



DEPARTMENT OF THE ARMY
CAMP STANLEY STORAGE ACTIVITY, MCAPP
25800 RALPH FAIR ROAD, BOERNE, TX 78015-4800

May 19, 2010

U-080-10

Mr. Bryan Smith
Texas Commission on Environmental Quality
Industrial and Hazardous Waste Permits Section
P.O. Box 13087 (MC-130)
Austin, TX 78711-3087

Subject: Biannual Status Report (Month 31 – Month 36, November, 2009 - April, 2010) of the Pilot Study Class V Aquifer Remediation Injection Wells at Camp Stanley Storage Activity, Boerne, Texas, TCEQ Authorization No. 5X2600431; WWC12002216; CN602728206/RN104431655

Dear Mr. Smith:

The Camp Stanley Storage Activity (CSSA), McAlester Army Ammunition Plant, U.S. Army Field Support Command, Army Materiel Command, U.S. Army, is submitting this biannual report summarizing the injection activities performed at the on-post Solid Waste Management Unit (SWMU) B-3 site (Figure 1). The activities performed are part of the planned SWMU B-3 Pilot Study being performed to evaluate the effectiveness of enhanced anaerobic biodegradation (EAB) for treatment of chlorinated compounds in groundwater. The pilot study activities include the injection of recovered groundwater into mulch/gravel filled bioreactor trenches.

This biannual report contains data as specified by the Texas Commission on Environmental Quality (TCEQ) Underground Injection Control (UIC) permit for the months of November, 2009 through April, 2010 (Months 31-36). The biannual reporting data includes monthly samples of the injected groundwater for volatile organic concentrations (VOCs) and total dissolved solids (TDS) and field collected parameters including injection volumes, injection pressures and the pH of recovered groundwater. Data indicates that concentrations of contaminants did not exceed limits specified in 40 CFR §261.24 Table 1 as referenced in CSSA's UIC permit authorization.

Between November 1, 2009 and April 30, 2010 approximately 3,852,000 gallons of groundwater from wells CS-MW16-CC (~1,695,000 gallons), CS-MW16-LGR (~662,000 gallons), and B3-EXW-01 (~1,495,000 gallons) were injected into SWMU B-3 bioreactor trenches 1 and 2. A total of 23,251,104 gallons of recovered groundwater from CS-MW16-LGR, CS-MW16-CC, and B3-EXW-01 have been injected into bioreactor trenches 1 and 2 since normal bioreactor operations began. Samples of the injected groundwater, for this reporting period, were collected on November 11 and December 15, 2009, and January 26, February 23, March 23, and April 20, 2010. Results of analysis are summarized in the attached Table 1. Field forms which contain operating pressures and pH readings for the reporting period are also attached and the laboratory data packages are included in the accompanying CD.

If you have any questions regarding the information contained in this letter, please feel free to contact Glare Sanchez, CSSA Environmental Program Manager, at (210) 698-5208 or Ken Rice, Parsons, at (512) 719-6050.

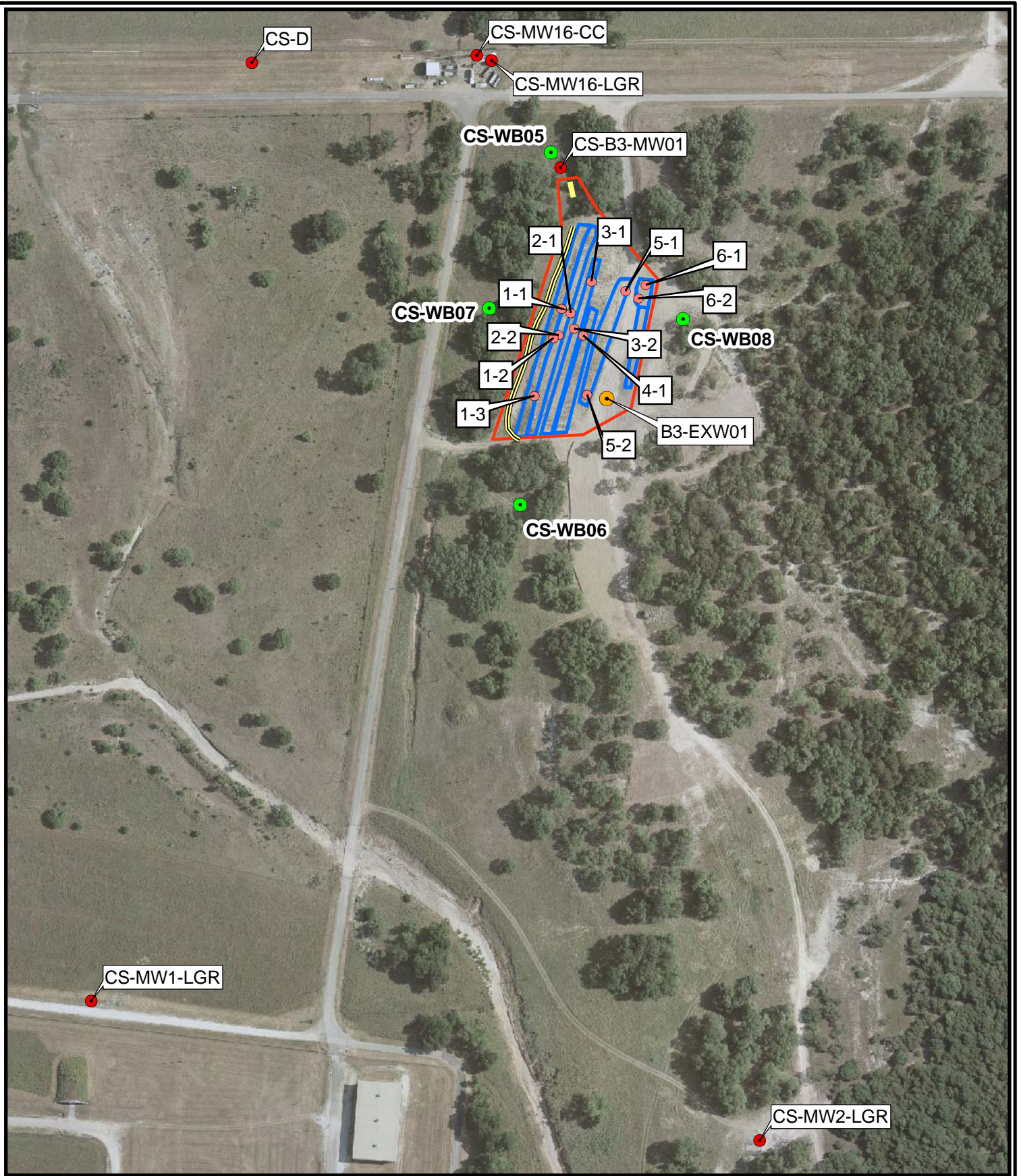
Sincerely,



Jason D. Shirley
Installation Manager

Enclosures

cc: Glare Sanchez, CSSA Environmental Program Manager
Wayne Elliott, USAE (ltr only)
Julie Burdey, Parsons (ltr only)
Ken Rice, Parsons
File: 745953.03000



- New Extraction Well
- Bioreactor Trench Sumps
- B-3 Monitoring Wells
- Westbay Wells
- B-3 Boundary
- Berm Location
- Tank
- Former Trench Locations

Figure 1

B-3 Bioreactor System
Camp Stanley Storage Activity

PARSONS

Analytical Summary Data

Table 1
B3 - UIC Analytical Results

	Sample ID			B3-UIC			B3-UIC			B3-UIC			B3-UIC			B3-UIC					
	Sample Date			11/18/09			12/15/09			01/26/10			02/23/10			03/23/10			03/23/10		
	Sample Type			N1			N1			N1			N1			N1			N1		
Sampling Method			Grab			Grab			Grab			Grab			Grab			Grab			
Lab ID			AY08028			AY09058			AY10228			AY11832			AY13402			AY14479			
	B-3 UIC			Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution	Results	Flags	Dilution			
	Lab	MDL	PQL																Criteria (RCRA Haz.)		
SW8260B (µg/L)																					
Cis-DCE	0.16	1.2	--	150		1	180		5	70		1	92		1	29		1	73		1
Trans-DCE	0.19	0.6	--	3.1		1	1.4		1	2.4		1	2.2		1	4.0		1	2.3		1
TCE	0.16	1.0	500.	150		1	160		5	78		1	100		1	32		1	89		1
PCE	0.15	1.4	700.	110		1	150		1	52		1	68		1	2.9		1	50		1
Toluene	0.17	1.1	--	0.17	U	1	0.17	U	1	0.17	U	1	0.17	U	1	0.17	U	1	0.17	U	1
Vinyl Chloride	0.23	1.1	200.	0.23	U	1	0.31	J	1	0.23	U	1	0.23	U	1	0.23	U	1	0.23	U	1
EPA 160.1 (mg/L)																					
TDS	4.4	10.	--	353		1	315		1	364		1	397		1	393		1	350		1
Field measured																					
pH				7.43			6.98			* 7.22			7.06			7.40			7.30		

Tables present all laboratory results for analytes.
Data packages for laboratory analysis results are presented in Attachment 1.
All samples were analyzed by APPL Laboratory Services.
pH results reported were field measured
UIC criteria specified in 40 CFR 261.24 Table 1

* This pH value was derived from pHs and contributing volumes from extraction wells CS-MW16-LGR and CS-MW16-CC.

