

**CSSA B-3 BIOREACTOR OPERATIONS
ANNUAL PERFORMANCE STATUS REPORT
(QUARTER 29 – QUARTER 32, MAY 2014 – APRIL 2015)**

JULY 9, 2015

This status report summarizes the operation of a bioreactor at Solid Waste Management Unit (SWMU) B-3 from May 2014 through April 2015, comprising the eighth year of bioreactor operations and monitoring since system start-up. This status report includes descriptions of current conditions, field observations, analytical results, and an anticipated schedule of activities for the next reporting period. Analytical results from monthly and quarterly regulatory and performance sampling through April 2015 are attached for reference. Parsons personnel responsible for bioreactor operation during the reporting period include Ken Rice, Samantha Elliott, Julie Bouch, Adrien Lindley, Elisa Rice, Richard Fincke, Fabian Bocanegra, and Scott Pearson.

Executive Summary

Site rainfall was above average throughout the year. Above average monthly precipitation was recorded for several months during 2014 and 2015. For the year (May, 2014 through April, 2015) a total of 34.60 inches of rain was recorded, 1.69 inches above average. Moderate drought conditions persisted during the first half of the reporting period resulting in a net deficit which is reflected in initial low aquifer water levels. The above average rainfall during the latter half of the reporting period however, has resulted in a precipitous rise in aquifer water levels area-wide. Injection of extracted groundwater continued through the year with few interruptions. Minor interruptions include: system maintenance, reaching automatic cut-off levels in the wells and/or storage tank, and B-3 bioreactor system upgrade activities. More significant interruptions during the reporting period included a six-week suspension of pumping at wells CS-MW16-LGR and –CC due to maintenance issues and electrical system upgrades.

Through the reporting period, approximately 20,771,000 gallons of groundwater was extracted from CS-MW16-LGR, CS-MW16-CC, B3-EXW01, B3-EXW02, B3-EXW03, B3-EXW04, and B3-EXW05 and were injected into bioreactor trenches 1 and 6. The majority of extracted groundwater, ~6,373,000 was extracted from B3-EXW03, followed by ~4,014,000 gallons from CS-MW16-CC. CS-MW16-LGR and EXWs -01, -02, -04, and -05 contributed lesser volumes of ~1,031,000, ~3,392,000, ~2,170,000, ~2,539,000, and ~1,252,000 gallons, respectively. Since the start of normal operations approximately 115,057,600 gallons of extracted groundwater have been injected into the bioreactor.

Data from monitoring efforts indicate that the B-3 bioreactor has continued to maintain appropriate geochemical conditions for effective anaerobic dechlorination of chlorinated aliphatic hydrocarbons (CAHs). Geochemical parameters indicating optimal conditions include the following:

- Concentrations of dissolved oxygen (DO) are generally less than 0.5 milligrams per liter (mg/L) and oxidation-reduction potential (ORP) values are less than 100 millivolts (mV), indicating an anaerobic environment conducive to dechlorination of CAHs within the trenches;
- Production of methane indicating that fermentation is occurring; and

- Hydrogen concentrations are greater than 1.0 nanomoles per liter (nmol/L), indicating that there is sufficient electron donor present to stimulate anaerobic dechlorination of CAHs.

Analytical results for samples collected in trench sumps provide evidence that biotic and abiotic dechlorination of tetrachloroethene (PCE) and trichloroethene (TCE) is occurring. The presence of the end product ethene provides evidence that the biotic reductive dechlorination process appears to be the major pathway for degradation of CAHs within trenches 1 and 6. Additionally, two other degradation mechanisms, both biotic and abiotic, appear to be occurring within trench 1.

It appears that biotic anaerobic oxidation of CAHs to carbon dioxide may be occurring with Mn (IV) as the terminal electron acceptor. This degradation pathway reaction results in the production of the reduced form of manganese [Mn (II)]. The periodic detections of high concentrations of Mn(II) in trenches 1 and 6 may be the result of this biotic process.

Evidence for the existence of abiotic reductive dechlorination is indicated by the presence of reduced iron [Fe(II)] and trans-DCE in trench 1. Field sampling analyses (Noblis) indicated positive results for hydrogen sulfide and sulfate-reducing bacteria. Hydrogen sulfide likely reduces iron [III] in soil minerals to iron [II], which is then available to facilitate reductive dechlorination of CAHs. Although evidence suggests this degradation pathway exists, it may not be a significant contributor to the overall degradation of contaminants.

Summary of Bioreactor Operation

Analytical results from biannual sampling at the bioreactor sumps indicate that SWMU B-3 trenches contain a range of *cis*-DCE levels (0.40 – 90 µg/L) as well as concentrations of other dechlorination products (e.g., VC, ethene). A summary of the analytical data collected for the reporting period (year 8) is included in Table 1. A summary of biannual monitoring results from the bioreactor trench sumps are attached, analytical results of the surrounding SWMU B-3 multi-port monitoring wells (MPMW or Westbay[®]) and monitoring wells are also attached.

Results of volatile organic carbon (VOC) analyses indicate that groundwater from the uppermost saturated zone (LGR-03B) of Westbay[®] wells CS-WB07 and CS-WB05 contain less than 100 micrograms per liter (µg/L) of PCE, TCE, and *cis*-DCE; well CS-WB06 contains less than 100 µg/L of PCE and greater than 100 µg/L of TCE and *cis*-DCE. The LGR-03B zone in CS-WB08 was dry throughout the year and therefore no samples collected. Similar analysis of groundwater from extraction wells indicate wells CS-MW16-CC and B3-EXW05 contain less than 100 micrograms per liter (µg/L) of PCE, TCE, and *cis*-DCE; wells CS-MW16-LGR, B3-EXW01, B3-EXW03, and B3-EXW04 contains greater than 100 µg/L of PCE, TCE, and *cis*-DCE, and B3-EXW02 contains less than 100 µg/L of PCE, and greater than 100 µg/L of TCE and *cis*-DCE.

VOC analytical results from bioreactor trench sump samples indicate slight increases in contaminant mass (total molar concentration) in trench sumps T1-1, T1-2, T1-3, and T6-2 and a decrease in trench sump T6-1 since April 2014. Over the bioreactor operational period (8 years), contaminant mass appears stable or decreasing.

Water quality field measurements from bioreactor trench 1 sumps indicate during the eighth year of bioreactor operations average annual values for DO, pH, ORP, and specific conductivity were 0.28 mg/L, 6.69, -9.09 mV, and 0.76 mS/cm, respectively, and temperatures ranged from ~21 °C to ~27 °C. Other observations regarding the data collected during this reporting period are listed below.

Water quality field measurements from trench 6 during sixth year of operations include average DO, pH, ORP, and specific conductivity of 0.25 mg/L, 6.60, -40.47 mV, and 0.64 mS/cm respectively; and temperatures ranged between 19 °C to 24 °C.

Ground water elevation data from the shallow UGR wells combined with similar data from the Westbay UGR zones and the bioreactor sumps helped confirm the presence of a groundwater “mound” around the bioreactor trenches. Analyses of samples from these wells indicated the presence of vinyl chloride with concentrations ranging from non-detect to 94 ppb (WB08-UGR-01) with the highest levels typically found north and west of the bioreactor. MW-28, located southwest of the bioreactor, has been consistently dry and MW-29 and -30 were also dry through the period, and therefore not sampled. Water quality parameters in the UGR wells fluctuated during the reporting period. In general, good reducing conditions (low DO, ORP, and pH) were reported in MW-26, 27, and 33, while moderate reducing conditions were observed in MW-31 and 34, and poor reducing conditions observed in MW-32. Shallow UGR wells MW-28, 29, and 30 did not have enough water for consistent readings.

During the reporting period, 36.40 inches of precipitation were measured on-post. Over the year, average water thicknesses in active trenches 1 and 6 (7.06 feet and 3.88 feet, respectively) indicate saturated conditions within the bioreactor is being maintained.

Attached are graphs including: B-3 trench 1 average water thickness with rainfall data, VOC concentration summaries for extraction wells, storage tanks (UIC), trench 1 and 6 sumps, and in the defined uppermost saturated zones (zone LGR-03B) in the surrounding multi-port monitoring wells, cumulative precipitation, as well as water level elevations in the defined uppermost saturated zone (zone LGR-03B) of the B-3 multi-port monitoring wells with rainfall data.

Quarter 32 - Analytical Data Observations

1. Arsenic (As) was detected in concentrations exceeding the MCL (10 µg/L) in one Westbay well zone, CS-WB05-LGR04B (13 µg/L) during the year. Manganese (Mn) was reported in bioreactor trench water samples at concentrations ranging from 40 to 1,150 µg/L (MCL is 50 µg/L). Seven of the UGR wells sampled during the year had elevated levels of Mn with concentrations ranging from 8.0 to 1,890 µg/L. One shallow UGR well did not produce enough water to sample. An elevated level of Mn was reported in CS-B3-MW01 (143 µg/L) and elevated levels of Mn were reported in CS-WB06-UGR-01 (2,120 µg/L), WB07-LGR-01 (569 µg/L), and CS-WB08-UGR-01 (586 µg/L), all other multi-port monitoring well (MPMW) zones reported Mn and As levels below the MCL. The elevated levels are likely due to changing pH conditions of the groundwater and the reduction of naturally occurring As and Mn within the limestone media to more soluble forms. Additionally, the biotic anaerobic oxidation pathway of CAHs may also be contributing to the elevated levels of Mn within the treatment system.
2. DO and ORP values were favorable for the reduction of CAHs, and it is likely that geochemical conditions will continue to improve as normal bioreactor operations continue.
3. The volatile organic compound summary for the trenches indicates an end-product (DCE isomer, VC, and ethene) dominated chemical composition in water. Total molar concentrations in sumps in trenches 1 and 6 have fluctuated through the year.
4. Reductive dechlorination of CAHs by microbial activity appears to be occurring as *dehalococcoides* (DHC) bacteria counts have been identified at or above the range of biostimulated populations (1.0E +03 cell/mL) in trench 1.
5. Saturated conditions within the bioreactor were maintained through the year with average water thicknesses of approximately 7.06 and 3.88 feet in trenches 1 and 6, respectively.

The reductive dechlorination end products VC, ethene, and ethane are present in the shallow UGR zone around the SWMU B-3 in addition to samples collected from sumps indicating the lateral influence of the bioreactor. VC is present in samples from shallow UGR wells MW26, -27, -31, -33 and -34, (8.2, 11, 0.55, 8.6 and 24 µg/L), and in samples from the WB06-UGR01 (9.8 µg/L) and WB08-UGR01 (94 µg/L) zones. Ethene and ethane are present in MW26, -27, -34, and WB08-UGR01 (4.1, 2.0, 15, and 18 µg/L ethene, and 11, 7.6, 10, and 2.9 µg/L ethane, respectively).

In addition to reductive dechlorination end products within the UGR, these products are also observed at depth. VC is observed in the LGR-03B, -04A, -04B, and BS-01 zones within WB05 (11, 93, 60, and 7.7 µg/L); in the LGR -04 zone within WB06 (3.7 µg/L); in the LGR-01 and -03B zones within WB07 (74 and 1.3 µg/L); and within WB08-LGR-01 and B3-MW01 (1.2 and 23 µg/L). Ethene is observed at depth within WB05-LGR-04B and WB07-LGR-01 (16 and 8.5µg/L). Ethane was not observed within samples collected within the LGR during this reporting period.

Recommendations

Recommendation for further treatability study actions include:

- Continue monitoring bioreactor and surrounding wells for UIC Permit and Performance parameters.

Anticipated Schedule for Next Period (May, 2015 – April, 2016):

- Continue monitoring and maintenance activities for delivery of groundwater to the bioreactor trenches.
- Conduct semi-annual monitoring events for the bioreactor system.
- Continue UIC monitoring with annual reporting due July 2016.
- Continue SCADA control and automation integration.

Specific Data Observation Notes for Attachments

- Table 32.1.1 presents field collected data from bioreactor trench sumps, and indicates saturated conditions were maintained during the year.
- Analytical results from the B-3 trench sump (trenches 1 through 6) samples, shown in Table 32.1.2, present data from the eighth year of bioreactor operations.
- Table 32.1.2 presents the VOC concentrations from biannual samples collected in bioreactor trench sumps. These data indicate that dechlorination products are being generated within the bioreactor. VC was present at variable concentrations in trench sumps, ranging from non-detect, ND to 25 µg/L during the year. Ethene was observed in concentrations ranging from ND to 6.6 µg/L in trench 1, and ND to 11 µg/L in trench 6.
- Table 32.1.3 indicates that Mn(II) and Fe(II) were present at concentrations consistent with alternative degradation pathways. Additionally, Table 32.1.3 provides evidence of the biotic anaerobic degradation pathway with the elevated concentrations of Mn and CO₂ and presents ethane concentrations ranging from ND to 5.2 µg/L in trench 1, and ND to 12 µg/L in trench 6 at various times during the year. Ethane was detected in each of the active trench sumps at least once during the last year.

- Table 32.3.3 indicates that VC was present (23 µg/L) in the samples collected from monitoring well CS-B3-MW01. Table 32.2.3a indicates VC concentrations of 93 µg/L in WB05-LGR04A and 60 µg/L in WB05-LGR04B, suggesting a connection between this zone and CS-B3-MW01. Ethene was observed in WB05 zones LGR04A and LGR04B during the year (2.9 and 16 µg/L, respectively).
- Table 32.4.4 indicates moderate populations of *Dehalococcoides* (DHC) bacteria exist in trenches 1 and 6 and smaller populations exist at greater depths in B3-EXW-01 and CS-WB05-LGR-04B.
- The changes in molar fraction and total molar concentrations shown in graphs of trench sumps indicate slight increases in contaminant mass possibly derived from less-dechlorinated (higher proportion of PCE and TCE) water provided by the extraction wells. Dechlorination of VOC impacted water to VC and ethene, however, is still occurring in the trenches.
- Table 32.6.2 indicates that significant amounts of contaminant mass are being provided for injection into the bioreactor by the seven extraction wells. Parent products (PCE and TCE) make up the majority of the contaminant mass, though *cis*-DCE is also present.
- Figure 32.2.5 shows that the water levels in Westbay wells are significantly influenced by drought conditions and precipitation, while pumping at CS-MW16-LGR and CS-B3-EXW01 shows strong influence in the deeper LGR zones. Pumping at CS-MW16-CC appears to have no influence on UGR or upper LGR zones.
- Table 32.7.3 indicates the presence of VC in several of the shallow UGR wells with concentrations ranging from non-detect to 24 µg/L. Additionally, Table 32.7.3 provides evidence of the biotic anaerobic degradation pathway as indicated by elevated concentrations of Mn and CO₂.

Analytical Summary Data

Table 1 Summary of Analysis Presented for Reporting Period

Event	VOCs	TDS	TOC	DOC	MEE & CO₂	SO₃⁻	Chloride, Sulfate	Fe²⁺	Mn	Metals[*]	H⁺	DHC
Semi-Annual Sampling ^a (Quarter 30)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Semi-Annual Sampling ^a (Quarter 32)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

a – Semi-annual sampling includes samples from B3-trench sumps, Monitoring Wells, Extraction Wells, and Multi-port (Westbay) wells.

* - Metals analyses was reduced to include only arsenic results beginning with the Month 44 sampling event.

