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 2nd Quarter 2013 sampling event was conducted by Blaine Tech Services, Inc.

WELL MONITORING DATA SHEET

Project #: 130419-AW1	Site: JPL, Pasadena
Sampler: AW	Gauging Date: 5-3-13
Well I.D.: MW-1	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 120	Depth to Water (DTW): 28.20
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type YSI- Pro Plus
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 46.56	

Purge Method: Disposable Bailer; Positive Air Displacement; Electric Submersible; Waterra; 2" Rediflo pump; Extraction Pump; Other Dedicated RFZ

Sampling Method: Disposable Bailer; Extraction Port; (Dedicated Tubing); Other:

Flow Rate= 3 gpm

Start Purge Date= 5-3-13 0802 Pump @ 90'

60.0 (Gals.) X 3 = 180.0 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	DTW
0812	16.4	7.15	492	1	0.07	128.9	30	29.47
0822	16.4	7.33	486	1	0.05	113.7	60	29.50
0832	16.5	7.16	492	1	0.06	48.3	90	29.55
0842	16.5	7.17	496	1	0.06	-20.2	120	29.55
0852	16.4	7.16	497	1	0.08	-39.6	150	29.56
0902	16.5	7.17	496	1	0.08	-47.9	180	29.56

Did well dewater? Yes (No) Gallons actually evacuated: 180

Sampling Date: 5-3-13 Sampling Time: 0905 Depth to Water: 29.56

Sample I.D.: MW-1 Laboratory: BC Labs

Analyzed for: See COC. Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable): DUP-8-2013 @ 0910

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 130419-AW1	Site: JPL, Pasadena
Sampler: AW	Gauging Date: 5-3-13
Well I.D.: MW-5	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 140	Depth to Water (DTW): 86.36
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type YSI-Pro Plus
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 97.08	

Purge Method: Disposable Bailer; Positive Air Displacement; Electric Submersible; Waterra; 2" Rediflo pump; Extraction Pump; Other Dedicated RFZ

Sampling Method: Disposable Bailer; Extraction Port; (Dedicated Tubing); Other:

Flow Rate= 3 gpm

Start Purge Date= 5-3-13 1237 Pump @ 125'

34.9 (Gals.) X 3 = 104.7 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	DTW
1243	15.6	6.59	489	1	1.73	219.0	18	86.91
1249	15.5	6.55	485	1	1.31	213.4	36	86.93
1255	15.5	6.56	485	1	1.30	208.9	54	86.97
1301	15.5	6.58	485	1	1.29	207.3	72	86.97
1307	15.5	6.57	485	1	1.28	209.8	90	86.97
1313	15.5	6.57	484	1	1.24	205.6	108	86.97

Did well dewater? Yes (No) Gallons actually evacuated: 108

Sampling Date: 5-3-13 Sampling Time: 1315 Depth to Water: 86.97

Sample I.D.: MW-5 Laboratory: BC Labs

Analyzed for: See COC. Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 130419-AW1	Site: JPL, Pasadena
Sampler: AW	Gauging Date: 5-3-13
Well I.D.: MW-6	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 245	Depth to Water (DTW): 191.18
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type YSI-Pro Plus
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 201.94	

Purge Method: Disposable Bailer; Positive Air Displacement; Electric Submersible; Waterra; 2" Rediflo pump; Extraction Pump; Other Dedicated RFZ

Sampling Method: Disposable Bailer; Extraction Port; Dedicated Tubing; Other:

Flow Rate= 3gpm

Start Purge Date= 5-3-13 0630 Pump @ 230'

35.0 (Gals.) X 3 = 105.0 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	DTW
0636	20.6	6.35	1187	1	8.71	208.1	18	191.85
0642	20.6	6.40	1179	1	8.97	184.6	36	191.90
0648	20.7	6.41	1180	1	9.04	171.5	54	191.95
0654	20.7	6.41	1189	1	8.85	168.6	72	191.97
0700	20.7	6.42	1190	1	8.87	167.5	90	191.95
0706	20.7	6.42	1189	1	8.84	166.0	108	191.96

Did well dewater? Yes (No) Gallons actually evacuated: 108

Sampling Date: 5-3-13 Sampling Time: 0710 Depth to Water: 191.96

Sample I.D.: MW-6 Laboratory: BC Labs

Analyzed for: See C.O.C. Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable): DUP-7-2013 @ 0715

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 130419-AW1	Site: JPL, Pasadena
Sampler: AW	Gauging Date: 5-2-13
Well I.D.: MW-7	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 275	Depth to Water (DTW): 224.34
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type YSI. Pro Plus
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 234.47	

Purge Method:
Disposable Bailer
Positive Air Displacement
Electric Submersible
Waterra
2" Rediflo pump
Extraction Pump
Other Dedicated RFZ

Sampling Method:
Disposable Bailer
Extraction Port
Dedicated Tubing
Other:

Flow Rate= 2 gpm
Start Purge Date= 5-2-13 1307 Pump @ 265'

33.0 (Gals.) X 3 = 99.0 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	DTW
1315	24.4	6.85	670	1	5.54	79.2	17	224.45
1323	24.6	6.83	673	1	5.36	66.5	33	224.46
1332	24.7	6.84	674	1	5.24	59.5	50	224.49
1340	24.7	6.85	674	1	5.21	57.6	66	224.51
1348	24.8	6.85	674	1	5.14	60.3	83	224.48
1356	24.7	6.84	674	1	5.16	57.4	99	224.49

Did well dewater? Yes (No) Gallons actually evacuated: 99

Sampling Date: 5-2-13 Sampling Time: 1400 Depth to Water: 224.49

Sample I.D.: MW-7 Laboratory: BC Labs

Analyzed for: See COC. Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable): DUP-6-2013 1405

FB I.D. (if applicable): @ Time Analyzed for: See COC.

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 130419-AW1	Site: JPL, Pasadena
Sampler: AWolff	Gauging Date: 5-2-13
Well I.D.: MW-8	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 205	Depth to Water (DTW): 150.84
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type YSI-Pro Plus
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	161.67

Purge Method: Disposable Bailer; Positive Air Displacement; Electric Submersible; Waterra; 2" Rediflo pump; Extraction Pump; Other Dedicated RFZ

Sampling Method: Disposable Bailer; Extraction Port; (Dedicated Tubing); Other:

Flow Rate= 3 gpm

Start Purge Date= 5-2-13 1140 Pump @ 195'

35.3 (Gals.) X 3 = 105.9 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	DTW
1146	16.3	6.89	431	1	5.28	65.3	18	151.15
1152	16.3	6.85	431	1	5.11	54.8	36	151.08
1158	16.3	6.83	430	1	5.12	54.6	54	151.07
1204	16.3	6.84	430	1	5.11	52.4	72	151.10
1210	16.3	6.86	431	1	5.10	50.5	90	151.09
1216	16.3	6.85	431	1	5.04	51.5	108	151.10

Did well dewater? Yes (No) Gallons actually evacuated: 108

Sampling Date: 5-2-13 Sampling Time: 1220 Depth to Water: 151.10

Sample I.D.: MW-8 Laboratory: BC Labs

Analyzed for: See COC Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 130419-AW1	Site: JPL, Pasadena
Sampler: AWolff	Gauging Date: 5-2-13
Well I.D.: MW-9	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 68	Depth to Water (DTW): 19.64
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type YSI-ProPlus
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 29.31	

Purge Method: Disposable Bailer; Positive Air Displacement; Electric Submersible; Waterra; 2" Rediflo pump; Extraction Pump; Other Dedicated RF2

Sampling Method: Disposable Bailer; Extraction Port; (Dedicated Tubing); Other:

Flow Rate= 3gpm

Start Purge Date= 5-2-13 1041 Pump @ 60'

31.5 (Gals.) X 3 = 94.5 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	DTW
1046	17.6	6.71	432	1	0.27	83.5	17	22.18
1052	17.6	6.71	423	1	0.67	66.3	33	22.29
1057	17.7	6.72	428	1	0.34	51.2	49	22.30
1103	17.6	6.73	431	1	0.20	30.1	66	22.31
1108	17.7	6.76	431	1	0.20	26.0	82	22.32
1114	17.6	6.73	430	1	0.21	20.6	99	22.32

Did well dewater? Yes (No) Gallons actually evacuated: 99

Sampling Date: 5-2-13 Sampling Time: 1115 Depth to Water: 22.32

Sample I.D.: MW-9 Laboratory: BC Labs

Analyzed for: See COC, Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 130419-AW1	Site: JPL, Pasadena
Sampler: AW	Gauging Date: 5-3-13
Well I.D.: MW-10	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 155	Depth to Water (DTW): 101.85
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type YSI-Pro Plus
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 112.48	

Purge Method:
- Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- 2" Rediflo pump
- Extraction Pump
- Other Dedicated RF2

Sampling Method:
- Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other:

Flow Rate= 3 gpm
Start Purge Date= 5-3-13 1140 Pump @ 140

34.6 (Gals.) X 3 = 103.8 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	DTW
1146	20.0	6.55	940	1	6.91	196.4	18	101.89
1152	20.0	6.53	954	1	7.11	202.6	36	101.90
1158	20.0	6.54	966	1	7.24	205.7	54	101.90
1204	20.0	6.55	964	1	7.23	207.7	72	101.90
1210	20.0	6.55	973	1	7.30	209.9	90	101.90
1216	20.1	6.55	977	1	7.31	210.5	108	101.90

Did well dewater? Yes (No) Gallons actually evacuated: 108

Sampling Date: 5-3-13 Sampling Time: 1220 Depth to Water: 101.90

Sample I.D.: MW-10 Laboratory: BC Labs

Analyzed for: See COC. Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 130419-AW1	Site: JPL, Pasadena
Sampler: AWolff	Gauging Date: ~~9-7-12~~ 5-2-13
Well I.D.: MW-13	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 235	Depth to Water (DTW): 194.80
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type YSI-Pro Plus
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 202.84	

Purge Method:
- Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- 2" Rediflo pump
- Extraction Pump
- Other Dedicated RFZ

Sampling Method:
- Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other:

Flow Rate= 350 ml/m

Start Purge Date= 5-2-13 0803 Pump@227

26.2 (Gals.) X 3 = 78.6 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	DTW
0807	22.4	6.76	598	5	6.98	117.5	14	194.92
0812	22.4	6.76	608	1	6.76	78.0	27	194.90
0816	22.5	6.79	615	2	6.86	72.2	41	194.90
0821	22.5	6.78	620	1	6.78	73.6	54	194.90
0825	22.5	6.76	622	1	6.76	76.0	68	194.90
0830	22.5	6.76	624	1	6.84	78.5	81	194.90

Did well dewater? Yes (No) Gallons actually evacuated: 81

Sampling Date: 5-2-13 Sampling Time: 0835 Depth to Water: 194.90

Sample I.D.: MW-13 Laboratory: BC Labs

Analyzed for: See C.O.C. Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 130419-AW1	Site: JPL, Pasadena
Sampler: AWolff	Gauging Date: 5-2-13
Well I.D.: MW-15	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 74	Depth to Water (DTW): 32.71
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type YSI-Pro Plus
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 40.96	

Purge Method: Disposable Bailer; Positive Air Displacement; Electric Submersible; Waterra; 2" Rediflo pump; Extraction Pump; Other Dedicated RFZ

Sampling Method: Disposable Bailer; Extraction Port; (Dedicated Tubing); Other:

Flow Rate= 4 gpm

Start Purge Date= 5-2-13 0916 Pump @ 54'

26.9 (Gals.) X 3 = 80.7 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	DTW
0919	16.8	6.87	453	1	0.17	63.0	14	33.70
0923	16.8	6.91	454	1	0.14	57.1	28	33.72
0926	16.8	6.92	454	1	0.14	54.7	42	33.77
0930	16.8	6.94	455	1	0.12	51.3	52	33.75
0933	16.8	6.94	454	1	0.12	46.2	70	33.74
0937	16.8	6.95	454	1	0.11	43.9	84	33.80

Did well dewater? Yes (No) Gallons actually evacuated: 84

Sampling Date: 5-2-13 Sampling Time: 0940 Depth to Water: 33.80

Sample I.D.: MW-15 Laboratory: BC Labs

Analyzed for: Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 130419-AW1	Site: JPL, Pasadena
Sampler: AW	Gauging Date: 5-3-13
Well I.D.: MW-16	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 285	Depth to Water (DTW): 246.62
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	Flow Cell Type YSI-ProPlus
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 254.29	

Purge Method:
- Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- 2" Rediflo pump
- Extraction Pump
- Other Dedicated RFZ

Sampling Method:
- Disposable Bailer
- Extraction Port
- Dedicated Tubing (circled)
- Other:

Flow Rate= 1.5 gpm

Start Purge Date= 5-3-13 1007 Pump @ 265'

25.0 (Gals.) X 3 = 75.0 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Gals. Removed	DTW
1015	25.2	6.83	638	1	3.91	718.8	13	247.19
1023	25.1	6.83	638	1	3.90	722.4	25	247.27
1032	25.2	6.85	639	1	3.88	717.8	38	247.32
1040	25.3	6.88	638	1	3.81	717.6	50	247.27
1049	25.1	6.85	639	1	3.75	721.0	63	247.27
1057	25.0	6.87	639	1	3.75	719.6	75	247.27

Did well dewater? Yes (No) Gallons actually evacuated: 75

Sampling Date: 5-3-13 Sampling Time: 1100 Depth to Water: 247.27

Sample I.D.: MW-16 Laboratory: BC Labs

Analyzed for: See COC Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

FB I.D. (if applicable): @ Time Analyzed for:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-3
SAMPLING DATE(S): 4-29-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 160.02
ATM. PRESSURE (PSI): (Start) 14.04 (Finish) 14.02
21.06°C 18.53°C

PROBE TYPE: Westbay
SERIAL NO.: EMS2508
PROJECT: JPL Pasadena
OPERATOR(S): tb/LF
WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters						Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	231.12	✓	239.29	✓	239.29	✓	231.12	20.5	407	8.27	33	7.25	128	1000	MW-3-5
4	1	✓	✓	✓	✓	✓	189.37	✓	198.20	✓	198.20	✓	189.37	22.7	432	8.17	129	7.33	120	1030	MW-3-4
3	1	✓	✓	✓	✓	✓	99.14	✓	106.58	✓	106.58	✓	99.14	22.8	446	7.82	3	10.15	134	1100	MW-3-3
2	1	✓	✓	✓	✓	✓	58.62	✓	66.60	✓	66.60	✓	58.62	22.8	393	8.15	3	7.21	130	1130	MW-3-2
	2	✓	✓	✓	✓	✓	58.63	✓	66.62	✓	66.62	✓	58.63								
	3	✓	✓	✓	✓	✓	58.61	✓	66.61	✓	66.61	✓	58.61								
	4	✓	✓	✓	✓	✓	58.60	✓	66.60	✓	66.60	✓	58.60								
	5	✓	✓	✓	✓	✓	57.09	✓	66.60	✓	66.60	✓	57.09								
1	1	✓	✓	✓	✓	✓	23.71	✓	35.86	✓	35.86	✓	23.71	22.9	450	8.20	42	6.50	132	1345	MW-3-1

Comments: Level IV @ Port 4

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-4
SAMPLING DATE(S) 4-25-13 4-26-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 201.90'
ATM. PRESSURE (PSI): (Start) 14.13 (Finish) 14.16
19.96 19.21

PROBE TYPE Westbay
SERIAL NO. EMS2508
PROJECT: JPL, Pasadena
OPERATOR(S) K. Wolff
WEATHER Overcast