Abbreviations:

PQL Practical Quantitation Limit
MDL Method Detection Limit
N1 Environmental Sample
SQL Sample Quantitation Limit
UIC Underground Injection Control

Field Forms

Bioreactor Monitoring

Personnel: J. Bouch, S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 11-5-09		Time: 0935 7.14		20.77	0.348	-2.8	2.17		
B3-T1-1	12.9	3.80	7.28	25.74	0.539	-0.8	2.52	✓	
B3-T1-2	12.4	3.58	6.94	21.05	0.448	-6.4	0.31		
B3-T1-3	12.85	3.21	7.20	17.93	0.377	-43.4	0.54	✓	
B3-T2-1	9.67	5.20	7.28	25.74	0.539	-1.0	0.45		
B3-T2-2	10.01	5.59	6.53	23.16	0.530	-40.8	0.45	✓	
B3-T3-1	9.96	3.27	7.12	26.84	0.677	-79.6	0.26		
B3-T3-2	7.4	6.95	7.10	22.10	0.437	-18.2	0.72		
B3-T4-1	6.32	5.52	7.19	24.94	0.657	-10.8	2.44		
B3-T5-1	9.33	6.24	7.19	21.37	0.325	-16.4	0.63		
B3-T5-2	7.98	6.12	6.78	23.57	0.498	-20.0	0.40		
B3-T6-1	11.45	5.61	7.22	24.38	0.325	-77.9	2.89		
B3-T6-2	12.34	5.49	7.04	20.88	0.341	-22.1	0.340		
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	11-2-09	0915	11-3-09	0915	11-4-09	0830	11-5-09	0935	11-6-09	0830
	Rate (gpm) / Cumulative Total (gal)									
T-1	9.72	5087.119	8.74	5111.286	0	5120.316	23.7	5150.282	27.8	5182.478
T-2	3.72	2265.169	3.54	2275.901	0	2279.953	10.1	2291.535	10.1	2304.863
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	X	X	0	156.888	0	156.888	0	159.838	9.32	164.255
CS-MW16-CC	24.67	1,020,888	0	376.888	0	376.888	0	382,014	18.18	390.113
B3-EXW01	23.67	2,952,325	24.48	1,052,942	0.42	1,064,155	24.17	1,100,822	23.93	1,133,041

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)) - *Note: If bag filter pressure drop is >or= 10 psi change filter.

PB-1-PB-2 = 41-46 = 0	PB-1-PB-2 = 0-0 = 0	PB-1-PB-2 = 0-0 = 0	PB-1-PB-2 = 52-38 = 14	PB-1-PB-2 = 44-44 = 0
Notes: Tank 3/4 full	Tank is 4/16 full MW16LGR = 186.9 MW16CC = 233.9	MW16LGR = 187.8 MW16CC = 233.9 CC - DTW - 230.25 (w/ water level)	Tank is 3/4 full changed bf 16 LGR = 196.0 16CC = 242.5	MW16LGR = 196.6 MW16CC = 237.9

* MW16 wells off

* 16 wells still not working turned off EX well to drain tank to test 16 wells tomorrow
11-5-09 039787

LGR = 187.6
Week 132
Tank empty * back
17.01 / 1140.18

11-2-09 / 1425346

Tank is 9/16 full

200 / 4237.848

Personnel <u>S. Elliott + J. Borch</u>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	11/2/09	0907	14.12	14.07 14.22	21.55
CS-WB05-LGR-02	182		0906		14.11 14.25	15.18
CS-WB05-LGR-03A	216		0905		14.14 14.27	29.93
CS-WB05-LGR-03B	262		0904		16.17 15.68	49.86
CS-WB05-LGR-04A	277		0904		22.70 22.25	55.51
CS-WB05-LGR-04B	329		0903		45.33 44.86	77.84
CS-WB05-BS-01	362		0902		59.67 59.21	90.88
CS-WB05-CC-01	432		0900		90.08 89.60	100.68
CS-WB05-CC-02	460		0900		102.24 101.76	112.66
CS-WB06-UGR-01	20		1047	14.13	14.04 14.16	18.39
CS-WB06-LGR-01	93		1046		14.07 14.21	16.28
CS-WB06-LGR-02	174		1045		14.11 14.24	38.02
CS-WB06-LGR-03A	207		1044		14.14 14.26	32.03
CS-WB06-LGR-03B	260		1041		21.60 25.49	54.93
CS-WB06-LGR-04	320		1040		47.66 51.54	76.73
CS-WB07-UGR-01	14		1104	14.14	14.05 14.17	16.49
CS-WB07-LGR-01	90		1103		14.10 14.21	17.82
CS-WB07-LGR-02	175		1101		14.14 14.25	28.68
CS-WB07-LGR-03A	208		1100		14.17 14.28	30.40
CS-WB07-LGR-03B	257		1059		15.58 15.65	51.59
CS-WB07-LGR-04	318		1058		42.13 42.18	75.27
CS-WB08-UGR-01	38		1029	14.13	14.03 14.17	20.00
CS-WB08-LGR-01	115		1028		14.08 14.21	21.40
CS-WB08-LGR-02	193		1026		14.12 14.24	20.51
CS-WB08-LGR-03A	228		1025		14.14 14.25	28.29
CS-WB08-LGR-03B	273		1023		18.87 26.07	47.75
CS-WB08-LGR-04	341		1022		48.45 55.61	75.70

Sample time = 0945 X

No sample dry X

* Checked water levels in 16 wells — tank empty tried to turn on wells — would not turn on. Turned on extraction well and transfer pumps. Need to contact Richard.

Bioreactor Monitoring

Personnel: J. Bouch; S. Elliott; A. Lindley
Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 11-11-09		Time: 0815							
B3-T1-1	12.9	3.04	7.15	20.58	0.669	-86.6	0.39	✓	
B3-T1-2	12.4	2.70	7.03	20.05	0.617	-87.0	0.24		
B3-T1-3	12.85	2.33	7.18	19.86	0.593	-115.1	0.23		
B3-T2-1	9.67	4.49	7.08	24.79	0.815	-80.0	0.21	0.64 ✓	
B3-T2-2	10.01	4.49	6.48	22.70	0.961	-111.4	0.36		
B3-T3-1	9.96	6.86	6.85	26.44	1.021	-112.0	0.16		
B3-T3-2	7.4	6.78	7.96	22.37	0.714	0.56	83.3		
B3-T4-1	6.32	5.41	7.12	21.19	0.630	-82.6	0.40		
B3-T5-1	9.33	6.64	7.19	22.02	0.524	-82.3	0.28		
B3-T5-2	7.98	5.66	6.72	22.08	0.743	-92.8	0.24		
B3-T6-1	11.45	5.61	7.13	22.08	0.517	-75.1	3.02		
B3-T6-2	12.34	5.42	7.05	21.58	0.536	-86.9	0.27		
B3-UIC									

B-3 Transfer System Monitoring

Meter	Flow Meters Readings									
	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	11.9.09	0845	11.10.09	0840	11.11.09	0803	11.12.09	1240	11.13.09	10.30
	Rate (gpm) / Cumulative Total (gal)									
T-1	21.0	5200059	21.6	5322571	27.3	5355072	24.3	5393858	27.3	5418341
T-2	11.5	2350737	10.5	2361616	11.1	2380528	11.7	2398019	11.3	2409139
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	0	180422	9.49	185227	9.38	190519	0	196763	0	199382
CS-MW16-CC	0	421616	18.10	430763	15.07	439412	0	449782	0	454299
B3-EXW01	23.73	1235906	23.63	1269968	23.59	1302698	23.46	1343266	23.41	1373940

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 48 - 44 = 4 PB-1 - PB-2 = 48 - 44 = 4 PB-1 - PB-2 = 47 - 42 = 5 PB-1 - PB-2 = 48 - 40 = 8 PB-1 - PB-2 = 44 - 44 = 0

Notes: MW16 LGR = 209.4 MW16 CC = 256.4 Tank is 5/8 full Tank is 1 3/4 full changed BF (44-44=0) Tank is 15/16 full
 MW16 LGR = 214.2 MW16 CC = 291.5 Tank is 9/16 full MW16 LGR = 203.4 MW16 CC = 241.9

Tank is 1 3/4 full

*pinched back flow to 16.0

Week 133

70.29 / 4,644,610

71.55 / 4,747,071

4853054 / 70.05

4,967,088 / 69.70

5,059,522 / 70.4

Personnel <i>S. Elliott + J. Borch</i>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	<i>11-10-09</i>	<i>1409</i>	<i>14.14</i>	<i>14.07</i> <i>14.16</i>	<i>21.61</i>
CS-WB05-LGR-02	182		<i>1408</i>		<i>14.11</i> <i>14.18</i>	<i>14.22</i>
CS-WB05-LGR-03A	216		<i>1407</i>		<i>14.14</i> <i>14.21</i>	<i>22.50</i>
CS-WB05-LGR-03B	262		<i>1406</i>		<i>16.17</i> <i>15.60</i>	<i>42.45</i>
CS-WB05-LGR-04A	277		<i>1405</i>		<i>22.70</i> <i>22.14</i>	<i>48.12</i>
CS-WB05-LGR-04B	329		<i>1404</i>		<i>45.33</i> <i>44.82</i>	<i>70.52</i>
CS-WB05-BS-01	362		<i>1403</i>		<i>59.67</i> <i>59.19</i>	<i>85.41</i>
CS-WB05-CC-01	432		<i>1355</i>		<i>90.08</i> <i>89.57</i>	<i>96.41</i>
CS-WB05-CC-02	460		<i>1354</i>		<i>102.24</i> <i>101.72</i>	<i>108.80</i>
CS-WB06-UGR-01	20		<i>1441</i>	<i>14.12</i>	<i>14.04</i> <i>14.13</i>	<i>18.44</i>
CS-WB06-LGR-01	93		<i>1440</i>		<i>14.07</i> <i>14.15</i>	<i>16.29</i>
CS-WB06-LGR-02	174		<i>1439</i>		<i>14.11</i> <i>14.20</i>	<i>37.75</i>
CS-WB06-LGR-03A	207		<i>1438</i>		<i>14.14</i> <i>14.22</i>	<i>32.55</i>
CS-WB06-LGR-03B	260		<i>1436</i>		<i>21.60</i> <i>25.47</i>	<i>55.48</i>
CS-WB06-LGR-04	320		<i>1436</i>		<i>47.66</i> <i>51.54</i>	<i>70.82</i>
CS-WB07-UGR-01	14		<i>1458</i>	<i>14.12</i>	<i>14.05</i> <i>14.13</i>	<i>16.64</i>
CS-WB07-LGR-01	90		<i>1457</i>		<i>14.10</i> <i>14.18</i>	<i>17.86</i>
CS-WB07-LGR-02	175		<i>1456</i>		<i>14.14</i> <i>14.19</i>	<i>28.73</i>
CS-WB07-LGR-03A	208		<i>1455</i>		<i>14.17</i> <i>14.24</i>	<i>28.22</i>
CS-WB07-LGR-03B	257		<i>1454</i>		<i>15.58</i> <i>15.63</i>	<i>49.44</i>
CS-WB07-LGR-04	318		<i>1453</i>		<i>42.13</i> <i>42.18</i>	<i>68.57</i>
CS-WB08-UGR-01	38		<i>1424</i>	<i>14.10</i>	<i>14.03</i> <i>14.12</i>	<i>20.03</i>
CS-WB08-LGR-01	115		<i>1423</i>		<i>14.08</i> <i>14.15</i>	<i>21.50</i>
CS-WB08-LGR-02	193		<i>1422</i>		<i>14.12</i> <i>14.20</i>	<i>21.20</i>
CS-WB08-LGR-03A	228		<i>1421</i>		<i>14.14</i> <i>14.21</i>	<i>21.85</i>
CS-WB08-LGR-03B	273		<i>1420</i>		<i>18.87</i> <i>26.04</i>	<i>41.34</i>
CS-WB08-LGR-04	341		<i>1419</i>		<i>48.45</i> <i>55.63</i>	<i>69.71</i>