Figures

Figure 32.1.2 T1-1

B-3 Bioreactor Trench 1 Sump 1 VOC Summary
Apr 2014 - Apr 2015

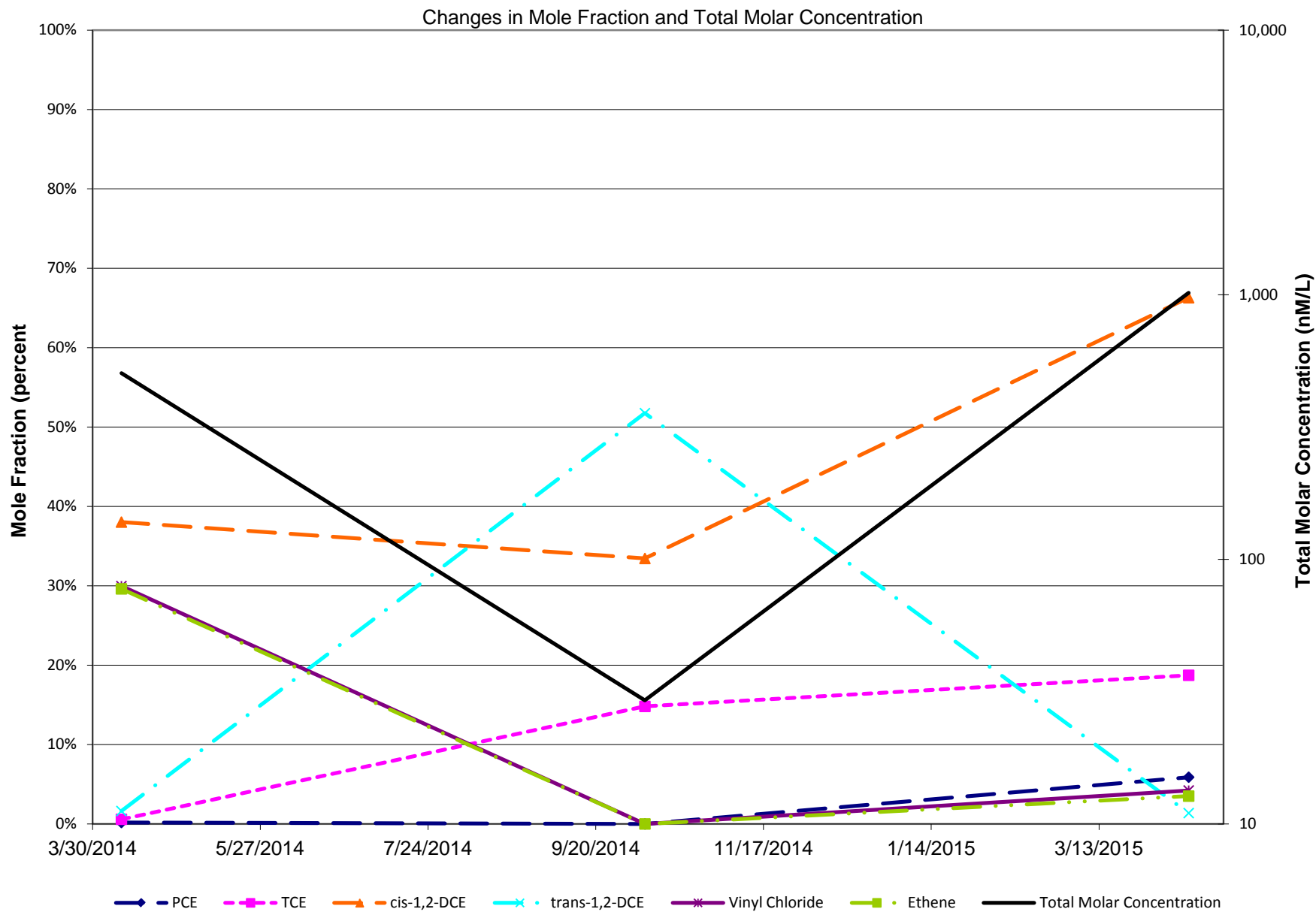


Figure 32.1.2 T1-2

**B-3 Bioreactor Trench 1 Sump 2 VOC Summary
Apr 2014 - Apr 2015**

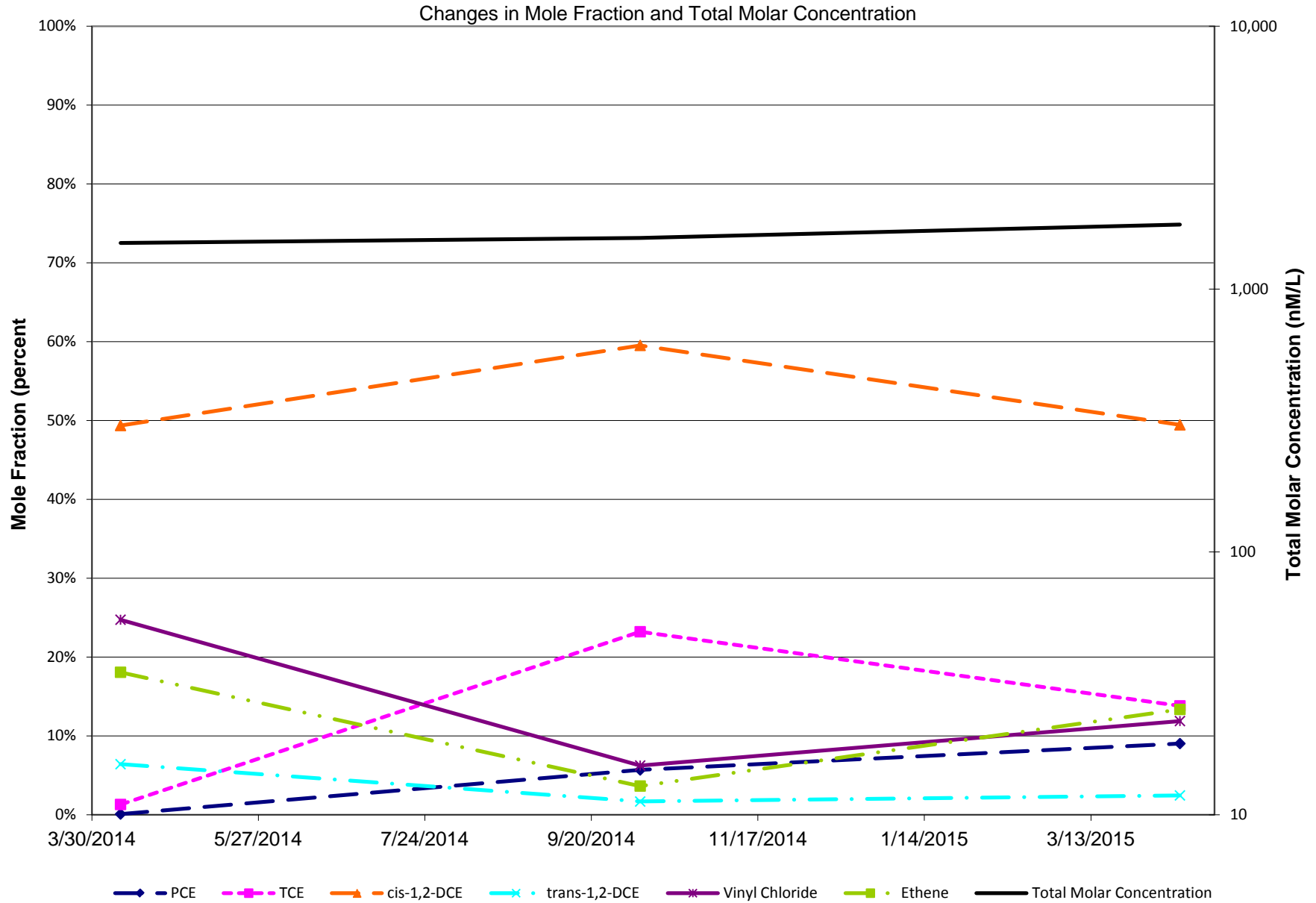


Figure 32.1.2 T1-3

B-3 Bioreactor Trench 1 Sump 3 VOC Summary
Apr 2014 - Apr 2015

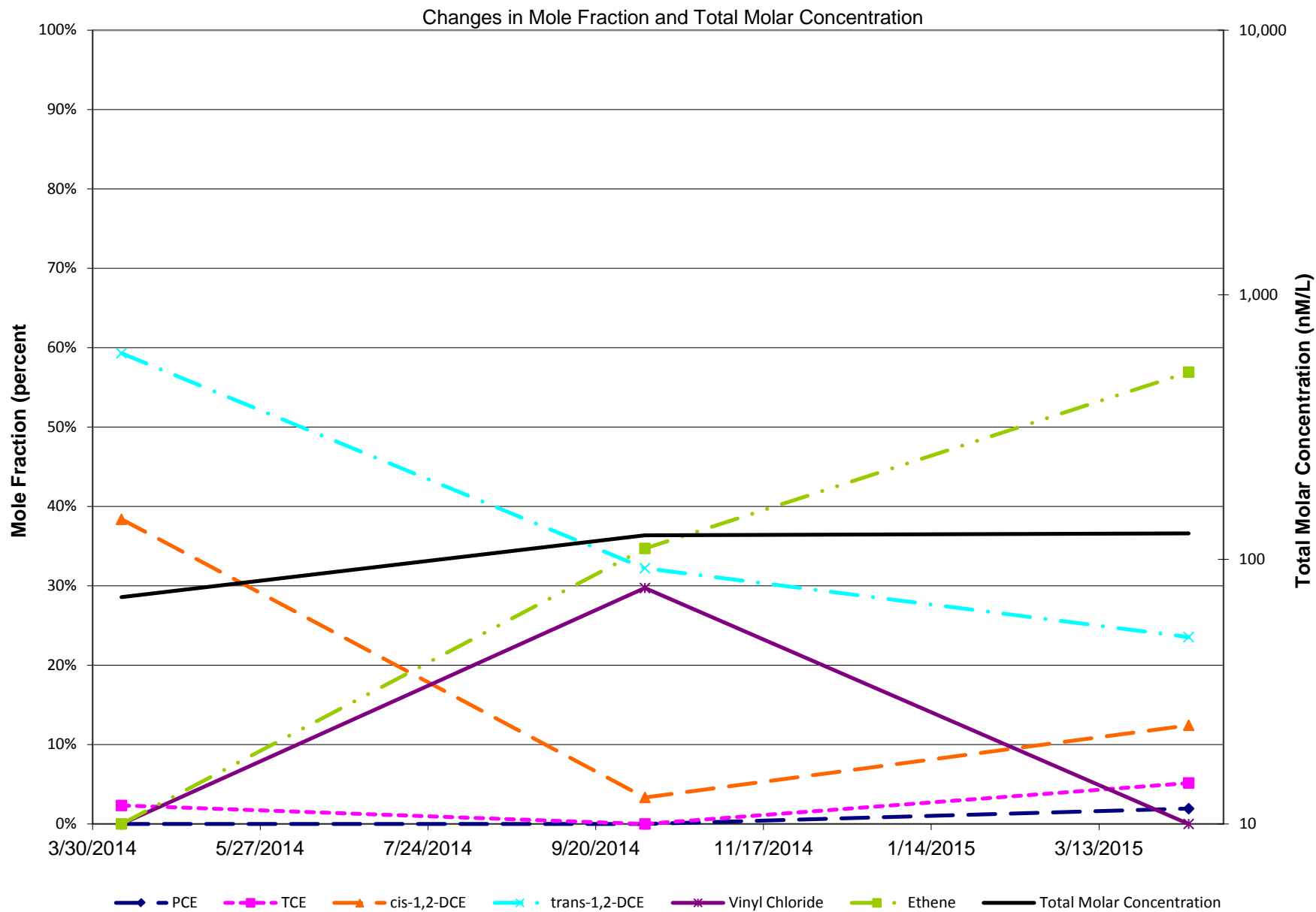


Figure 32.1.2 T6-1

B-3 Bioreactor Trench 6 Sump 1 VOC Summary
Apr 2014 - Apr 2015

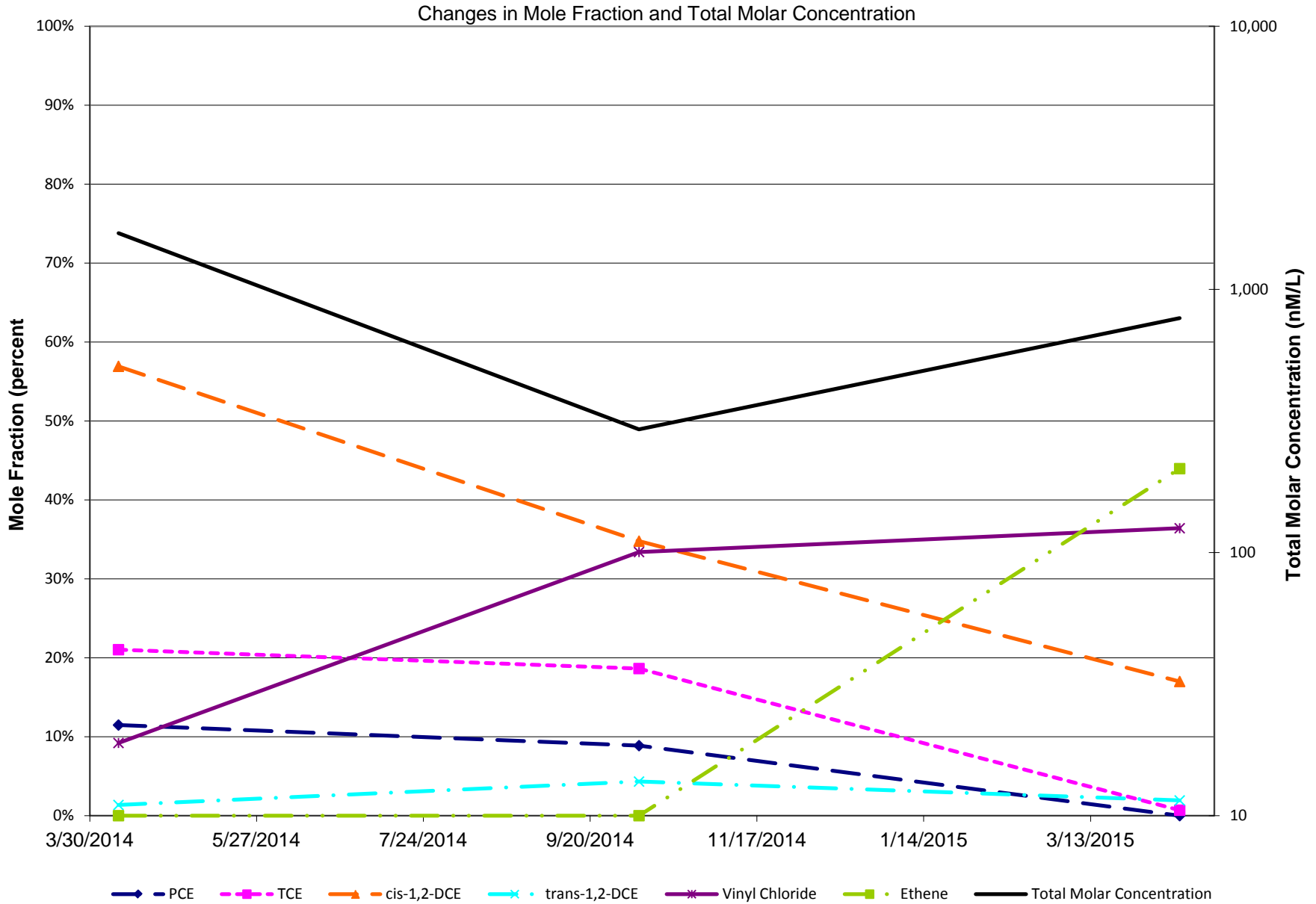


Figure 32.1.2 T6-2

B-3 Bioreactor Trench 6 Sump 2 VOC Summary Apr 2014 - Apr 2015

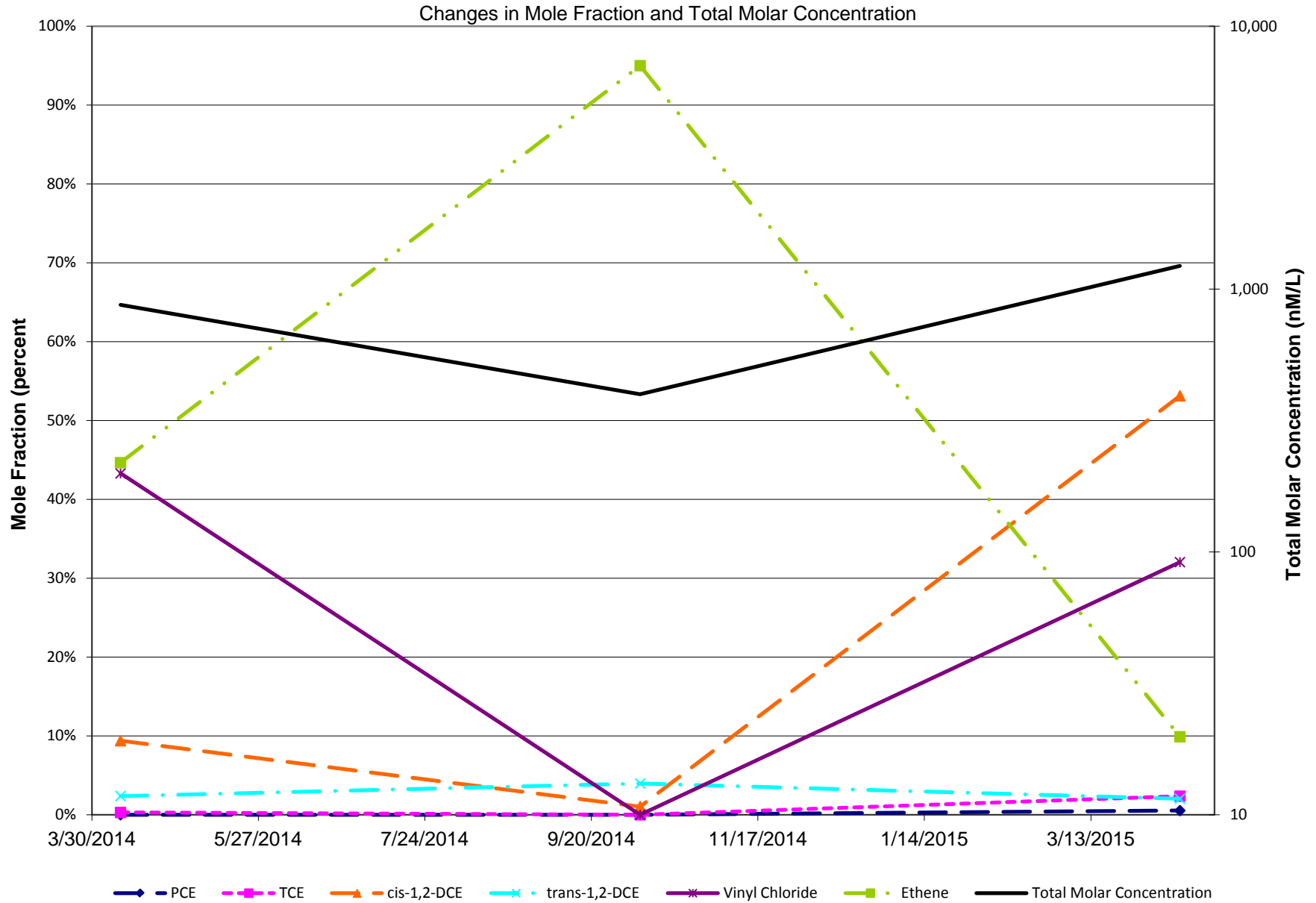


