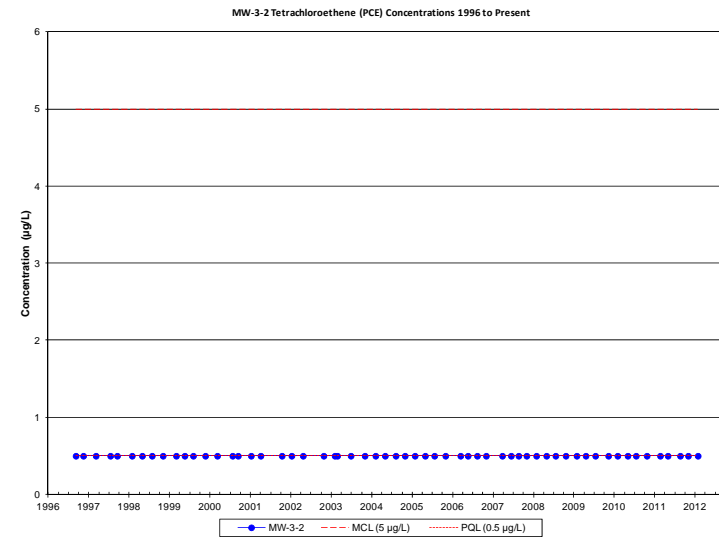
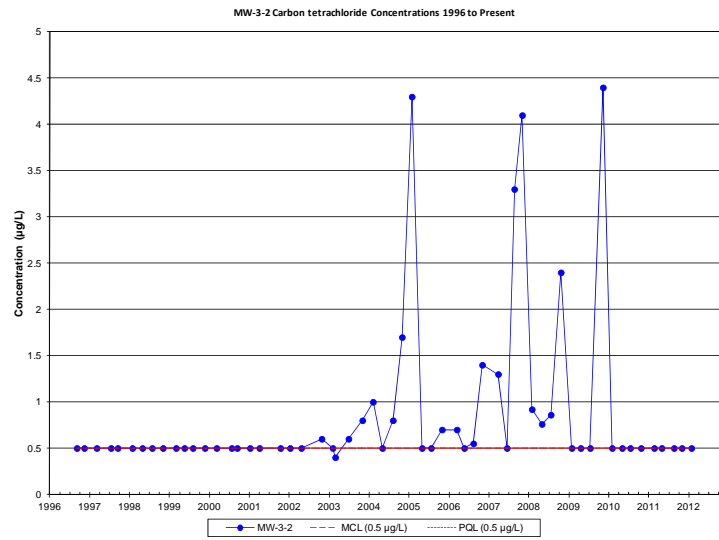
Screen No.	Depth (ft. BTOC)	Fluid Pressure Readings			Temp. (°C)	Time	Piezometric Level Outside Port (ft.)	Water Level Elevation (ft.)
		Inside Casing (psia)	Outside Casing (psia)	Inside Casing (psia)				
5	713	210.64	211.98	210.64	20.67	1201		
								256.77
4	633	176.15	176.20	176.16	21.09	1203		
								259.31
3	503	119.90	123.00	119.94	21.06	1204		
								252.04
2	423	85.22	90.95	85.18	20.71	1206		
								245.98
1	358	56.93	63.63	56.94	20.42	1207		
								244.01



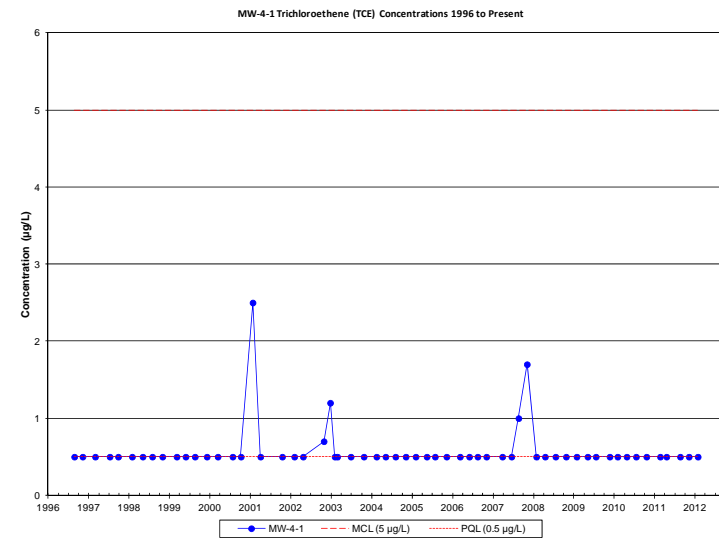
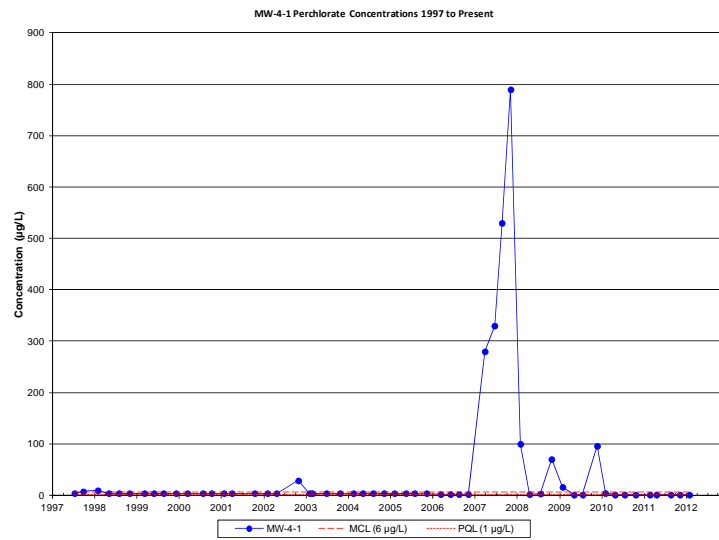
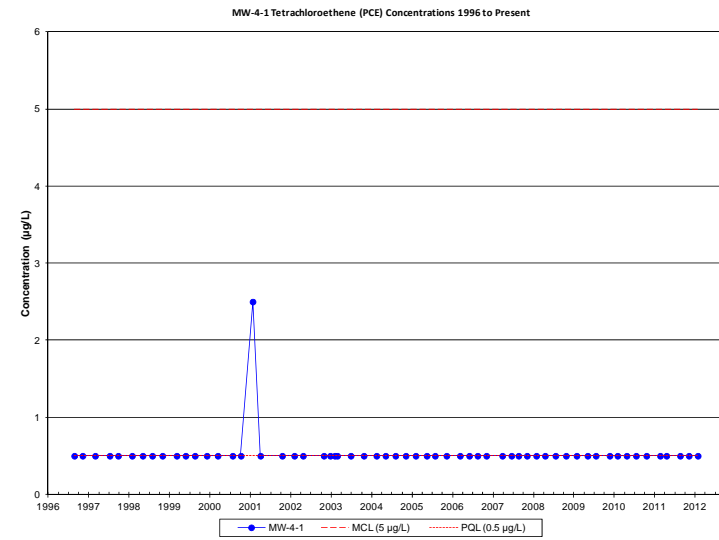
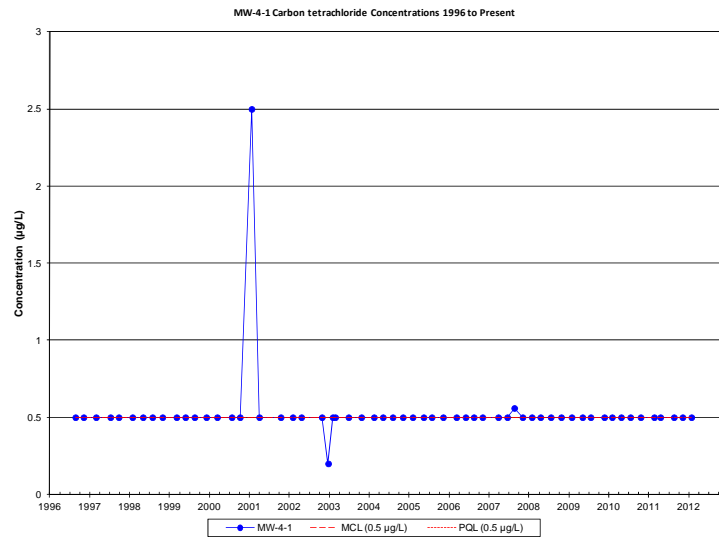