Bioreactor Monitoring

Personnel: J. Bouch, A. Lindley

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 1.18.09		Time: 0840							
B3-T1-1	12.9	3.01	7.00	16.46	0.663	-67.6	0.18	✓	Ⓜ 1045
B3-T1-2	12.4	2.64	7.07	15.44	0.636	-58.9-60.2	1.27	0.57	Ⓜ 0945
B3-T1-3	12.85	2.35	7.14	16.42	0.621	-70.6	0.61	✓	Ⓜ 0920
B3-T2-1	9.67	4.44	6.91	23.05	0.780	-94.0	0.15	✓	Ⓜ 1110
B3-T2-2	10.01	4.78	6.50	21.53	1.208	-87.2	0.35	✓	Ⓜ 1020
B3-T3-1	9.96	6.84	7.12	21.74	0.744	-65.4	0.20		Ⓜ 1145
B3-T3-2	7.4	6.78	6.89	25.43	1.102	-101.2	0.08		Ⓜ 1115
B3-T4-1	6.32	5.57	7.04	20.61	0.655	-64.9	0.11		Ⓜ 1045
B3-T5-1	9.33	6.15	6.74	21.51	0.757	-79.5	0.19		Ⓜ 1020
B3-T5-2	7.98	5.88	7.04	20.69	0.539	-63.6	0.45		Ⓜ 1000
B3-T6-1	11.45	5.68	7.14	20.40	0.535	-51.8	2.74		Ⓜ 0900
B3-T6-2	12.34	5.48	7.10	20.32	0.553	-56.3	0.42		Ⓜ 0930
B3-UIC			7.43	22.64	0.597	-65.7	5.77		Ⓜ 1120

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday					
Date/Time:	11.16.09	11.17.09 0848	11.18.09 0836	11.19.09 0840	11.20.09 1031					
	Rate (gpm) / Cumulative Total (gal)									
T-1	21.1	5510269	21.4	5544587	23.4	5572122	24.4	5606107	5.36	5637269
T-2	11.3	2450899	11.7	2466377	10.9	2479060	11.4	2494395	3.54	2508015
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	0	214916	9.11	223301	9.21	228365	0	236649	0	242320
CS-MW16-CC	0	498820	14.60	492642	14.42	500661	0	514191	0	523386
B3-EXW01	-	-	24.75	1496658	0	1524806	23.4	1552903	23.94	1585044

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)) = *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 45 - 45 = 0 PB-1 - PB-2 = 46 - 46 = 0 PB-1 - PB-2 = 44 - 44 = 0 PB-1 - PB-2 = 48 - 48 = 0 PB-1 - PB-2 = 0 - 0 = 0

Notes: Tank is 10/16 full Tank 3/4 full MW16 LGR = 233.6 MW16 CC = 220.7 Tank is 13/16 full TP is off - would not come on in auto. Tank is full Turned B3 EXW01 off for weekend and closed

454,164 / 68.81

Week 134

68.87 / 65,1673

752,192 / 64.04

Personnel: J. Bouch; A. Lindley; E. Tennyson							
Weekly Water Level Monitoring							
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)	
CS-WB05-LGR-01	99	11-18-09	1307	14.03	14.07 14.13	21.57	
CS-WB05-LGR-02	182	↓	1346		14.11 14.17	14.20	
CS-WB05-LGR-03A	216		1345		14.14 14.20	19.04	
CS-WB05-LGR-03B	262		1344		16.17 15.49	38.96	
CS-WB05-LGR-04A	277		1343		22.70 22.01	43.84	
CS-WB05-LGR-04B	329		1342		45.33 44.63	66.29	
CS-WB05-BS-01	362		1341		59.67 58.98	81.64	
CS-WB05-CC-01	432		1339		90.08 89.39	96.54	
CS-WB05-CC-02	460		↓		1338	102.24 101.54	108.49
CS-WB06-UGR-01	20		↓		1436	14.07	14.04 14.09
CS-WB06-LGR-01	93			1435	14.07 14.14		16.23
CS-WB06-LGR-02	174	1434		14.11 14.17	37.71		
CS-WB06-LGR-03A	207	1433		14.14 14.18	32.95		
CS-WB06-LGR-03B	260	1431		21.60 25.34	55.85		
CS-WB06-LGR-04	320	↓		1430	47.66 51.38		67.20
CS-WB07-UGR-01	14	↓	1450	14.06	14.05 14.09	16.66	
CS-WB07-LGR-01	90		1449		14.10 14.13	17.83	
CS-WB07-LGR-02	175		1448		14.14 14.17	28.73	
CS-WB07-LGR-03A	208		1447		14.17 14.19	24.24	
CS-WB07-LGR-03B	257		1445		15.58 15.52	47.44	
CS-WB07-LGR-04	318		↓		1444	42.13 42.03	63.84
CS-WB08-UGR-01	38	↓	1417	14.06	14.03 14.10	19.93	
CS-WB08-LGR-01	115		1416		14.08 14.13	21.22	
CS-WB08-LGR-02	193		1414		14.12 14.16	21.64	
CS-WB08-LGR-03A	228		1413		14.14 14.20	18.03	
CS-WB08-LGR-03B	273		1412		48.87-25.90 27.50	38.38 37.49	
CS-WB08-LGR-04	341		↓		1358	48.45 55.44	66.02

Sample
11-16-09 / 0925

11-16-09
17.60 / 40.09

Sample
11-16-09 / 1300

11-16-09
26.91 / 55.76

Sample
11/16/09 / 1325

14.12 AM
11/16/09
17.62 / 47.95

Sample
11/16/09 / 1025

11/16/09
27.50 / 38.33

valve at Tank. TP is off also. TP would turn on in hand.

Bioreactor Monitoring

Personnel: S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	** DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 11.25.09		Time: 1330							
B3-T1-1	12.9	3.59	7.16	18.96	0.596	-48.0	1.11		** can't calibrate DO because internet is down, it is what it is
B3-T1-2	12.4	3.27	7.06	17.33	0.626	-61.1	0.47	✓	
B3-T1-3	12.85	2.92	7.05	16.49	0.594	-88.5	0.48	✓	
B3-T2-1	9.67	4.97	6.94	21.84	0.697	-54.4	0.73		
B3-T2-2	10.01	5.33	6.35	21.64	1.123	-78.3	0.79	✓	
B3-T3-1	9.96	6.97	6.84	24.06	0.906	-55.4	0.49		
B3-T3-2	7.4	6.9677	7.02	20.13	0.651	-57.0	0.60		
B3-T4-1	6.32	5.30	7.04	19.11	0.595	-60.9	0.51		
B3-T5-1	9.33	5.94	7.10	20.28	0.519	-52.6	1.30 1.34		
B3-T5-2	7.98	5.86	6.80	20.78	0.724	-61.5	0.46		
B3-T6-1	11.45	5.35	7.10	20.90	0.516	-51.2	1.72		
B3-T6-2	12.34	5.15	7.04	20.30	0.528	-60.4	0.28		
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	11.23.09	0800	11.24.09	1500	11.25.09	0830	11.26.09		11.27.09	
	Rate (gpm) / Cumulative Total (gal)									
T-1 *	8.3/24.9	5,673,252	23.3	28033	8.71	45,135				
T-2	2.21/10.6	2,520,976	10.4	2532735	3.12	2,539,752				
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	9.61	262,227	9.32	279,648	9.16	289,474				
CS-MW16-CC	14.7	554,431	14.31	581,030	14.20	596,132				
B3-EXW01	Ø	1,585,049	Ø	off	Ø	off				