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters						Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	153.76	✓	190.58	✓	190.58	✓	153.76	20.1	427	8.38	3	6.67	121	1045	MW-4-5
4	1	✓	✓	✓	✓	✓	101.02	✓	138.19	✓	138.19	✓	101.02	19.6	423	8.22	6	7.65	114	1120	MW-4-4
3	1	✓	✓	✓	✓	✓	70.49	✓	107.88	✓	107.88	✓	70.49	19.6	441	8.16	4	8.16	127	1150	MW-4-3
2	1	✓	✓	✓	✓	✓	34.62	✓	~~72.43~~ 72.43	✓	72.43	✓	34.62	20.2	790	7.96	15	7.60	190	1220	MW-4-2
	2	✓	✓	✓	✓	✓	34.62	✓	72.42	✓	72.42	✓	34.62								
	3	✓	✓	✓	✓	✓	34.62	✓	72.42	✓	72.42	✓	34.62								
	4	✓	✓	✓	✓	✓	34.62	✓	72.42	✓	72.42	✓	34.62								
	5	✓	✓	✓	✓	✓	34.62	✓	72.42	✓	72.42	✓	34.62								
1	1	✓	✓	✓	✓	✓	14.20	✓	37.51	✓	37.51	✓	14.20	20.7	586	8.16	3	7.21	140	1420	MW-4-1
	2	✓	✓	✓	✓	✓	14.20	✓	37.58	✓	37.58	✓	14.20								
	4-26-13																				
1	1	✓	✓	✓	✓	✓	14.20	✓	37.54	✓	37.54	✓	14.20							1420	MW-4-1

Comments: Returned on 4-26 to recollect NDMA Bottle after it broke in transit

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-11
SAMPLING DATE(S) 5-1-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 156.68'
ATM. PRESSURE (PSI): (Start) 14.09 (Finish) 14.11
19.09°C 16.74°C

PROBE TYPE Westbay
SERIAL NO. EMS2508
PROJECT: JPL, Pasadena
OPERATOR(S) MWolff
WEATHER Overcast

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters						Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	226.62	✓	212.48	✓	212.48	✓	226.62	16.6	312	8.69	16	6.48	150	0650	MW-11-5
4	1	✓	✓	✓	✓	✓	177.41	✓	174.63	✓	174.63	✓	177.41	16.4	239	9.09	2	7.09	-95	0725	MW-11-4
3	1	✓	✓	✓	✓	✓	136.01	✓	131.98	✓	131.98	✓	136.01	16.4	381	8.50	13	6.15	72	0755	MW-11-3
2	1	✓	✓	✓	✓	✓	62.21	✓	60.82	✓	60.82	✓	62.21	16.3	453	8.46	4	5.95	70	0830	MW-11-2
1	1	✓	✓	✓	✓	✓	14.81	✓	28.19	✓	28.19	✓	14.81	15.9	501	8.08	-3	6.36	110	0900	MW-11-1
	2	✓	✓	✓	✓	✓	14.81	✓	28.17	✓	28.17	✓	14.81								

Comments: TB-8-5/1/13 0600 EB-8-5/1/13 0620 MS/MSD @ Port 4 DUP-5-2013 @ Port 1 0905

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-12
SAMPLING DATE(S): 4-30-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 109.53
ATM. PRESSURE (PSI): (Start) 14.06 (Finish) 14.01
18.67°C 17.05°C

PROBE TYPE: Westbay
SERIAL NO.: EMS25C8
PROJECT: JPL, Pasadena
OPERATOR(S): MW, JFF
WEATHER: Overcast

Port Number	Run Number	Probe to Top Collar: Arm out / Land Probe	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port): Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Sample Collection Checks (probe at sampling port in MP casing): Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Field Parameters: Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample: Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	211.16	✓	189.86	✓	189.86	✓	211.16	16.9	422	8.28	3	7.59	65	0745	MW-12-5
4	1	✓	✓	✓	✓	✓	162.89	✓	147.66	✓	147.66	✓	162.89	16.9	471	8.33	4	9.19	57	0820	MW-12-4
3	1	✓	✓	✓	✓	✓	113.09	✓	99.28	✓	99.28	✓	113.09	16.5	414	8.31	2	8.08	-9	0900	MW-12-3
2	1	✓	✓	✓	✓	✓	78.02	✓	65.39	✓	65.39	✓	78.02	17.2	542	8.20	3	7.25	33	0935	MW-12-2
	2	✓	✓	✓	✓	✓	78.02	✓	65.38	✓	65.38	✓	78.02								
1	1	✓	✓	✓	✓	✓	33.01	✓	26.90	✓	26.90	✓	33.01	18.6	444	8.31	24	6.12	103	1050	MW-12-1

Comments: TB-7-4/30/13 0700 EB-7-4/30/13 0710 MS/MSD @ Port 4 DUP-4-2013 @ Port 2 0990

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-14
SAMPLING DATE(S): 4-23-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 149.96
ATM. PRESSURE (PSI): (Start) 14.09 (Finish) 14.02
25.52°C 20.65°C

PROBE TYPE: Westbay
SERIAL NO.: FMS250B
PROJECT: JPL, Pasadena
OPERATOR(S): Wolff
WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters						Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	188.22	✓	173.04	✓	173.64	✓	188.22	22.6	334	8.64	4	8.55	64	1110	MW-14-5
4	1	✓	✓	✓	✓	✓	151.66	✓	136.60	✓	136.60	✓	151.66	22.7	752	8.21	2	7.44	114	1140	MW-14-4
	2	✓	✓	✓	✓	✓	151.66	✓	136.64	✓	136.64	✓	151.66								
3	1	✓	✓	✓	✓	✓	119.91	✓	104.60	✓	104.60	✓	119.91	23.7	1180	7.91	6	7.30	123	1230	MW-14-3
2	1	✓	✓	✓	✓	✓	73.51	✓	58.91	✓	58.91	✓	73.51	24.1	1212	8.09	4	7.76	133	1305	MW-14-2
1	1	✓	✓	✓	✓	✓	43.04	✓	28.96	✓	28.96	✓	43.04	23.4	1198	7.14	18	6.59	152	1335	MW-14-1

Comments: DUP-2 - ~~1/2=1.5~~ 2Q13 1145 Port 4 MS/MSD @ Port 3

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-17
SAMPLING DATE(S): 4-26-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 204.94
ATM. PRESSURE (PSI): (Start) 14.14 (Finish) 14.17
17.05°C 19.96°C

PROBE TYPE: Westbay
SERIAL NO.: EMS2504
PROJECT: JPL, Pasadena
OPERATOR(S): MW, SA
WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters						Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	242.31	✓	226.83	✓	226.83	✓	242.31	16.7	364	8.30	9	7.86	151	0720	MW-17-5
4	1	✓	✓	✓	✓	✓	180.09	✓	162.41	✓	162.41	✓	180.09	16.5	451	8.28	2	8.75	154	0755	MW-17-4
	2	✓	✓	✓	✓	✓	180.09	✓	162.41	✓	162.41	✓	180.09								
3	1	✓	✓	✓	✓	✓	130.54	✓	115.40	✓	115.40	✓	130.54	18.7	542	8.39	2	8.20	145	0900	MW-17-3
	2	✓	✓	✓	✓	✓	130.55	✓	115.38	✓	115.38	✓	130.55								
	3	✓	✓	✓	✓	✓	130.54	✓	115.37	✓	115.37	✓	130.54								
	4	✓	✓	✓	✓	✓	130.54	✓	115.35	✓	115.35	✓	130.54								
	5	✓	✓	✓	✓	✓	129.32	✓	115.35	✓	115.35	✓	129.32								
2	1	✓	✓	✓	✓	✓	87.70	✓	75.92	✓	75.92	✓	87.70	19.3	454	8.52	2	6.50	142	1100	MW-17-2
1	1	✓	✓	✓	✓	✓	35.72	✓	27.41	✓	27.41	✓	35.72	20.1	491	8.29	3	7.04	131	1140	MW-17-1

Comments: TB: 0630 TB-5-4/26/13 EB: 0650 EB-5-4/26/13 Level IV @ Port 1

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-18
SAMPLING DATE(S): 4-24-13
LOCATION: JPL
WATER LEVEL INSIDE CASING:
ATM. PRESSURE (PSI): (Start) 19.06 (Finish) 19.01
18.00°C 16.92°C

PROBE TYPE: Westbay
SERIAL NO.: EMS2508
PROJECT: JPL, Pasadena
OPERATOR(S): AmJaiSR
WEATHER: Overcast

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters						Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	165.89	✓	192.90	✓	192.90	✓	165.89	16.8	314	8.69	45 NTU	7.52	60	0730	MW-18-5
4	1	✓	✓	✓	✓	✓	114.10	✓	141.10	✓	141.10	✓	114.10	16.9	385	8.36	3	8.68	24	0805	MW-18-4
	2	✓	✓	✓	✓	✓	114.10	✓	141.11	✓	141.11	✓	114.10					~~6.82~~			
	3	✓	✓	✓	✓	✓	114.10	✓	141.08	✓	141.08	✓	114.10								
	4	✓	✓	✓	✓	✓	114.10	✓	141.06	✓	141.06	✓	114.10								
	5	✓	✓	✓	✓	✓	112.56	✓	141.02	✓	141.02	✓	112.56								
3	1	✓	✓	✓	✓	✓	53.16	✓	84.11	✓	84.11	✓	53.16	18.0	505	8.35	2	6.92	78	1020	MW-18-3
2	1	✓	✓	✓	✓	✓	14.16	✓	45.16	✓	45.16	✓	14.16	17.2	416	8.34	6	6.85	111	1050	MW-18-2
1	1	✓	✓	✓	✓	✓	14.13	✓	19.42	✓	19.42	✓	14.13	16.8	368	8.23	3	7.25	119	1120	MW-18-1

Comments: TB-3-4/24/13 0630 EB-3-4/24/13 0700 Level IV @ Port 3

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-19
SAMPLING DATE(S): ~~4-22-13~~ 4-22-13 4-23-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 135.22
ATM. PRESSURE (PSI): (Start) 14.05 (Finish) 14.07
26.01°C 20.57°C

PROBE TYPE: Westbay
SERIAL NO.: EMS2508
PROJECT: JPL Pasadena
OPERATOR(S): AWolff
WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters						Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (3 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	172.78	✓	153.24	✓	153.24	✓	172.78	23.7	657	8.32	2	7.75	89	1350	MW-19-5
4	1	✓	✓	✓	✓	✓	149.68	✓	129.72	✓	129.72	✓	149.68	21.5	625	8.20	1	6.85	104	1420	MW-19-4
3	1	✓	✓	✓	✓	✓	127.07	✓	109.73	✓	109.73	✓	127.07	20.2	601	7.89	2	7.49	120	1450	MW-19-3
4-23-13																					
2	1	✓	✓	✓	✓	✓	93.26	✓	75.11	✓	75.11	✓	93.26	16.0	1055	7.93	1.3	8.93	165	0745	MW-19-2
	2	✓	✓	✓	✓	✓	93.27	✓	75.12	✓	75.12	✓	93.27								
	3	✓	✓	✓	✓	✓	93.27	✓	75.12	✓	75.12	✓	93.27								
	4	✓	✓	✓	✓	✓	93.27	✓	75.12	✓	75.12	✓	93.27								
	5	✓	✓	✓	✓	✓	92.82	✓	75.11	✓	75.11	✓	92.82								
1	1	✓	✓	✓	✓	✓	61.82	✓	44.72	✓	44.72	✓	61.82	19.3	429	8.12	2.5	6.09	98	0945	MW-19-1

Comments: 4-23-13 TB-2-4/23/13 0630 SB-2-4/23/13 0700 EB-2-4/23/13 0710

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-20
SAMPLING DATE(S): 4-22-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 92.01
ATM. PRESSURE (PSI): (Start) 14.10 (Finish) 13.91
24.33°C 21.73°C

PROBE TYPE: Westbay
SERIAL NO.: EMS 2508
PROJECT: JPL, Pasadena
OPERATOR(S): Ariel K
WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters						Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	323.04	✓	316.82	✓	316.82	✓	323.04	19.6	281	8.89	2	7.55	-121	1000	MW-20-5
4	1	✓	✓	✓	✓	✓	236.17	✓	224.07	✓	224.57	✓	236.17	18.7	290	9.25	2	7.96	-140	1035	MW-20-4
3	1	✓	✓	✓	✓	✓	176.36	✓	162.57	✓	162.57	✓	176.36	19.1	325	9.24	2	6.54	-110	1110	MW-20-3
	2	✓	✓	✓	✓	✓	176.36	✓	162.42	✓	162.42	✓	176.36								
2	1	✓	✓	✓	✓	✓	102.61	✓	93.55	✓	93.55	✓	102.61	20.1	472	8.41	2	7.05	27	1200	MW-20-2
1	1	✓	✓	✓	✓	✓	32.39	✓	23.40	✓	23.40	✓	32.39	19.4	610	7.87	2	6.96	78	1230	MW-20-1

Comments: TB= TB-1-4/22/13 0800 SB= SB-1-4/22/13 0900 EB= EB-1-4/22/13 0910 Level IV @ Port 3

DUP-1-4/22/13 @ Port 3 1115 MS/MSD @ Port 1

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-21
SAMPLING DATE(S): 5-1-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 117.50'
ATM. PRESSURE (PSI): (Start) 14.14 (Finish) 14.14
17.85°C 24.85°C

PROBE TYPE: Westbay
SERIAL NO.: EMS2508
PROJECT: JPL, Pasadena
OPERATOR(S): M. Wolff
WEATHER: Overcast

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters						Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	129.33	✓	146.28	✓	146.28	✓	129.33	19.6	846	8.25	1	7.84	159	1105	MW-21-5
4	1	✓	✓	✓	✓	✓	102.29	✓	119.34	✓	119.34	✓	102.29	20.8	774	8.12	2	7.21	154	1140	MW-21-4
3	1	✓	✓	✓	✓	✓	72.10	✓	89.96	✓	89.96	✓	72.10	21.4	1175	8.20	1	6.35	167	1210	MW-21-3
2	1	✓	✓	✓	✓	✓	38.12	✓	55.26	✓	55.26	✓	38.12	22.3	1317	8.20	1	6.45	147	1290	MW-21-2
1	1	✓	✓	✓	✓	✓	14.13	✓	23.99	✓	23.99	✓	14.13	23.1	1200	8.01	1	4.52	147	1310	MW-21-1

Comments: MS/MSD @ Port 2

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-22
SAMPLING DATE(S): 4-25-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 159.77
ATM. PRESSURE (PSI): (Start) 14.08 (Finish) 14.14
17.79°C 19.23°C

PROBE TYPE: Westbay
SERIAL NO.: EMS 2508
PROJECT: JPL, Pasadena
OPERATOR(S): MW, FF
WEATHER: Overcast

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters						Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	202.10	✓	183.62	✓	183.62	✓	202.10	16.6	335	9.09	2	8.64	-117	0710	MW-22-5
4	1	✓	✓	✓	✓	✓	149.67	✓	133.41	✓	133.41	✓	149.67	17.1	387	8.25	2	8.06	-2	0745	MW-22-4
3	1	✓	✓	✓	✓	✓	115.83	✓	102.62	✓	102.62	✓	115.83	16.8	609	8.30	1	8.07	73	0810	MW-22-3
	2	✓	✓	✓	✓	✓	115.83	✓	102.61	✓	102.61	✓	115.83								
2	1	✓	✓	✓	✓	✓	89.74	✓	76.41	✓	76.41	✓	89.74	17.5	711	8.32	1	8.64	121	0900	MW-22-2
1	1	✓	✓	✓	✓	✓	53.07	✓	39.76	✓	39.76	✓	53.07	19.0	1187	8.09	1	7.27	131	0935	MW-22-1

Comments: TB-4-4/25/13 0600 EB-4-4/25/13 0630 Level IV @ Ports 5+1 DUP-3-2013 @ Port 3 0815

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-23
SAMPLING DATE(S): 4-29-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 166.51
ATM. PRESSURE (PSI): (Start) 14.04 (Finish) 14.07
18.14°C 19.96°C