## **ATTACHMENT 6: TIME SERIES PLOTS**

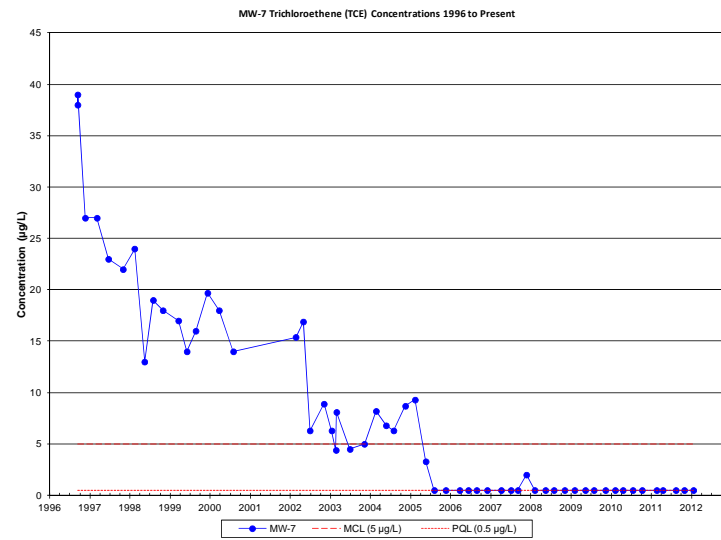
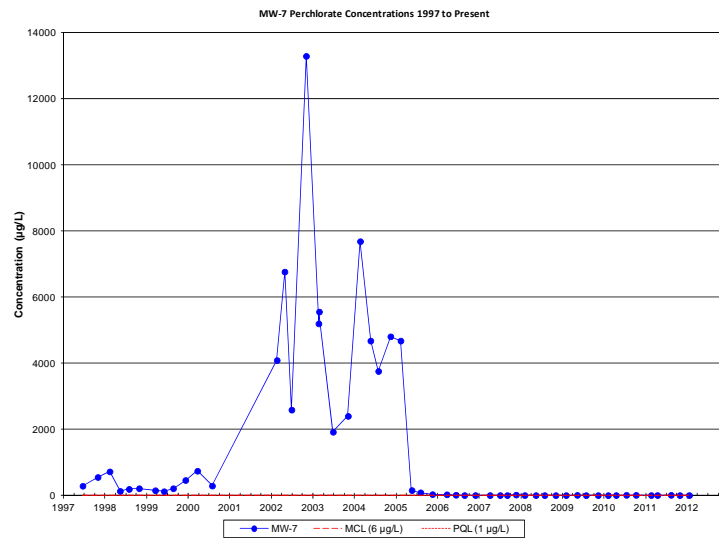
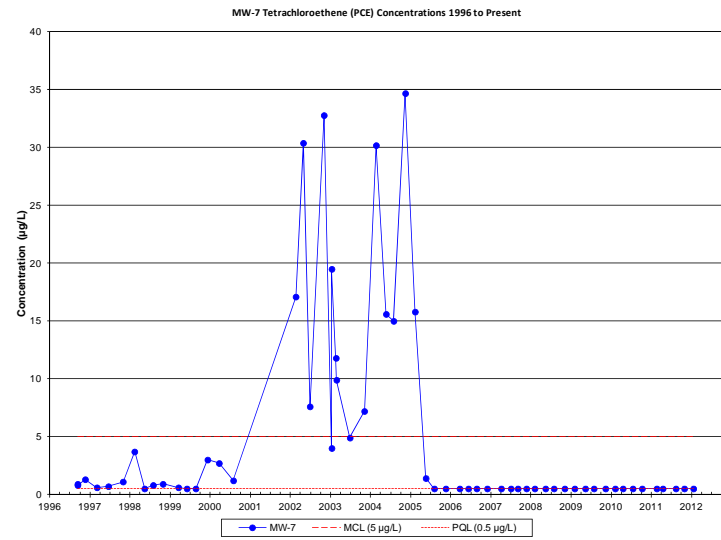
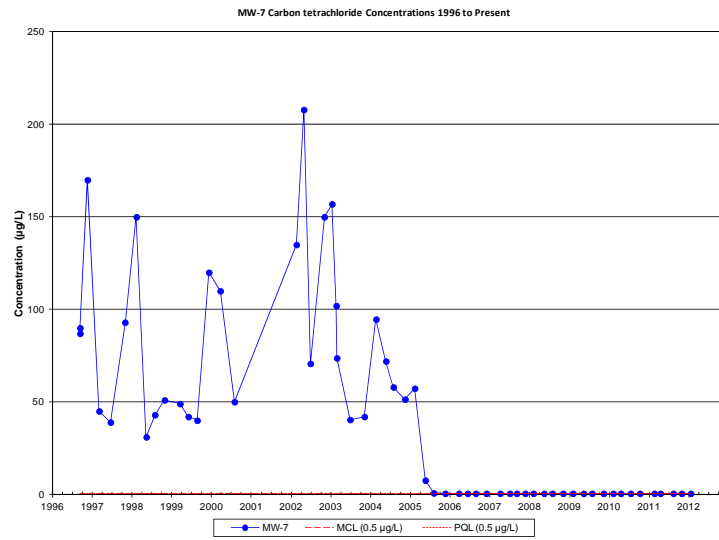
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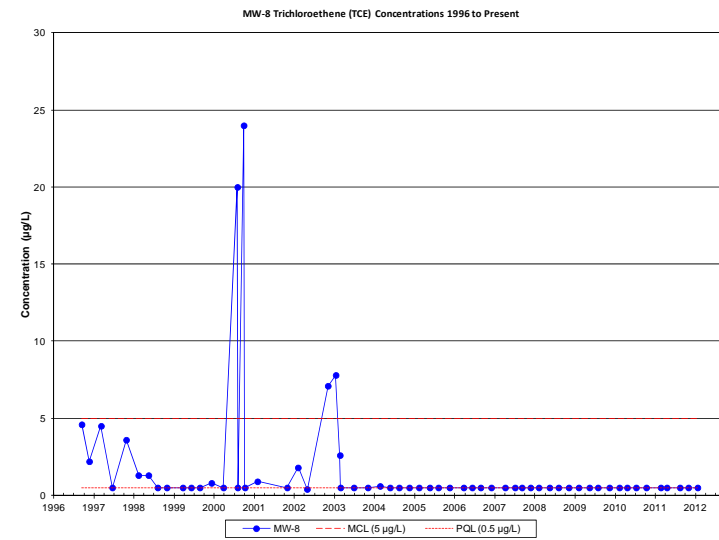
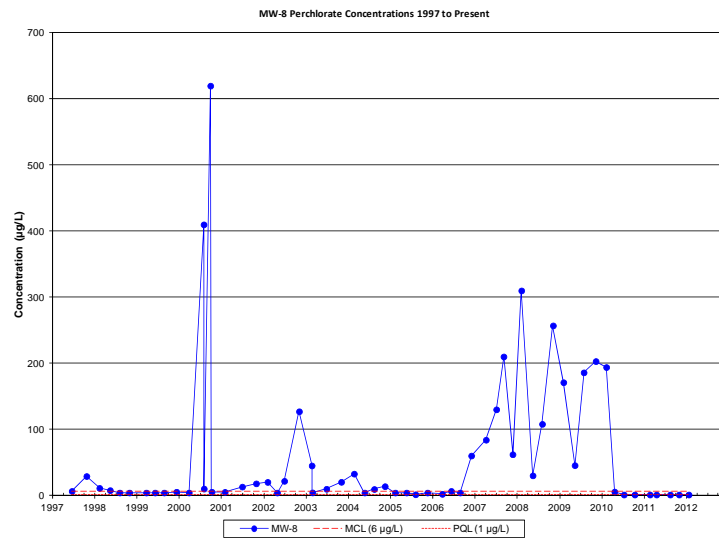
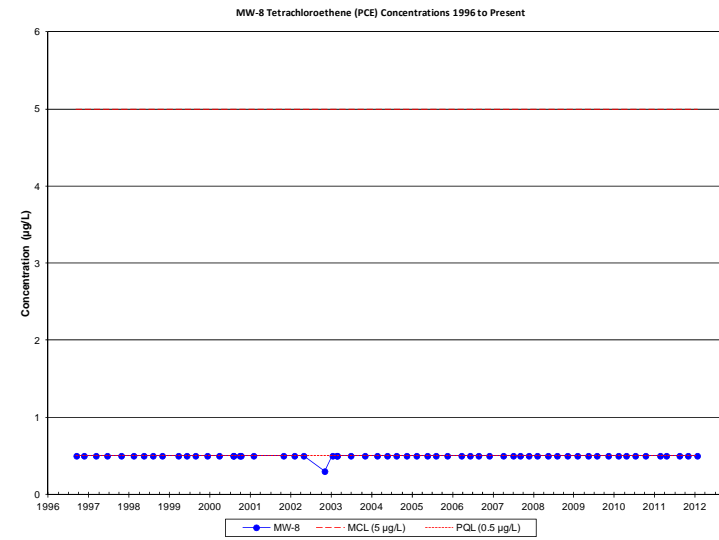
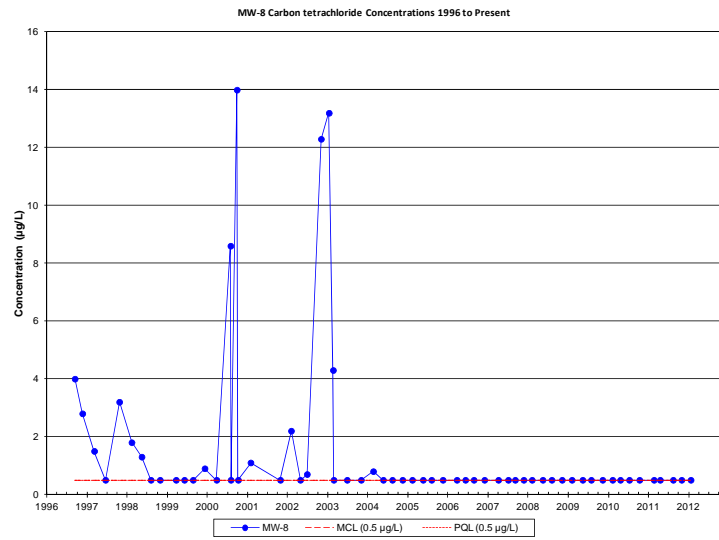
VOCs and Perchlorate Time Series Plots for MW-3-2