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 45-44	PB-1 - PB-2 = 47-42 = 5	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =
Notes: tank = 5/8 full * changed out meter at T-1, hard to read screen old = 5,673,252 gallons	tank = 1/2 full	tank = 3/8 full MW16-LGR = 211.6 MW16-CC = 306.7		

new = 0
MW16-LGR = 203.6
MW16-CC = 294.6
CS-12 to T-6 = 6,024,450 / 66.87

T6 = 70.235 pm
Tot2 = 6,152,699

Week 135

70.40 / 6,227,051

- will grav. ty feed all weekend, transfer pump off, B3-EXW01 will remain off

Personnel		Rice, Tennyson 11-25-09				
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	11/25/09	1441	14.13	14.07 14.20	21.56
CS-WB05-LGR-02	182		1439		14.11 14.26	14.26
CS-WB05-LGR-03A	216		1437		14.14 14.27	25.95
CS-WB05-LGR-03B	262		1436		16.17 15.53	45.86
CS-WB05-LGR-04A	277		1435		22.70 22.05	52.98
CS-WB05-LGR-04B	329		1433		45.33 44.68	75.70
CS-WB05-BS-01	362		1431		59.67 59.03	88.75
CS-WB05-CC-01	432		1429		90.08 89.43	86.50
CS-WB05-CC-02	460		1427		102.24 101.60	98.80
CS-WB06-UGR-01	20		✓		1407	14.13
CS-WB06-LGR-01	93	1405		14.07 14.21	16.31	
CS-WB06-LGR-02	174	1403		14.11 14.26	38.33	
CS-WB06-LGR-03A	207	1401		14.14 14.27	34.38	
CS-WB06-LGR-03B	260	1359		21.60 25.42	57.28	
CS-WB06-LGR-04	320	1357		47.66 51.47	78.37	
CS-WB07-UGR-01	14	✓		1421	14.13	
CS-WB07-LGR-01	90		1420	14.10 14.21		17.80
CS-WB07-LGR-02	175		1418	14.14 14.25		29.31
CS-WB07-LGR-03A	208		1416	14.17 14.27		29.14
CS-WB07-LGR-03B	257		1414	15.58 15.60		50.34
CS-WB07-LGR-04	318		1412	42.13 42.11 51.47		78.30
CS-WB08-UGR-01	38	✓	1350	14.13	14.03 14.17	20.03
CS-WB08-LGR-01	115		1348		14.08 14.21	22.65
CS-WB08-LGR-02	193		1346		14.12 14.25	22.00
CS-WB08-LGR-03A	228		1344		14.14 14.28	27.31
CS-WB08-LGR-03B	273		1342		18.87 25.99	46.77
CS-WB08-LGR-04	341		1340		48.45 55.53	78.46

Bioreactor Monitoring

Personnel: J. Bouch; Tennyson

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 12-3-09		Time: 1400							
B3-T1-1	12.9	3.48	6.99	15.24	0.414	-57.1	3.43	✓	Temp?
B3-T1-2	12.4	3.21	6.60	19.86	0.544	-108.7	0.59		
B3-T1-3	12.85	2.87	6.91	12.91	0.466	-57.7	0.70		
B3-T2-1	9.67	4.88	7.08	20.37	0.507	-59.7	0.28		
B3-T2-2	10.01	5.28	6.40	21.35	0.751	-91.6	0.80		
B3-T3-1	9.96	6.86	7.01	22.37	0.659	-71.20	0.41		
B3-T3-2	7.4	6.69	7.04	18.11	0.479	-59.3	1.16		
B3-T4-1	6.32	5.28	6.99	16.91	0.429	-65.3	0.75		
B3-T5-1	9.33	5.84	7.11	19.52	0.403	-62.2	1.30		
B3-T5-2	7.98	5.88	6.71	18.91	0.511	-62.4	1.01		
B3-T6-1	11.45	5.32	7.11	20.90	0.403	-60.3	2.60		
B3-T6-2	12.34	5.13	7.08	19.75	0.407	-62.4	0.64		
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	11:30:09	1119	12:1:09	0915	12:2:09	0828	12:3:09	0900	12:4:09	1043
Rate (gpm) / Cumulative Total (gal)										
T-1	23.4	93077.4	25.4	124490	24.1	157757	24.1	192702	—	—
T-2	11.6	25508.9	10.1	25639.9	9.97	257765.2	9.23	259214.7	—	—
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	0	318313	0	323508	0	329164	0	334895	—	—
CS-MW16-CC	0	642148	0	650636	0	659639	0	668730	—	—
B3-EXW01	41.18	158505.9	24.12	161723.6	23.94	165044.3	24.13	168506.6	—	—

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)) = *Note: If bag filter pressure drop is > or = 10 psi change filter.

38.51	PB-1 - PB-2 = 48 - 40 = 8	PB-1 - PB-2 = 44 - 44 = 0	PB-1 - PB-2 = 44 - 44 = 0	PB-1 - PB-2 = 44 - 44 = 0	PB-1 - PB-2 = —
Notes:	Tank is 10/16 full Turned on TP and B3EX01 - opened valve.	Tank is 3/4 full	MW16 LGR = 199.3 MW16 CC = 241.2 Tank 3/4 full	MW16 LGR = 197.1 MW16 CC = 238.9 Tank is 9/16 full	* System off and lines drained for the weekend *

Change 2nd BF (42-42=0)

Week 136

*Turning off all 3 wells and draining lines *

CS-12 is still injecting into T-6.

68.16 / 6,734,623

71.23 / 6,281,137

70.9 / 6,926,466

70.99 / 7,029,379

69.23 / 7,137,925

Data was not sent into the data log for change a unit

Personnel <i>S. Elliott & M. Zugelder</i>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	12/3/09	0813	14.14	14.07 14.21	21.49
CS-WB05-LGR-02	182		0812		14.11 14.25	14.20
CS-WB05-LGR-03A	216		0810		14.14 14.27	23.20
CS-WB05-LGR-03B	262		0809		16.17 15.55	43.10
CS-WB05-LGR-04A	277		0808		22.70 22.07	49.37
CS-WB05-LGR-04B	329		0807		45.33 44.70	71.88
CS-WB05-BS-01	362		0806		59.67 59.04	86.30 27
CS-WB05-CC-01	432		0804		90.08 89.45	98.41
CS-WB05-CC-02	460		0802		102.24 101.61	110.33
CS-WB06-UGR-01	20		0846	14.16	14.04 14.18	18.40
CS-WB06-LGR-01	93		0845		14.07 14.22	16.27
CS-WB06-LGR-02	174		0844		14.11 14.27	37.94
CS-WB06-LGR-03A	207		0843		14.14 14.28	34.76
CS-WB06-LGR-03B	260		0842		21.60 25.42	57.66
CS-WB06-LGR-04	320		0840		47.66 51.47	71.76
CS-WB07-UGR-01	14		0904	14.15	14.05 14.18	16.74
CS-WB07-LGR-01	90		0901		14.10 14.22	17.76
CS-WB07-LGR-02	175		0900		14.14 14.27	29.54
CS-WB07-LGR-03A	208		0858		14.17 14.28	28.99
CS-WB07-LGR-03B	257		0857		15.58 15.63	50.18
CS-WB07-LGR-04	318		0856		42.13 42.11	69.61
CS-WB08-UGR-01	38		0829	14.13	14.03 14.18	19.99
CS-WB08-LGR-01	115		0828		14.08 14.22	20.78
CS-WB08-LGR-02	193		0827		14.12 14.26	22.32
CS-WB08-LGR-03A	228		0826		14.14 14.28	22.96
CS-WB08-LGR-03B	273		0825		18.87 25.98	42.41
CS-WB08-LGR-04	341	↓	0823		48.45 55.52	70.55

Weather is supposed to get very cold and freeze tomorrow night.
 Don't want lines to burst.

Bioscience Monitoring

Outlet	Flow	Pressure	Temp	Flow	Pressure	Temp	Flow	Pressure	Temp
B3-11C	15.34	2.12	7.08	11.92	0.12	13.512	0.827	15.202	10.402
B3-11B	41.92	2.35	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-11A	1.88	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12A	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12B	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12C	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12D	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12E	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12F	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12G	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12H	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12I	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12J	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12K	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12L	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12M	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12N	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12O	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12P	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12Q	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12R	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12S	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12T	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12U	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12V	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12W	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12X	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12Y	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402
B3-12Z	0.32	2.88	7.11	11.92	0.12	13.512	0.827	15.202	10.402

Branch pumps water levels (B10C)

Time: 14:00

Tanks

not opening pump 2
 12-15 re fill rotation

opening for this rotation
 2 tanks off big pump

Bioreactor Monitoring

Personnel: J. Bouch

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 12.8.09		Time: 10:10							
B3-T1-1	12.9	3.94	7.04	18.92	0.551	-46.6	1.21	✓	(MW27 UGR) 46 DTW (MW27 UGR)
B3-T1-2	12.4	3.85	6.62	18.54	0.653	-100.7	0.69		
B3-T1-3	12.85	3.54	7.03	13.63	0.595	-53.9	0.67		
B3-T2-1	9.67	5.37	7.07	18.99	0.590	-47.4	0.70		
B3-T2-2	10.01	5.20	6.57	19.44	0.832	-49.6	0.83		
B3-T3-1	9.96	6.99	7.00	21.16	0.761	-54.6	0.45		
B3-T3-2	7.4	6.91	6.88	16.27	0.542	-57.3	1.14		
B3-T4-1	6.32	5.25	6.91	15.20	0.503	-52.5	0.89		
B3-T5-1	9.33	5.98	7.16	20.26	0.491	-50.6	0.92		
B3-T5-2	7.98	6.12	6.91	17.55	0.650	-52.7	0.71		
B3-T6-1	11.45	5.40	7.14	20.18	0.489	-50.4	2.53		
B3-T6-2	12.34	5.19	7.14	20.55	0.494	-52.5	0.67		
B3-UIC									

B-3 Transfer System Monitoring

Meter	Flow Meters Readings									
	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	12.7.09	1327	12.8.09	0943	12.9.09	1006	12.10.09	0943	12.11.09	0825
	Rate (gpm) / Cumulative Total (gal)									
T-1	4.39	202024	22.2	223779	22.9	257425	23.4	290122	23.0	321858
T-2	3.25	2596082	7.82	2604473	9.66	2618149	10.7	2632426	10.2	2645126
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	9.83	337935	8.48	338987	8.48	343909	8.19	348785	8.32	353290
CS-MW16-CC	15.02	673345	15.67	674975	15.67	683972	15.56	693069	15.72	701887
B3-EXW01	41.29	1694175	23.82	1723929	23.82	1758536	23.51	1792252	23.48	1824299