PROBE TYPE: Westbay
SERIAL NO.: EMS2508
PROJECT: JPL, Pasadena
OPERATOR(S): tWolff
WEATHER: Overcast

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters							Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	204.76	✓	193.06	✓	193.06	✓	204.76	17.1	389	9.52	11	7.81	-110	0650	MW-23-5
4	1	✓	✓	✓	✓	✓	162.70	✓	151.13	✓	151.13	✓	162.70	17.5	352	8.33	2	8.23	-30	0720	MW-23-4
3	1	✓	✓	✓	✓	✓	108.02	✓	99.54	✓	99.54	✓	108.02	17.3	432	8.22	1	7.32	27	0750	MW-23-3
2	1	✓	✓	✓	✓	✓	79.81	✓	71.33	✓	71.33	✓	79.81	18.4	1075	8.03	2	6.44	83	0820	MW-23-2
1	1	✓	✓	✓	✓	✓	45.10	✓	37.60	✓	37.60	✓	45.10	18.0	1182	7.85	1	8.45	115	0850	MW-23-1

Comments: TB-6-4/29/13 0600 SB-3-4/29/13 0620 EB-6-4/29/13 0625 Level II @ Port 5 MS/MSD @ Port 1

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-24
SAMPLING DATE(S) 4-30-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 197.36
ATM. PRESSURE (PSI): (Start) 14.01 (Finish) 13.94
21.20°C 22.01°C

PROBE TYPE Westbay
SERIAL NO. EMS2908
PROJECT: JPL, Pasadena
OPERATOR(S) AW, EF
WEATHER Overcast

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters						Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	224.06	✓	207.86	✓	207.86	✓	224.06	20.9	379	8.42	6	10.96	157	1205	MW-24-5
4	1	✓	✓	✓	✓	✓	170.33	✓	157.22	✓	157.22	✓	170.33	20.9	231	9.36	4	4.68	-134	1240	MW-24-4
3	1	✓	✓	✓	✓	✓	118.31	✓	108.44	✓	108.44	✓	118.31	20.5	406	8.64	3	4.84	-86	1310	MW-24-3
2	1	✓	✓	✓	✓	✓	91.13	✓	81.71	✓	81.71	✓	91.13	20.6	516	8.34	1	8.22	17	1345	MW-24-2
1	1	✓	✓	✓	✓	✓	51.26	✓	42.88	✓	42.88	✓	51.26	21.1	623	8.21	2	7.02	40	1420	MW-24-1
	2	✓	✓	✓	✓	✓	51.27	✓	42.86	✓	42.86	✓	51.27								

Comments: Level IV @ Port 5, MS/MSD @ Port 2

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-25
SAMPLING DATE(S): 4-24-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 258.51
ATM. PRESSURE (PSI): (Start) 14.20 (Finish) 14.12
17.15°C 18.92°C

PROBE TYPE: Westbay
SERIAL NO.: EMS2508
PROJECT: JPL Pasadena
OPERATOR(S): AWolff
WEATHER: Overcast

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters							Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (5 psi)	Close Valve/ Shoe In/ Arm in	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
5	1	✓	✓	✓	✓	✓	215.60	✓	213.70	✓	213.70	✓	215.60	18.9	362	9.49	2	6.42	-139	1235	MW-25-5
4	1	✓	✓	✓	✓	✓	180.96	✓	177.96	✓	177.96	✓	180.96	18.5	758	8.31	4	6.68	4	1305	MW-25-4
3	1	✓	✓	✓	✓	✓	124.66	✓	124.66	✓	124.66	✓	124.66	18.4	646	8.17	1	6.88	73	1335	MW-25-3
2	1	✓	✓	✓	✓	✓	89.86	✓	92.67	✓	92.67	✓	89.86	18.4	674	8.25	1	6.19	107	1405	MW-25-2
1	1	✓	✓	✓	✓	✓	62.04	✓	65.99	✓	65.99	✓	62.04	18.0	852	7.51	2	6.10	59	1440	MW-25-1

Comments: MS/MSD @ Port 1

WESTBAY™ GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET

WELL ID: MW-26
SAMPLING DATE(S): 4-26-13
LOCATION: JPL
WATER LEVEL INSIDE CASING: 69.66
ATM. PRESSURE (PSI): (Start) 14.18 (Finish) 14.30
22.3 20.09

PROBE TYPE: Westbay
SERIAL NO.: EMS2500
PROJECT: JPL Pasadena
OPERATOR(S): MW, SS
WEATHER: Clear

Port Number	Run Number	Probe to Top Collar	Surface Function Tests / Position Sampler (probe in top of collar) / (lower probe to port)				Sample Collection Checks (probe at sampling port in MP casing)							Field Parameters						Sample	
		Arm out / Land Probe	Shoe Out/ Close Valve/ Check Vacuum	Open Valve/ Apply Vacuum (3 psi)	Close Valve/ Shoe In/ Arm In	Locate Port/ Arm Out/ Land Probe	Pressure in MP Casing (psi)	Shoe Out	Port Pressure (psi)	Open Valve	Port Pressure (psi)	Close Valve/ Shoe In	Pressure in MP Casing (psi)	Sample Temp (°C)	SC (µS/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (ppm)	ORP (mV)	Sample Time	Sample ID
2	1	✓	✓	✓	✓	✓	80.42	✓	66.84	✓	66.84	✓	80.42	22.2	643	8.48	45	6.55	172	1250	MW-26-2
1	1	✓	✓	✓	✓	✓	46.88	✓	31.47	✓	31.47	✓	46.88	21.7	982	8.15	69	6.63	158	1320	MW-26-1

Comments:

ATTACHMENT 5: WATER LEVEL MEASUREMENTS

This attachment contains water level measurements for the JPL relatively shallow standpipe monitoring wells (MW-1, MW-5 through 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 2nd Quarter 2013. Water level measurements were recorded before the sampling event on April 19, 2013 for the relatively shallow standpipe monitoring wells and for the Westbay™ multiport wells. Water level measurements were recorded after the sampling event on May 6, 2013 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 Blaine Tech Services, Inc.

WELL GAUGING DATA

Project # 130419-AW1 Date 4-19-13 Client Battelle

Site JPL, Pasadena

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: ~~TOB~~ or TOC	Notes
MW-1	1013	4					27.80	QED		
MW-5	0651	4					85.13			
MW-6	0917	4					190.05			
MW-7	0830	4					223.33			
MW-8	0757	4					149.72			
MW-9	1018	4					19.31			
MW-10	0644	4					99.60			
MW-13	0602	4					194.28			
MW-15	0731	4					32.47			
MW-16	0842	4					245.91	↓	↓	

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-3
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1100.34
WEATHER: Clear

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.21 (finish) 14.20
Temp (°C) (start) 21.01 (finish) 18.84

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	653	649	228.97	239.02	228.97	21.36	518.64	134.36	653	1031
4	558	555	187.81	198.01	187.81	21.74	424.03	133.97	558	1032
3	346	344	95.49	106.37	95.49	21.52	212.61	133.39	346	1034
2	252	251	54.62	67.25	54.62	20.72	122.36	129.64	252	1035
1	172	172	19.84	36.42	19.84	19.79	51.29	120.76	172	1036

Comments: Collar detect is 2' above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-4
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1082.84
WEATHER: Clear

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.18 (finish) 14.20
Temp (oC) (start) 15.50 (finish) 19.19

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing 150.07	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	513	513	~~105~~	190.81	150.07	18.31	407.49	105.51	513	0657
4	392	392	97.41	138.42	97.41	19.61	286.62	105.38	392	0658
3	322	322	66.97	103.09	66.97	19.91	216.65	105.35	322	0659
2	240	240	31.29	72.64	31.29	19.96	134.87	105.13	240	0700
1	150	150	14.30	37.82	14.30	19.72	54.54	95.46	150	0701

Comments: Collar detect is 2' above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-11
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1139.30
WEATHER: Clear

PROBE TYPE Westbay
SERIAL NO. EMS2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.19 (finish) 14.19
Temp (°C) (start) 16.85 18.08

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	639	638	221.86	213.57	221.86	18.43	459.97	179.03	639	0719
4	524	523	172.37	175.34	172.37	19.42	371.77	152.23	524	0720
3	429	~~0~~428	131.44	132.63	131.44	19.59	273.24	155.76	429	0721
2	259	258	57.84	61.15	57.84	19.11	108.34	150.66	259	0722
1	149	149	14.28	28.38	14.28	18.52	32.74	116.26	149	0723

Comments: Collar detect is 6" above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-12
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1102.14
WEATHER: Clear

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.23 (finish) 14.22
Temp (°C) (start) 16.01 (fin) 17.51

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	548	548	207.46	191.02	207.46	17.59	407.85	140.15	548	0741
4	436	436	158.74	148.31	158.74	18.60	309.32	126.68	436	0742
3	323	323	109.59	99.61	109.59	18.51	196.97	126.03	323	0744
2	243	243	74.80	65.76	74.80	18.34	118.88	124.12	243	0744
1	140	140	29.87	27.74	29.87	18.00	31.17	108.83	140	0745

Comments: Collar detect is 6" above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-14
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1173.47
WEATHER: Clear

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolf
ATM. PRESSURE (Patm): (start) 14.20 (finish) 14.18
Temp (oC) (start) 20.91 (finish) 19.64

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	540	539	184.57	173.13	184.57	20.69	366.45	173.35	540	0901
4	456	455	148.03	136.74	148.03	20.81	282.70	173.30	456	0902
3	382	381	115.87	104.65	115.87	20.66	208.67	173.33	382	0902
2	277	276	78.14	59.05	70.14	20.31	103.47	173.53	277	0903
1	207	206	39.66	29.02	39.66	19.94	34.19	172.81	207	0904

Comments: Collar detect is 6" above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-17
DATE: 4-26-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1191.21
WEATHER: Clear

PROBE TYPE Westbay
SERIAL NO. EMS2504
PROJECT JPL Pasadena
OPERATOR(S) MWolff
ATM. PRESSURE (Patm): (start) 14.14 (finish) 14.17
17.05°C 19.96°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	726	723	242.31	226.83	242.31	18.09	490.68	235.32	726	0709
4	582	579	180.11	162.41	180.11	17.81	342.06	239.94	582	0711
3	468	467	1830.56	115.39	130.56	17.70	233.58	234.42	468	0712
2	370	369	87.73	75.94	87.73	17.27	142.57	227.43	370	0713
1	250	249	35.74	~~24~~ 27.49	35.74	17.03	30.68	219.32	250	0715

Comments: Collar detect is 6" above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-18
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1225.41
WEATHER: Clear

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.16 (finish) 14.13
Temp (°C) 19.20 17.77

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	684	684	162.26	193.41	162.26	20.33	413.53	270.47	684	1053
4	564	564	110.06	141.88	110.06	20.61	294.05	269.35	564	1055
3	424	424	49.26	84.51	49.26	20.00	162.30	261.70	424	1056
2	330	330	14.29	45.41	14.29	19.10	72.09	257.91	330	1057
1	270	270	14.25	19.60	14.25	18.46	12.55	257.45	270	1058

Comments: Collar 6" above port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-19
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1142.94
WEATHER: Clear

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolfe
ATM. PRESSURE (Patm): (start) 14.19 (finish) 14.17
Temp (oC): 24.07 (finish) 18.22

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	498	497	171.45	151.60	171.45	21.68	317.00	181.00	498	0959
4	444	443	148.01	128.24	148.01	21.20	263.11	180.89	444	1000
3	392	391	125.52	109.28	125.52	20.79	219.37	172.63	392	1001
2	314	313	91.69	75.19	91.69	20.44	140.73	173.27	314	1001
1	242	241	60.43	44.84	60.43	19.88	70.71	171.29	242	1002

Comments: Collar detect is 6' above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-20
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1165.05
WEATHER: Clear

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.21 (finish) 14.14
Temp (°C) (") 21.43 (") 17.98

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	900	898	321.42	316.97	321.42	22.39	698.47	201.53	900	1117
4	700	698	234.89	223.70	234.89	22.49	483.29	216.71	700	1119
3	562	560	174.92	160.34	174.92	21.81	338.28	223.72	562	1121
2	392	390	101.21	93.73	101.21	20.46	183.45	208.55	392	1122
1	230	228	30.87	23.69	30.87	18.80	21.87	208.13	230	1123

Comments: Collar detect is 6" above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-21
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1059.10
WEATHER: Clear

PROBE TYPE Westbay
SERIAL NO. EMS2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.23 (finish) 14.21
Temp (°C) 23.50 20.00

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	372	372	125.70	146.51	125.70	22.27	305.17	66.03	372	0936
4	310	310	98.72	119.66	98.72	21.82	243.23	66.77	310	0936
3	240	240	68.74	89.76	68.74	21.36	174.25	65.75	240	0937
2	161	162	34.38	55.51	34.38	20.69	95.23	65.77	161	0938
1	90	90	14.25	24.07	14.25	20.29	22.70	67.30	90	0939

Comments: Collar det™ detect is 2' above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-22
DATE: 4-25-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1176.98
WEATHER: Overcast

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasa
OPERATOR(S) AWolff
ATM. PRESSURE (Patm): (start) 14.08 (finish) 14.14
17.79°C 19.23°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	588	586	202.10	183.62	202.10	22.61	391.13	196.87	588	0651
4	467	465	149.64	133.39	149.64	22.02	275.25	191.75	467	0658
3	389	388	115.86	102.59	115.86	21.69	209.19	184.81	389	0700
2	329	329	89.79	76.42	89.79	21.27	143.82	185.18	329	0701
1	245	245	52.84	39.76	52.84	20.63	59.24	185.76	245	0702

Comments: Collar detect is 1' above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-23
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1108.84
WEATHER: Clear

PROBE TYPE Westbay
SERIAL NO. EMS2508
PROJECT JPL, Pasadena
OPERATOR(S) K. Wolff
ATM. PRESSURE (Patm): (start) 14.16 (finish) 14.19
Temp (°C) 14.03 (finish) 19.53

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	542	541	203.28	194.18	203.28	18.46	415.31	126.69	542	0613
4	445	444	161.23	151.91	161.23	19.39	317.79	127.21	445	0614
3	319	318	106.72	99.77	106.72	19.81	197.50	121.50	319	0615
2	254	253	78.50	71.54	78.50	19.68	132.38	121.62	254	0616
1	174	173	43.77	37.72	43.77	19.62	54.35	119.65	174	0617

Comments: Collar detect is 1' above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-24
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1205.94
WEATHER: Clear

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.21 (finish) 14.18
Temp (°C) (start) 16.50 (finish) 21.66

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	678	678	223.48	208.87	223.48	19.95	~~449.08~~ ~~415.31~~	~~228.92~~ ~~126.69~~	678	0810
4	554	552	168.92	158.06	168.92	20.77	331 ~~349~~ ~~317.99~~	222.14	554	0812
3	435	433	117.40	108.78	117.40	20.95	218 ~~193~~ ~~179.50~~	216.83	435	0813
2	373	372	90.51	82.01	90.51	21.03	156.91 ~~152.38~~	216.59	373	0814
1	279	278	50.36	43.22	50.36	21.47	~~54~~ ~~55~~ 116.93	212.07	279	0815

Comments: Collar detect is 6" above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-25
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 934.53
WEATHER: Clear

PROBE TYPE WestBay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.28 (finish) 14.28
Temp (°C) (") 22.09 (") 20.39

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	713	711	211.92	214.37	211.92	22.13	461.61	251.39	713	1207
4	633	631	177.41	178.38	177.41	22.11	378.58	254.92	633	1209
3	503	501	121.17	124.98	121.17	21.70	255.38	247.62	503	1210
2	423	422	86.49	92.87	86.49	21.27	181.31	241.69	423	1211
1	358	357	58.21	65.62	58.21	20.89	118.44	239.56	350	1212

Comments: Collar detect is 2' ~~above~~ below sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-26
DATE: 4-19-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1059.08
WEATHER: Clear