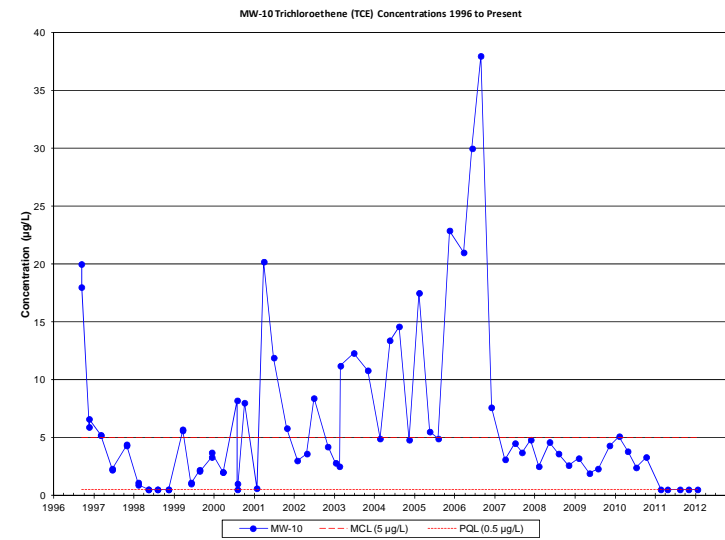
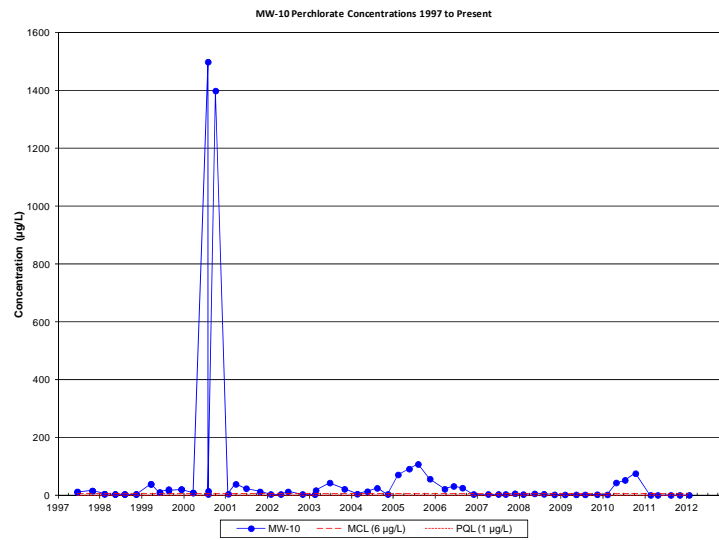
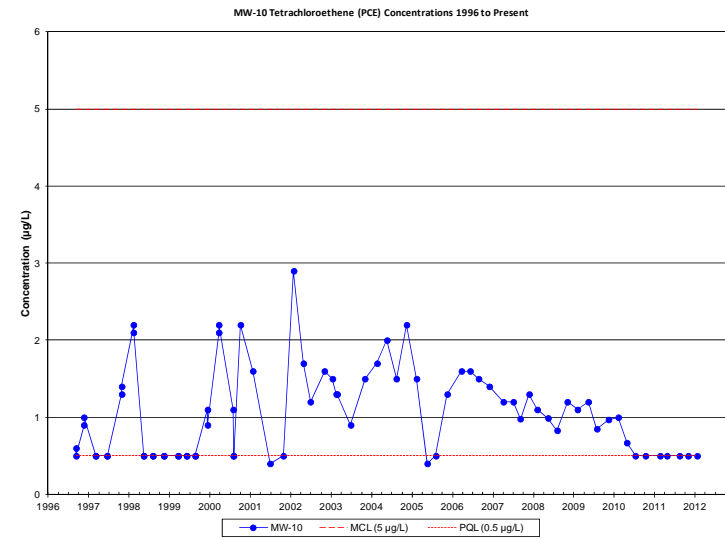
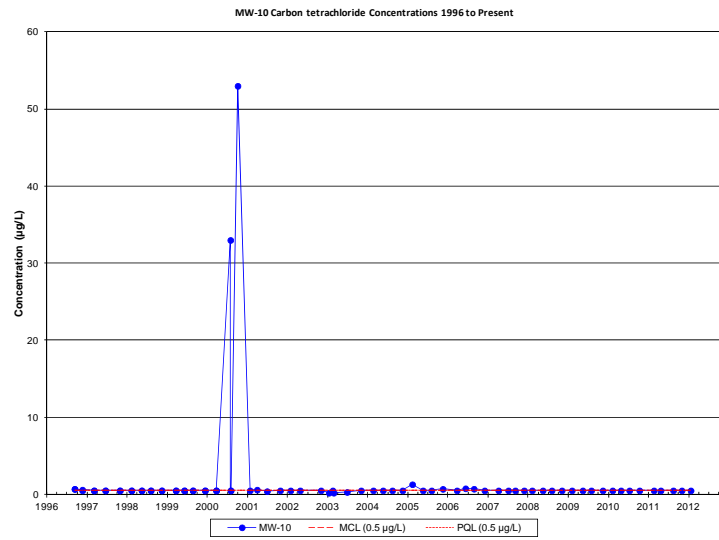
**VOCs and Perchlorate Time Series Plots for MW-4-1**