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 42-42=0	PB-1 - PB-2 = 44-44=0	PB-1 - PB-2 = 45-44=1
Notes: Tank is 1/4 full	MW16 LGR = 197.4 MW16 CC = 223.1 Tank is 9/16 full	MW16 LGR = 199.2 MW16 CC = 230.2 Tank is 1/2 full	Tank is 9/16 full	Tank is 1/2 full

*turned on 16 wells and extraction well - closed all valves x

44.9394
70.64 / 7.8636 (m)

changed BF

Week 137

70.17 / 7535132

69.93 / 7640294

21.57 / 7736205

mm / 7831754

Personnel		J. Bouch; E. Tennyson				
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	12-10-09	1402	14.12	14.07 14.16	21.47
CS-WB05-LGR-02	182		1401		14.11 14.22	14.20
CS-WB05-LGR-03A	216		1400		14.14 14.23	23.04
CS-WB05-LGR-03B	262		1359		16.17 15.49	42.95
CS-WB05-LGR-04A	277		1358		22.70 22.01	48.41
CS-WB05-LGR-04B	329		1357		45.33 44.65	70.84
CS-WB05-BS-01	362		1356		59.67 59.00	85.78
CS-WB05-CC-01	432		1355		90.08 87.40	101.03
CS-WB05-CC-02	460		1353		102.24 101.55	112.97
CS-WB06-UGR-01	20		12-10-09		1433	14.12
CS-WB06-LGR-01	93	1432		14.07 14.17	16.28	
CS-WB06-LGR-02	174	1431		14.11 14.22	38.07	
CS-WB06-LGR-03A	207	1430		14.14 14.23	35.26	
CS-WB06-LGR-03B	260	1429		21.60 25.37	58.16	
CS-WB06-LGR-04	320	1428		47.66 51.43	70.91	
CS-WB07-UGR-01	14	12-10-09	1453	14.11	14.05 14.14	16.63
CS-WB07-LGR-01	90		1452		14.10 14.19	17.73
CS-WB07-LGR-02	175		1451		14.14 14.21	29.64
CS-WB07-LGR-03A	208		1450		14.17 14.23	28.88
CS-WB07-LGR-03B	257		1448		15.58 15.58	50.07
CS-WB07-LGR-04	318		1447		42.13 42.07	68.41
CS-WB08-UGR-01	38	12-10-09	1418	14.11	14.03 14.14	19.94
CS-WB08-LGR-01	115		1417		14.08 14.18	20.73
CS-WB08-LGR-02	193		1416		14.12 14.23	22.47
CS-WB08-LGR-03A	228		1415		14.14 14.24	22.17
CS-WB08-LGR-03B	273		1414		18.87 25.93	41.63
CS-WB08-LGR-04	341		1413		48.45 55.48	69.81

Bioreactor Monitoring

Personnel: J. Bouch; A. Lindley

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 12/15/09		Time: 9:05							
B3-T1-1	12.9	2.85	6.82	17.33	0.559	-52.0	0.53	✓	① 1000
B3-T1-2	12.4	3.18	6.91	18.76	0.565	-48.0	0.33	✓	② 1306
B3-T1-3	12.85	2.45	7.16	16.43	0.586	-42.9	2.48	✓	③ 0920
B3-T2-1	9.67	4.62	6.84	17.84	0.569	-47.9	0.42	✓	④ 1330
B3-T2-2	10.01	4.73	6.39	19.19	0.924	-69.1	0.45	✓	⑤ 1025
B3-T3-1	9.96	6.82	6.97	20.45	0.750	-79.5	0.47		
B3-T3-2	7.4	6.62	6.92	16.10	0.570	-54.6	1.03		
B3-T4-1	6.32	5.21	6.96	16.75	0.521	-51.4	0.76		
B3-T5-1	9.33	6.04	7.07	21.27	0.503	-53.9	0.55		
B3-T5-2	7.98	6.03	6.66	16.70	0.577	-50.1	0.49		
B3-T6-1	11.45	5.44	7.07	20.97	0.502	-54.0	2.26		
B3-T6-2	12.34	5.27	7.05	21.38	0.505	-54.1	0.43		⑥ 1415
B3-UIC			6.99	19.88	0.543	-52.4	4.16		⑦ 1405

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	12-14-09	0924	12-15-09	0855	12-16-09	0940	12-17-09	0909	12-18-09	0837
	Rate (gpm) / Cumulative Total (gal)									
T-1	23.4	421083	22.4	452702	22.6	484408	22.3	516587	23.4	541142
T-2	10.1	2686444	8.5	2699775	9.4	2713279	10.9	2727507	12.2	2735366
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	7.81	367223	8.09	371480	8.04	375947	8.0	380610	8.0	384015
CS-MW16-CC	15.56	729163	15.80	737423	15.23	746000	15.2	754947	15.2	761373
B3-EXW01	23.3	1926840	23.31	1959970	23.09	1993115	23.41	2026517	23.0	2059664

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)) = *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 48 - 44 = 4	PB-1 - PB-2 = 48 - 42 = 6	PB-1 - PB-2 = 48 - 42 = 6	PB-1 - PB-2 = 48 - 40 = 8	PB-1 - PB-2 = 42 - 42 = 0
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Notes: Tank is 3/4 full MW16 LGR = 205.9 MW16 CC = 243.0
 Tank is 9/10 full Tank is 9/10 full MW16 CC = 246.0 MW16 LGR = 210.2
 Tank is 1/2 full changed BF Tank was overflowing - turned out to be floats at sump 1-1x
 MW16 LGR = 225.9 MW16 CC = 284.4

Week 138

70.17 / 8.138812 69.90 / 8.262044 69.58 / 8.337799 8.440262 / 69.7 69.53 / 8.539730

Personnel: J. Bouch ; A. Lindley

Weekly Water Level Monitoring

Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	93	12/16/09	0914	14.20	14.20 14.26	21.54
CS-WB05-LGR-02	182		0913		14.25 14.32	14.28
CS-WB05-LGR-03A	216		0912		14.30 14.34	21.18
CS-WB05-LGR-03B	202		0911		20.50 15.53	41.09
CS-WB05-LGR-04A	277		0910	14.20	27.00 22.09	46.64
CS-WB05-LGR-04B	329		0910		49.85 44.70	68.98
CS-WB05-BS-01	362		0909		64.00 59.04	84.16
CS-WB05-CC-01	432		0908		94.00 89.46	97.73
CS-WB05-CC-02	460		0907		106.85 101.6	110.17
CS-WB06-LGR-01	20		0949		14.20 14.25	18.47
CS-WB06-LGR-01	93		0948		14.20 14.28	16.39
CS-WB06-LGR-02	174		0947	14.20	14.30 14.33	38.22
CS-WB06-LGR-03A	207		0946		14.35 14.35	35.41
CS-WB06-LGR-03B	280		0945		22.81 25.48	58.38
CS-WB06-LGR-04	320		0943		48.80 51.54	69.66
CS-WB07-LGR-01	74		1006		14.20 14.24	16.94
CS-WB07-LGR-01	90		1005		14.25 14.27	17.75
CS-WB07-LGR-02	175		1004	14.22	14.20 14.32	29.62
CS-WB07-LGR-03A	208		1003		14.30 14.33	27.74
CS-WB07-LGR-03B	257		1002		16.70 15.65	48.94
CS-WB07-LGR-04	318		1000		43.22 42.15	66.70
CS-WB08-LGR-01	33		0931		14.20 14.24	15.16
CS-WB08-LGR-01	175		0930		14.25 14.28	20.74
CS-WB08-LGR-02	193		0928	14.20	14.25 14.33	22.66
CS-WB08-LGR-03A	238		0927		14.30 14.35	20.60
CS-WB08-LGR-03B	273		0926		20.55 26.03	40.04
CS-WB08-LGR-04	341		0924		50.00 55.57	68.47

12-14-09 | 0950

14.03

17.41 | 41.60

12/14/09 | 1350

14.01

26.72 | 58.2

12/14/09 | ~~1300~~

14.00

17.43 | 49.22

09 14:10

27.88 | 40.5

Bioreactor Monitoring

Personnel: J. Bouch; S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 12-21-09 12:23:09		Time: 0855 1104							
B3-T1-1	12.9	3.09	7.05	19.23	0.416	-54.3	0.68		
B3-T1-2	12.4	2.74	6.76	16.66	0.415	-63.2	0.49	✓	
B3-T1-3	12.85	2.36	6.82	14.64	0.425	-51.7	0.69		
B3-T2-1	9.67	4.53	6.89	17.94	0.420	-71.7	0.55	✓	
B3-T2-2	10.01	4.83	6.42	18.84	0.696	-83.1	0.65		
B3-T3-1	9.96	6.77	7.00	19.44	0.557	-88.2	0.35		
B3-T3-2	7.4	6.62	6.93	16.52	0.426	-49.5	0.73		
B3-T4-1	6.32	5.17	6.98	17.04	0.386	-50.5	0.48		
B3-T5-1	9.33	6.09	7.16	21.17	0.372	-56.8	0.70		
B3-T5-2	7.98	6.04	6.70	16.53	0.426	-50.0	0.46		
B3-T6-1	11.45	5.46	7.16	21.70	0.371	-55.1	2.42		
B3-T6-2	12.34	5.26	7.14	21.00	0.371	-60.8	0.42		
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	12-21-09 0855	12-22-09 0925	12-23-09 0932	12-24-09 1000	
	Rate (gpm) / Cumulative Total (gal)				
T-1	23.0 / 624168	9.27 / 656528	7.43 / 677879	9.24 / 698082	
T-2	11.1 / 2779945	5.88 / 2795650	4.0 / 2806533	3.74 / 2816957	
T-3					
T-4					
T-5					
T-6					
B-3 (Total)					
CS-MW16-LGR	8.09 / 395987	0 / 402316	8.09 / 411849	8.19 / 423661	
CS-MW16-CC	15.61 / 784169	0 / 796369	15.27 / 814532	15.07 / 836741	
B3-EXW01	0 / 2156019	23.11 / 2180411	0 / 219534	0 / 219534	

Holiday Merry Christmas!