PROBE TYPE WestBay
SERIAL NO. EM52508
PROJECT JPL, Pasadena
OPERATOR(S) A Walt
ATM. PRESSURE (Patm): (start) 14.24 (finish) 14.21
Temp (°C) (↓) 22.02 (↑) 19.64

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From 217 Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
2	215	~~207~~	74.80	66.84	74.80	20.41	121.35	93.65	215	1145
1	135	132	42.19	31.55	42.19	20.04	39.93	95.07	135	1146

Comments: Collar detect is 2' below sample port

WELL GAUGING DATA

Project # 130419-AW1 Date 5-6-13 Client Battelle

Site JPL, Pasadena

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-1	0836	4					28.34	QED		
MW-5	0728	4					86.66			
MW-6	1019	4					191.08			
MW-7	0913	4					224.46			
MW-8	1324	4					151.36			
MW-9	0829	4					19.80			
MW-10	0720	4					100.67			
MW-13	0651	4					195.18			
MW-15	0847	4					32.89			
MW-16	1307	4					247.61			

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-3
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1100.34
WEATHER: Rainy

PROBE TYPE West Bay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.13 (finish) 14.13
Temp (°C) 16.27 18.23

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	653	650	228.96	238.64	228.96	18.45	517.94	135.06	653	0815
4	558	556	187.66	197.70	187.66	19.60	423.49	134.50	558	0816
3	346	344	95.48	105.96	95.48	20.09	211.85	134.15	346	0818
2	252	251	54.60	66.30	54.60	19.87	120.56	131.64	252	0819
1	172	171	19.81	35.46	19.81	19.15	49.21	122.79	172	0820

Comments: Collar detect @ 2" above port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-4
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1082.84
WEATHER: Rainy

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.16 (finish) 14.14
Temp (°C) 15.64 19.08

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	513	511	149.97	190.14	149.97	17.92	405.99	107.01	513	0742
4	392	390	97.38	137.75	97.38	19.08	285.12	106.88	392	0743
3	322	320	66.93	107.45	66.93	19.52	215.22	106.78	322	0744
2	240	238	31.22	72.01	31.22	19.64	133.46	106.54	240	0745
1	150	148	14.24	36.94	14.24	19.47	52.55	97.45	150	0745

Comments: Collar detect @ 2' above port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-11
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1139.30
WEATHER: Rain

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.15 (finish) 14.13
Temp 17.26 18.35

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	639	636	222.04	211.95	222.04	18.79	456.32	182.68	639	0757
4	524	521	173.20	174.13	173.20	20.13	369.07	154.93	524	0759
3	429	426	132.63	131.52	132.63	20.13	270.77	158.23	429	0800
2	259	256	58.84	60.48	58.84	19.51	106.88	152.12	259	0801
1	149	147	14.19	28.06	14.19	18.81	32.09	116.91	149	0802

Comments: Collar detect @ 6" above port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-12
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1102.14
WEATHER: Heavy Clouds

PROBE TYPE Westbay
SERIAL NO. FMS2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.05 (finish) 14.12
Temp (°C) 15.13 17.44

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	548	547	222.99	189.51	206.99	17.19	404.79	193.21	548	0900
4	436	435	158.36	147.29	158.36	18.24	307.38	128.62	436	0901
3	323	322	109.28	98.95	109.28	18.48	195.86	127.14	323	0902
2	243	242	74.38	65.09	74.38	18.29	117.75	125.25	243	0903
1	140	139	29.48	26.50	29.48	17.91	28.72	111.28	140	0904

Comments: Collar ~~feet~~ (NK) detect @ 6" above port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-14
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1173.47
WEATHER: Cloudy / Rain

PROBE TYPE Westbay
SERIAL NO. EMS2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.11 (finish) 14.10
Temp (C) 18.53 19.06

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	540	538	184.36	172.22	184.36	19.12	364.76	175.24	540	1005
4	456	454	148.03	135.98	148.03	19.84	281.15	174.85	456	1006
3	387	380	116.35	103.90	116.35	19.52	207.15	174.85	382	1010
2	277	275	70.00	58.36	70.00	19.41	102.03	174.92	277	1011
1	207	205	39.42	28.45	39.42	19.25	33.08	173.92	207	1012

Comments: Collar detect @ 6" above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-17
DATE: 5-16-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1191.21
WEATHER: Rainy / Overcast

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.11 (finish) 14.10
Temp (°C) 15.16 16.68

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	726	724	240.40	225.43	240.40	17.64	407.52	238.48	726	1101
4	582	581	178.06	161.01	178.06	18.48	338.90	293.10	582	1102
3	468	467	128.60	114.28	128.60	18.29	231.09	236.91	468	1103
2	370	369	86.03	74.42	86.03	17.70	139.14	230.86	370	1104
1	250	249	33.96	26.91	33.96	17.02	71.53	220.47	250	1105

Comments: Collar defect @ 6" above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-18
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1225.41
WEATHER: Overcast

PROBE TYPE Westbay
SERIAL NO. EMS2508
PROJECT JPL, Pasadena
OPERATOR(S) Twolff
ATM. PRESSURE (Patm): (start) 14.10 (finish) 14.10
16.03°C 17.39°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	684	681	184.22	191.60	184.22	17.87	409.49	274.51	684	1123
4	564	561	132.18	140.59	132.18	18.91	291.81	272.19	564	1124
3	424	422	72.17	82.90	72.17	18.41	158.72	265.28	424	1126
2	330	328	30.52	44.52	30.52	17.85	70.18	259.82	330	1127
1	270	268	14.22	18.94	14.22	17.56	11.17	258.83	270	1128

Comments: Collar is 6" above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-19
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1142.94
WEATHER: Raining

PROBE TYPE Westbay
SERIAL NO. EM52508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.41 (finish) 14.11
Temp 16.29 17.42

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	498	497	171.33	149.26	171.33	17.16	311.72	186.28	498	1040
4	444	443	147.99	125.93	147.99	17.69	257.90	186.10	444	1041
3	392	391	125.27	~~125.19~~ 125.13	125.27	18.04	216.88	175.12	392	1042
2	314	313	91.43	74.01	91.43	18.63	138.12	175.88	314	1044
1	242	241	60.36	44.12	60.36	18.42	69.16	172.84	242	1045

Comments: Collar detect @ 6" above
Strike-out = 108.15

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-20
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1165.05
WEATHER: Rain

PROBE TYPE Westbay
SERIAL NO. EMS2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.12 (finish) 14.10
Temp (°C) 15.60 17.61

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	900	897	321.41	316.54	321.41	19.58	697.68	202.32	900	1139
4	700	697	234.57	223.86	234.57	21.10	483.87	216.13	700	1141
3	562	559	174.86	161.44	174.86	20.25	339.87	222.13	562	1142
2	392	389	101.01	92.94	101.01	19.76	181.84	210.16	392	1143
1	230	227	30.71	22.92	30.71	18.34	20.30	209.70	230	1144

Comments: Collar Detect is 6" above sampling port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-21
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1059.10
WEATHER: Overcast / Rain

PROBE TYPE Westbay
SERIAL NO. EM02508
PROJECT JPL, Pasadena
OPERATOR(S) AWolff
ATM. PRESSURE (Patm): (start) 14.19 (finish) 14.19
19.57°C 18.87°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	372	372	125.54	145.84	125.54	19.71	303.72	68.28	372	1244
4	310	310	98.56	119.06	98.56	19.83	241.80	68.20	310	1245
3	240	240	68.44	89.10	68.44	19.47	172.82	67.18	240	1246
2	161	162	34.13	54.95	34.13	19.21	94.03	66.97	161	1247
1	90	91	14.21	23.69	14.21	18.99	21.92	68.08	90	1248

Comments: Collar is 2' above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-22
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1176.98
WEATHER: Rain

PROBE TYPE Westbay MP
SERIAL NO. ~~EMS 2805~~ EMS 2508
PROJECT JPL, Residence
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.06 (finish) 14.11
Temp (°C) 16.10 19.88

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	588	587	200.33	183.05	200.33	19.38	399.80	198.14	588	0708
4	467	466	147.98	132.80	147.98	20.17	273.93	193.07	467	0709
3	389	388	114.42	101.96	114.42	20.40	202.79	186.21	389	0710
2	329	328	88.13	75.80	88.13	20.40	142.43	186.57	329	0711
1	245	244	51.29	39.33	51.29	20.15	58.30	186.70	245	0712

Comments: Collar detect @ 1' above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-23
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1108.84
WEATHER: Rain, Heavy Clouds

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.06 (finish) 14.10
Temp (°C) 18.67 20.20

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	542	540	203.06	192.46	203.06	21.28	411.57	130.43	542	0640
4	445	443	161.04	150.57	161.04	21.47	314.93	130.07	445	0641
3	319	317	106.47	99.00	106.47	21.22	195.96	123.04	319	0642
2	254	253	78.26	70.28	78.26	20.97	129.70	124.30	254	0643
1	174	173	43.56	37.27	43.56	20.54	53.55	120.45	174	0644

Comments: Collar detect is 1' above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-24
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1200.94
WEATHER: Overcast

PROBE TYPE Westbay
SERIAL NO. EMS 2508
PROJECT JPL, Pasadena
OPERATOR(S) A. Wolff
ATM. PRESSURE (Patm): (start) 14.08 (finish) 14.10
15.42 21.43

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
			223.26							
5	678	676	~~223.26~~	207.43	223.26	20.21	446.06	231.94	678	0936
4	554	552	168.72	156.78	168.72	20.69	329.21	224.79	554	0937
3	435	433	117.07	107.98	117.07	20.88	216.63	218.37	435	0938
2	373	371	90.28	81.33	90.28	21.00	155.15	217.85	373	0940
1	279	277	49.54	42.64	49.54	21.10	65.89	213.11	279	0940

Comments: Collar detect @ 6" above port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

WELL ID: MW-25
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 934.53
WEATHER: Overcast/Rain

PROBE TYPE Westbay
SERIAL NO. EMS2508
PROJECT JPL, Pasadena
OPERATOR(S) tw, lft
ATM. PRESSURE (Patm): (start) 14.26 (finish) 14.27
17.97°C 19.83°C

Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
5	713	710	211.83	213.62	211.83	19.58	459.92	253.08	713	1221
4	633	630	177.38	177.92	177.38	20.26	377.56	255.94	633	1222
3	503	501	121.07	124.60	121.07	20.42	254.55	248.45	503	1223
2	423	421	86.36	92.57	86.36	20.30	180.66	242.34	423	1224
1	358	356	58.09	65.40	58.09	20.14	117.98	240.02	358	1225

Comments: Collar detect is 2' above sample port

WESTBAY™ GROUNDWATER MONITORING WELL
WATER LEVEL MEASUREMENT LOG SHEET

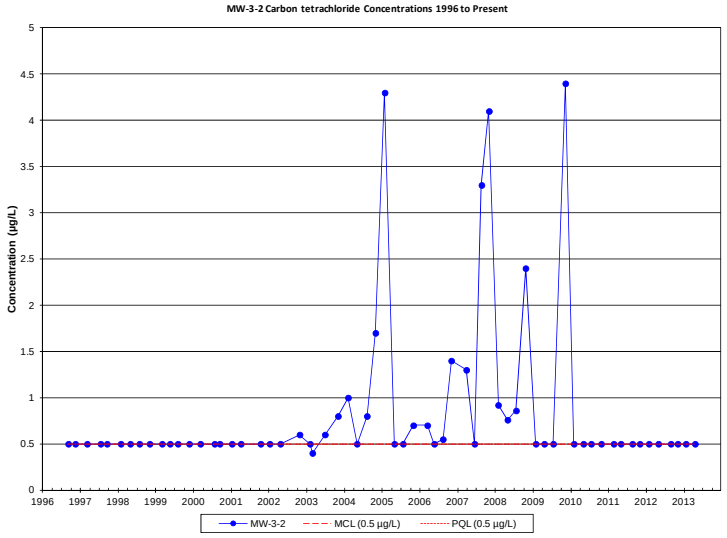
WELL ID: MW-26
DATE: 5-6-13
LOCATION: JPL
ELEV. TOP OF WASTBAY CASING 1059.08
WEATHER: Rainy

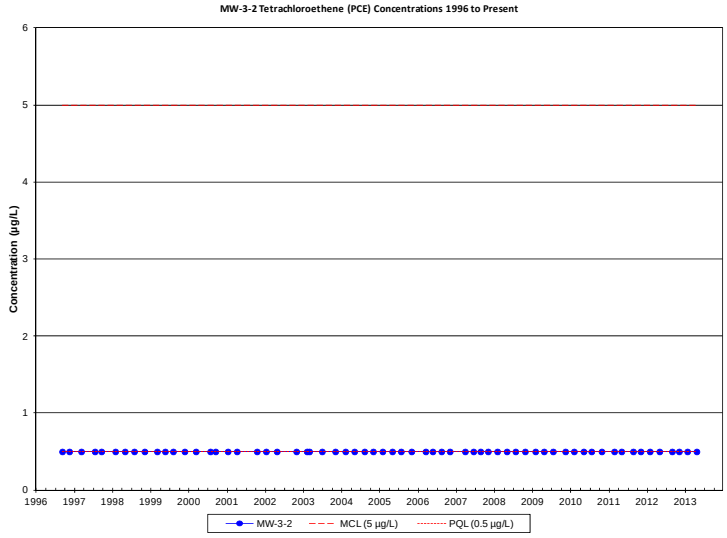
PROBE TYPE Westbay
SERIAL NO. EMS2508
PROJECT JPL, Pasadena
OPERATOR(S) A Wolff
ATM. PRESSURE (Patm): (start) 14.20 (finish) 14.19
16.11 17.73

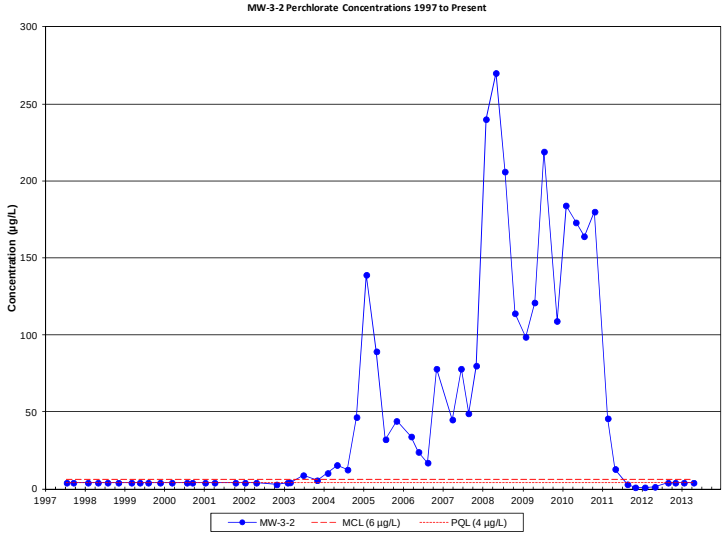
Port No.	Depth to Meas. Port Valve (ft)		Pressure Readings (psi)				Pressure Head Outside Port (ft) P(ft)=(P2-Patm)*2.307 ft/psi)	Depth to Water Outside Port (ft) DTW = Dp-P(ft)	True Port Depth (Dp) (ft)	Time
	From Log (Dp)	From Cable	psi Inside Casing	kg/cm² Outside Casing P2	mH²O Inside Casing	Trans. Temp. (oC)				
2	215	213	76.84	66.69	76.84	17.07	121.09	93.91	215	1202
1	135	133	41.99	31.32	41.99	17.56	39.50	95.50	135	1203