Figure 32.2.2b

CS-WB06-LGR03B VOC Summary
Apr 2014 - Apr 2015

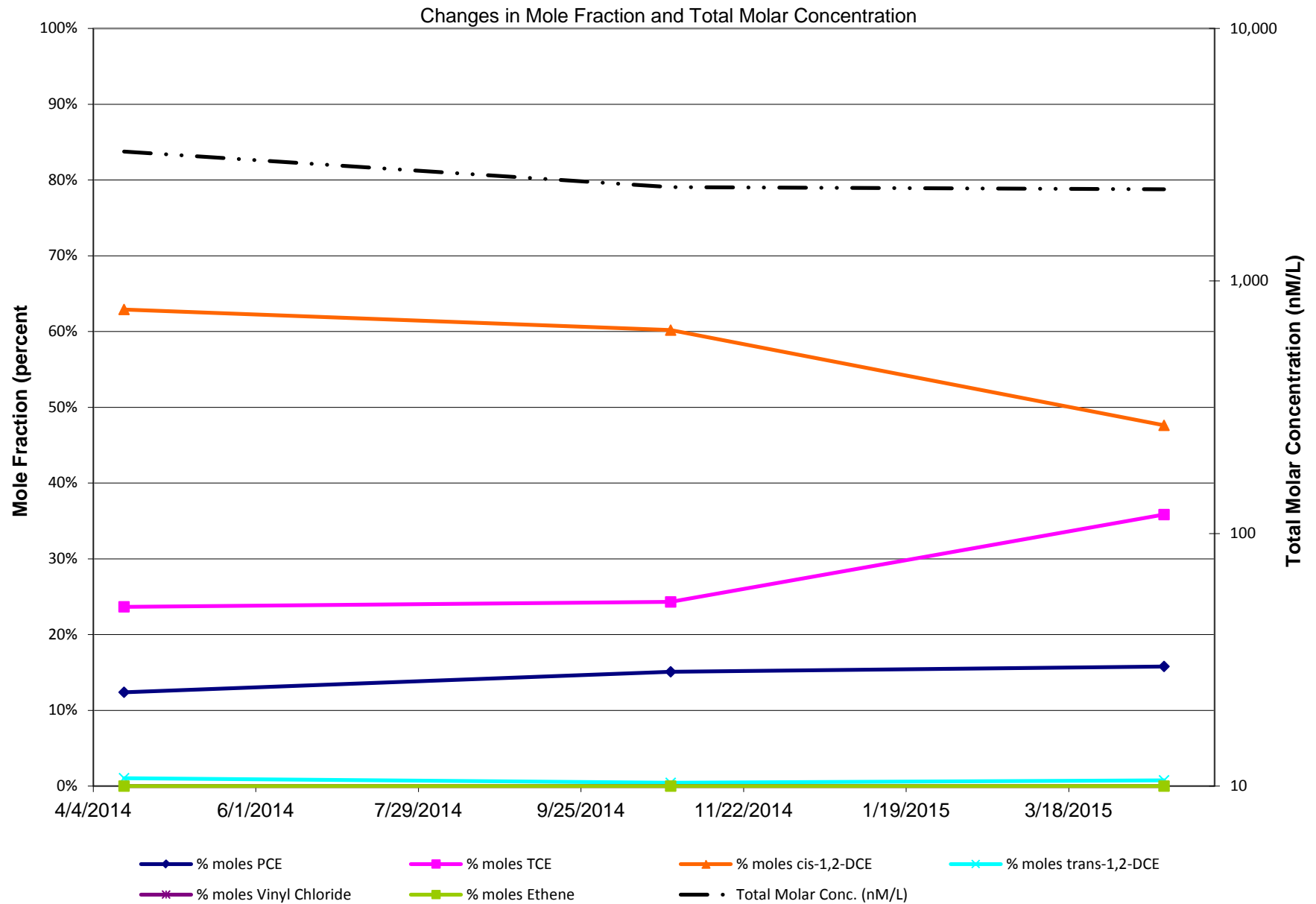


Figure 32.2.2c

CS-WB07-LGR03B VOC Summary
Apr 2014 - Apr 2015

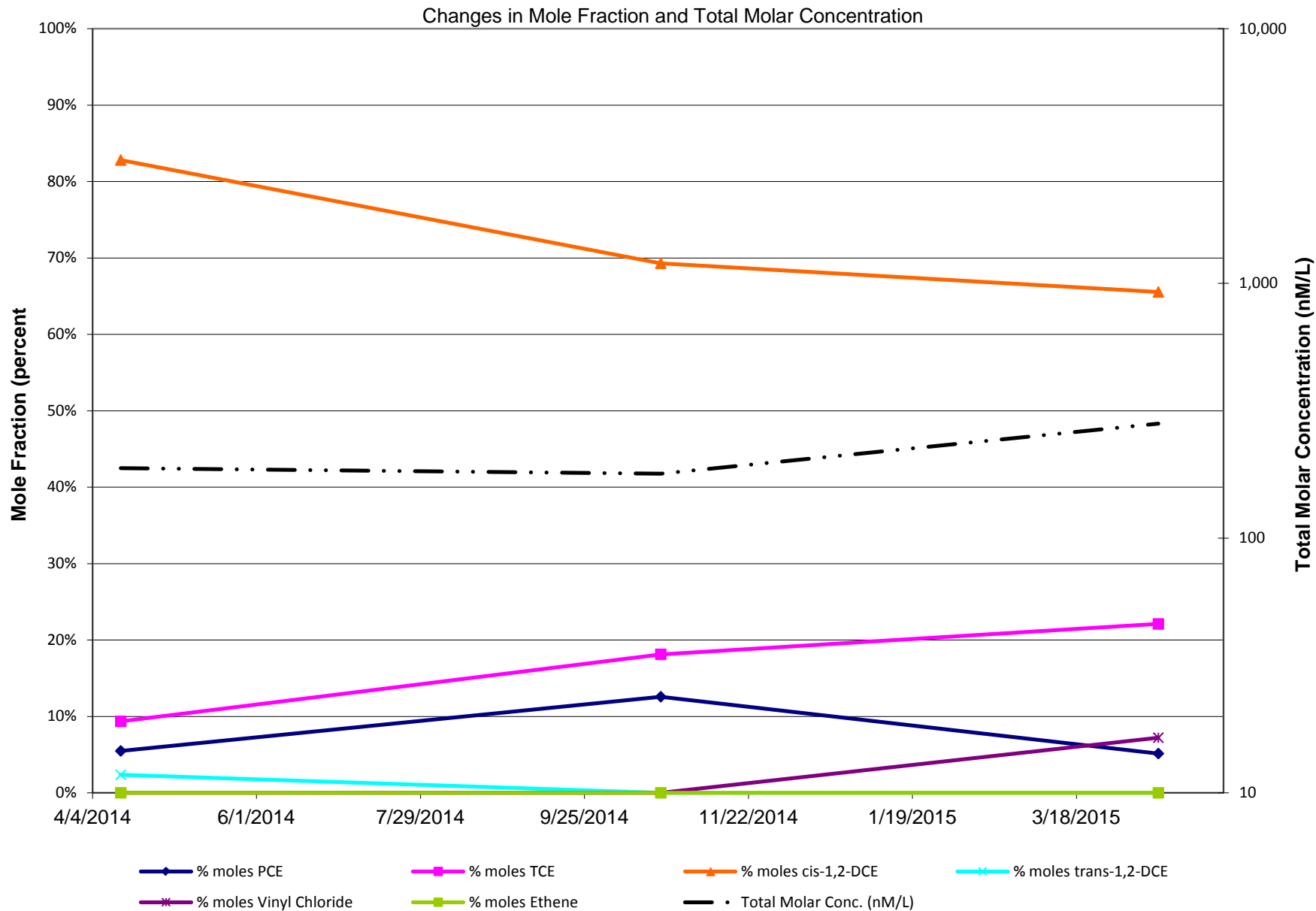


Figure 32.2.5

Lower Glen Rose Groundwater Elevations (feet above MSL) Measured in Westbay Wells May 2012 - April 2015

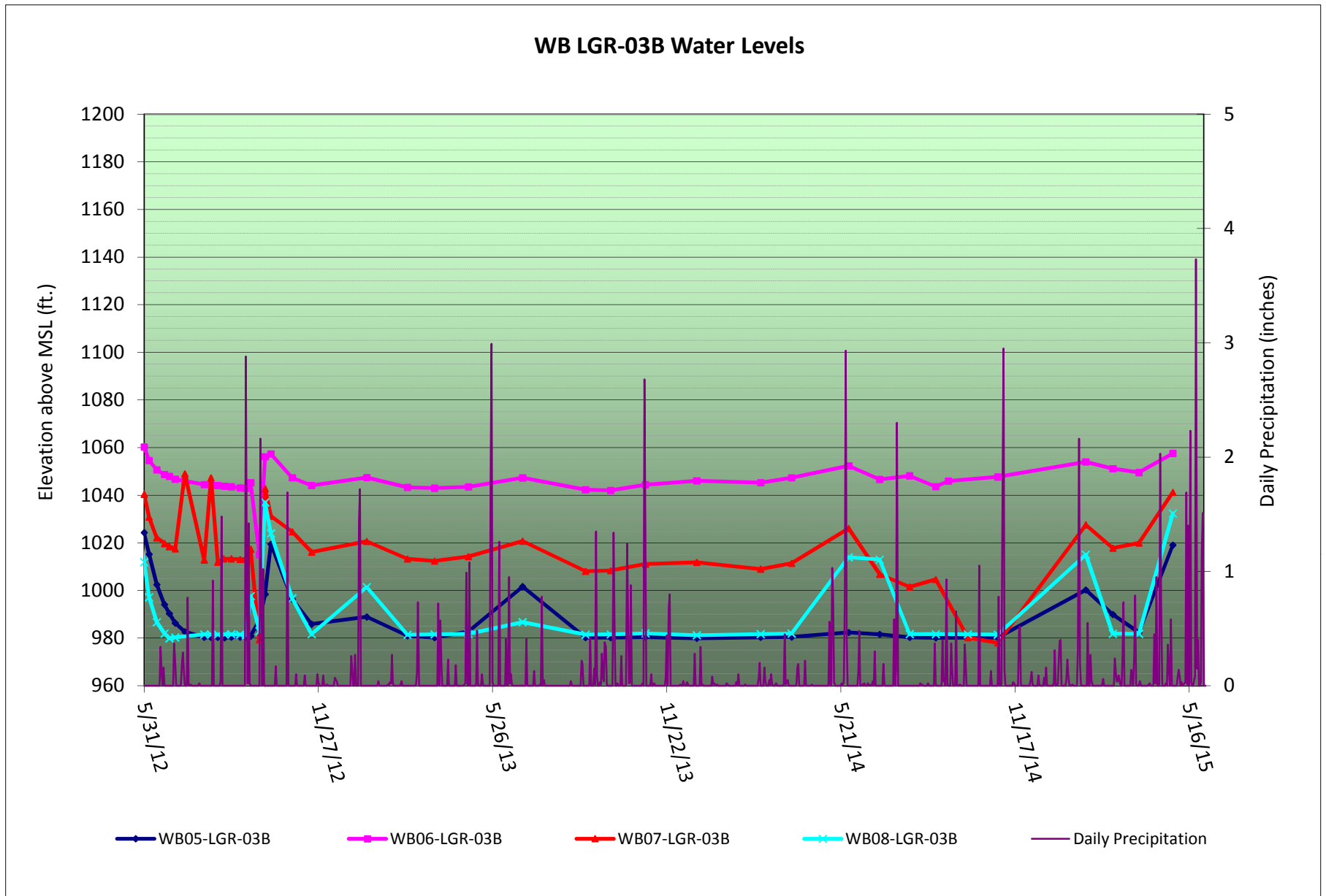


Figure 32.5.6

SWMU B-3 Bioreactor Trench Average Water Thickness/Daily Precipitation

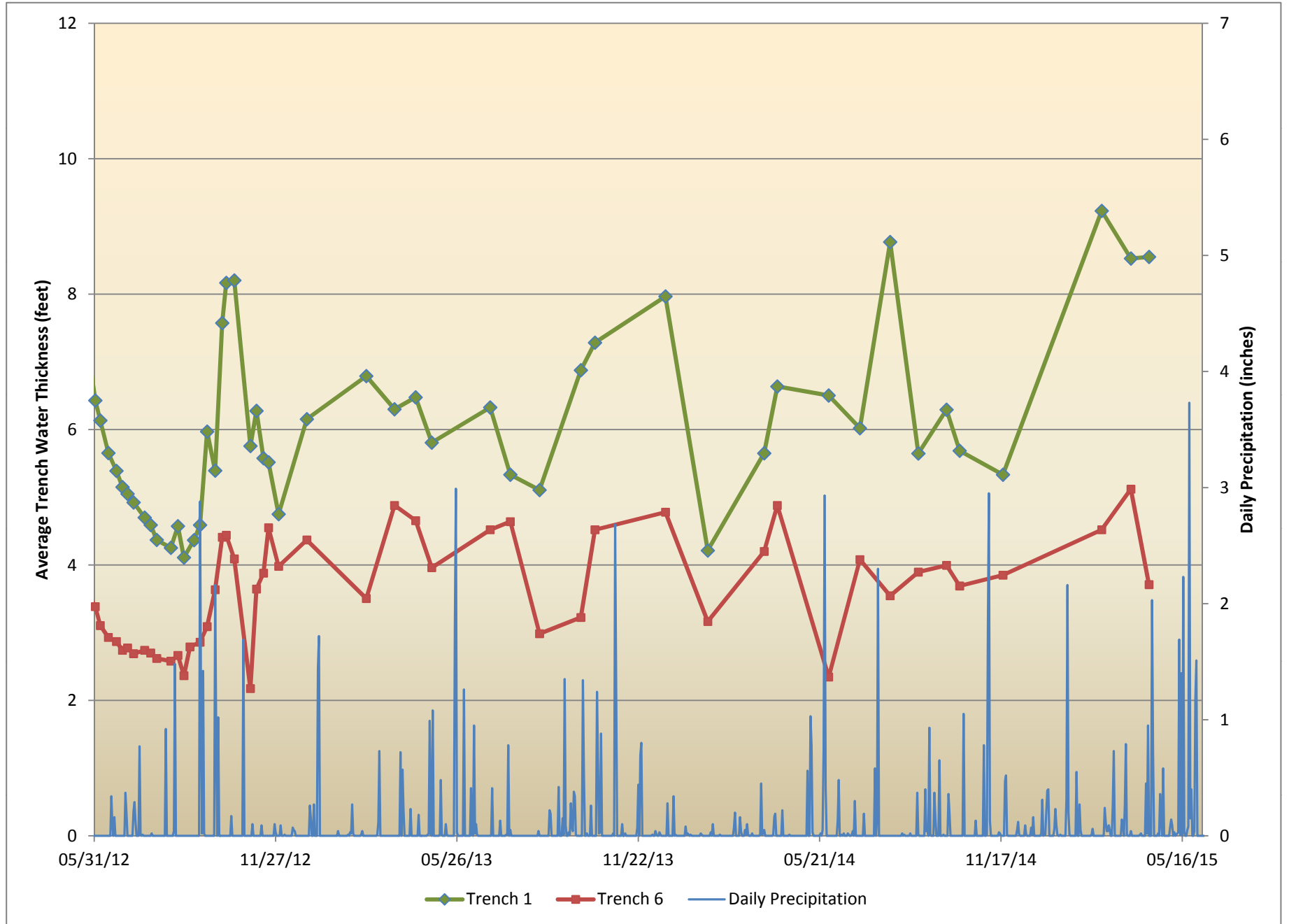


Figure 32.5.2

Changes in Mole Fraction and Total Molar Concentration at Storage Tank (UIC) Apr 2014 - Apr 2015