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: if bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 42 - 42 = 0	PB-1 - PB-2 = 0 - 0 = 0	PB-1 - PB-2 = 52 - 30 = 22	PB-1 - PB-2 = 0 - 0 = 0	PB-1 - PB-2 =
Notes: Tank is 9/16 full MW16CC = * SCADA DOWN MW16LGR = * SCADA DOWN	Tank is 3/4 full MW16CC = 283.1 MW16LGR = 226.1 *Turned off extraction well	MW16LGR = 227.2 MW16CC = 301.8 Tank is 1/4 full	Tank is 1/2 full Turned off 16 wells and drained tank for weekend/also drained lines.	

69.58 / 9,840,911

69.46 / 9,942,496

Week 137
changed bag filter
69.46 / 042751

68.87 / 10,144,051

Personnel		S. Elliott + J. Bouch					
Weekly Water Level Monitoring							
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)	
CS-WB05-LGR-01	99	12.21.09	1347	14.08	14.26 14.13	21.58	
CS-WB05-LGR-02	182		1346		14.32 14.19	14.21	
CS-WB05-LGR-03A	216		1345		14.34 14.21	19.98	
CS-WB05-LGR-03B	262		1344		15.53 15.37	39.89	
CS-WB05-LGR-04A	277		1343		22.09 21.93	45.33	
CS-WB05-LGR-04B	329		1342		44.70 44.55	67.82	
CS-WB05-BS-01	362		1341		59.04 58.90	82.86	
CS-WB05-CC-01	432		1340		89.46 89.30	98.96	
CS-WB05-CC-02	460		1339		101.60 101.45	110.91	
CS-WB06-UGR-01	20				1415	14.08	14.25 14.10
CS-WB06-LGR-01	93			1414	14.28 14.14		16.28
CS-WB06-LGR-02	174		1413	14.33 14.19	38.15		
CS-WB06-LGR-03A	207		1412	14.35 14.22	35.43		
CS-WB06-LGR-03B	260		1411	25.48 25.32	58.32		
CS-WB06-LGR-04	320		1410	51.54 51.38	68.55		
CS-WB07-UGR-01	14		1430	14.07	14.24 14.10		16.92
CS-WB07-LGR-01	90		1429		14.27 14.13	17.76	
CS-WB07-LGR-02	175		1428		14.32 14.18	29.52	
CS-WB07-LGR-03A	208		1427		14.33 14.20	26.98	
CS-WB07-LGR-03B	257		1426		15.65 15.50	48.16	
CS-WB07-LGR-04	318		1425		42.15 42.01	65.49	
CS-WB08-UGR-01	38		1402	14.07	14.24 14.11	19.96	
CS-WB08-LGR-01	115		1401		14.28 14.15	20.79	
CS-WB08-LGR-02	193		1400		14.33 14.19	22.68	
CS-WB08-LGR-03A	228		1359		14.35 14.20	19.37	
CS-WB08-LGR-03B	273		1358		26.03 25.88	38.82	
CS-WB08-LGR-04	341	✓	1357		55.57 55.42	67.30	

* TP was not on ~~test~~ when I arrived to check morning readings. The wells were off. Water in Trench 1 was higher than it has been. I think that the Sump 1-1 float has turned off everything. Turned off B3 Ex 01 in order to allow water to go down a bit in Trench 1. Kept checking on it all day. TP did kick on at the end of the day. Kept extraction well off. *

Bioreactor Monitoring

Trench Sumps Water Levels (B100)

Time	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
11:00	4.2	4.1	4.0	3.9	3.8	3.7	3.6
12:00	4.1	4.0	3.9	3.8	3.7	3.6	3.5
13:00	4.0	3.9	3.8	3.7	3.6	3.5	3.4
14:00	3.9	3.8	3.7	3.6	3.5	3.4	3.3
15:00	3.8	3.7	3.6	3.5	3.4	3.3	3.2
16:00	3.7	3.6	3.5	3.4	3.3	3.2	3.1
17:00	3.6	3.5	3.4	3.3	3.2	3.1	3.0
18:00	3.5	3.4	3.3	3.2	3.1	3.0	2.9
19:00	3.4	3.3	3.2	3.1	3.0	2.9	2.8
20:00	3.3	3.2	3.1	3.0	2.9	2.8	2.7
21:00	3.2	3.1	3.0	2.9	2.8	2.7	2.6
22:00	3.1	3.0	2.9	2.8	2.7	2.6	2.5
23:00	3.0	2.9	2.8	2.7	2.6	2.5	2.4
00:00	2.9	2.8	2.7	2.6	2.5	2.4	2.3

B-3 Transfer System Monitoring

Time	Pressure	Flow	Temp	Level	Status
11:00	15.5	1000	10.0	1100	OK
12:00	15.5	1000	10.0	1100	OK
13:00	15.5	1000	10.0	1100	OK
14:00	15.5	1000	10.0	1100	OK
15:00	15.5	1000	10.0	1100	OK
16:00	15.5	1000	10.0	1100	OK
17:00	15.5	1000	10.0	1100	OK
18:00	15.5	1000	10.0	1100	OK
19:00	15.5	1000	10.0	1100	OK
20:00	15.5	1000	10.0	1100	OK
21:00	15.5	1000	10.0	1100	OK
22:00	15.5	1000	10.0	1100	OK
23:00	15.5	1000	10.0	1100	OK
00:00	15.5	1000	10.0	1100	OK

~~Handwritten notes and signatures at the bottom of the page.~~

Bioreactor Monitoring

Personnel: *Tennyson; J. Bouch*

Trench Sumps Water Levels ('BTOC)

* see page back

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg C)	Secord (mg/cm)	ORP	DO (mg/L)	Trench Clean Being Used	Notes
Date: 12-31-09		Time: 10:24							
B3-T1-1	12.9	3.84	7.03	19.04	0.468	-47.3	1.60 *	✓	T1 pond water level subsided ~2' 12/24 to 12/28
B3-T1-2	12.4	3.65	6.53	16.63	0.500	-82.0	0.52	✓	
B3-T1-3	12.85	3.28	6.70	10.48	0.470	-43.8	0.72		
B3-T2-1	9.67	5.25	6.82	16.90	0.451	-46.3	1.02		
B3-T2-2	10.01	5.64	6.34	17.98	0.754	-61.7	0.75		
B3-T3-1	9.96	6.96	6.91	18.37	0.596	-66.3	0.43		
B3-T3-2	7.4	6.80	-	-	-	-	-		not enough water.
B3-T4-1	6.32	5.34	6.92	16.34	0.432	-45.3	1.09		
B3-T5-1	9.33	6.35	7.00	19.97	0.421	-47.7	0.95		
B3-T5-2	7.98	7.75	-	-	-	-	-		not enough water.
B3-T6-1	11.45	6.65	7.05	22.41	0.429	-50.6	2.33		
B3-T6-2	12.34	5.18	7.00	20.11	0.421	-47.8	0.48		
B3-UIC									

B-3 Transfer System Monitoring

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	12-28-09 1625	12-29-09 1300	12-30-09 1000	12-31-09 1017	
	Rate (gpm) / Cumulative Total (gal)				
T-1	9.5 gpm	6.70	7.2	24.9	
T-2	Ø	2.78	10.9	9.92	
T-3					
T-4					
T-5					
T-6					
B-3 (Total)					
CS-MW16-LGR	6.5	15.07	7.36	Ø	
CS-MW16-CC	15.2	6.47	15.10	Ø	
B3-EXW01	off	OFF	24.291	23.26	

PB-1 - PB-2 = 0 - 0 = 0

Notes: All ext. wells off since 12/24, MW 16s on @ 1121. B3 EXW 01 left off. MW 16 LGR - 225.7 MW 16 CC = 301.7 Tank is 1/4 full Tank is 1/2 full Tank is 3/4 full Wells turned off, T/P off No monitoring - Holiday off. system off.

Tank 3/4 full, gravity draining. TP not on yet, left on auto TP test on "Hand" = OK. changed BP Turned on extraction well. Week 140 for winterizing. Tank gravity drains. 16LGR = 213.8, 16CC = 249.3 66.70/10, 635, 118 65.92/10, 719, 246 66.01/10, 815, 732

Personnel <u>J. Bouch; E. Tennyson</u>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	12-30-09	1122	14.10	14.26 14.13	21.57
CS-WB05-LGR-02	182		1121		14.32 14.17	14.17
CS-WB05-LGR-03A	216		1120		14.34 14.21	19.50
CS-WB05-LGR-03B	262		1119		15.53 15.37	39.43
CS-WB05-LGR-04A	277		1118		22.09 21.89	43.73
CS-WB05-LGR-04B	329		1117		44.70 44.53	66.09
CS-WB05-BS-01	362		1116		59.04 58.89	81.93
CS-WB05-CC-01	432		1115		89.46 89.29	91.70
CS-WB05-CC-02	460	✓	1114		101.60 101.45	104.10
CS-WB06-UGR-01	20		1157	14.11	14.25 14.11	18.28
CS-WB06-LGR-01	93		1156		14.28 14.14	16.29
CS-WB06-LGR-02	174		1155		14.33 14.19	38.03
CS-WB06-LGR-03A	207		1154		14.35 14.21	35.79
CS-WB06-LGR-03B	260		1153		25.48 25.34	58.68
CS-WB06-LGR-04	320	✓	1152		51.54 51.38	67.24
CS-WB07-UGR-01	14		1215	14.07	14.24 14.07	16.77
CS-WB07-LGR-01	90		1214		14.27 14.12	17.74
CS-WB07-LGR-02	175		1213		14.32 14.16	29.39
CS-WB07-LGR-03A	208		1212		14.33 14.19	24.90
CS-WB07-LGR-03B	257		1211		15.65 15.48	48.10
CS-WB07-LGR-04	318	✓	1210		42.15 42.01	63.69
CS-WB08-UGR-01	38		1143	14.09	14.24 14.12	19.87
CS-WB08-LGR-01	115		1142		14.28 14.15	20.90
CS-WB08-LGR-02	193		1140		14.33 14.21	22.64
CS-WB08-LGR-03A	228		1138		14.35 14.22	18.10
CS-WB08-LGR-03B	273		1137		26.03 25.89	37.58
CS-WB08-LGR-04	341	✓	1136		55.57 55.43	66.06