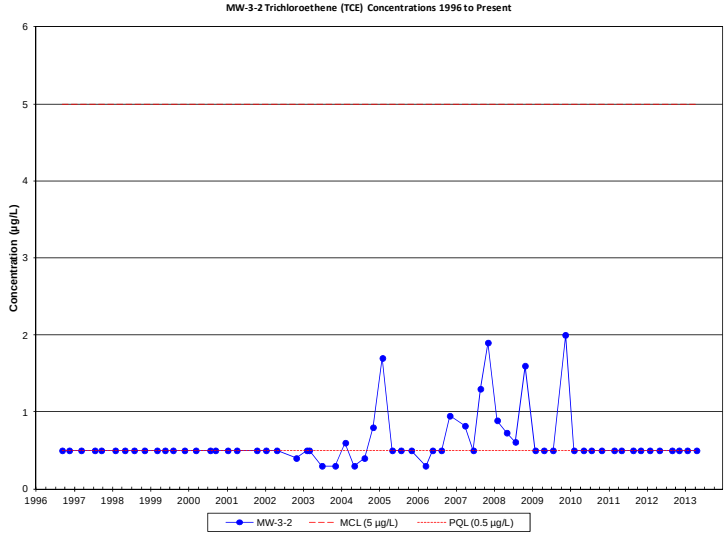
Comments:

ATTACHMENT 6: TIME SERIES PLOTS

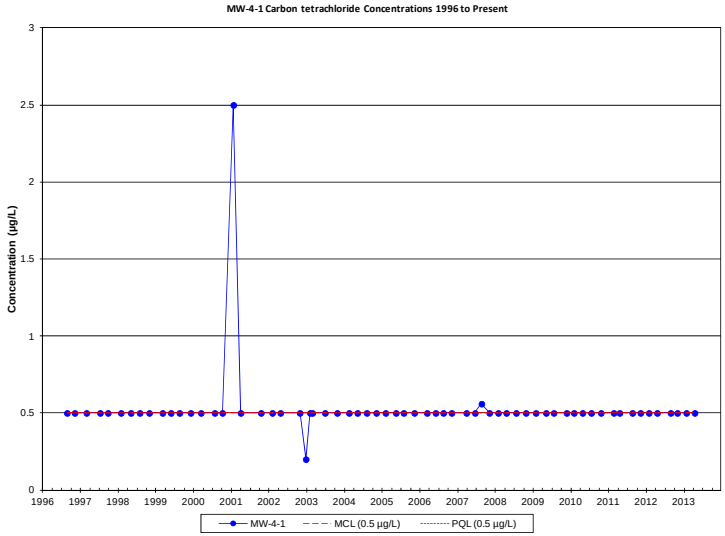


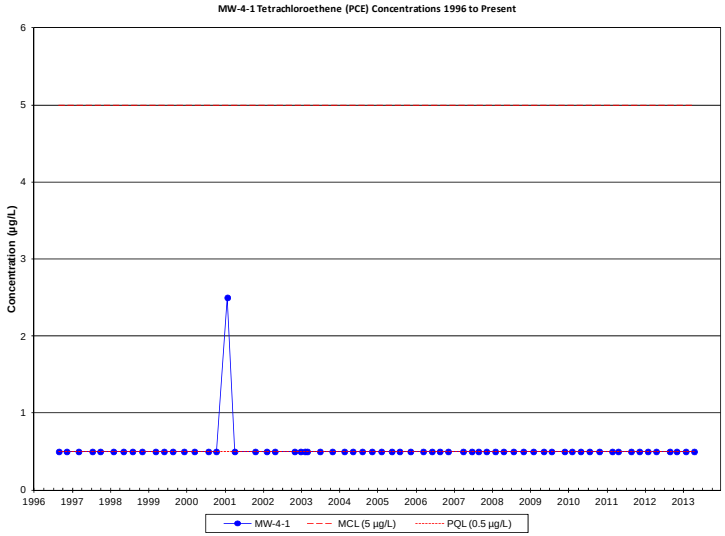


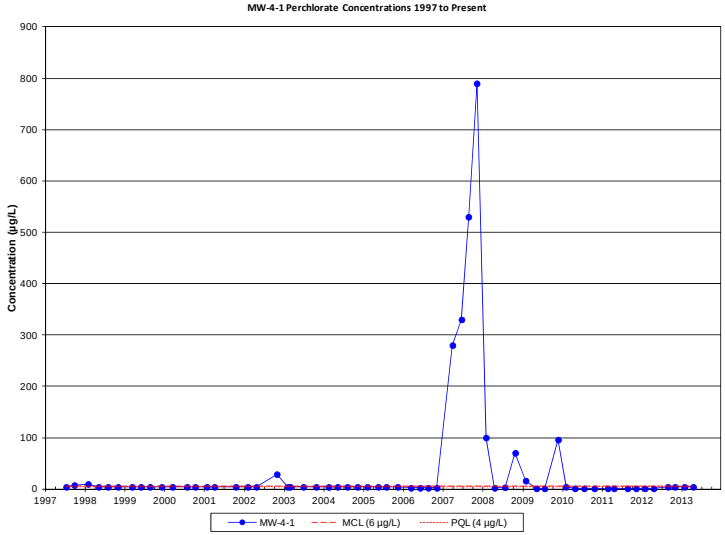


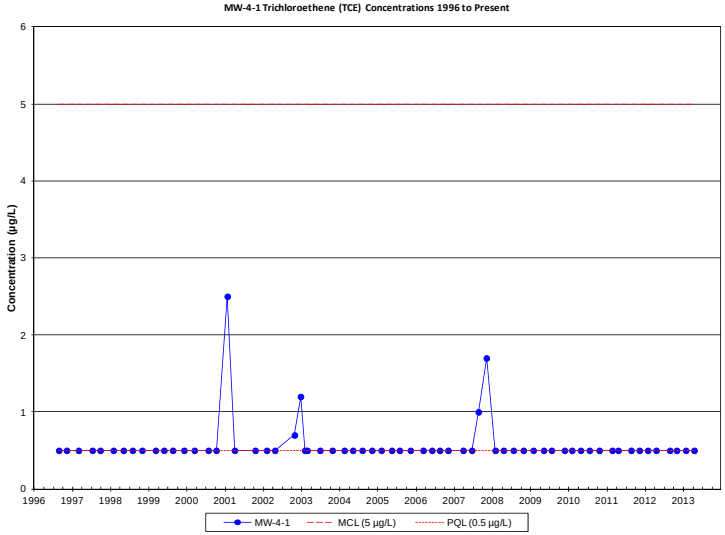


VOCs and Perchlorate Time Series Plots for MW-3-2

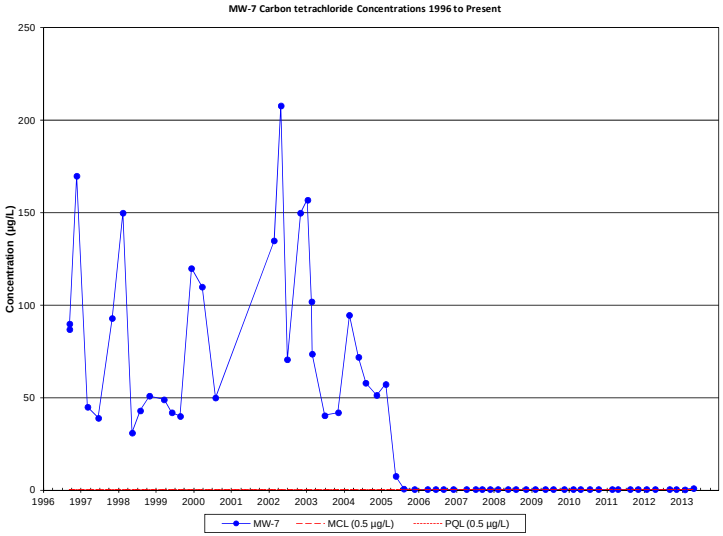


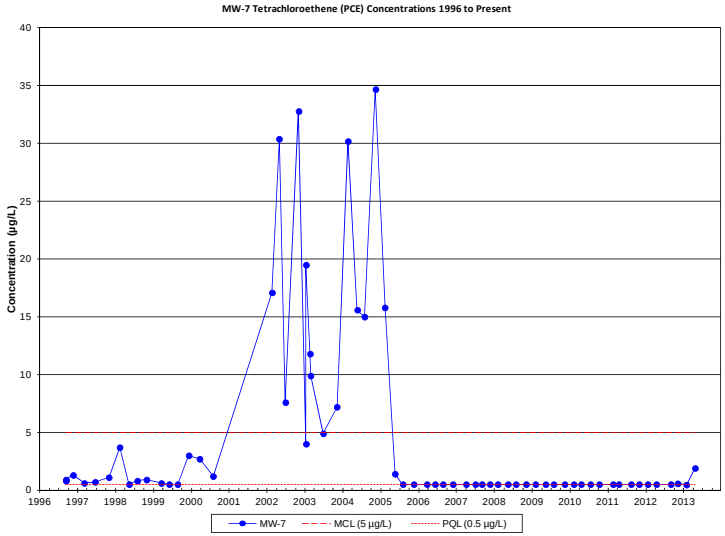


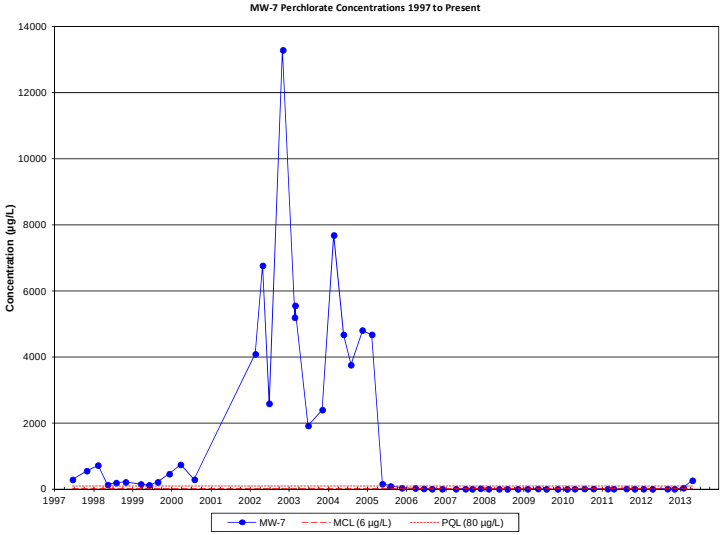


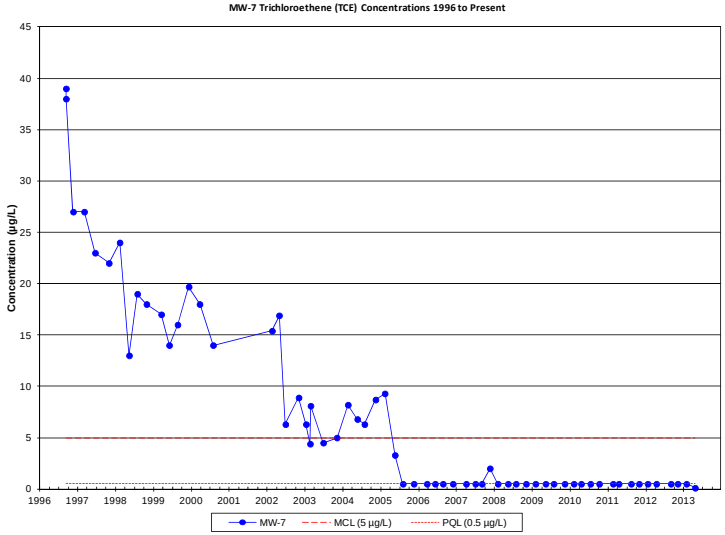


VOCs and Perchlorate Time Series Plots for MW-4-1

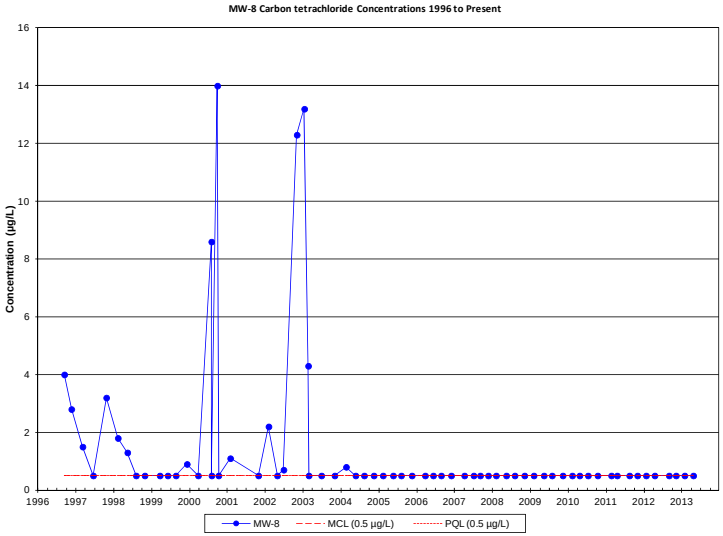


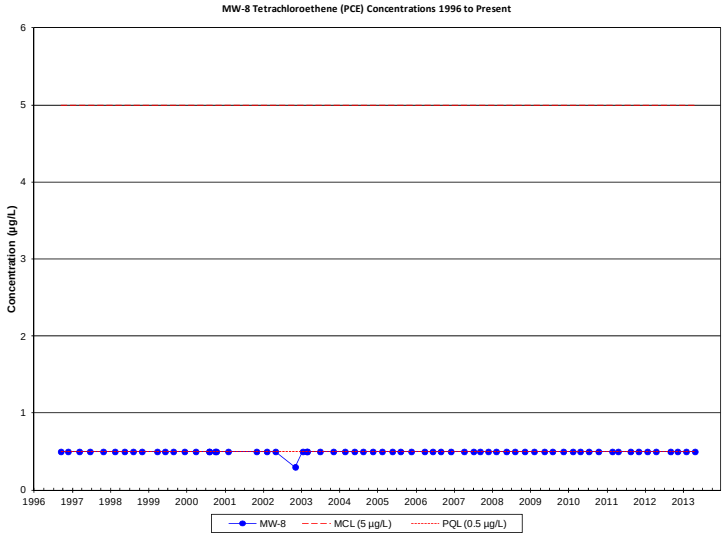


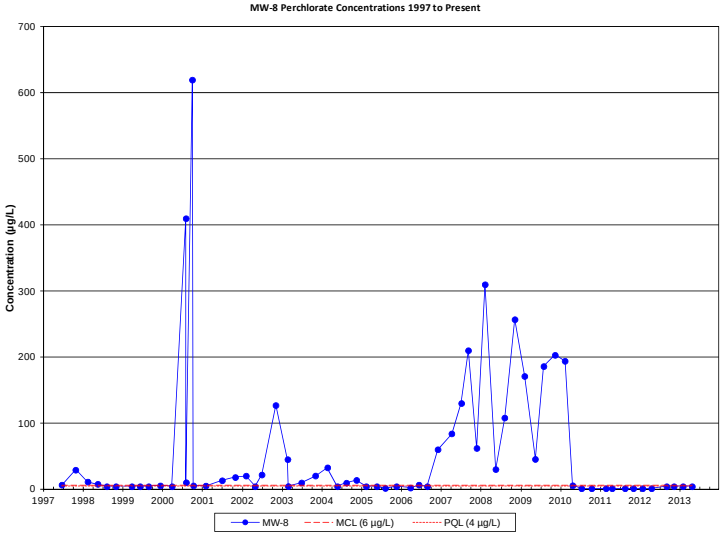


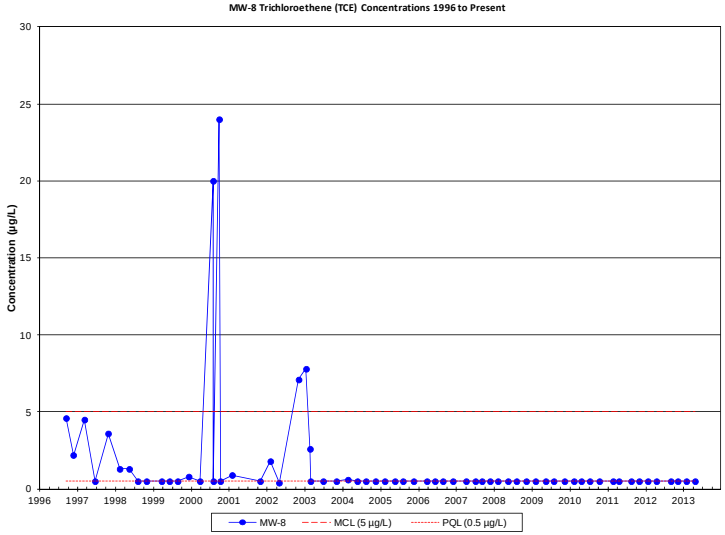


VOCs and Perchlorate Time Series Plots for MW-7

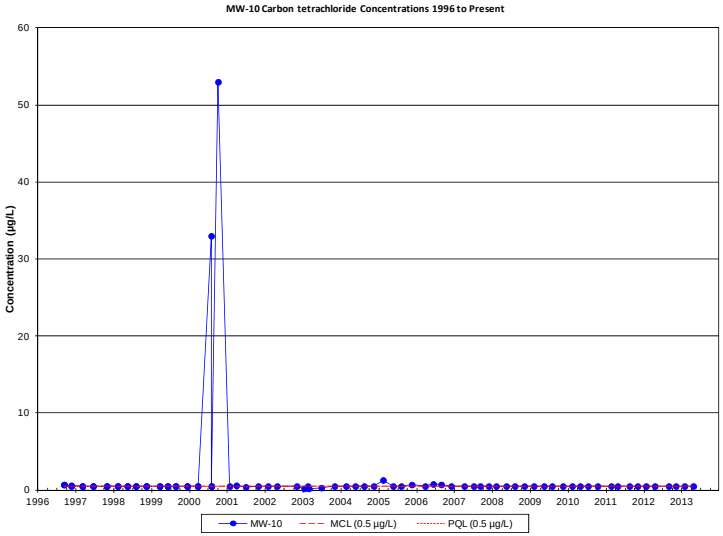


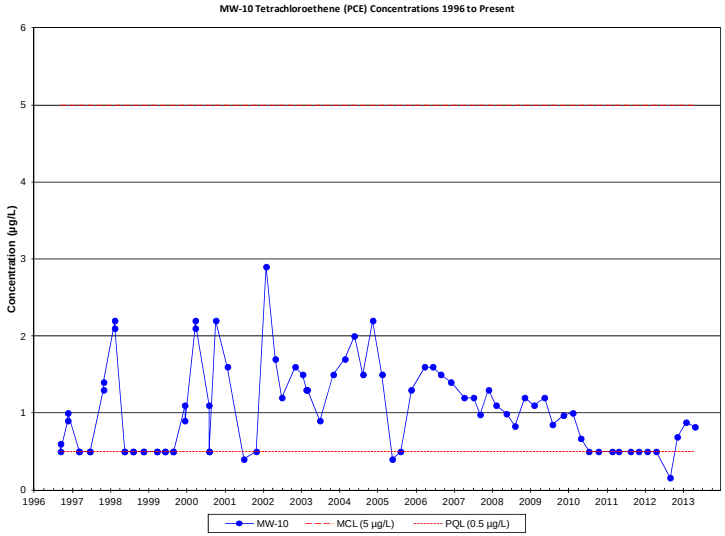


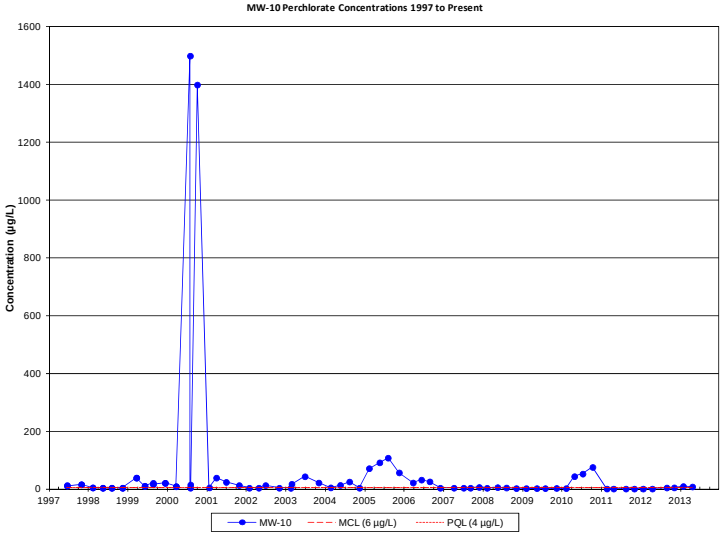


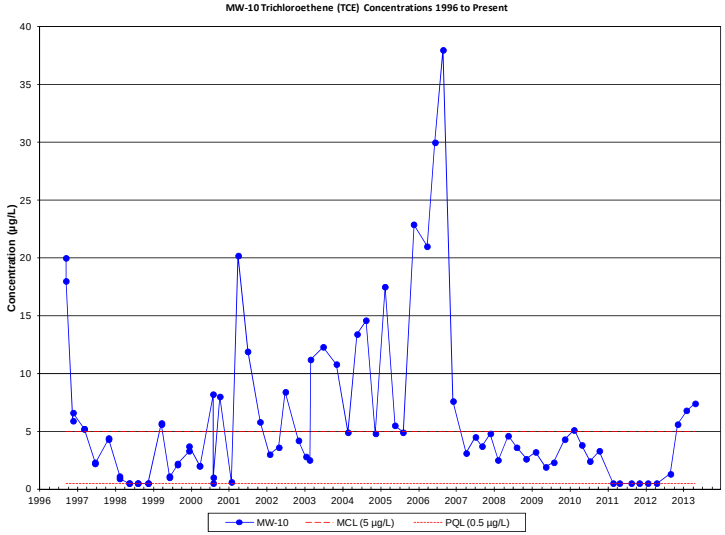


VOCs and Perchlorate Time Series Plots for MW-8

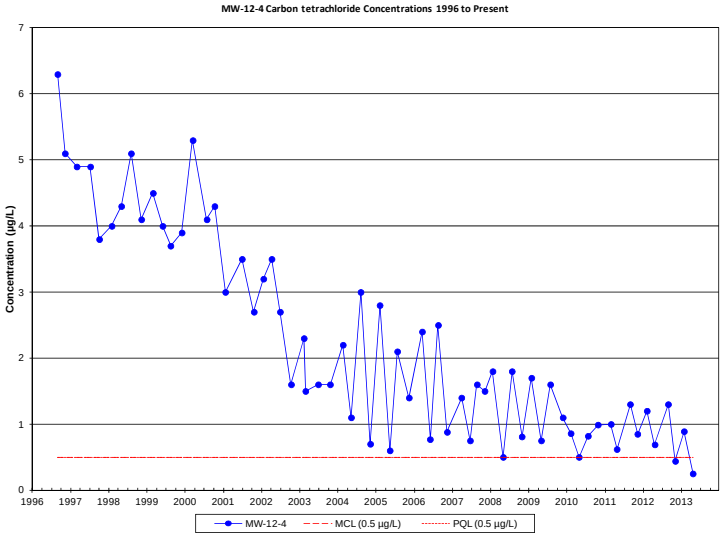