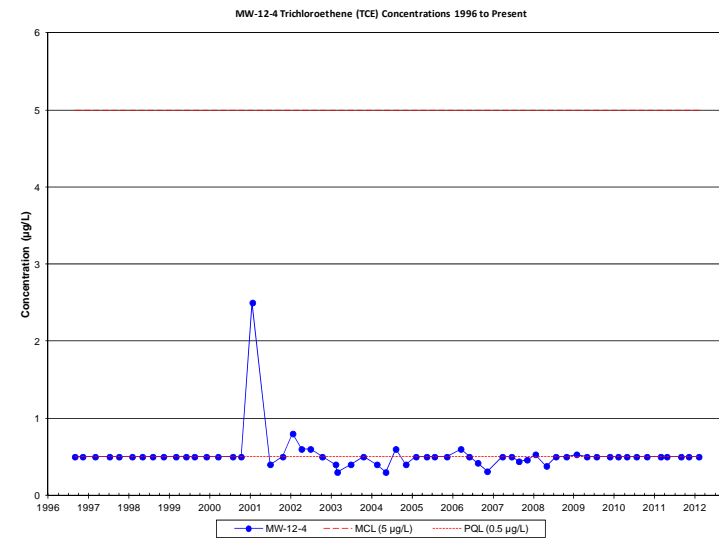
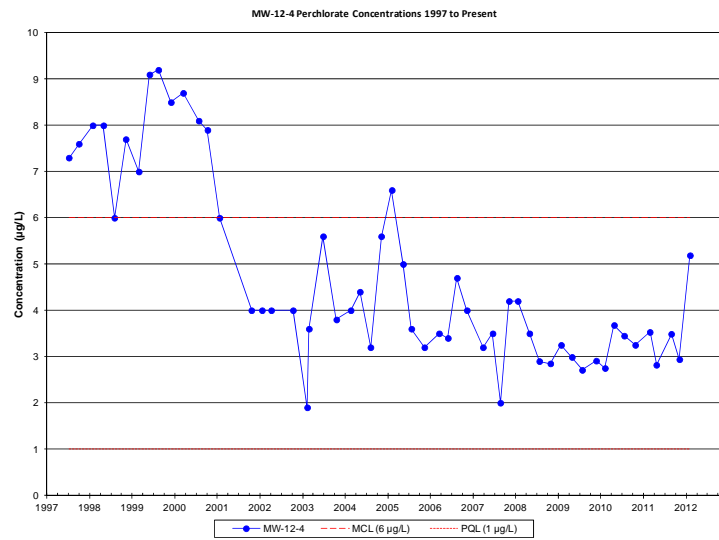
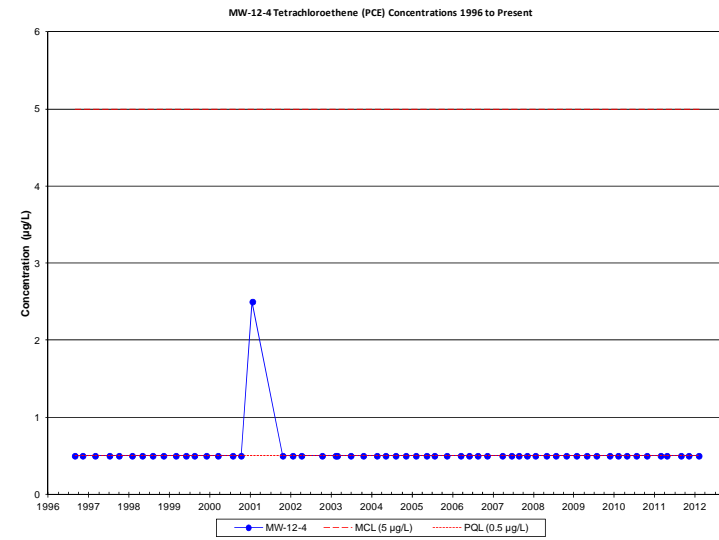
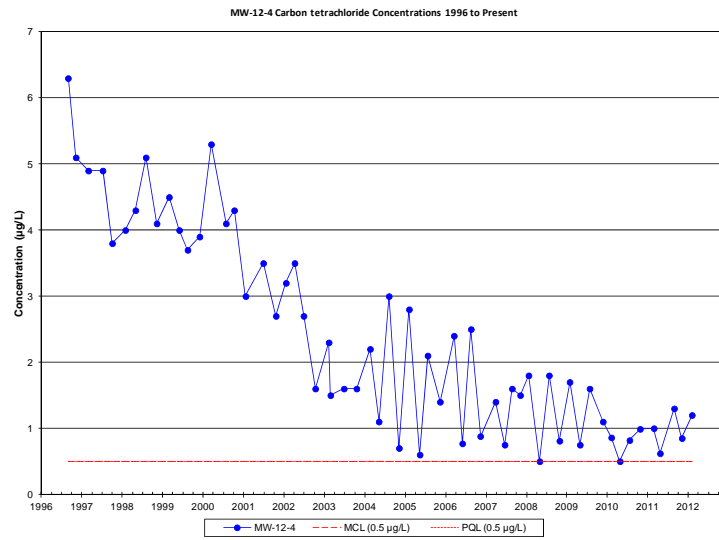
VOCs and Perchlorate Time Series Plots for MW-7



**VOCs and Perchlorate Time Series Plots for MW-8**

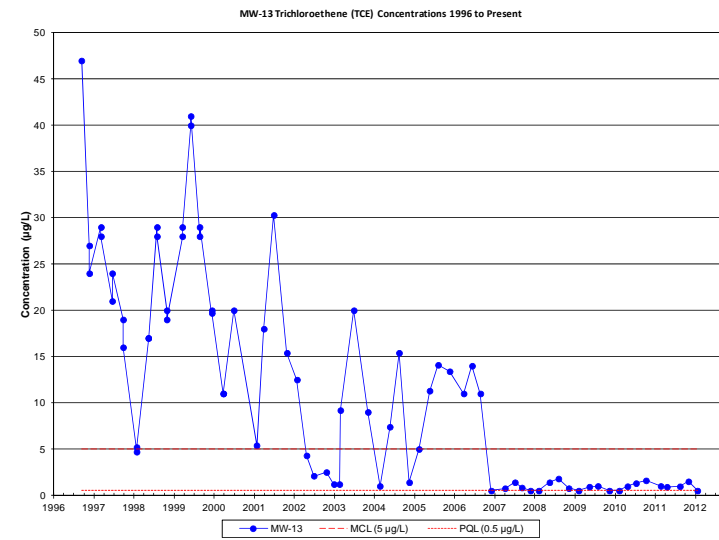
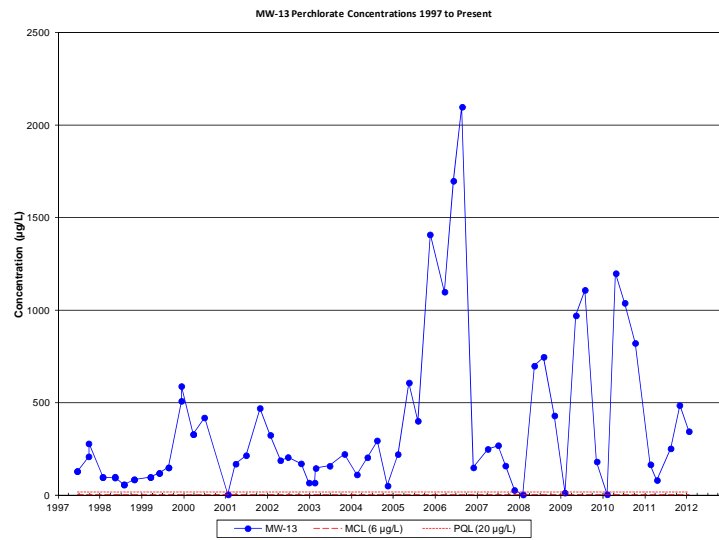
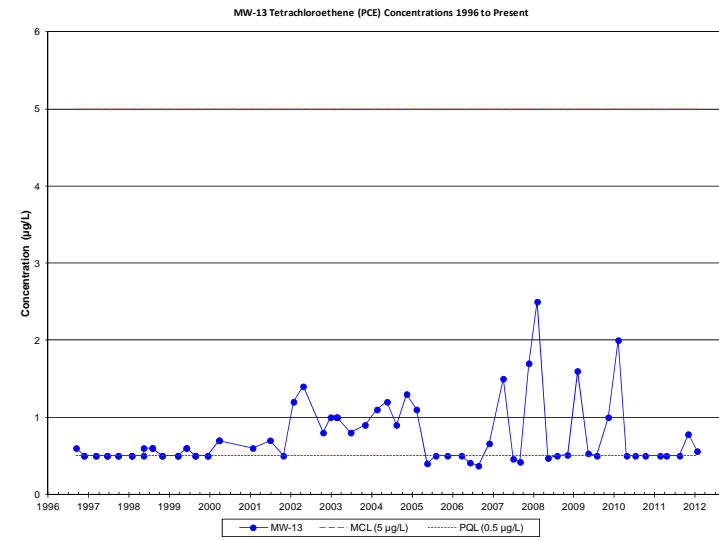
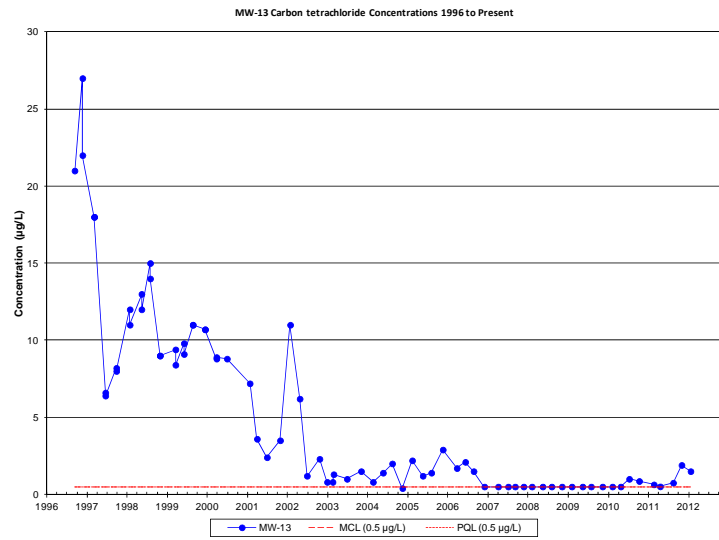