Bioreactor Monitoring

Personnel: J. Bouch

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft. BTOC)	Sump Water Level (ft. BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 1.7.09		Time: 0845							
B3-T1-1	12.9	4.51	7.24	14.16	0.380	-51.3	0.75	✓	
B3-T1-2	12.4	4.22	6.69	14.30	0.521	-54.0	0.71		
B3-T1-3	12.85	3.75	6.91	13.33	0.348	-43.70	1.48		
B3-T2-1	9.67	5.93	7.06	17.06	0.343	-59.0	0.70		
B3-T2-2	10.01	6.22	6.59	19.16	0.521	-54.0	1.00		
B3-T3-1	9.96	7.08	6.98	17.31	0.422	-48.8	0.69		
B3-T3-2	7.4	6.98	7.04	16.42	0.318	-45.8	2.47		
B3-T4-1	6.32	5.51							
B3-T5-1	9.33	6.59							
B3-T5-2	7.98	2.85	7.09	14.89	0.315	-47.5	1.07		
B3-T6-1	11.45	5.85	7.40	19.35	0.311	-46.4	2.60		
B3-T6-2	12.34	5.70	7.07	20.45	0.314	-50.1	0.80		
B3-UIC									

B-3 Transfer System Monitoring

Meter	Flow Meters Readings									
	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	1:4:00	0900	1:5:00	0922	1:6:00	0955	1:7:10	0930		
	Rate (gpm) / Cumulative Total (gal)									
T-1	2.01	786632	6.03	803139	5.46	812709	9.04	824454		
T-2	0.70	2452799	12.8	2871443	13.9	2893560	17.3	2920903		
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	6.47	449067	6.63	455665	6.58	464826	6.47	474382		
CS-MW16-CC	15.40	88180	15.12	906328	14.90	928501	14.98	950339		
B3-EXW01	40.0	2245591	0	2245724	0	2258415	11.7	2271382		
Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: if bag filter pressure drop is > or = 10 psi change filter.										
PB-1 - PB-2 = 0 - 0 = 0		PB-1 - PB-2 = 0 - 0 = 0		PB-1 - PB-2 = 0 - 0 = 0		PB-1 - PB-2 = 0 - 0 = 0		PB-1 - PB-2 =		
Notes: Started up B3 turned on B3 Exw01 and 16 wells Trench here was almost			Tank is 1/4 full MW16LGR = 231.1		MW16LGR = 231.7 MW16CC = 301.9		Tank 3/4 full B3 Exw01 WL 253.91			

System Off

* dry and Tank empty
 05.16 / 11,186852
 02.26 / 11,274335
 Week 141
 02.23 / 11,364689
 * Turned off and drained System for the weekend due to cold temps
 02.22 / 11,462055

* January 14 - opened Trench 2 line and pinched back B3 EX 01 flow as well as the pressure at the tank in order to keep water flowing and lines from freezing.*

Personnel <u>J. Bach, E. Terryson</u>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft. BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	12.5.09	1450	14.17	^{14.26} 14.23	21.62
CS-WB05-LGR-02	182		1457		^{14.32} 14.29	14.31
CS-WB05-LGR-03A	216		1456		^{14.34} 14.32	18.60
CS-WB05-LGR-03B	262		1455		^{15.53} 15.43	38.52
CS-WB05-LGR-04A	277		1453		^{22.09} 21.97	43.78
CS-WB05-LGR-04B	329		1452		^{44.70} 44.59	66.25
CS-WB05-BS-01	362		1450		^{59.04} 58.95	81.61
CS-WB05-CC-01	432		1449		^{89.46} 89.35	89.57
CS-WB05-CC-02	460	✓	1447		^{101.60} 101.51	101.94
CS-WB06-UGR-01	20		1409		14.15	^{14.25} 14.22
CS-WB06-LGR-01	93		1408	^{14.28} 14.25		16.40
CS-WB06-LGR-02	174		1406	^{14.33} 14.29		37.95
CS-WB06-LGR-03A	207		1405	^{14.35} 14.33		35.80
CS-WB06-LGR-03B	260		1404	^{25.48} 25.43		58.77
CS-WB06-LGR-04	320	✓	1403	^{51.54} 51.48		70.20
CS-WB07-UGR-01	14		1435	14.18	^{14.24} 14.22	16.72
CS-WB07-LGR-01	90		1434		^{14.27} 14.24	17.75
CS-WB07-LGR-02	175		1433		^{14.32} 14.29	29.28
CS-WB07-LGR-03A	208		1432		^{14.33} 14.31	26.30
CS-WB07-LGR-03B	257		1431		^{15.65} 15.61	47.49
CS-WB07-LGR-04	318	✓	1430		^{42.15} 42.12	64.97
CS-WB08-UGR-01	38		1333	14.17	^{14.24} 14.21	19.90
CS-WB08-LGR-01	115		1331		^{14.28} 14.25	20.98
CS-WB08-LGR-02	193		1330		^{14.33} 14.30	22.94
CS-WB08-LGR-03A	228		1329		^{14.35} 14.31	19.03
CS-WB08-LGR-03B	273		1327		^{26.03} 25.17	38.51
CS-WB08-LGR-04	341	✓	1326		^{55.57} 55.53	70.44

Bioreactor Monitoring

Personnel: Tennyson, J. Bouch

Trench Sumps Water Levels ('BTOC)

	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg C)	Sp. Cond.	ORP	DO (mg/L)	Trench Currently Being Used (Y/N)	Notes
Date: <u>01-14-10</u>		Time: <u>10:00 AM</u>							
B3-T1-1	12.9	5.19	7.05	18.92	0.600	-114.9	0.96		3rd
B3-T1-2	12.4	4.95	6.81	17.04	0.611	108.6	0.61	✓	2nd
B3-T1-3	12.85	4.80	7.15	19.05	0.642	-114.1	0.98	✓	1st monitored
B3-T2-1	9.67	6.63	6.94	16.85	0.580	-110.8	0.46		
B3-T2-2	10.01	6.95	6.56	17.59	0.834	-110.9	0.54	✓	
B3-T3-1	9.96	7.15	6.99	17.66	0.688	-108.9	0.62		
B3-T3-2	7.4	7.03	-	-	-	-	-		insufficient water
B3-T4-1	6.32	5.58	6.99	15.55	0.546	-74.8	3.66		
B3-T5-1	9.33	6.70	7.08	20.14	0.545	-101.4	0.79		
B3-T5-2	7.98	dry	-	-	-	-	-		dry
B3-T6-1	11.45	5.97	7.03	21.10	0.551	-100.5	1.77		
B3-T6-2	12.34	5.78	7.09	20.60	0.543	-100.5	0.50		
B3-UIC									

B-3 Transfer System Monitoring

Meter	Flow Meters Readings				
	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:		<u>01-12-10</u>	<u>1-13-10</u>	<u>1-14-10</u>	<u>1-15-10</u>
		<u>1740</u>	<u>0823</u>	<u>1145</u>	<u>0909</u>
		Rate (gpm) / Cumulative Total (gal)			
T-1		9.6 gpm 827024	8.87 838612	8.24 861035	8.61 880519
T-2		2.8 gpm 2924465	3.23 2928573	10.1 2936970	2.99 2944351
T-3					
T-4					
T-5					
T-6					
B-3 (Total)		Total:			
CS-MW16-LGR		6.43 475889	6.19 481457	6.41 491871	6.41 500005
CS-MW16-CC		14.30 493680	14.03 496232	14.35 499520	14.42 500962
B3-EXW01		off	off	off	off

off

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = Note: if bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 =	PB-1 - PB-2 = \emptyset	PB-1 - PB-2 = \emptyset	PB-1 - PB-2 = $55 - 50 = 5$	PB-1 - PB-2 =
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Notes: Freeze damage repairs underway. Tank = 9/16 full wells on at 1354, CC T₁ = 950379 LGR = 474385 Tank is 3/4 full 13/16 tank T/P just on. MW16CC = 312.3 MW16LGR = 237.0 Tank is half full

T/P tests good, leave on "auto".