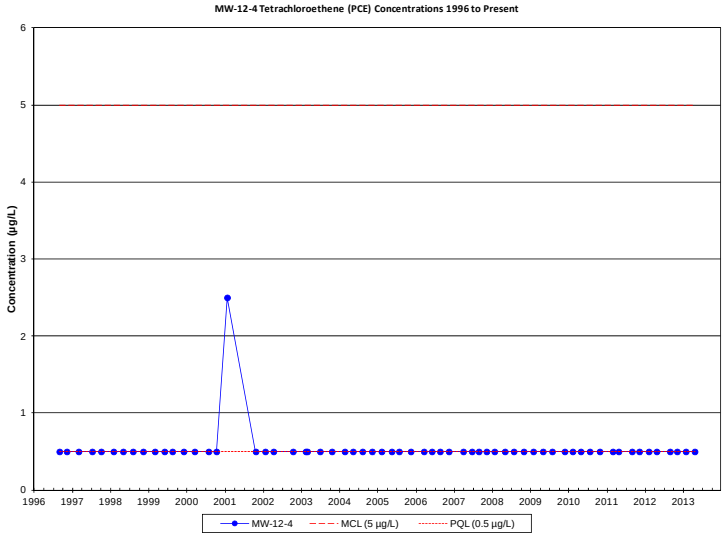


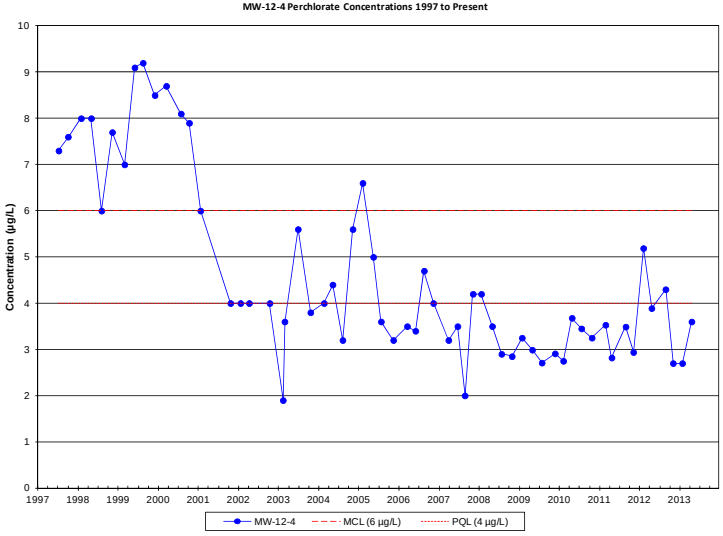


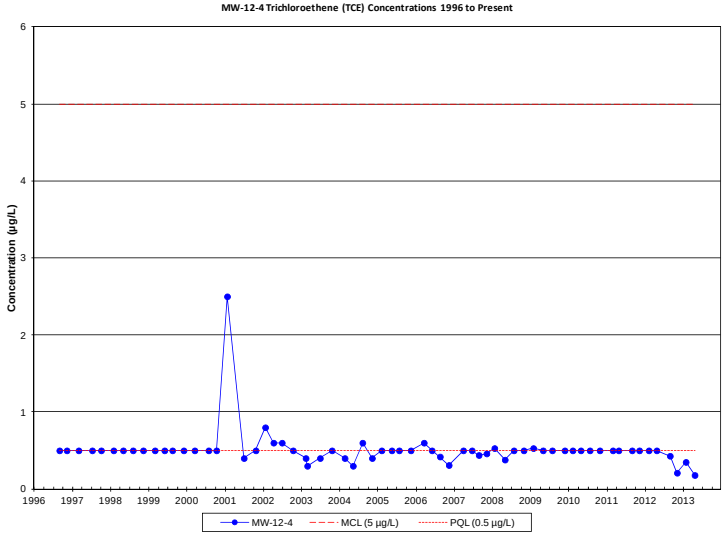


VOCs and Perchlorate Time Series Plots for MW-10

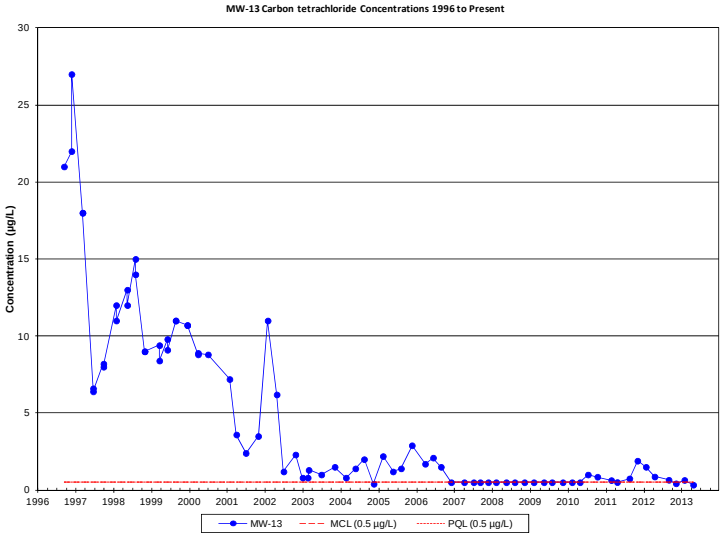


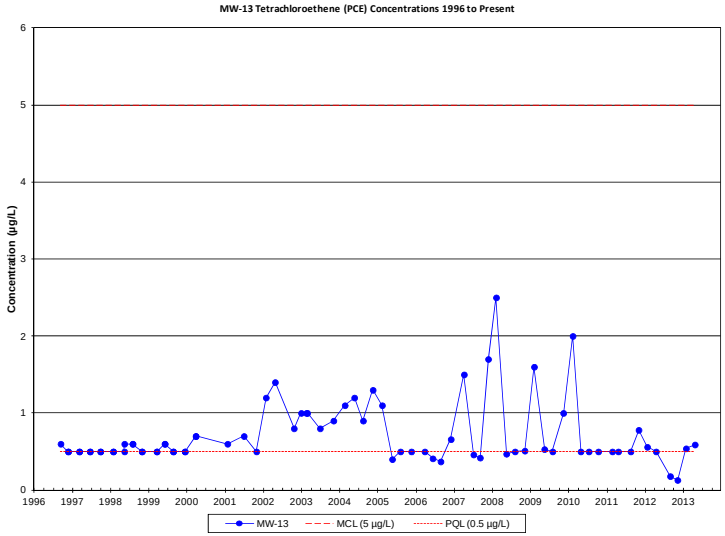


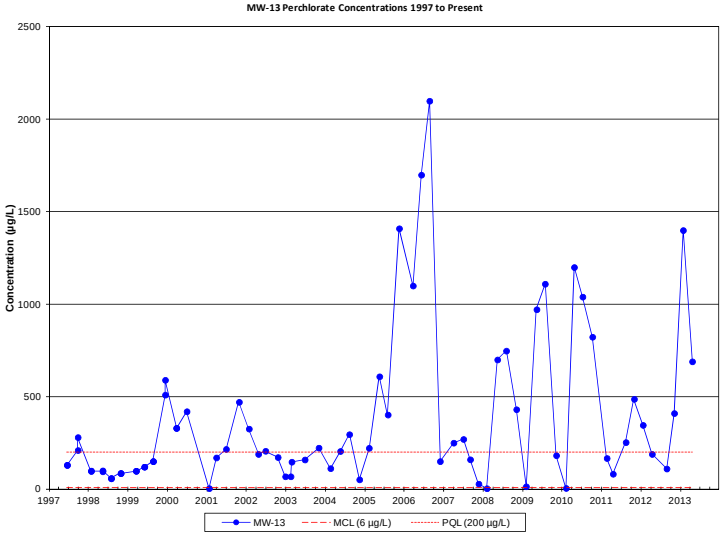


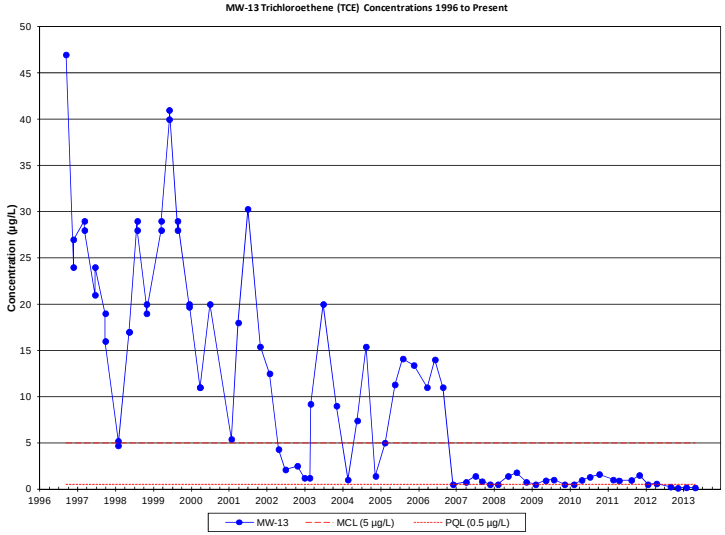


VOCs and Perchlorate Time Series Plots for MW-12-4

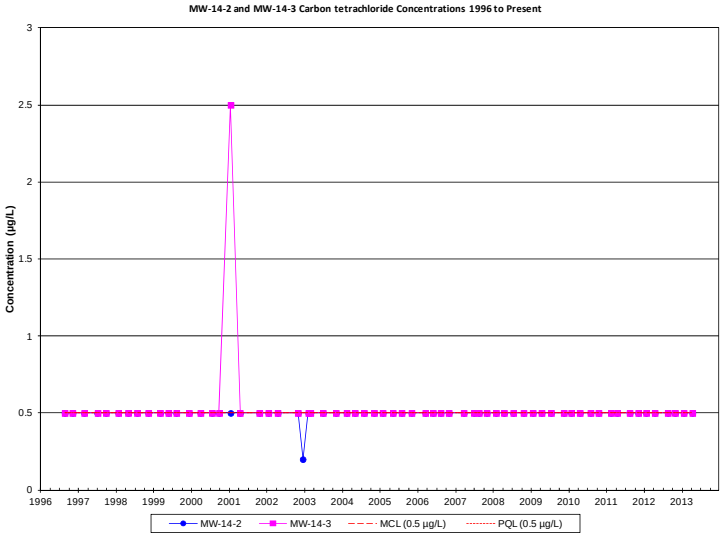


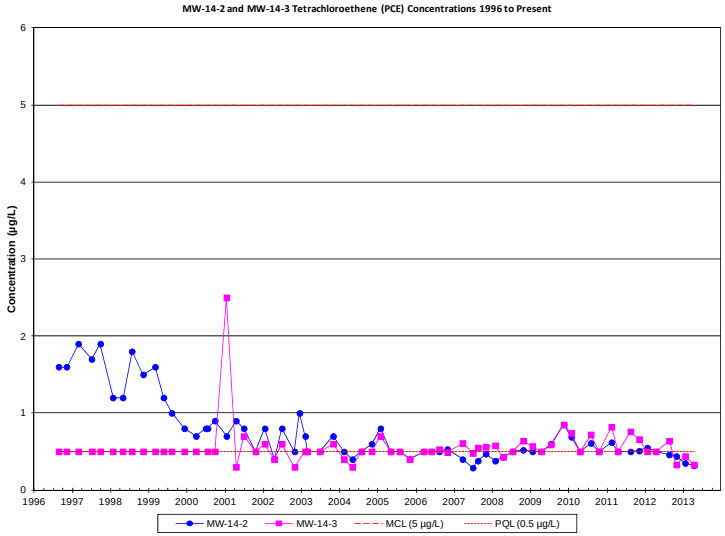


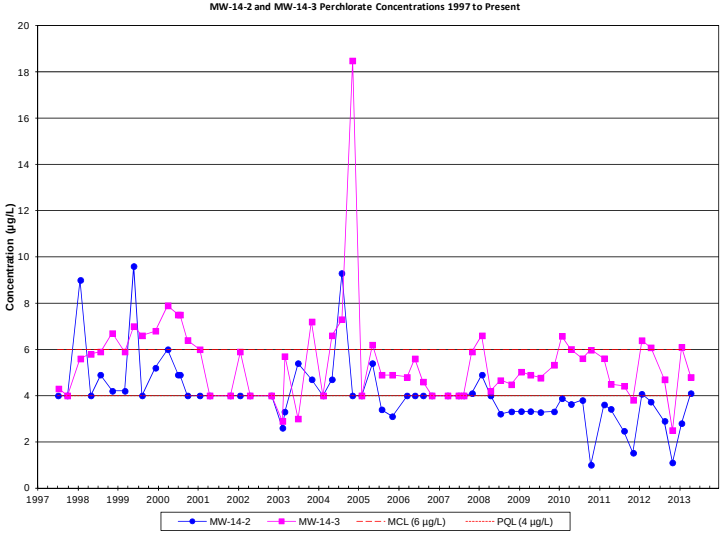


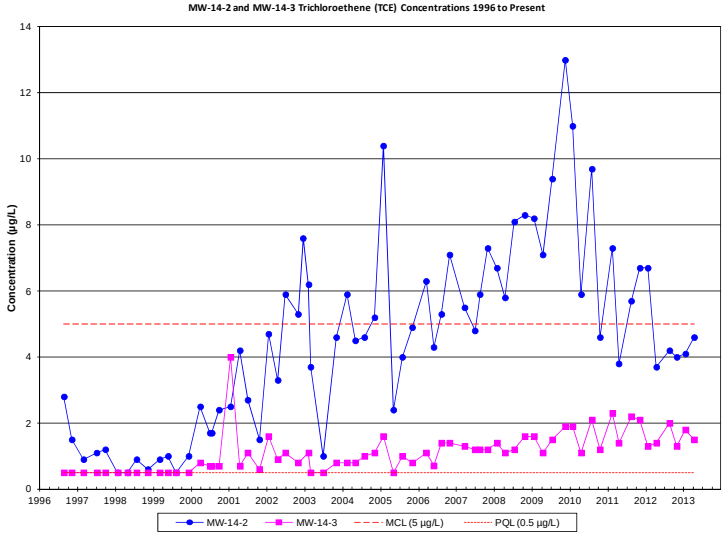


VOCs and Perchlorate Time Series Plots for MW-13

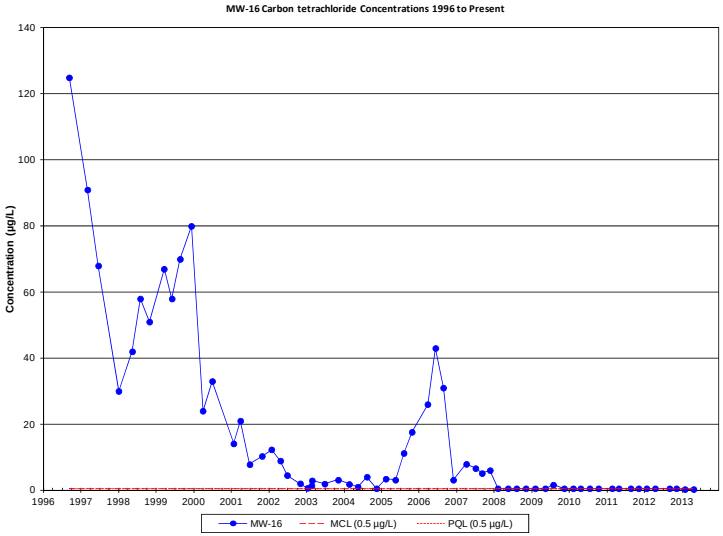


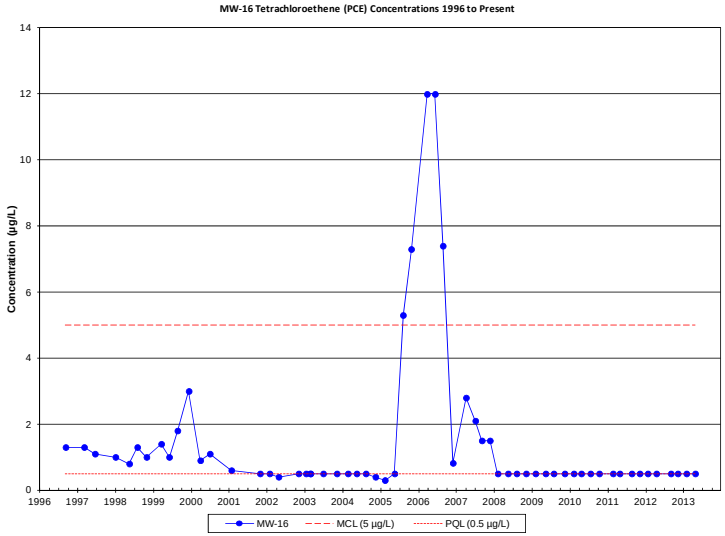


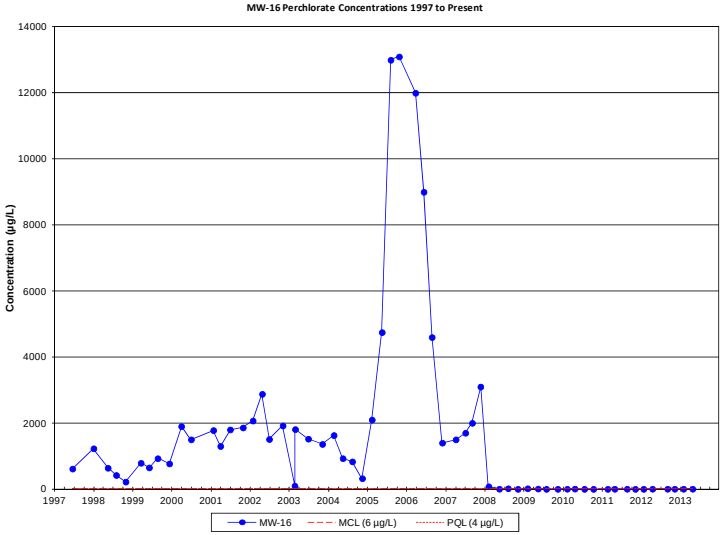


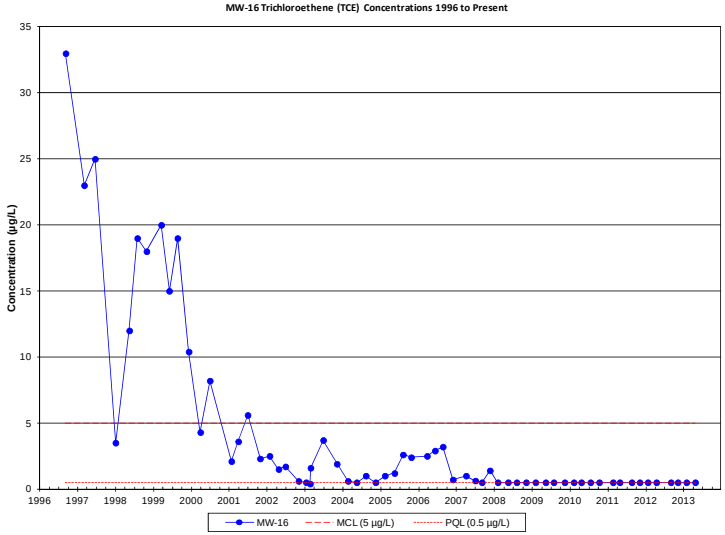


VOCs and Perchlorate Time Series Plots for MW-14-2 and MW-14-3

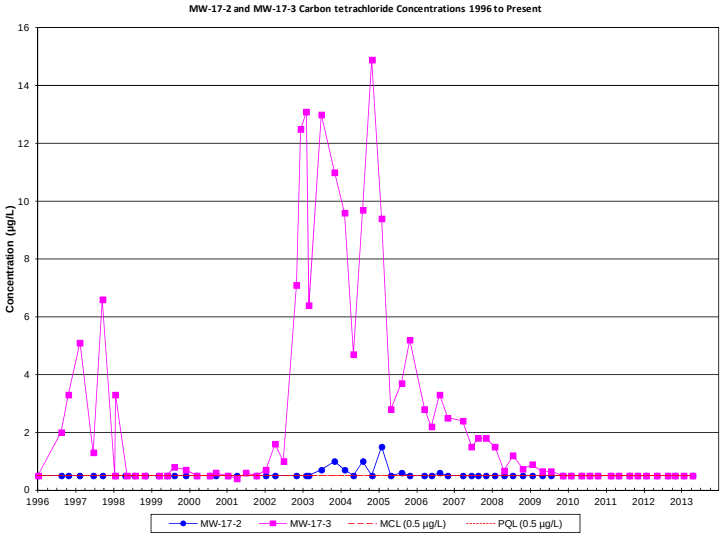