**VOCs and Perchlorate Time Series Plots for MW-10**

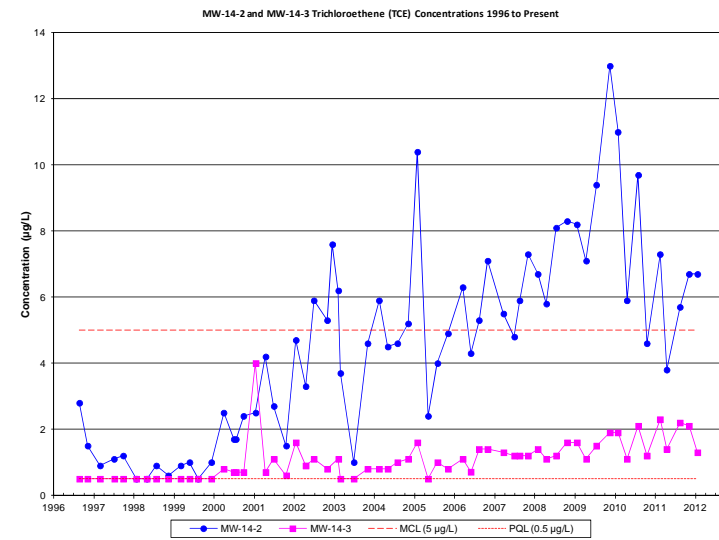
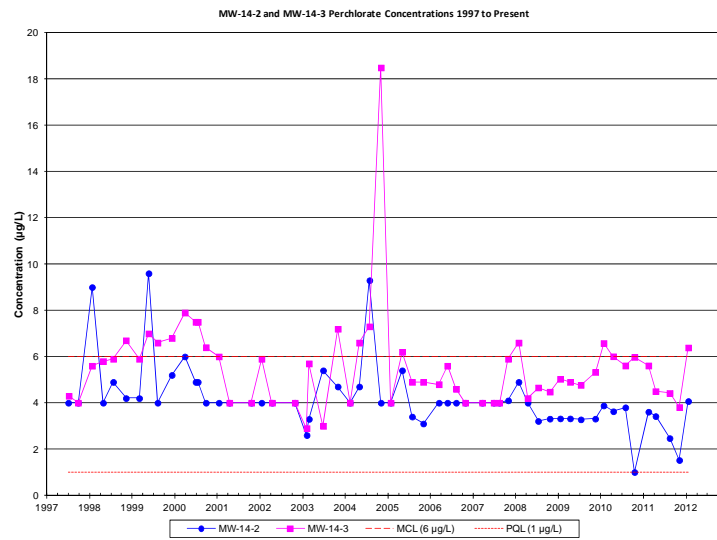
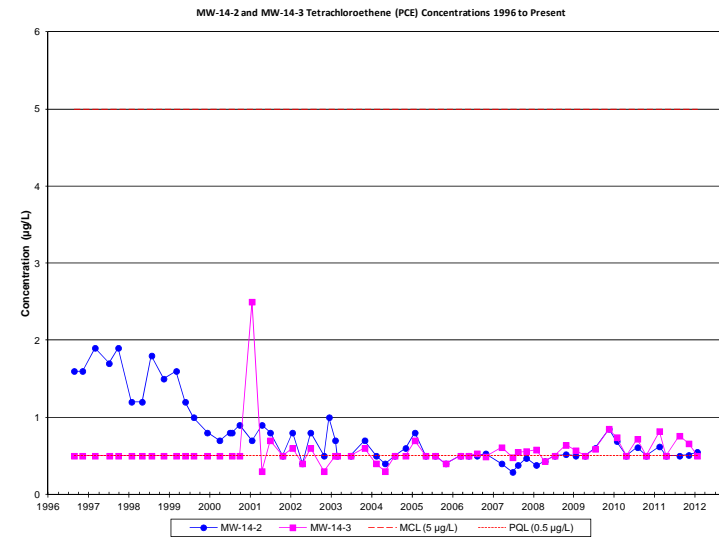
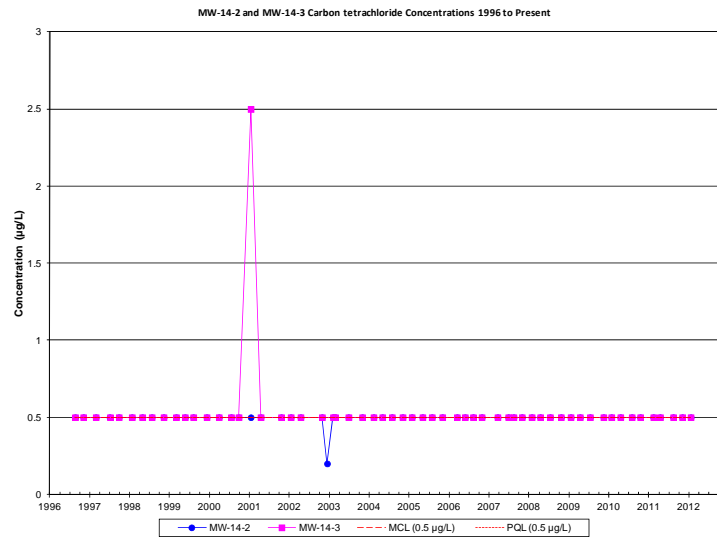