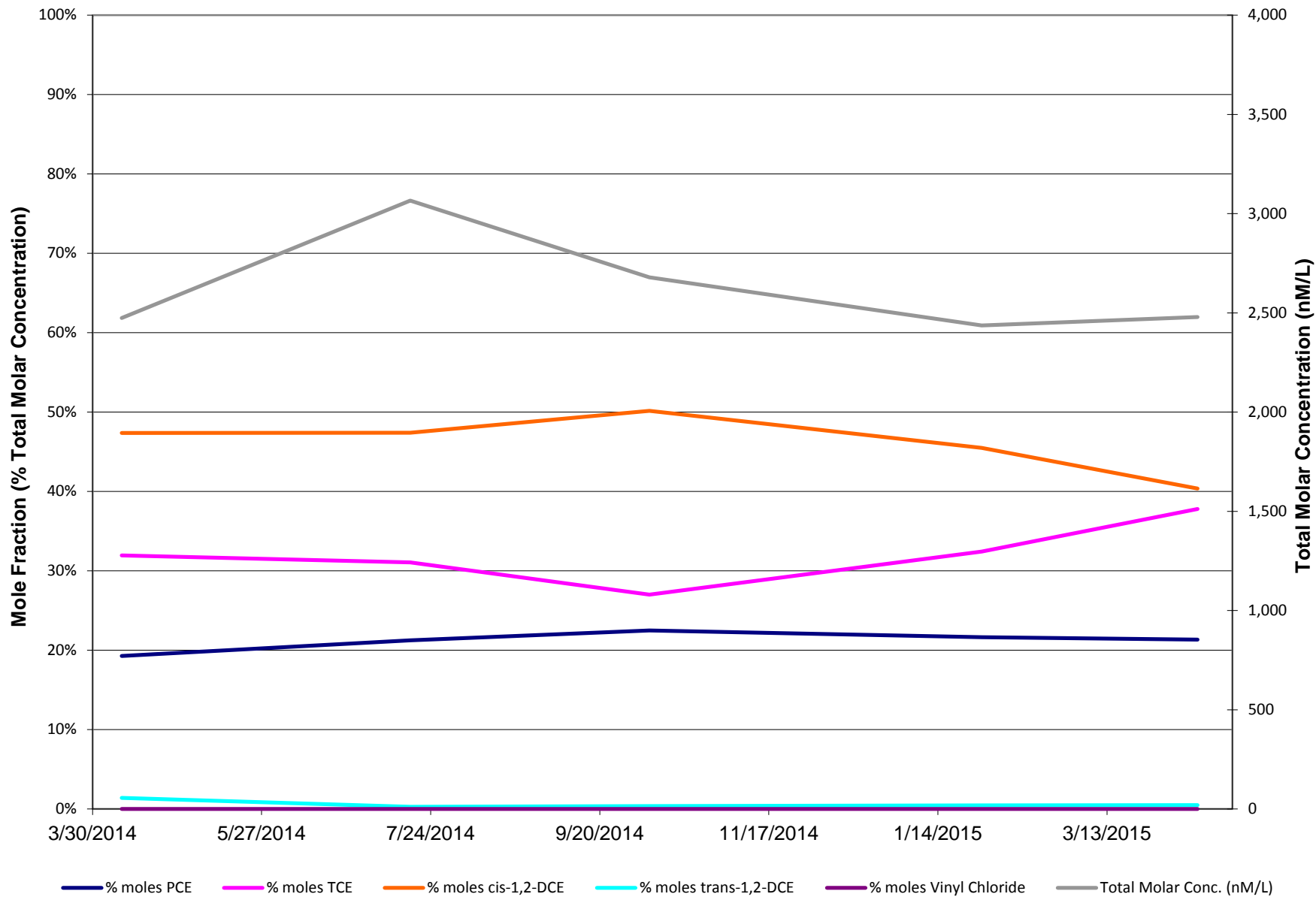


Figure 32.6.2 16-CC

CS-MW16-CC VOC Summary
Apr 2014 - Apr 2015

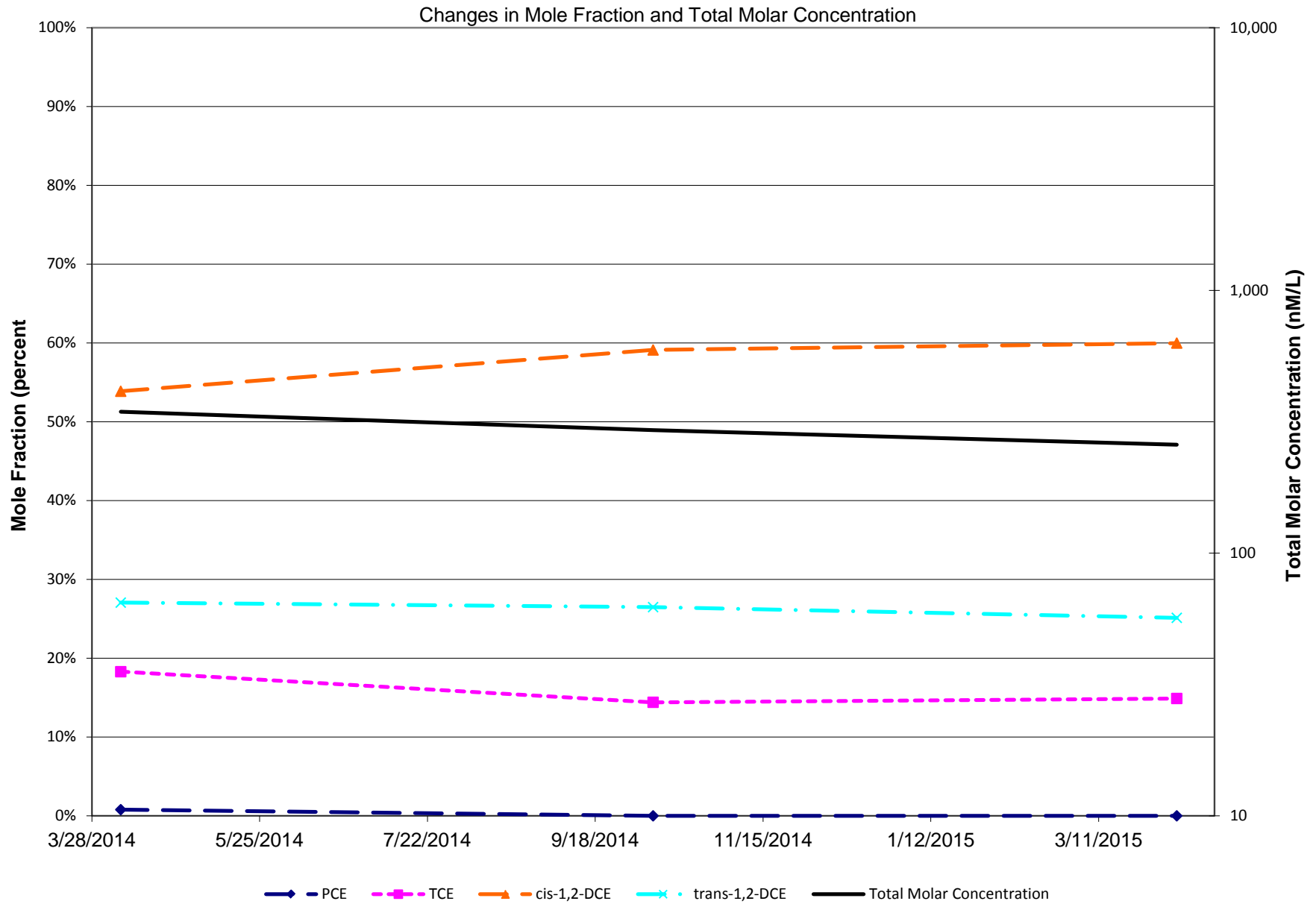


Figure 32.6.2 16-LGR

CS-MW16-LGR VOC Summary Apr 2014 - Apr 2015

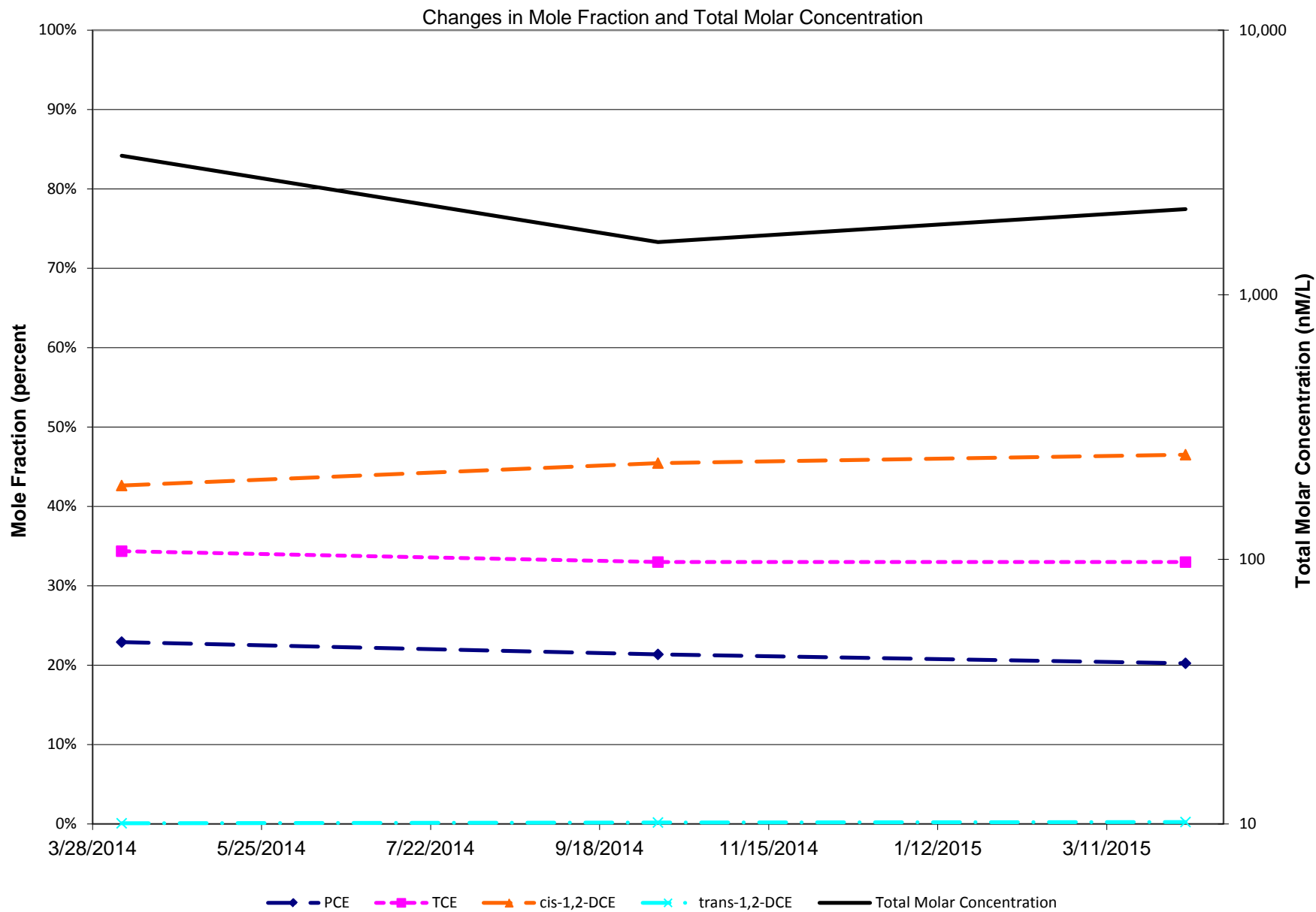


Figure 32.6.2 EXW01

B3-EXW01 VOC Summary
Apr 2014 - Apr 2015

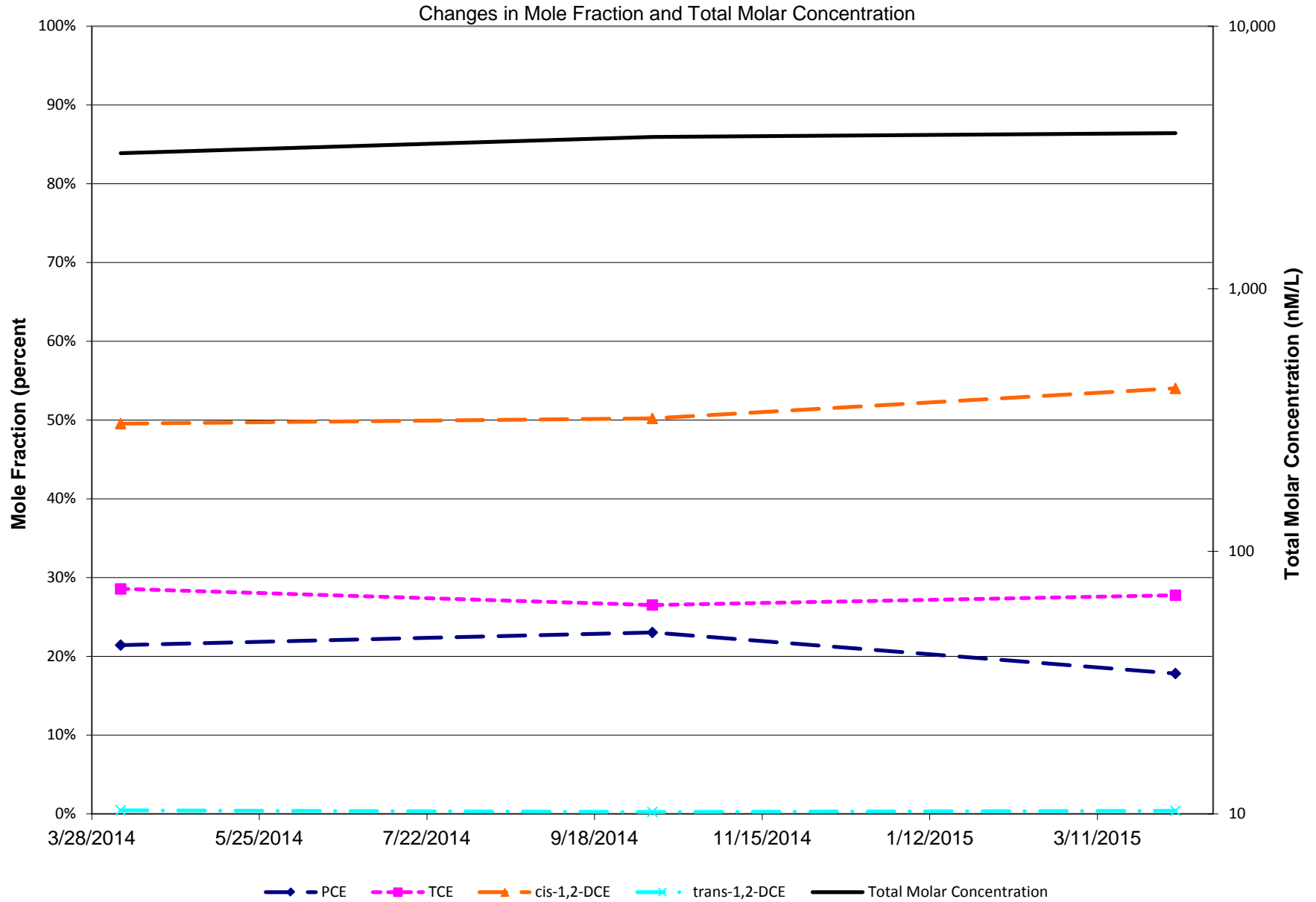