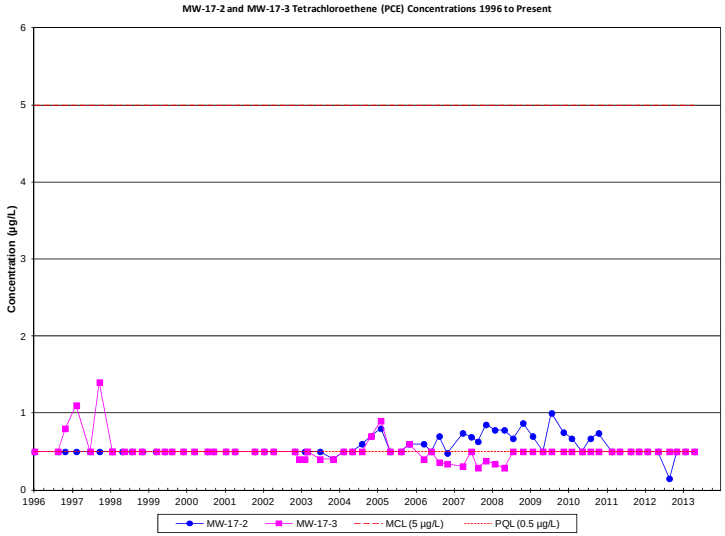


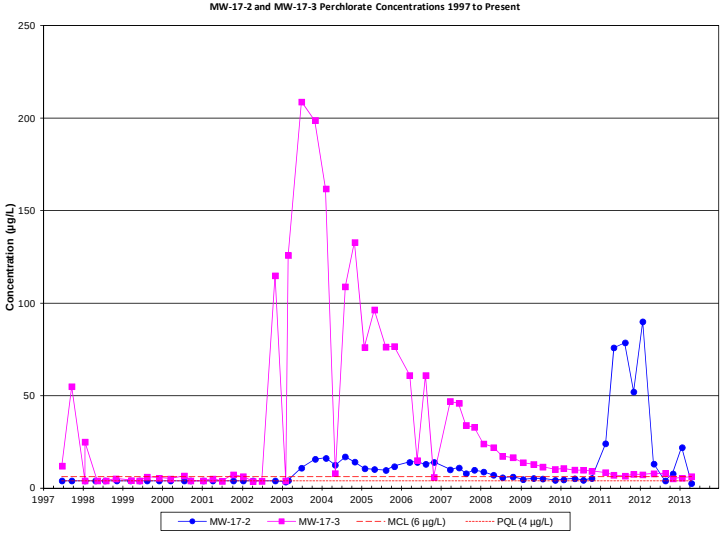


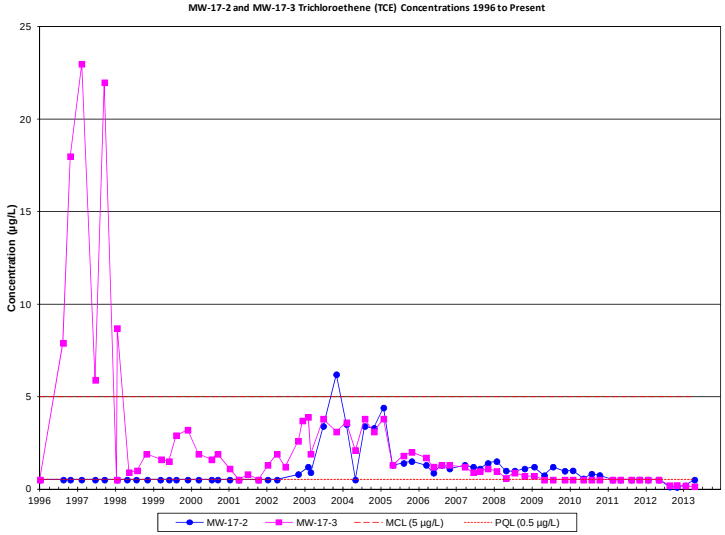


VOCs and Perchlorate Time Series Plots for MW-16

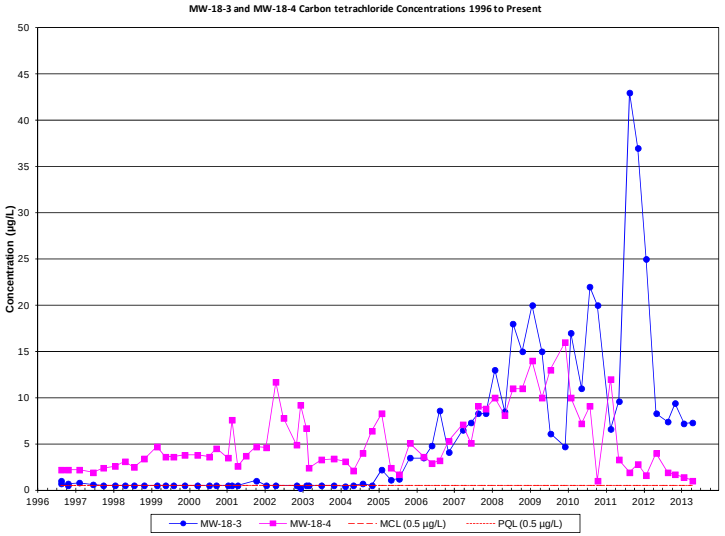


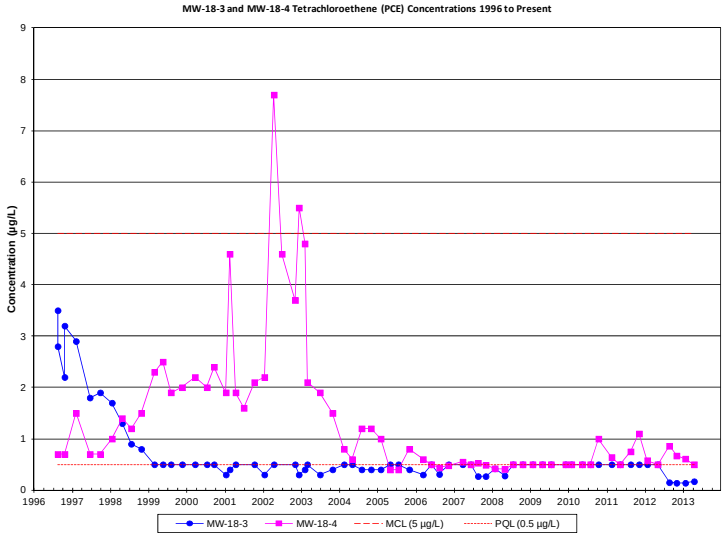


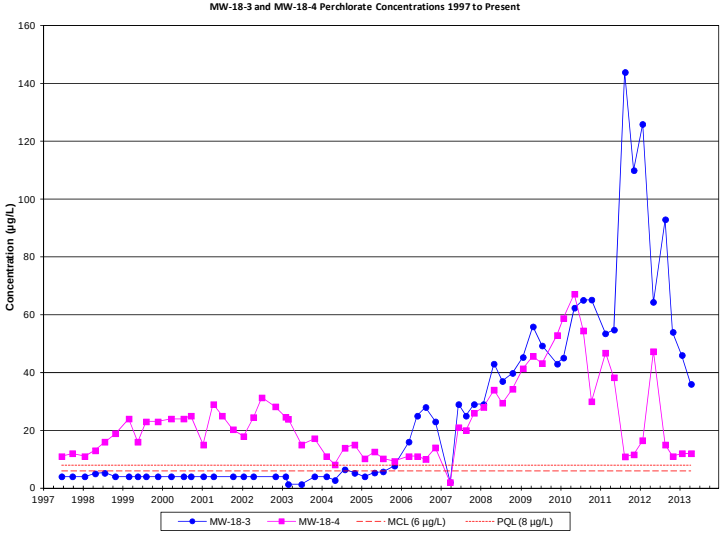


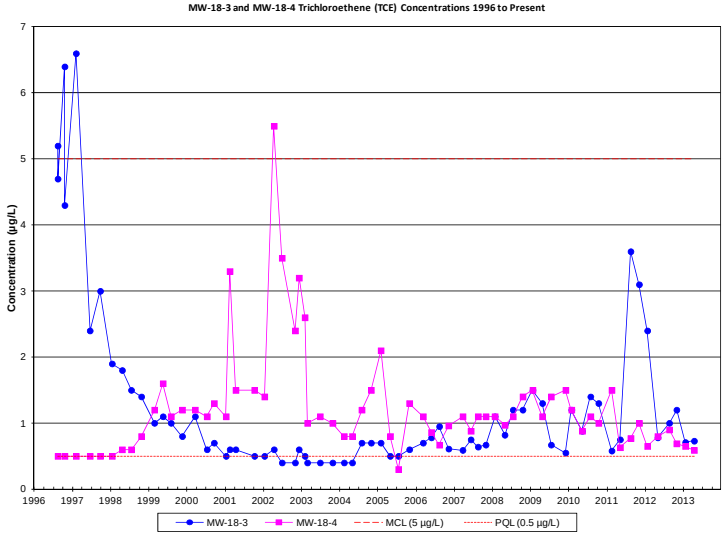


VOCs and Perchlorate Time Series Plots for MW-17-2 and MW-17-3

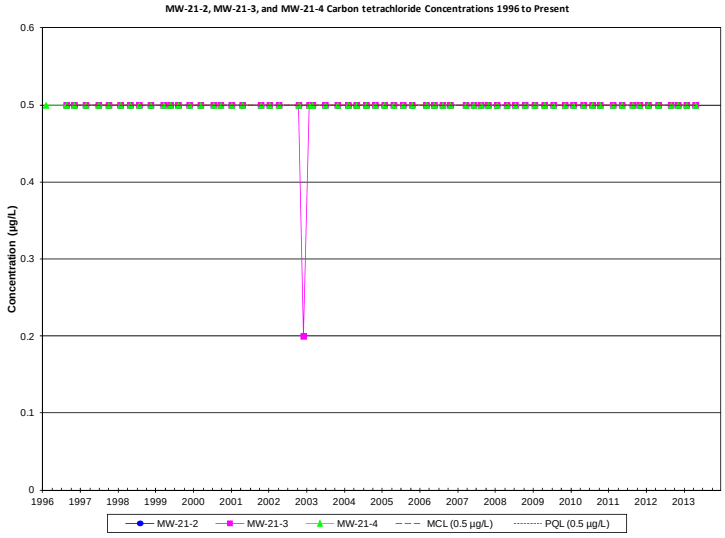


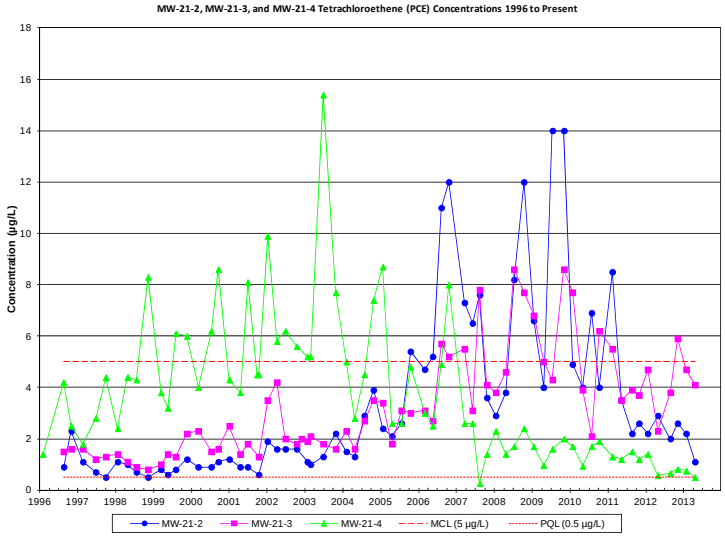


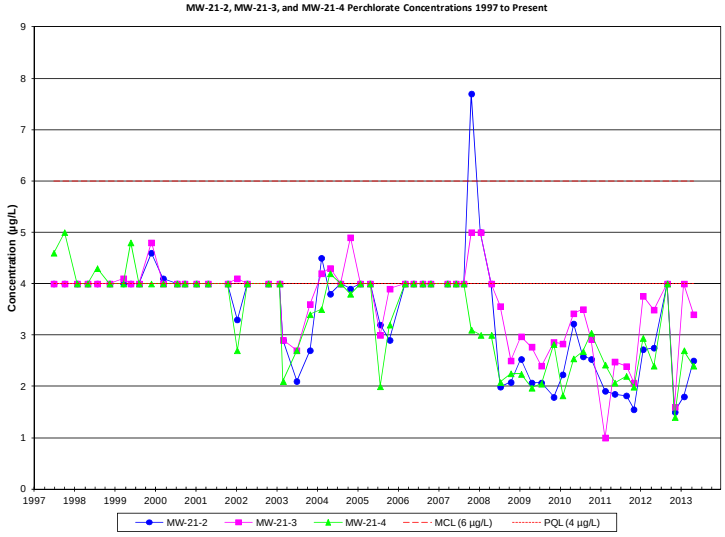


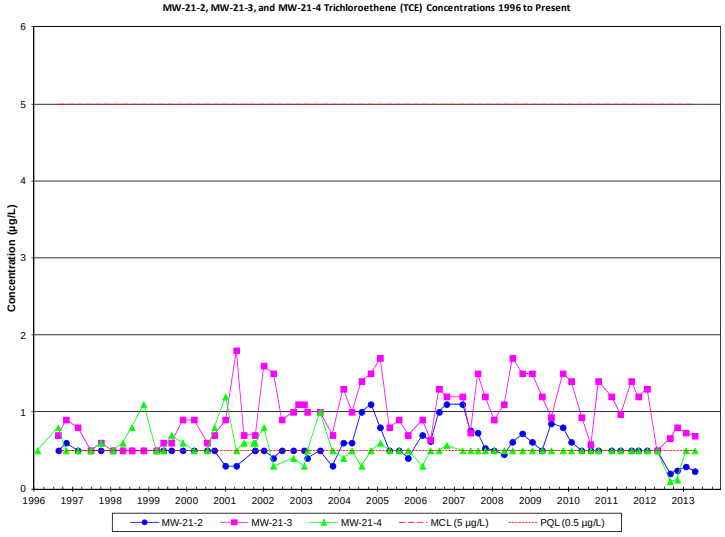


VOCs and Perchlorate Time Series Plots for MW-18-3 and MW-18-4

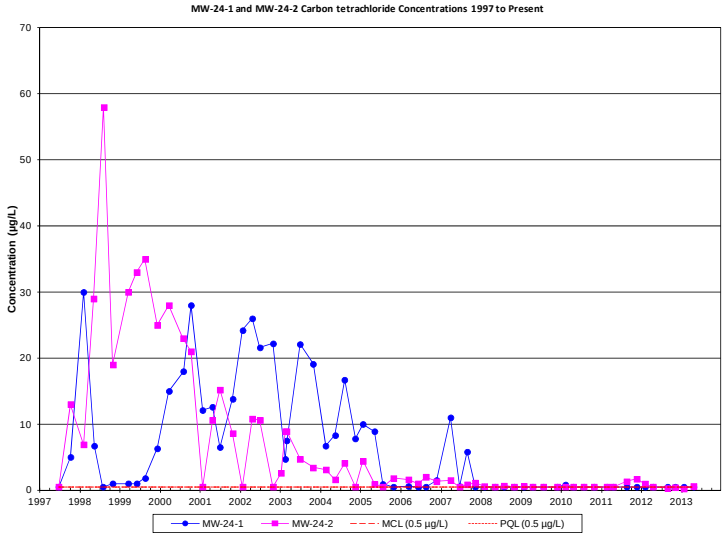


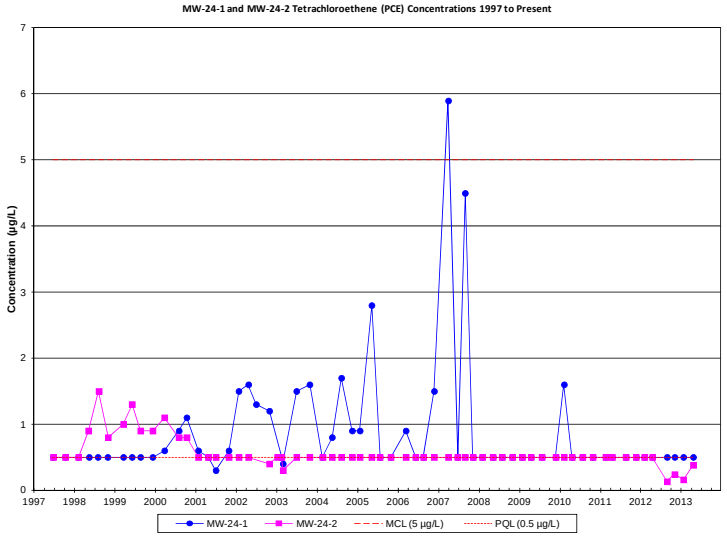


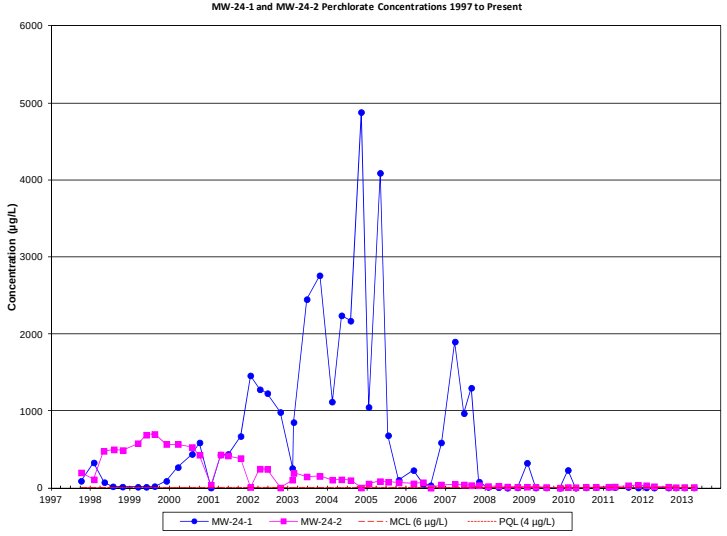


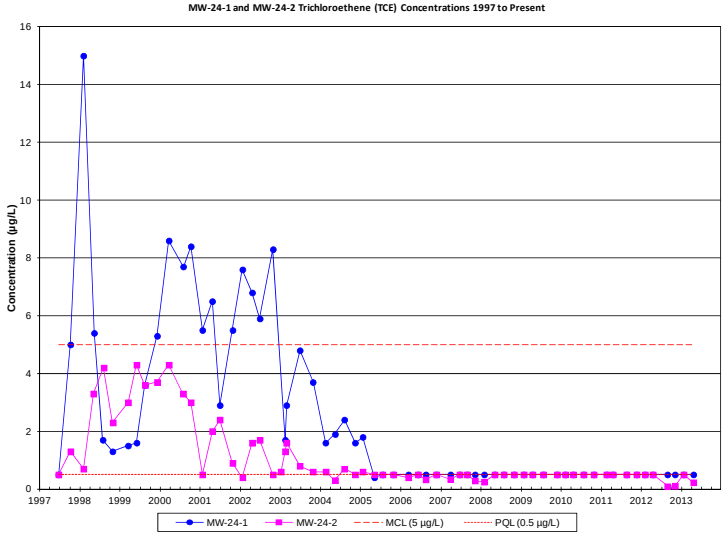


VOCs and Perchlorate Time Series Plots for MW-21-2 and MW-21-3 and MW-21-4









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