VOCs and Perchlorate Time Series Plots for MW-12-4

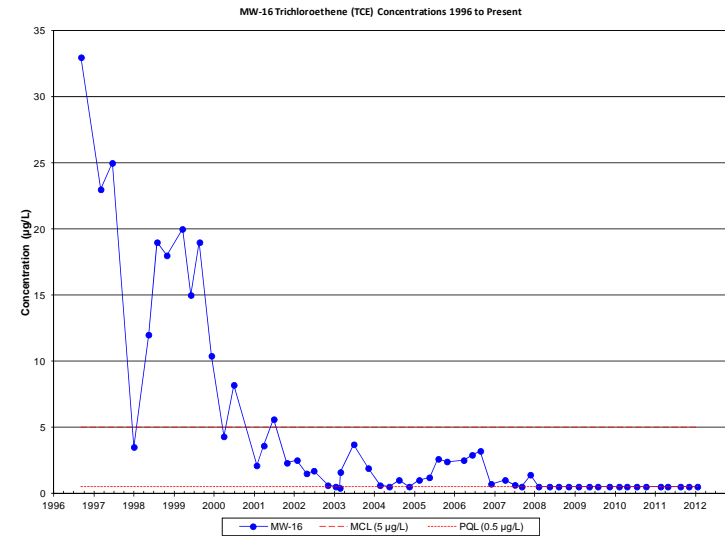
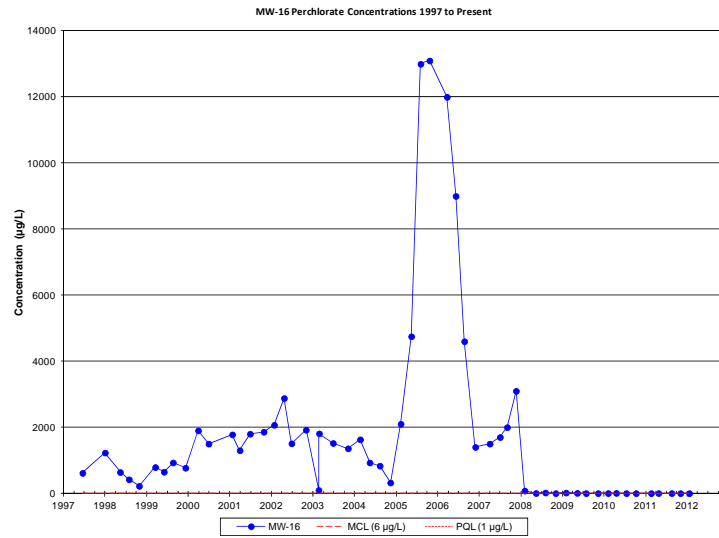
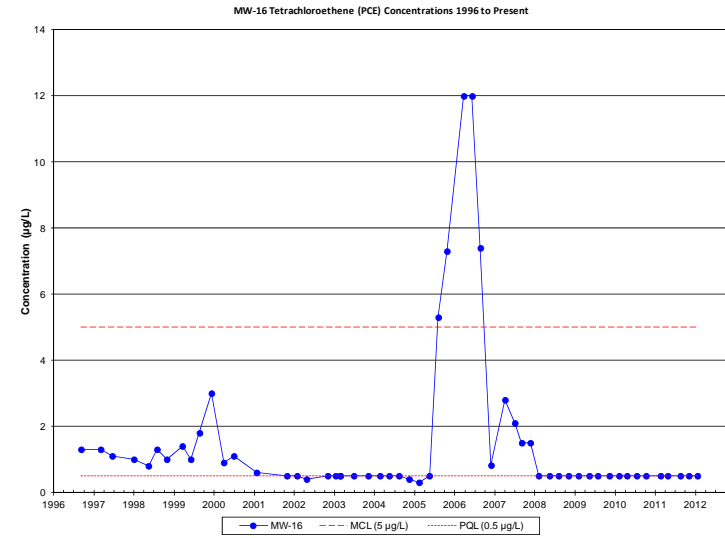
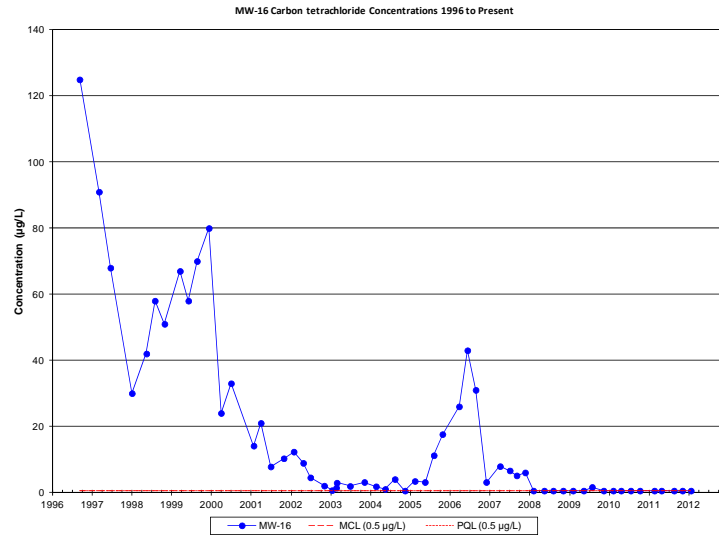




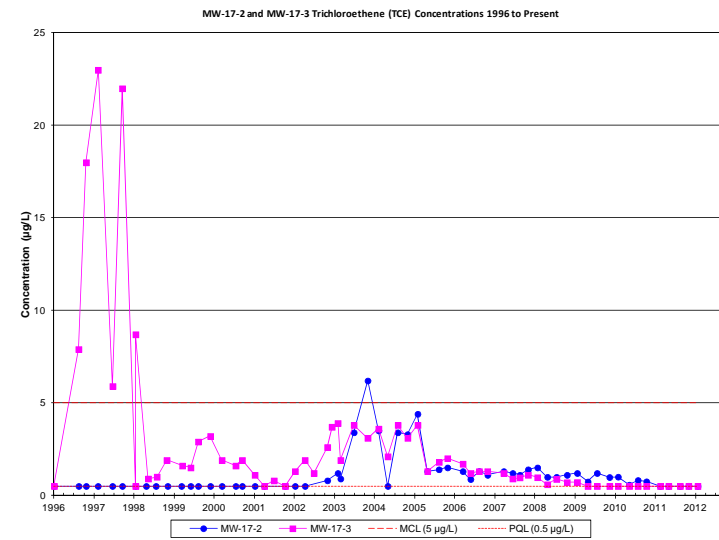
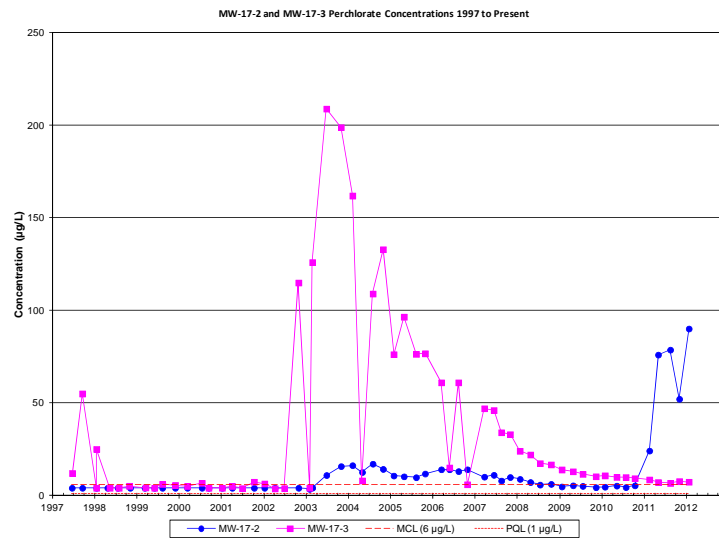
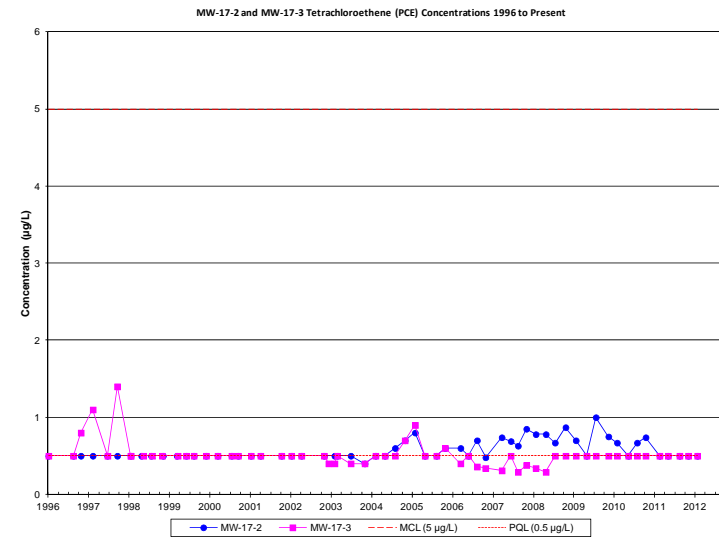
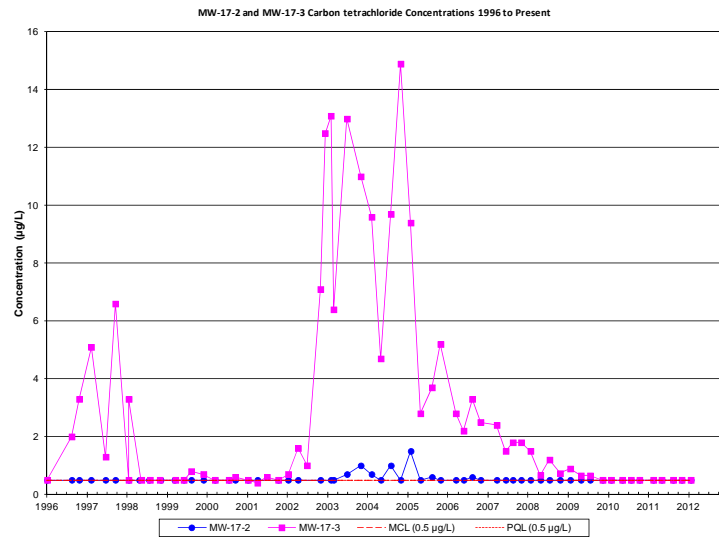
**VOCs and Perchlorate Time Series Plots for MW-13**