Figure 32.6.2 EXW02

B3-EXW02 VOC Summary
Apr 2014 - Apr 2015

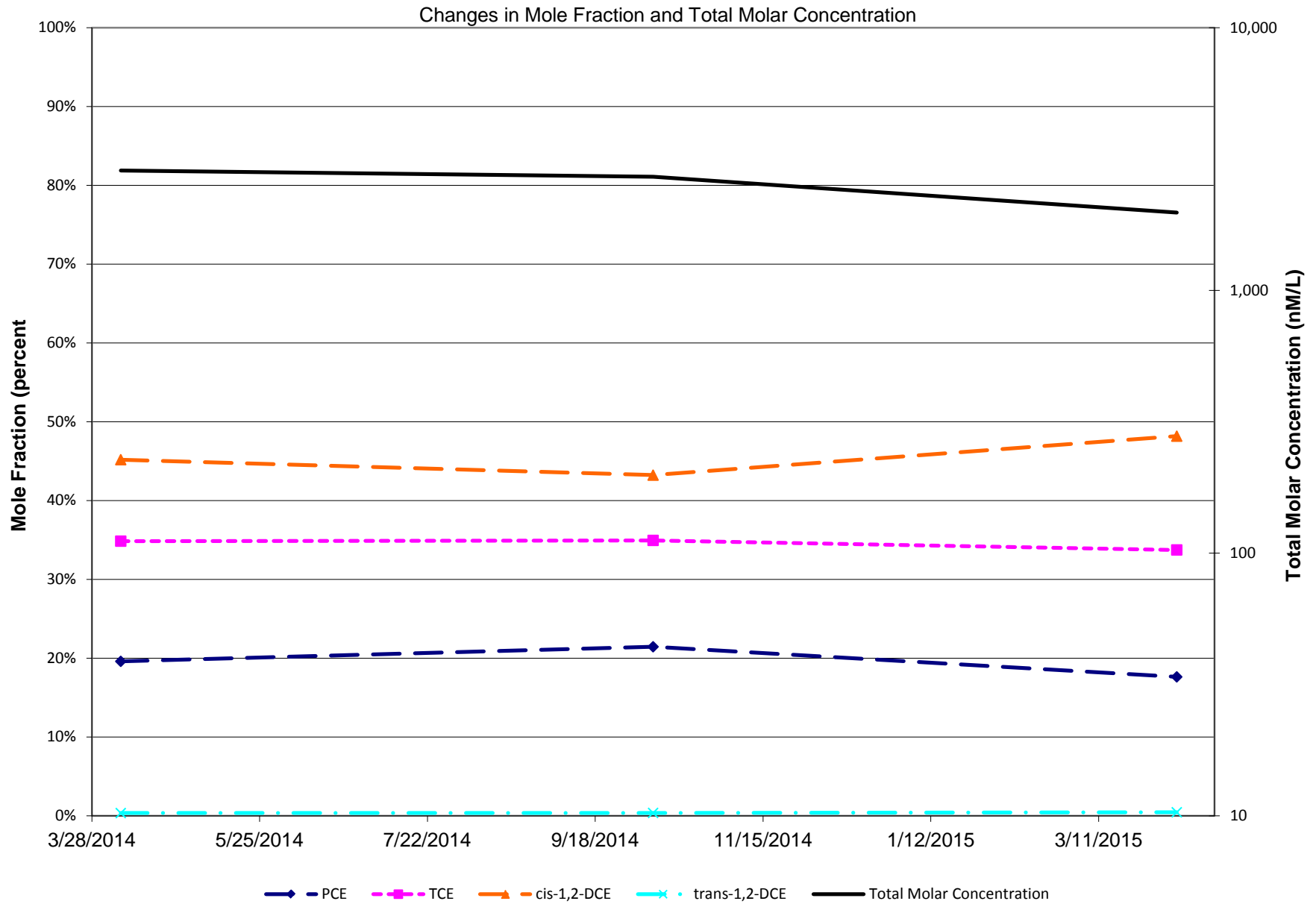


Figure 32.6.2 EXW03

B3-EXW03 VOC Summary
Apr 2014 - Apr 2015

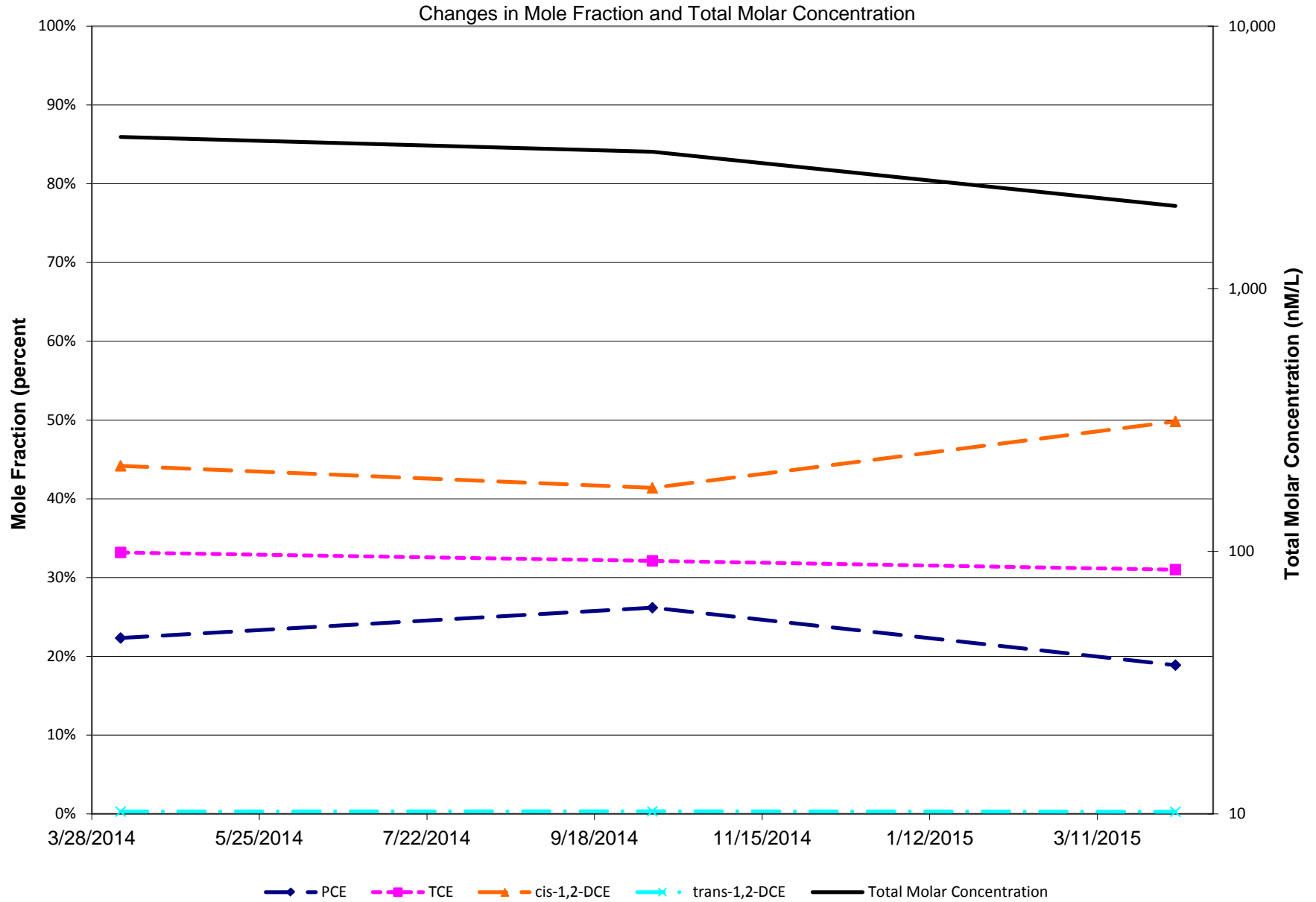


Figure 32.6.2 EXW04

B3-EXW04 VOC Summary
Apr 2014 - Apr 2015

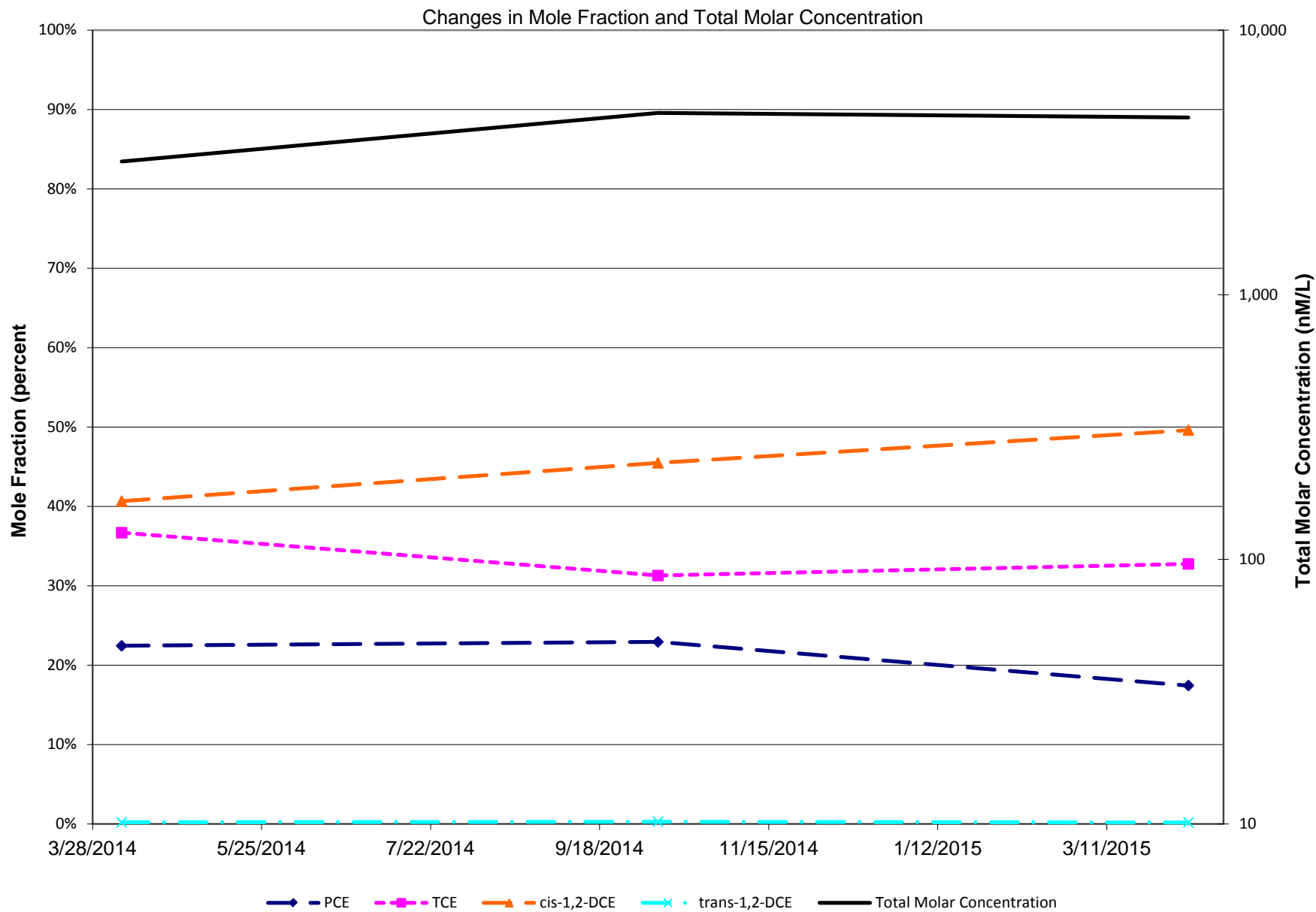
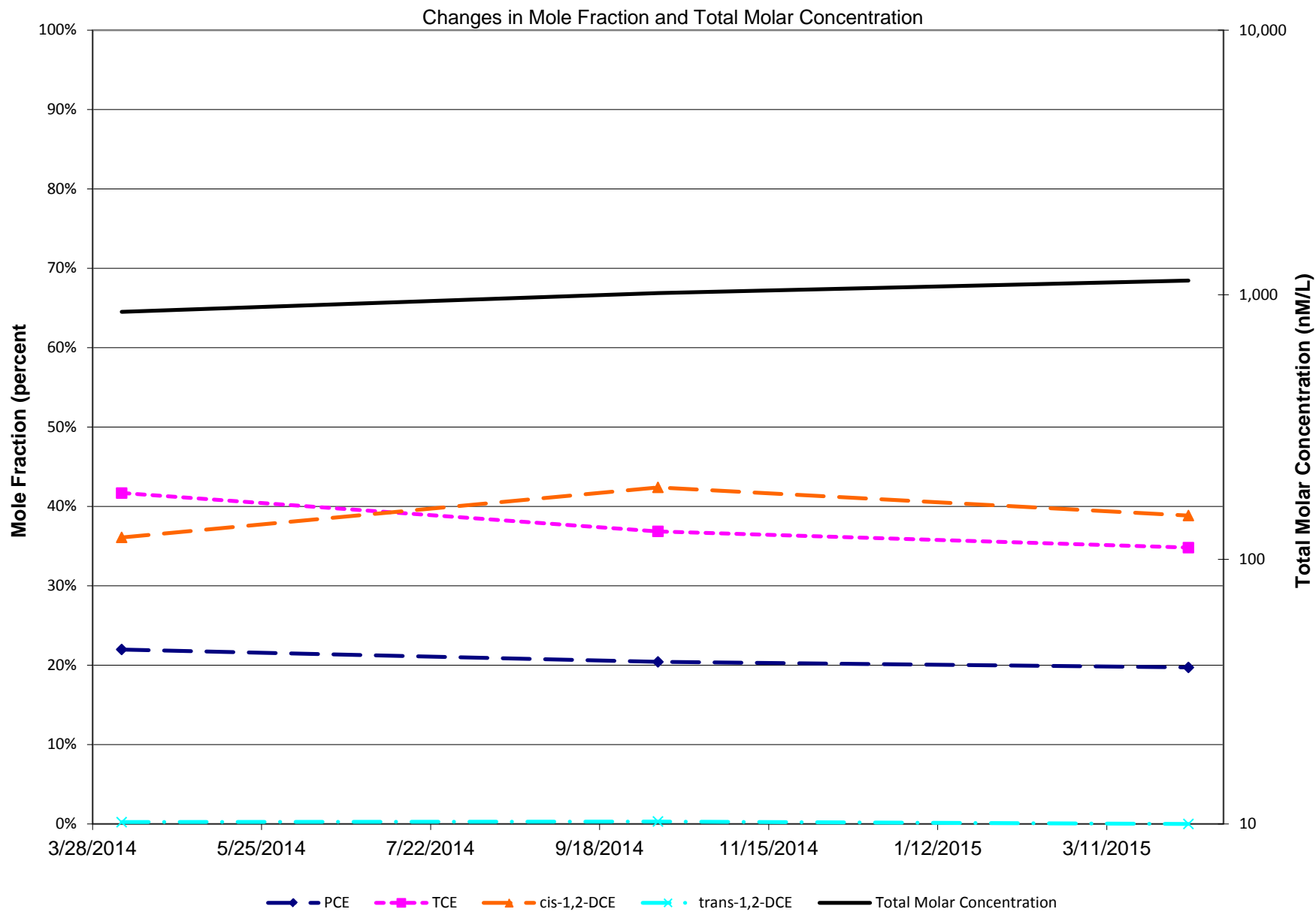


Figure 32.6.2 EXW05

B3-EXW05 VOC Summary
Apr 2014 - Apr 2015



Tables

Table 32.1.2

B-3 Bioreactor Trench VOC Summary
Apr 2014 - Apr 2015

Q32 Date	T1-1			T1-2			T1-3			T6-1			T6-2		
	4/9/2014	10/7/2014	4/13/2015	4/9/2014	10/7/2014	4/13/2015	4/9/2014	10/7/2014	4/13/2015	4/9/2014	10/7/2014	4/13/2015	4/9/2014	10/7/2014	4/13/2015
PCE (µg/L)	0.15	0	9.9	0.23	15	26	0	0	0.40	31	4.3	0	0	0	1.1
TCE (µg/L)	0.39	0.57	25	2.6	48	32	0.22	0	0.85	45	7.2	0.71	0.34	0	3.8
cis-1,2-DCE (µg/L)	19	0.95	65	72	90	84	2.7	0.40	1.5	90	9.9	13	7.9	0.40	63
trans-1,2-DCE (µg/L)	0.80	1.5	1.4	9.3	2.5	4.2	4.1	3.8	2.9	2.1	1.2	1.5	2.0	1.5	2.4
Vinyl chloride (µg/L)	9.5	0	2.7	23	6.1	13	0	2.3	0	9.4	6.1	18	24	0	25
Ethene (µg/L)	4.2	0	1.0	7.6	1.6	6.6	0	1.2	2.0	0	0	9.6	11	11	3.4
PCE (nM/L)	0.905	0.000	59.881	1.387	88.886	159.018	0.000	0.000	2.412	187.662	26.051	0.000	0.000	0.000	6.513
TCE (nM/L)	2.968	4.338	190.425	19.636	363.041	243.169	1.674	0.000	6.469	343.710	54.723	5.404	2.588	0.000	28.922
cis-1,2-DCE (nM/L)	192.264	9.799	674.059	739.969	930.892	870.552	27.643	4.126	15.575	930.376	102.114	132.336	81.692	4.126	650.748
trans-1,2-DCE (nM/L)	8.252	15.162	13.925	96.235	26.302	43.218	42.702	39.711	29.500	22.176	12.687	15.059	20.629	15.781	24.961
Vinyl chloride (nM/L)	151.496	0.000	42.873	370.821	97.744	209.247	0.000	36.634	0.000	150.536	98.064	283.475	376.740	0.000	392.417
Ethene (nM/L)	149.733	0.000	35.651	270.945	57.041	235.294	0.000	42.781	71.301	0.000	0.000	342.246	388.592	377.897	121.212
Total Molar Conc. (nM/L)	505.62	29.30	1016.81	1498.99	1563.91	1760.50	72.02	123.25	125.26	1634.46	293.64	778.52	870.24	397.80	1224.8
% moles PCE	0.2%	0.0%	5.9%	0.1%	5.7%	9.0%	0.0%	0.0%	1.9%	11.5%	8.9%	0.0%	0.0%	0.0%	0.5%
% moles TCE	0.6%	14.8%	18.7%	1.3%	23.2%	13.8%	2.3%	0.0%	5.2%	21.0%	18.6%	0.7%	0.3%	0.0%	2.4%
% moles cis-1,2-DCE	38.0%	33.4%	66.3%	49.4%	59.5%	49.4%	38.4%	3.3%	12.4%	56.9%	34.8%	17.0%	9.4%	1.0%	53.1%
% moles trans-1,2-DCE	1.6%	51.8%	1.4%	6.4%	1.7%	2.5%	59.3%	32.2%	23.6%	1.4%	4.3%	1.9%	2.4%	4.0%	2.0%
% moles Vinyl Chloride	30.0%	0.0%	4.2%	24.7%	6.3%	11.9%	0.0%	29.7%	0.0%	9.2%	33.4%	36.4%	43.3%	0.0%	32.0%
% moles Ethene	29.6%	0.0%	3.5%	18.1%	3.6%	13.4%	0.0%	34.7%	56.9%	0.0%	0.0%	44.0%	44.7%	95.0%	9.9%
sum % moles	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: 0 sample indicates a non-detect analyte value

Table 32.1.3

B-3 Bioreactor Analytical Summary
Apr 2014 - Apr 2015

Q32		Bioreactor Active Trench Sumps																													
Well ID		T1-1						T1-2						T1-3						T6-1						T6-2					
Sample Date	Units	4/9/2014		10/7/2014		4/13/2015		4/9/2014		10/7/2014		4/13/2015		4/9/2014		10/7/2014		4/13/2015		4/9/2014		10/7/2014		4/13/2015		4/9/2014		10/7/2014		4/13/2015	
Compound		Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag
Dissolved Organic Carbon	mg/L	5.9		9.6		3.9		4.0		2.1		1.8		15		7.4		8.0		2.1		2.4		2.6		5.1		6.0		4.5	
Total Organic Carbon	mg/L	6.4		11		7.8		3.9		2.1		1.8		15		9.3		8.8		1.9		3.2		5.1		4.7		6.5		4.9	
Methane	µg/L	525		2,200		867		216		43		124		9,350		5,340		7,540		17		0		1,230		1,200		3,070		179	
Ethane	µg/L	4.2		0		1.0	F	7.6		1.6	F	6.6		0		1.2	F	2.0	F	0		0		9.6		11		11		3.4	
Ethane	µg/L	1.8	F	5.2		3.6		0		0		0		9.1		5.8		10		0		0		8.4		4.6		12		0	
Carbon Dioxide	µg/L	212,000		178,000		134,000		59,600		97,600		57,100		146,000		173,000		111,000		50,000		67,000		104,000		126,000		233,000		195,000	
Sulfate	mg/L	19		2.1		16		27		43		29		1.0		4.0		5.4		32		8.7		11		15		5.2		21	
Chloride	mg/L	16		15		17		16		16		15		16		16		15		16		14		15		16		15		15	
Ferrous Iron	mg/L	4.7		3.0		6.2		2.9		0.64	F	0.58	F	6.2		7.0		8.2		0.48	F	1.9		7.3		4.7		14		2.6	
Manganese	µg/L	335		293		1,150		57		9.0		40		402		368		393		124		253		208		204		147		55	
Hydrogen	nM					18		5.5		7.7												17		23		17		23		8.3	
Sulfide	mg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		9.5		0	
Total Dissolved Solids	mg/L	516		454		444		410		392		386		506		434		437		367		357		373		408		390		376	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	19		0.95	F	65		72		90		84		2.7		0.40	F	1.5		90		9.9		13		7.9		0.40	F	63	
Dichloroethene, trans-1,2-	µg/L	0.80		1.5		1.4		9.3		2.5		4.2		4.1		3.8		2.9		2.1		1.2		1.5		2.0		1.5		2.4	
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	0.15	F	0		9.9		0.23	F	15		26		0		0.40	F	31		4.3		0		0		0		0		1.1	F
Toluene	µg/L	0		0.42	F	0		0		0		0		0.20	F	0.43	F	0		0		0		0		0		0		0	
Trichloroethene	µg/L	0.39	F	0.57	F	25		2.6		48		32		0.22	F	0		0.85	F	45		7.2		0.71	F	0.34	F	0		3.8	
Vinyl chloride	µg/L	9.5		0		2.7		23		6.1		13		0		2.3				9.4		6.1		18		24		0		25	
Arsenic	µg/L	0.80	F	2.6	F	0		1.7	F	1.0	F	0		2.3	F	3.1	F	0		1.2	F	1.4	F	0		0.70	F	2.5	F	0	
		Month 84		Month 90		Month 96		Month 84		Month 90		Month 96		Month 84		Month 90		Month 96		Month 84		Month 90		Month 96		Month 84		Month 90		Month 96	

Note: 0 sample indicates a non-detect analyte value

Table 32.2.2

Upper Saturated Zone (Zone 03B) VOC Summary
Apr 2014 - Apr 2015

Q32 Date	CS-WB05-LGR03B	CS-WB06-LGR03B			CS-WB07-LGR03B		
	4/27/2015	4/15/2014	10/27/2014	4/21/2015	4/14/2014	10/22/2014	4/16/2015
PCE (µg/L)	1.2	67	59	60	1.7	3.7	2.4
TCE (µg/L)	2.6	101	75	109	2.3	4.3	8.2
cis-1,2-DCE (µg/L)	44	199	137	107	15	12	18
trans-1,2-DCE (µg/L)	4.4	3.3	0.98	1.7	0.43	0	0
Vinyl chloride (µg/L)	11	0	0	0	0	0	1.3
Ethene (µg/L)	0	0	0	0	0	0	0
PCE (nM/L)	7.297	403.365	354.701	364.409	10.312	22.493	14.473
TCE (nM/L)	19.484	770.607	571.505	826.927	17.581	32.423	62.257
cis-1,2-DCE (nM/L)	452.398	2048.788	1415.059	1098.711	155.750	123.981	184.631
trans-1,2-DCE (nM/L)	45.591	34.038	10.108	17.535	4.435	0.000	0.000
Vinyl chloride (nM/L)	176.452	0.000	0.000	0.000	0.000	0.000	20.317
Ethene (nM/L)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total Molar Conc. (nM/L)	701.22	3256.80	2351.37	2307.58	188.08	178.90	281.7
% moles PCE	1.0%	12.4%	15.1%	15.8%	5.5%	12.6%	5.1%
% moles TCE	2.8%	23.7%	24.3%	35.8%	9.3%	18.1%	22.1%
% moles cis-1,2-DCE	64.5%	62.9%	60.2%	47.6%	82.8%	69.3%	65.5%
% moles trans-1,2-DCE	6.5%	1.0%	0.4%	0.8%	2.4%	0.0%	0.0%
% moles Vinyl Chloride	25.2%	0.0%	0.0%	0.0%	0.0%	0.0%	7.2%
% moles Ethene	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
sum % moles	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Note: 0 sample indicates a non-detect analyte value

Table 32.2.3a

B-3 Bioreactor Multi-Port Well CS-WB05 Analytical Summary
Apr 2014 - Apr 2015

Well ID	CS-WB05																																									
	CS-WB05-LGR-01						CS-WB05-LGR03B						CS-WB05-LGR-04A						CS-WB05-LGR-04B						CS-WB05-BS-01						CS-WB05-CC-01						CS-WB05-CC-02					
	Sample Date	Units	4/23/2014	10/23/2014	4/23/2015	4/23/2015	4/22/2014	10/24/2014	4/23/2015	4/22/2014	10/24/2014	4/23/2015	4/22/2014	10/24/2014	4/23/2015	4/22/2014	10/24/2014	4/23/2015	4/22/2014	10/24/2014	4/23/2015	4/22/2014	10/24/2014	4/23/2015	4/22/2014	10/27/2014	4/23/2015															
Dissolved Organic Carbon	mg/L	1.2	1.5	0.81	0.79	1.3	1.6	0.99	1.2	1.6	1.2	0.95	0.98	0.54	0.98	0.97	0.54	0.98	0.97	0.54	1.0	1.4	0.68																			
Total Organic Carbon	mg/L	1.3	1.0	0.57	0.83	1.5	2.0	B	0.90	1.3	1.6	B	1.1	0.83	1.1	B	0.54	0.85	0.92	B	0.48	F	0.68	1.5	B	0.56																
Methane	µg/L	6.9	5.1	0	134	219	2,730	1,970	2,780	338	1,430	35	38	18	4.3	3.7	0.80	F	3.2	10	0.80	F	3.2	10	2.9																	
Ethene	µg/L	0	0	0	0	1.0	F	0	2.9	F	16	0	2.3	F	8.5	0	0	0	0	0	0	0	0	0	0	0																
Ethane	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Carbon Dioxide	µg/L	45,700	61,100	15,100	27,600	11,000	45,400	50,900	80,700	17,200	50,100	12,500	11,900	10,600	24,700	21,900	8,100	4,250	F	31,000	30,400																					
Sulfate	mg/L	97	101	101	42	24	26	26	7.0	8.0	8.2	31	32	30	82	83	87	82	98	93																						
Chloride	mg/L	13	13	14	12	11	11	12	12	13	13	11	12	12	16	18	18	18	19	19																						
Ferrous Iron	mg/L	0.18	F	0	0.22	F	0.23	F	0.37	F	0.30	F	0.50	F	0.24	F	0.29	F	0.45	F	0.20	F	0.20	F	0.40	F	0.38	F	0.28	F	0.26	F	0.30	F								
Manganese	µg/L	0	0	0	0	6.0	4.0	F	4.0	F	25	26	37	2.0	F	0	0	0	3.0	F	0	0	0	0	0	0	0															
Sulfide	mg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Total Dissolved Solids	mg/L	520	529	550	370	350	362	340	333	336	330	331	345	331	407	406	413	434	430	430																						
Benzene	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Bromodichloromethane	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Bromoform	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Chloroform	µg/L	0	0	0	0	0	0	0	0	0.13	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Dibromochloromethane	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Dichlorodifluoromethane	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Dichloroethene, 1,1-	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Dichloroethene, cis-1,2-	µg/L	2.2	3.0	2.8	44	342	252	196	185	402	328	22	16	29	0.78	F	0.74	F	1.0	F	14	12	9.7																			
Dichloroethene, trans-1,2-	µg/L	0.89	0.60	0.70	4.4	15	11	16	2.9	3.6	5.6	0.26	F	0	0.23	F	0.54	F	0.65	9.8	8.4	5.5																				
Methylene chloride	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Naphthalene	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Tetrachloroethene	µg/L	0.22	F	0	0	1.2	F	1.5	0	0	125	125	88	0	0.62	F	0	0	0	0	0	0	0	0	0	0	0															
Toluene	µg/L	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0															
Trichloroethene	µg/L	0.55	F	0	0.46	F	2.6	1.7	0.34	F	0.62	F	155	270	200	0	0.71	F	0.63	F	0.60	F	0.57	F	1.9	1.0	0.52	F														
Vinyl chloride	µg/L	0	0	0	11	93	25	34	53	25	60	7.7	6.2	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0															
Arsenic	µg/L	0	2.6	F	2.5	F	2.7	F	0	2.4	F	3.7	F	1.5	F	13	F	11	F	0	1.3	F	1.5	F	0	0.90	F	0.90	F	0	0.90	F										
		Q28-Month 84	Q30-Month 90	Q32-Month 96	Q28-Month 96	Q28-Month 96	Q28-Month 84	Q30-Month 90	Q32-Month 96	Q28-Month 84	Q30-Month 90	Q32-Month 96	Q28-Month 84	Q30-Month 90	Q32-Month 96	Q28-Month 84	Q30-Month 90	Q32-Month 96	Q28-Month 84	Q30-Month 90	Q32-Month 96	Q28-Month 84	Q30-Month 90	Q32-Month 96	Q28-Month 84	Q30-Month 90	Q32-Month 96	Q28-Month 84	Q30-Month 90	Q32-Month 96	Q28-Month 84	Q30-Month 90	Q32-Month 96									