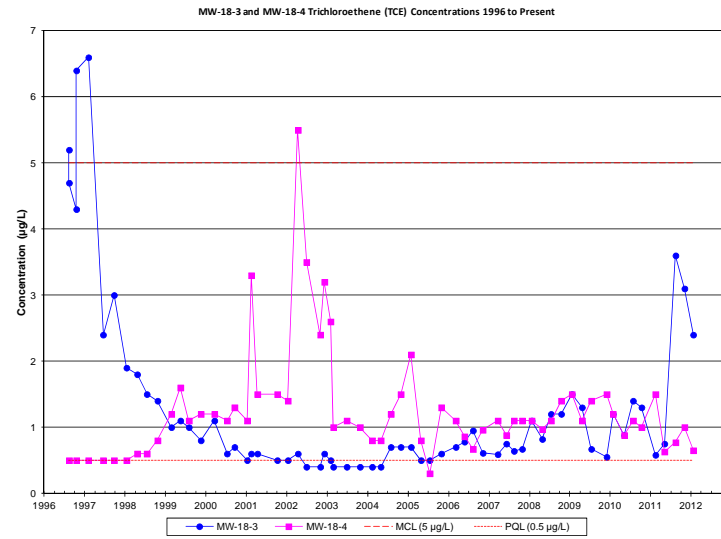
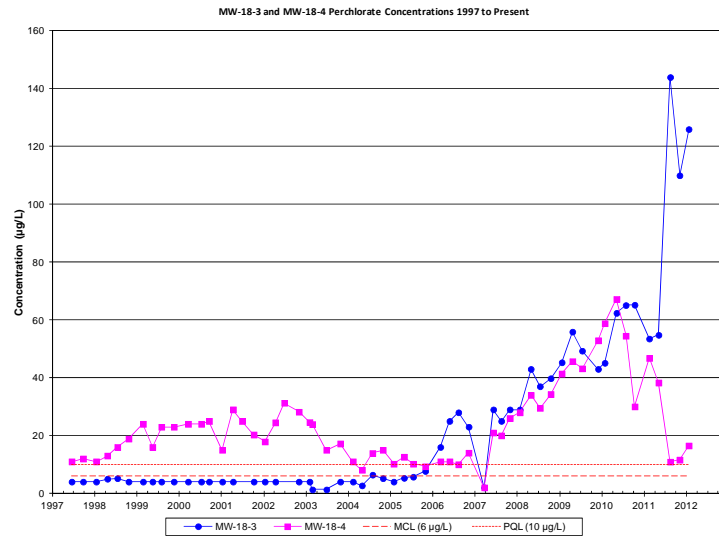
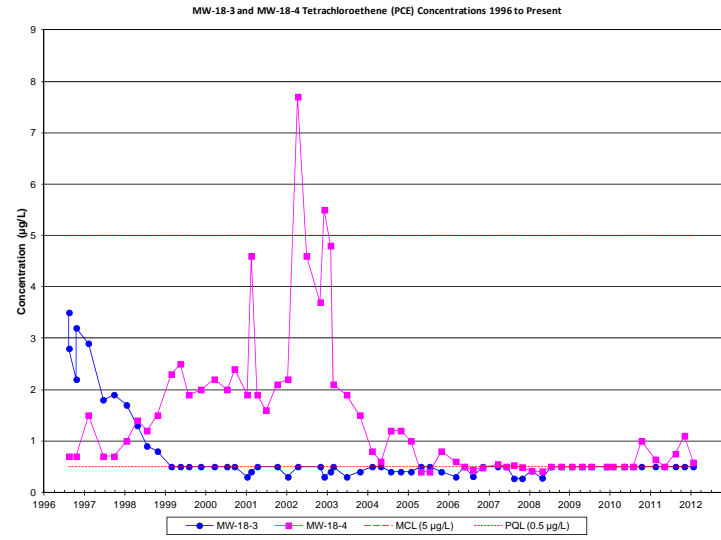
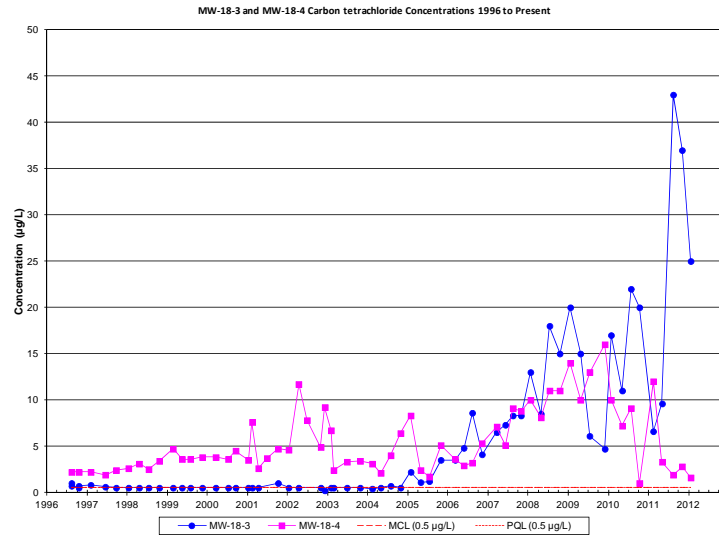
VOCs and Perchlorate Time Series Plots for MW-14-2 and MW-14-3