Note: 0 sample indicates a non-detect analyte value

Table 32.2.3b

B-3 Bioreactor Multi-Port Well CS-WB06 Analytical Summary
Apr 2014 - Apr 2015

Q32		CS-WB06																																			
Well ID		CS-WB06-LGR-01						CS-WB06-LGR-01						CS-WB06-LGR-02						CS-WB06-LGR03A						CS-WB06-LGR03B						CS-WB06-LGR-04					
Sample Date	Units	4/16/2014		10/28/2014		4/22/2015		4/16/2014		10/28/2014		4/22/2015		4/16/2014		10/28/2014		4/22/2015		4/15/2014		10/27/2014		4/21/2015		4/15/2014		10/27/2014		4/21/2015		4/15/2014		10/27/2014		4/21/2015	
Compound		Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag
Dissolved Organic Carbon	mg/L	5.7		6.3		2.1		2.5		2.3		3.2		1.4		1.1		0.75		1.0		0.78		0.66		1.0		0.78		1.1		1.1		0		1.3	
Total Organic Carbon	mg/L	5.3		7.4		2.3		1.9		2.9	B	3.2		1.0		1.7	B	0.59		0.65		1.4	B	0.54		0.87		1.6	B	0.40		F	1.0		1.3	B	3.0
Methane	µg/L	2,890		2,500		33		0		0		0.70	F	7.3		5.3		0.90	F	0		0		0		0		0		0		1.0	F	0		219	
Ethane	µg/L	1.3	F	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		2.3	F
Ethane	µg/L	2.5		2.6		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	150,000		158,000		45,800		80,400		53,300		24,900		25,200		33,100		7,190		47,400		43,200		10,500		29,400		49,700		20,600		50,000		24,800		59,600	
Sulfate	mg/L	6.7		2.2		23		23		18		25		26		19		19		19		19		21		19		21		12		12		12		12	
Chloride	mg/L	16		16		20		14		14		15		9.6		9.7		9.8		12		11		12		12		12		12		14		14		15	
Ferrous Iron	mg/L	1.6		3.1		0.67	F	0		0.18	F	0.20	F	0		0		0.22	F	0		0.22	F	0.18	F	0		0.23	F	0		0.22	F	0.20	F	0.20	F
Manganese	µg/L	1,880		2,120		683		39		51		51		0		0		0		2.0	F	0		0		0		0		0		0		0		0	
Sulfide	mg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Total Dissolved Solids	mg/L	510		509		517		443		448		417		336		332		329		336		337		330		320		331		333		354		373		366	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0.42	F	0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	60		1.0	F	8.9		28		9.5		18		17		10		14		182		112		107		199		137		107		145		108		94	
Dichloroethene, trans-1,2-	µg/L	5.3		3.0		0.22	F	1.2		0.44	F	0.76		0.39	F	0		0.27	F	1.7		0.76		0.75		3.3		0.98		1.7		1.1		0.74		1.4	
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	0.25	F	0		0.51	F	15		5.4		3.1		0.50	F	0		0.28	F	55		36		24		67		59		60		43		41		41	
Toluene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0	
Trichloroethene	µg/L	3.7		0		0		17		6.2		9.8		2.9		0.67	F	1.2		91		50		47		101		75		109		34		31		31	
Vinyl chloride	µg/L	9.8		1.6		1.8		0		0		0.90	F	0.43	F	0		0.42	F	0		0		0		0		0		0		0		0		3.7	
Arsenic	µg/L	2.7	F	7.7	F	2.7	F	0		1.2	F	1.4	F	0		1.4	F	1.1	F	0.40	F	2.4	F	1.8	F	0		2.0	F	1.8	F	0		1.4	F	0.90	F
		Q28-Month 84		Q30-Month 90		Q32-Month 96		Q28-Month 84		Q30-Month 90		Q32-Month 96		Q28-Month 84		Q30-Month 90		Q32-Month 96		Q28-Month 84		Q30-Month 90		Q32-Month 96		Q28-Month 84		Q30-Month 90		Q32-Month 96		Q28-Month 84		Q30-Month 90		Q32-Month 96	

Note: 0 sample indicates a non-detect analyte value

Table 32.2.3c

B-3 Bioreactor Multi-Port Well CS-WB07 Analytical Summary
Apr 2014 - Apr 2015

Q32		CS-WB07																							
Well ID		CS-WB07-LGR-01						CS-WB07-LGR-02						CS-WB07-LGR03B						CS-WB07-LGR-04					
Sample Date		4/14/2014		10/22/2014		4/21/2015		4/14/2014		10/22/2014		4/16/2015		4/14/2014		10/22/2014		4/16/2015		4/14/2014		10/22/2014		4/16/2015	
Compound	Units	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag
Dissolved Organic Carbon	mg/L	2.6		2.6		2.6		0.97		1.5		0.60		0.91		1.5		0.58		1.2		1.5		0.38	F
Total Organic Carbon	mg/L	2.7		2.0		1.6		0.94		0.82		0.52		0.82		0.75		0.31	F	1.0		0.70		0.63	F
Methane	µg/L	727		371		745		71		10		0		5.1		4.4		0		0		0		0	
Ethene	µg/L	8.3		3.7		8.5		0		0		0		0		0		0		0		0		0	
Ethane	µg/L	1.9	F	1.0	F	1.9	F	0		0		0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	79,700		60,100		106,000		23,500		38,700		14,700		28,600		25,900		9,210		37,500		17,200		20,000	
Sulfate	mg/L	14		9.6		13		34		32		32		23		24		22		11		10		10	
Chloride	mg/L	18		18		20		12		12		13		9.7		10		10		12		13		12	
Ferrous Iron	mg/L	1.8		1.6		1.5		0.16	F	0		0.28	F	0.18	F	0.22	F	0.22	F	0		0.18	F	0.20	F
Manganese	µg/L	522		406		569		26		16		13		0		0		0		0		0		2.0	F
Sulfide	mg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Total Dissolved Solids	mg/L	422		413		380		358		372		361		320		334		323		321		327		338	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0		0		0		0		0		0.17	F	0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0.48	F	0		0		0		0		0		0		0.33	F	0		0	
Dichloroethene, cis-1,2-	µg/L	92		44		225		6.3		3.0		3.0		15		12		18		391	F	281		221	
Dichloroethene, trans-1,2-	µg/L	4.8		0.79		18		0.44	F	0		0		0.43	F	0		0		1.9		1.3	F	1.2	F
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	0		0		0		2.4		1.6		2.7		1.7		3.7		2.4		210		145		85	
Toluene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Trichloroethene	µg/L	21		0		7.6		5.5		3.3		0		2.3		4.3		8.2		256		168		129	
Vinyl chloride	µg/L	7.6		4.3		74		0.70	F	0		0		0		0		1.3		0		0		0	
Arsenic	µg/L	0.60	F	3.1	F	2.6	F	0		1.9	F	0.60	F	0		3.2	F	2.1	F	0		1.8	F	0	
		Q28-Month 84		Q30-Month 90		Q32-Month 96		Q28-Month 84		Q30-Month 90		Q32-Month 96		Q28-Month 84		Q30-Month 90		Q32-Month 96		Q28-Month 84		Q30-Month 90		Q32-Month 96	

Note: 0 sample indicates a non-detect analyte value

Table 32.2.3d

B-3 Bioreactor Multi-Port Well CS-WB08 Analytical Summary
Apr 2014 - Apr 2015

Q32		CS-WB08																							
Well ID		CS-WB08-UGR-01						CS-WB08-LGR-01						CS-WB08-LGR-02						CS-WB08-LGR-04					
Sample Date		4/17/2014		10/21/2014		4/15/2015		4/17/2014		10/21/2014		4/15/2015		4/17/2014		10/21/2014		4/15/2015		4/16/2014		10/21/2014		4/15/2015	
Compound	Units	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag
Dissolved Organic Carbon	mg/L	1.7		2.8		1.7		0.75		1.3		0.85		1.0		2.5		1.1		2.3		3.5		2.5	
Total Organic Carbon	mg/L	1.6		1.9		1.7		0.77		0.85		0.37	F	1.3		1.0		0.63		2.2		2.3		2.2	
Methane	µg/L	251		270		923		0		0		0		3.0		7.5		7.1		6.2		0		0	
Ethene	µg/L	11		6.6		18		0		0		0		0		0		0		0		0		0	
Ethane	µg/L	0		1.5	F	2.9		0		0		0		0		0		0		0		0		0	
Carbon Dioxide	µg/L	29,600		22,700		88,500		32,300		37,900		37,400		14,200		32,700		39,300		26,300		155,000		96,300	
Sulfate	mg/L	15		11		7.6		101		104		102		102		101		99		15		14		14	
Chloride	mg/L	15		16		16		11		11		12		11		11		12		17		16		20	
Ferrous Iron	mg/L	1.6		1.5		1.7		0		0		0.18	F	0.22	F	0.27	F	0		0.20	F	0.18	F	0.20	F
Manganese	µg/L	586		530		477		0		0		0		0		0		0		27		19		230	
Sulfide	mg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Total Dissolved Solids	mg/L	383		381		376		537		536		540		536		526		525		439		446		435	
Benzene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Chloroform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	127		52		67		28		19		30		7.6		13		13		31		3.6		23	
Dichloroethene, trans-1,2-	µg/L	5.4		2.3		1.9		3.0		1.3		2.4		0		0.32	F	0.25	F	0.88		0.20	F	0.59	F
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Tetrachloroethene	µg/L	0		0.27	F	0		0		0		0		0		12		0		0.77	F	1.1	F	1.1	F
Toluene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0	
Trichloroethene	µg/L	0.44	F	0.47	F	0.26	F	0.17	F	0		0		0.23	F	6.1		0		1.8		0.80	F	1.8	
Vinyl chloride	µg/L	85		94		29		0.34	F	0.41	F	1.2		0.45	F	0		0.44	F	0.21	F	0		0	
Arsenic	µg/L	0		4.4	F	0		0		3.2	F	0.50	F	0		3.1	F	0.30	F	0		2.0	F	0	
		Q28-Month 84		Q30-Month 90		Q32-Month 96		Q28-Month 84		Q30-Month 90		Q32-Month 96		Q28-Month 84		Q30-Month 90		Q32-Month 96		Q28-Month 84		Q30-Month 90		Q32-Month 96	

Note: 0 sample indicates a non-detect analyte value

Table 32.3.3

B-3 Bioreactor Monitoring Well Analytical Summary
Apr 2014 - Apr 2015

Q32		Monitoring Wells											
Well ID		CS-MW1-LGR						CS-B3-MW01					
Sample Date		4/11/2014		10/9/2014		4/9/2015		4/11/2014		10/9/2014		4/9/2015	
Compound	Units	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag
Dissolved Organic Carbon	mg/L	0.83		0.88		0.46	F	4.6		5.8		7.2	
Total Organic Carbon	mg/L	0.79		0.92		0.28	F	5.0		6.1		7.3	
Methane	µg/L	0		0		0		523		336		533	
Ethene	µg/L	0		0		0		0		0		0	
Ethane	µg/L	0		0		0		0		0		0	
Carbon Dioxide	µg/L	19,600		31,900		40,700		75,800		64,200		74,100	
Sulfate	mg/L	14		16		14		2.0		2.1		1.5	
Chloride	mg/L	9.0		11		9.0		12		13		12	
Ferrous Iron	mg/L	0		0		0		1.3		0.92	F	1.8	
Manganese	µg/L	0		0		0		146		118		117	
Hydrogen	nM	0.72		4.5		23							
Sulfide	mg/L	0		0		0		0		0		0	
Total Dissolved Solids	mg/L	304		314		306		630		594		548	
Benzene	µg/L	0		0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0		0	
Chloroform	µg/L	0.14	F	0.11	F	0.12	F	0		0.11	F	0	
Dibromochloromethane	µg/L	0		0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	26		48		22		0		0.20	F	0	
Dichloroethene, trans-1,2-	µg/L	0.57	F	0.81		0.27	F	0.54	F	0.42	F	0.83	
Methylene chloride	µg/L	0		0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0		0	
Tetrachloroethene	µg/L	17		31		13		0		0		0	
Toluene	µg/L	0		0		0		0		0		0	
Trichloroethene	µg/L	38		35		31		0		0		0	
Vinyl chloride	µg/L	0		0		0		13		18		23	
Arsenic	µg/L	0		0		0		0		1.4	F	0	

Note: 0 sample indicates a non-detect analyte value

SWMU B-3 Microbial Data Summary
Apr 2014 - Apr 2015

Trench Sump				
B3-T1-2	Sample Date:	4/9/2014	10/7/2014	4/13/2015
Dechlorinating Bacteria	Units			
Dehalococcoides spp (1)	cells/mL	7.29E+03	2.06E+04	4.56E+04
Functional Genes	Units			
TCE R-Dase (1)	cells/mL	1.27E+02	4.31E+02	6.04E+02
BAV1 VC R-Dase (1)	cells/mL	7.21E+02	4.49E+02	5.05E+03
VC R-Dase	cells/mL	9.00E+02	5.57E+01	3.18E+02
B3-T6-2	Sample Date:	4/9/2014	10/7/2014	4/13/2015
Dechlorinating Bacteria	Units			
Dehalococcoides spp (1)	cells/mL	1.25E+04	1.92E+04	4.76E+04
Functional Genes	Units			
TCE R-Dase (1)	cells/mL	4.50E+02	3.38E+02	5.15E+02
BAV1 VC R-Dase (1)	cells/mL	3.65E+03	3.77E+02	3.03E+03
VC R-Dase	cells/mL	1.45E+03	9.17E+01	5.58E+02
Extraction Wells				
CS-MW16-LGR	Sample Date:	4/7/2014	10/8/2014	4/7/2015
Dechlorinating Bacteria	Units			
Dehalococcoides spp (1)	cells/mL	< 5.00E-01	1.85E+01	< 5.00E-01
Functional Genes	Units			
TCE R-Dase (1)	cells/mL	< 5.00E-01	8.17E-01	< 5.00E-01
BAV1 VC R-Dase (1)	cells/mL	< 5.00E-01	< 5.00E-01	< 5.00E-01
VC R-Dase	cells/mL	< 5.00E-01	< 5.00E-01	< 5.00E-01
B3-EXW01	Sample Date:	Not Sampled	10/8/2014	4/7/2015
Dechlorinating Bacteria	Units			
Dehalococcoides spp (1)	cells/mL		7.00E-01	1.24E+02
Functional Genes	Units			
TCE R-Dase (1)	cells/mL		< 5.00E-01	2.00E+00
BAV1 VC R-Dase (1)	cells/mL		< 5.00E-01	2.30E+00
VC R-Dase	cells/mL		< 5.00E-01	9.00E-01
Monitoring Wells				
CS-MW1-LGR	Sample Date:	4/11/2014	10/9/2014	4/9/2015
Dechlorinating Bacteria	Units			
Dehalococcoides spp (1)	cells/mL	< 5.00E-01	7.40E+00	< 5.00E-01
Functional Genes	Units			
TCE R-Dase (1)	cells/mL	< 5.00E-01	3.00E-01 J	< 5.00E-01
BAV1 VC R-Dase (1)	cells/mL	< 5.00E-01	< 5.00E-01	< 5.00E-01
VC R-Dase	cells/mL	< 5.00E-01	< 5.00E-01	< 5.00E-01
CS-B3-MW01	Sample Date:	4/11/2014	Not Sampled	Not Sampled
Dechlorinating Bacteria	Units			
Dehalococcoides spp (1)	cells/mL	1.95E+02		
Functional Genes	Units			
TCE R-Dase (1)	cells/mL	2.04E+01		
BAV1 VC R-Dase (1)	cells/mL	< 7.00E-01		
VC R-Dase	cells/mL	< 7.00E-01		
Westbay Multi-Port Wells				
CS-WB05-LGR-04B	Sample Date:	Not Sampled	10/24/2014	4/27/2015
Dechlorinating Bacteria	Units			
Dehalococcoides spp (1)	cells/mL		3.30E+01	6.57E+01
Functional Genes	Units			
TCE R-Dase (1)	cells/mL		5.03E+00	2.10E+00
BAV1 VC R-Dase (1)	cells/mL		5.49E-01	< 5.00E-01
VC R-Dase	cells/mL		< 5.00E-01	< 5.00E-01

Table 32.5.2

Storage Tank (UIC) VOC Summary
Apr 2014 - Apr 2015

Q32	B3-UIC				
Date	4/9/2014	7/17/2014	10/7/2014	1/29/2015	4/13/2015
PCE (µg/L)	79	108	100	87	88
TCE (µg/L)	104	125	95	104	123
cis-1,2-DCE (µg/L)	114	141	130	107	97
trans-1,2-DCE (µg/L)	3.4	0.84	0.96	1.1	1.2
Vinyl chloride (µg/L)	0	0	0	0	0
Ethene (µg/L)	0	0	0	0	0
PCE (nM/L)	476.995	651.511	602.304	526.865	528.674
TCE (nM/L)	789.862	951.823	723.647	790.319	936.829
cis-1,2-DCE (nM/L)	1171.738	1453.120	1343.167	1107.891	1000.619
trans-1,2-DCE (nM/L)	34.760	8.664	9.902	11.243	12.068
Vinyl chloride (nM/L)	0.000	0.000	0.000	0.000	0.000
Ethene (nM/L)	0.000	0.000	0.000	0.000	0.000
Total Molar Conc. (nM/L)	2473.4	3065.1	2679.0	2436.3	2478.2
% moles PCE	19.3%	21.3%	22.5%	21.6%	21.3%
% moles TCE	31.9%	31.1%	27.0%	32.4%	37.8%
% moles cis-1,2-DCE	47.4%	47.4%	50.1%	45.5%	40.4%
% moles trans-1,2-DCE	1.4%	0.3%	0.4%	0.5%	0.5%
% moles Vinyl Chloride	0.0%	0.0%	0.0%	0.0%	0.0%
% moles Ethene	0.0%	0.0%	0.0%	0.0%	0.0%
sum % moles	100.0%	100.0%	100.0%	100.0%	100.0%

Note: 0 sample indicates a non-detect analyte value

Table 32.5.3

SWMU B3-UIC Analytical Summary Table
Apr 2014 - Apr 2015

Q32		B3-UIC									
Well ID											
Sample Date		4/9/2014		7/17/2014		10/7/2014		1/29/2015		4/13/2015	
Compound	Units	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag
Total Dissolved Solids	mg/L	366		365		360		360		368	
Benzene	µg/L	0		0		0		0		0	
Bromodichloromethane	µg/L	0		0		0		0		0	
Bromoform	µg/L	0		0		0		0		0	
Chloroform	µg/L	0.10	F	0.17	F	0.20	F	0.19	F	0	
Dibromochloromethane	µg/L	0		0		0		0		0	
Dichlorodifluoromethane	µg/L	0		0		0		0		0	
Dichloroethene, 1,1-	µg/L	0		0		0		0		0	
Dichloroethene, cis-1,2-	µg/L	114		141		130		107		97	
Dichloroethene, trans-1,2-	µg/L	3.4		0.84		0.96	F	1.1	F	1.2	
Methylene chloride	µg/L	0		0		0		0		0	
Naphthalene	µg/L	0		0		0		0		0	
Tetrachloroethene	µg/L	79		108		100		87		88	
Toluene	µg/L	0		0		0		0		0	
Trichloroethene	µg/L	104		125		95		104		123	
Vinyl chloride	µg/L	0		0		0		0		0	

Table 32.6.2

B-3 Bioreactor Extraction Well VOC Summary
Apr 2014 - Apr 2015

Q32	16-LGR			16-CC			EXW01			EXW02			EXW03			EXW04			EXW05			
	Date	4/7/2014	10/8/2014	4/7/2015	4/7/2014	10/8/2014	4/7/2015	4/7/2014	10/8/2014	4/7/2015	4/7/2014	10/8/2014	4/7/2015	4/7/2014	10/8/2014	4/7/2015	4/7/2014	10/8/2014	4/8/2015	4/7/2014	10/8/2014	4/8/2015
PCE (µg/L)	128	56	71	0.45	0	0	117	145	116	93	96	58	140	144	65	119	185	135	31	34	37	
TCE (µg/L)	151	68	91	8.3	5.6	5.1	123	132	143	131	124	88	165	140	84	154	200	201	47	49	52	
cis-1,2-DCE (µg/L)	139	70	95	18	17	15	158	184	205	125	114	92	162	133	100	126	214	225	30	42	43	
trans-1,2-DCE (µg/L)	0.28	0.28	0.50	9.1	7.5	6.3	1.5	0.88	1.5	0.98	0.97	0.87	1.1	1.0	0.53	0.65	1.3	0.85	0.19	0.31	0	
Vinyl chloride (µg/L)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ethene (µg/L)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.1
PCE (nM/L)	768.860	337.575	426.943	2.714	0.000	0.000	704.215	871.676	697.763	560.996	581.559	348.972	844.781	870.289	390.340	715.130	1115.419	815.413	189.290	207.019	223.241	
TCE (nM/L)	1152.980	521.349	695.715	63.171	42.317	38.511	938.656	1003.805	1086.841	997.488	947.408	667.707	1255.575	1068.194	640.992	1169.267	1522.034	1531.700	358.931	373.697	394.094	
cis-1,2-DCE (nM/L)	1430.634	718.412	981.124	186.075	173.595	155.132	1628.571	1900.155	2114.698	1293.347	1171.841	953.378	1671.686	1376.070	1029.912	1295.823	2212.481	2320.474	310.882	429.912	439.917	
trans-1,2-DCE (nM/L)	2.888	2.888	5.157	93.450	77.772	64.982	15.059	9.077	15.678	10.108	10.005	8.974	11.037	10.624	5.467	6.704	13.718	8.767	1.960	3.198	0.000	
Vinyl chloride (nM/L)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ethene (nM/L)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	74.866
Total Molar Conc. (nM/L)	3355.36	1580.22	2108.9	345.41	293.68	258.62	3286.50	3784.71	3914.98	2861.94	2710.81	1979.03	3783.08	3325.18	2066.71	3186.92	4863.65	4676.35	861.06	1013.83	1132.12	
% moles PCE	22.9%	21.4%	20.2%	0.8%	0.0%	0.0%	21.4%	23.0%	17.8%	19.6%	21.5%	17.6%	22.3%	26.2%	18.9%	22.4%	22.9%	17.4%	22.0%	20.4%	19.7%	
% moles TCE	34.4%	33.0%	33.0%	18.3%	14.4%	14.9%	28.6%	26.5%	27.8%	34.9%	34.9%	33.7%	33.2%	32.1%	31.0%	36.7%	31.3%	32.8%	41.7%	36.9%	34.8%	
% moles cis-1,2-DCE	42.6%	45.5%	46.5%	53.9%	59.1%	60.0%	49.6%	50.2%	54.0%	45.2%	43.2%	48.2%	44.2%	41.4%	49.8%	40.7%	45.5%	49.6%	36.1%	42.4%	38.9%	
% moles trans-1,2-DCE	0.1%	0.2%	0.2%	27.1%	26.5%	25.1%	0.5%	0.2%	0.4%	0.4%	0.4%	0.5%	0.3%	0.3%	0.3%	0.2%	0.3%	0.2%	0.2%	0.3%	0.0%	
% moles Vinyl Chloride	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
% moles Ethene	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
sum % moles	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Note: 0 sample indicates a non-detect analyte value

B3-MW-26										
Elev (ft. MSL)		1238.49							Total Depth:	20.32 feet BTOC
Sample Date	Sample Time	Depth to H ₂ O (ft. BTOC)	pH	Temperature (°C)	Specific Conductivity (m-mho/cm)	Dissolved Oxygen (mg/L)	ORP (eV)	H ₂ O Elevation (feet)		
4/10/2014	900	13.43	6.18	19.33	0.597	0.86	245.80	1225.06		
10/14/2014	1000	13.89	6.58	21.80	0.706	0.93	-55.80	1224.60		
4/6/2015	1000	11.29	6.67	18.98	0.672	0.17	-202.50	1227.20		

B3-MW-28										
Elev (ft. MSL)		1226.67							Total Depth:	18.33 feet BTOC
Sample Date	Sample Time	Depth to H ₂ O (ft. BTOC)	pH	Temperature (°C)	Specific Conductivity (m-mho/cm)	Dissolved Oxygen (mg/L)	ORP (eV)	H ₂ O Elevation (feet)		
4/10/2014		18.30		Not enough water for field readings				Dry		
10/14/2014		18.30		Not enough water for field readings				Dry		
4/6/2015	1045	18.30		Not enough water for field readings				Dry		

B3-MW-30										
Elev (ft. MSL)		1246.01							Total Depth:	23.90 feet BTOC
Sample Date	Sample Time	Depth to H ₂ O (ft. BTOC)	pH	Temperature (°C)	Specific Conductivity (m-mho/cm)	Dissolved Oxygen (mg/L)	ORP (eV)	H ₂ O Elevation (feet)		
4/10/2014		23.54		Not enough water for field readings				1222.47		
10/14/2014		23.55		Not enough water for field readings				1222.46		
4/6/2015	1120	23.53		Not enough water for field readings				1222.48		

B3-MW-32										
Elev (ft. MSL)		1266.98							Total Depth:	58.45 feet BTOC
Sample Date	Sample Time	Depth to H ₂ O (ft. BTOC)	pH	Temperature (°C)	Specific Conductivity (m-mho/cm)	Dissolved Oxygen (mg/L)	ORP (eV)	H ₂ O Elevation (feet)		
4/10/2014	1100	54.98	6.51	20.98	0.432	4.82	170.8	1212.00		
10/14/2014		57.95		Not enough water for field readings				1209.03		
4/7/2015	1350	38.41	6.65	20.97	1.083	3.04	255.2	1228.57		

B3-MW-34										
Elev (ft. MSL)		1244.51							Total Depth:	25.40 feet BTOC
Sample Date	Sample Time	Depth to H ₂ O (ft. BTOC)	pH	Temperature (°C)	Specific Conductivity (m-mho/cm)	Dissolved Oxygen (mg/L)	ORP (eV)	H ₂ O Elevation (feet)		
4/10/2014	1145	18.72	6.38	21.80	0.525	0.58	-25.8	1225.79		
10/14/2014	1500	19.11	6.90	21.95	0.577	0.58	-96.9	1225.40		
4/7/2015	1315	16.39	6.54	21.56	1.480	1.38	27.8	1228.12		

B3-MW-27										
Elev (ft. MSL)		1233.42							Total Depth:	17.00 feet BTOC
Sample Date	Sample Time	Depth to H ₂ O (ft. BTOC)	pH	Temperature (°C)	Specific Conductivity (m-mho/cm)	Dissolved Oxygen (mg/L)	ORP (eV)	H ₂ O Elevation (feet)		
4/10/2014	915	8.86	6.18	18.32	0.532	1.08	-23.1	1224.56		
10/14/2014	1040	9.44	6.68	22.41	0.605	0.89	-24.9	1223.98		
4/6/2015	1030	6.65	6.76	17.85	0.660	0.13	-134.3	1226.77		

B3-MW-29										
Elev (ft. MSL)		1233.25							Total Depth:	20.40 feet BTOC
Sample Date	Sample Time	Depth to H ₂ O (ft. BTOC)	pH	Temperature (°C)	Specific Conductivity (m-mho/cm)	Dissolved Oxygen (mg/L)	ORP (eV)	H ₂ O Elevation (feet)		
4/10/2014		19.92		Not enough water for field readings				1213.33		
10/14/2014		19.92		Not enough water for field readings				1213.33		
4/6/2015	1110	19.96		Not enough water for field readings				1213.29		

B3-MW-31										
Elev (ft. MSL)		1257.20							Total Depth:	39.06 feet BTOC
Sample Date	Sample Time	Depth to H ₂ O (ft. BTOC)	pH	Temperature (°C)	Specific Conductivity (m-mho/cm)	Dissolved Oxygen (mg/L)	ORP (eV)	H ₂ O Elevation (feet)		
4/10/2014	1000	35.20	6.31	21.22	0.622	0.66	-59.1	1222.00		
10/14/2014	1400	36.22	6.62	21.20	0.730	2.12	275.9	1220.98		
4/6/2014	1145	32.75	6.72	21.44	0.727	0.10	-13.2	1224.45		

B3-MW-33										
Elev (ft. MSL)		1249.55							Total Depth:	29.55 feet BTOC
Sample Date	Sample Time	Depth to H ₂ O (ft. BTOC)	pH	Temperature (°C)	Specific Conductivity (m-mho/cm)	Dissolved Oxygen (mg/L)	ORP (eV)	H ₂ O Elevation (feet)		
4/10/2014	1120	23.68	6.31	21.05	0.548	1.69	233.5	1225.87		
10/14/2014	1430	24.06	6.78	20.78	0.653	0.67	-120.9	1225.49		
4/7/2015	1200	20.64	6.80	20.21	0.610	0.09	-140.3	1228.91		

B-3 Bioreactor UGR Well Analytical Summary
Apr 2014 - Apr 2015

Q32		Shallow UGR Wells																																			
Well ID		B3-MW26-UGR						B3-MW27-UGR						B3-MW31-UGR						B3-MW32-UGR						B3-MW33-UGR						B3-MW34-UGR					
Sample Date	Units	4/10/2014		10/14/2014		4/6/2015		4/10/2014		10/14/2014		4/6/2015		4/10/2014		10/14/2014		4/6/2015		4/10/2014		4/7/2015		4/10/2014		4/6/2015		4/10/2014		10/14/2014		4/7/2015					
Compound		Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag	Value	Flag		
Dissolved Organic Carbon	mg/L	3.4		4.6		2.5		2.7		4.6		2.3		2.3		1.8		2.0		4.8		2.8		2.4		2.5		7.1		3.0		15					
Total Organic Carbon	mg/L	3.9		4.2		3.8		2.9		6.9		2.3		2.9		2.0		2.0		4.7		3.5		3.1		2.6		8.6		5.7		15					
Methane	µg/L	2,940		3,240		2,580		690		257		1,790		0		16		0		0		0		100		134		1,870		2,540		0					
Ethane	µg/L	4.7		4.4		4.0		2.7	F	2.0	F	1.8	F	0		0		0		0		0		0		2.2	F	4.0		15		0					
Ethane	µg/L	4.9		9.1		11		2.1		1.6	F	7.6		0		0		0		0		0		0		1.0	F	4.7		10		0					
Carbon Dioxide	µg/L	131,000		186,000		128,000		75,100		75,500		104,000		45,900		103,000		133,000		24,000		77,500		53,800		79,400		73,500		77,400		84,800		145,000			
Sulfate	mg/L	6.9		11		7.1		12		7.5		16		63		98		21		16		25		20		22		5.1		8.5		14					
Chloride	mg/L	16		15		18		17		16		22		12		12		12		12		16		14		16		17		15		22					
Ferrous Iron	mg/L	0.52	F	1.2		0.51	F	0.53	F	1.0		0.63	F	1.4		1.3		8.1		1.4		0.48	F	0.35	F	1.1		0.20	F	3.9		6.9		0.32	F		
Manganese	µg/L	810		515		1,090		199		224		108		137		68		8.0		1,890		1,050		87		983		665		374							
Sulfide	mg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Total Dissolved Solids	mg/L	455		475		418		411		401		409		476		545		538		290		340		413		432		370		392		392		459			
Benzene	µg/L	0.21	F	0		0.18	F	0		0		0		0.35	F	0		0		0		0		0		0		0.32	F	0		0		0			
Bromodichloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Bromoform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Chloroform	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Dibromochloromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Dichlorodifluoromethane	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Dichloroethene, 1,1-	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Dichloroethene, cis-1,2-	µg/L	7.1		9.6		6.8		30		7.2		15		19		2.8		8.7		16		6.2		2.8		13		50		0.66	F	7.7		0.29	F		
Dichloroethene, trans-1,2-	µg/L	2.8		2.7		3.8		4.6		1.5		2.9		2.3		0.40	F	0.45	F	0.35	F	0		0		0.37	F	0.84		3.4		8.2		0.86			
Methylene chloride	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Naphthalene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Tetrachloroethene	µg/L	0.25	F	0		0		0		0		0		6.7		5.6		0.58	F	14		5.5		15		0.61	F	9.7		0		0		0.43	F		
Toluene	µg/L	0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0		0			
Trichloroethene	µg/L	0.28	F	0		0		0.32	F	0		0		5.4		3.4		1.6		6.7		3.3		7.7		1.8		13		0		0		0			
Vinyl chloride	µg/L	7.6		8.2		6.3		32		8.5		11		0		0		0.55	F	0		0		0		0		8.6		2.2		24		0			
Arsenic	µg/L	2.4	F	3.8	F	2.3	F	2.4	F	7.6	F	4.3	F	0		4.4	F	3.6	F	2.4	F	2.1	F	0		3.6	F	0.60	F	5.9	F	19	F	3.0	F		

Note: 0 sample indicates a non-detect analyte value