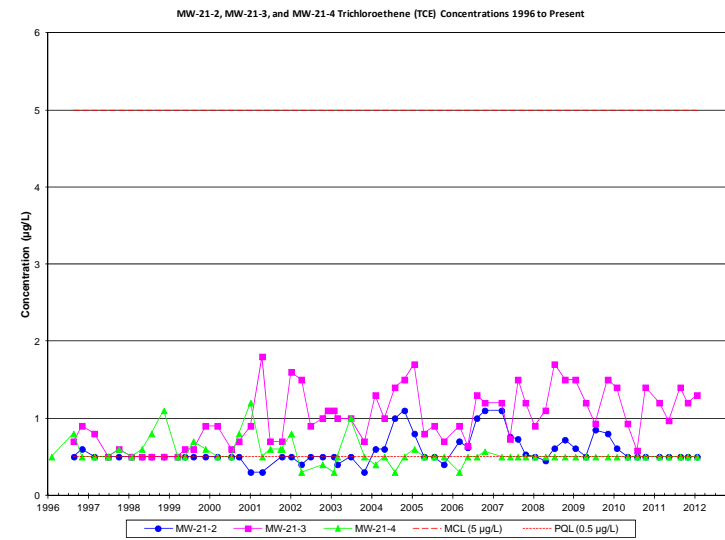
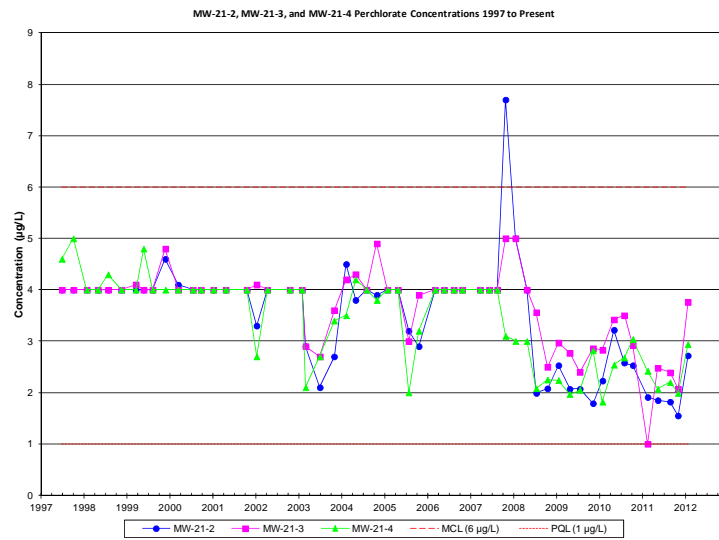
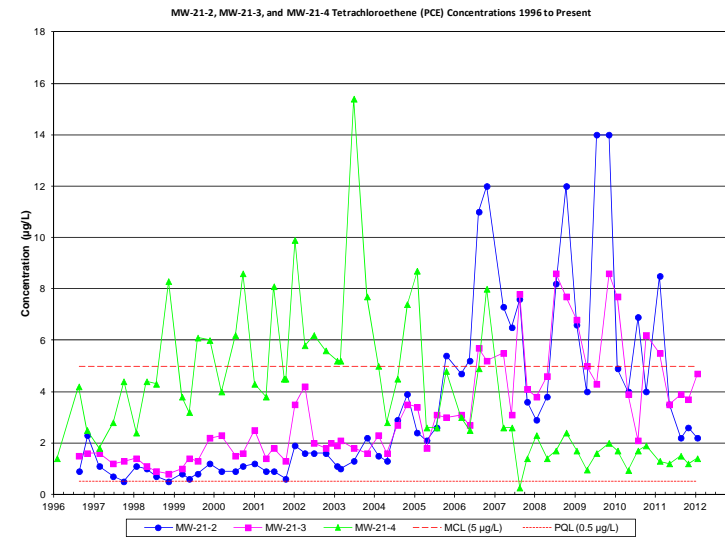
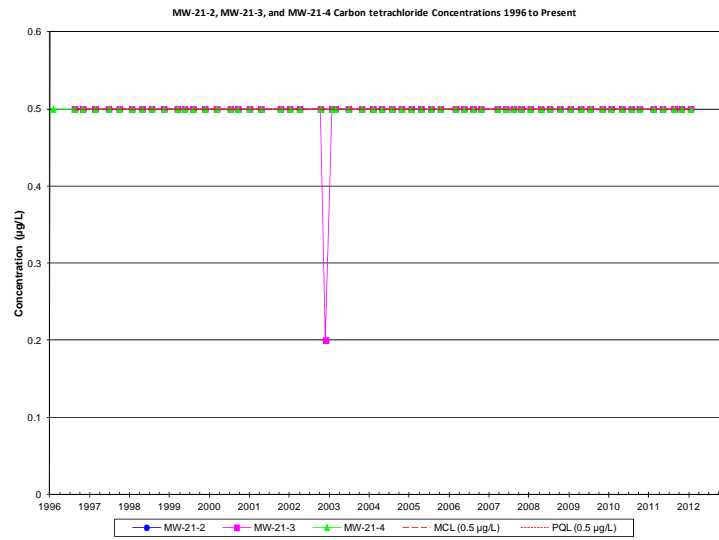
**VOCs and Perchlorate Time Series Plots for MW-16**



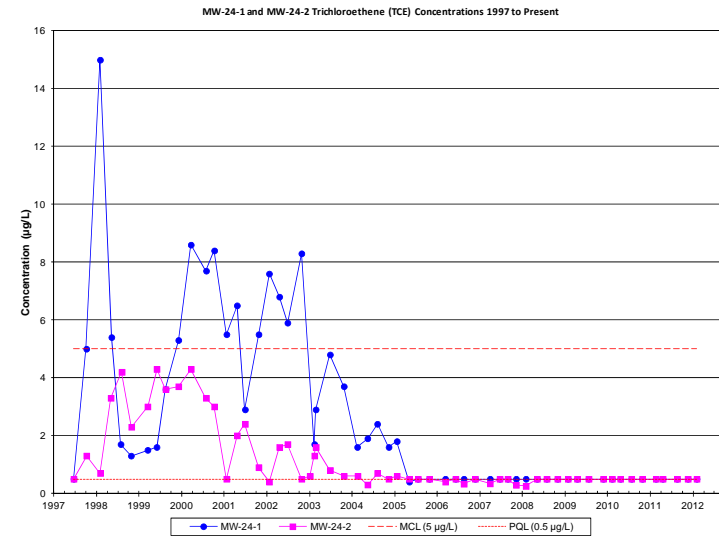
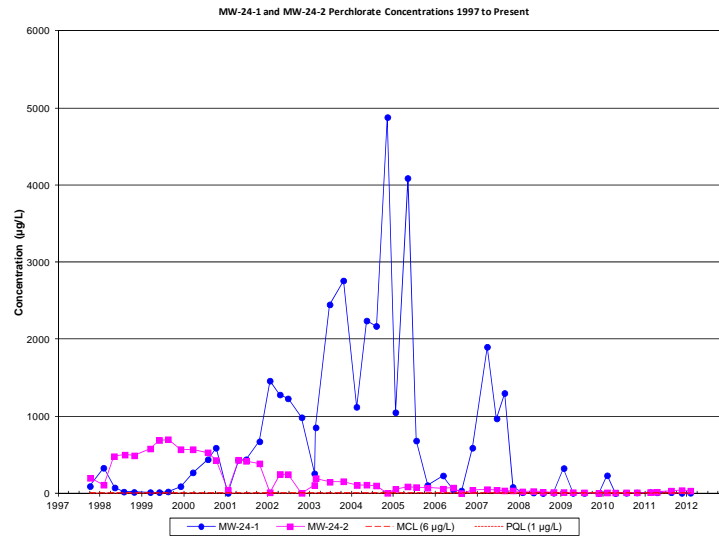
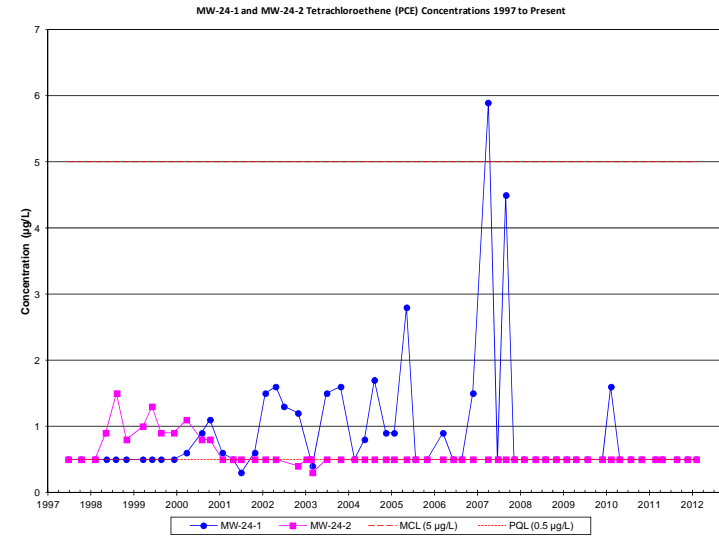
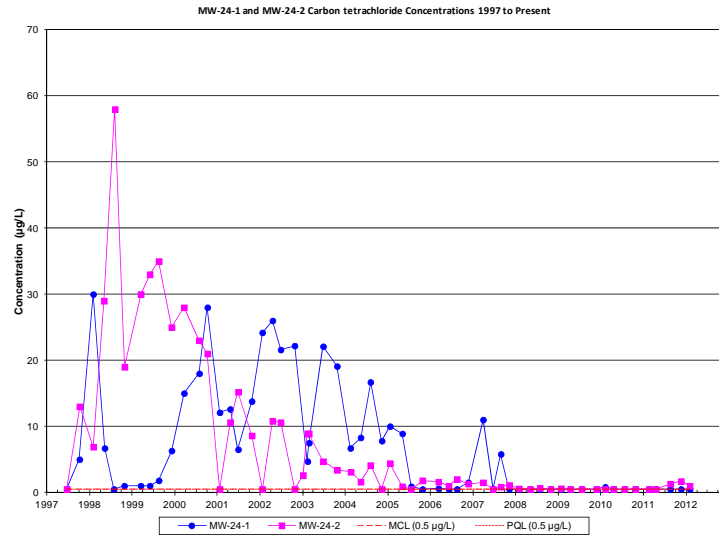
VOCs and Perchlorate Time Series Plots for MW-17-2 and MW-17-3



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



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



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