Week 142

T6 Q = 60.55 gpm tot = 92,070

flipped

Personnel <u>J. Bouch, E. Tennyson</u>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	01-13-10	1537	14.12	14.26 14.20	21.68
CS-WB05-LGR-02	182		1535		14.32 14.23	14.24
CS-WB05-LGR-03A	216		1534		14.34 14.25	16.84
CS-WB05-LGR-03B	262		1533		15.53 15.36	36.74
CS-WB05-LGR-04A	277		1532		22.09 21.87	40.93
CS-WB05-LGR-04B	329		1531		44.70 44.51	63.63
CS-WB05-BS-01	362		1530		59.04 58.87	79.25
CS-WB05-CC-01	432		1529		89.46 89.28	88.93
CS-WB05-CC-02	460		1528		101.60 99.35	101.31
CS-WB06-UGR-01	20	1608	1608	14.13	14.25 14.17	14.17 18.19 (JAS)
CS-WB06-LGR-01	93		1607		14.28 14.21	14.42 (JAS)
CS-WB06-LGR-02	174		1606		14.33 14.25	37.48 (JAS)
CS-WB06-LGR-03A	207		1605		14.35 14.27	35.72
CS-WB06-LGR-03B	260		1604		25.48 25.34	58.62
CS-WB06-LGR-04	320		1601		51.54 51.42	67.56
CS-WB07-UGR-01	14	1444	1444	14.14	14.24 14.16	16.51
CS-WB07-LGR-01	90		1443		14.27 14.21	17.78
CS-WB07-LGR-02	175		1442		14.32 14.25	29.07
CS-WB07-LGR-03A	208		1441		14.33 14.28	25.26
CS-WB07-LGR-03B	257		1421		15.65 15.56	46.46
CS-WB07-LGR-04	318		1418		42.15 42.06	63.06 (JAS)
CS-WB08-UGR-01	38	1352	1352	14.12	14.24 14.15	19.78
CS-WB08-LGR-01	115		1351		14.28 14.19	20.94
CS-WB08-LGR-02	193		1350		14.33 14.21	22.73
CS-WB08-LGR-03A	228		1349		14.35 14.25	16.19
CS-WB08-LGR-03B	273		1348		26.03 25.91	35.67
CS-WB08-LGR-04	341		1346		55.57 54.81	57.70 (JAS)

Week 142

+ shoe brake off

Bioreactor Monitoring

Personnel: S. Elliott + B. Martin
Trench Sumps Water Levels ('BTOC)

Date: <u>1.19.10</u>		Time: <u>0900</u>							
B3-T1-1	12.9	<u>3.08</u>	<u>6.82</u>	<u>17.74</u>	<u>0.596</u>	<u>-89.7</u>	<u>1.24</u>		<u>0930</u>
B3-T1-2	12.4	<u>8.89</u>	<u>6.98</u>	<u>16.48</u>	<u>0.620</u>	<u>-91.7</u>	<u>0.65</u>	✓	<u>1100</u>
B3-T1-3	12.85	<u>2.30</u>	<u>6.75</u>	<u>14.97</u>	<u>0.653</u>	<u>-127.2</u>	<u>0.84</u>	✓	<u>1530</u>
B3-T2-1	9.67	<u>4.52</u>	<u>6.77</u>	<u>16.38</u>	<u>0.575</u>	<u>-87.6</u>	<u>0.70</u>		<u>0945</u>
B3-T2-2	10.01	<u>4.83</u>	<u>6.75</u>	<u>16.58</u>	<u>0.773</u>	<u>-114.3</u>	<u>0.56</u>	✓	<u>1025</u>
B3-T3-1	9.96	<u>6.57</u>	<u>6.88</u>	<u>16.91</u>	<u>0.661</u>	<u>-95.3</u>	<u>0.84</u>		
B3-T3-2	7.4	<u>6.62</u>	<u>6.85</u>	<u>15.38</u>	<u>0.613</u>	<u>-85.7</u>	<u>1.71</u>		
B3-T4-1	6.32	<u>5.25</u>	<u>6.94</u>	<u>16.60</u>	<u>0.542</u>	<u>-88.8</u>	<u>1.67</u>		
B3-T5-1	9.33	<u>6.18</u>	<u>7.00</u>	<u>20.53</u>	<u>0.515</u>	<u>-97.1</u>	<u>0.84</u>		
B3-T5-2	7.98	<u>5.40</u>	<u>6.56</u>	<u>14.23</u>	<u>0.675</u>	<u>-83.8</u>	<u>0.88</u>		
B3-T6-1	11.45	<u>5.45</u>	<u>7.05</u>	<u>21.82</u>	<u>0.512</u>	<u>-99.4</u>	<u>1.90</u>		
B3-T6-2	12.34	<u>5.25</u>	<u>7.02</u>	<u>21.17</u>	<u>0.513</u>	<u>-98.9</u>	<u>0.59</u>		
B3-UIC									

B-3 Transfer System Monitoring

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	<u>1.18.10</u>	<u>0925</u>	<u>1.19.10</u>	<u>0930</u>	<u>1.20.10</u>	<u>0850</u>	<u>1.21.10</u>	<u>0830</u>	<u>1.22.10</u>	<u>0800</u>
T-1	<u>26.8</u>	<u>943642</u>	<u>28.8</u>	<u>965130</u>	<u>8.43</u>	<u>988,463</u>	<u>8.30</u>	<u>1000678</u>	<u>8.34</u>	<u>1013032</u>
T-2	<u>10.6</u>	<u>29168501</u>	<u>10.9</u>	<u>2976454</u>	<u>2.94</u>	<u>298,5744</u>	<u>2.53</u>	<u>2,998022</u>	<u>2.78</u>	<u>2994352</u>
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	<u>7.78</u>	<u>532,425</u>	<u>7.87</u>	<u>543,315</u>	<u>7.92</u>	<u>554,854</u>	<u>8.15</u>	<u>562,349</u>	<u>0</u>	<u>569,219</u>
CS-MW16-CC	<u>14.47</u>	<u>62305</u>	<u>14.47</u>	<u>82211</u>	<u>14.52</u>	<u>103,364</u>	<u>14.63</u>	<u>116,805</u>	<u>0</u>	<u>129,092</u>
B3-EXW01 off	<u>7.98</u>	<u>532,425</u>	<u>off</u>		<u>off</u>		<u>off</u>		<u>off</u>	

Notes:	PB-1 - PB-2 = <u>53-52</u>	PB-1 - PB-2 = <u>53-52</u>	PB-1 - PB-2 =	PB-1 - PB-2 = <u>54-50</u>	PB-1 - PB-2 = <u>54-50</u>
	<u>tank = 3/4 full</u>	<u>tank = 1/2 full</u>	<u>tank = 1/4</u>	<u>tank = 1/2 full</u> <u>TP off for SCAOA</u> <u>installation</u>	<u>tank = 3/4</u>

Week 143 - month 37 - Quarter 11

CS-12 435,935 / 62.15

CS.10 525,543

624,205 / 68.40

721,339 / 68.64

Personnel		S. Elliott & B. Murth				
Weekly Water Level Monitoring						
CS-WB05-LGR-01	99	1.20.10	1001	13.90	^{14.07} 13.94	21.49
CS-WB05-LGR-02	182		1000		^{14.11} 13.99	15.84
CS-WB05-LGR-03A	216		0959		^{14.14} 14.01	38.30
CS-WB05-LGR-03B	262		0958		^{16.17} 15.15	58.25
CS-WB05-LGR-04A	277		0956		^{22.70} 21.69	68.51
CS-WB05-LGR-04B	329		0955		^{45.33} 44.29	91.52
CS-WB05-BS-01	362		0954		^{59.67} 58.63	100.19
CS-WB05-CC-01	432		0953		^{90.08} 89.06	85.93
CS-WB05-CC-02	460		0952		^{102.24} 101.23	98.19
CS-WB06-UGR-01	20		0926	13.90	^{14.04} 13.93	18.57
CS-WB06-LGR-01	93		0925		^{14.07} 13.96	16.29
CS-WB06-LGR-02	174		0923		^{14.11} 14.01	44.38
CS-WB06-LGR-03A	207		0922		^{14.14} 14.02	40.58
CS-WB06-LGR-03B	260		0921		^{21.60} 25.14	63.47
CS-WB06-LGR-04	320		0920		^{47.66} 51.19	94.61
CS-WB07-UGR-01	14		0910	13.87	^{14.05} 13.94	17.10
CS-WB07-LGR-01	90		0908		^{14.10} 13.96	17.75
CS-WB07-LGR-02	175		0907		^{14.14} 14.00	33.80
CS-WB07-LGR-03A	208		0906		^{14.17} 14.05	34.34
CS-WB07-LGR-03B	257		0905		^{15.58} 15.32	55.55
CS-WB07-LGR-04	318		0903		^{42.13} 41.83	92.57
CS-WB08-UGR-01	38		0941	13.90	^{14.03} 13.92	20.28
CS-WB08-LGR-01	115		0940		^{14.08} 13.97	20.47
CS-WB08-LGR-02	193		0939		^{14.12} 14.01	23.12
CS-WB08-LGR-03A	228		0938		^{14.14} 14.02	40.68
CS-WB08-LGR-03B	273		0937		^{18.87} 25.71	60.14
CS-WB08-LGR-04	341	✓	0936		^{48.45} 55.24	92.76

Personnel <i>S. Elliott + J. Bosch</i>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	4/25/10	0838	13.96	14.26 14.10	21.27
CS-WB05-LGR-02	182		0837		14.32 14.14	23.18
CS-WB05-LGR-03A	216		0836		14.34 14.16	40.10
CS-WB05-LGR-03B	262		0835		15.53 14.94	60.03
CS-WB05-LGR-04A	277		0834		22.09 21.48	67.81
CS-WB05-LGR-04B	329		0833		44.70 44.11	90.52
CS-WB05-BS-01	362		0832		59.04 58.45	102.04
CS-WB05-CC-01	432		0831		89.46 88.85	103.29
CS-WB05-CC-02	460		0830		101.60 101.00	115.15
CS-WB06-UGR-01	20		0913		14.05	14.25 14.07
CS-WB06-LGR-01	93		0912	14.28 14.10		16.38
CS-WB06-LGR-02	174		0910	14.33 14.16		41.77
CS-WB06-LGR-03A	207		0909	14.35 14.17		41.77
CS-WB06-LGR-03B	260		0908	25.48 25.29		64.65
CS-WB06-LGR-04	320		0907	51.54 51.34		91.60
CS-WB07-UGR-01	14		0927	14.04		14.24 14.07
CS-WB07-LGR-01	90		0926		14.27 14.11	17.74
CS-WB07-LGR-02	175		0925		14.32 14.14	35.21
CS-WB07-LGR-03A	208		0924		14.33 14.18	39.90
CS-WB07-LGR-03B	257		0923		15.65 15.45	61.09
CS-WB07-LGR-04	318		0922		42.15 41.99	90.14
CS-WB08-UGR-01	38		0856		14.03	14.24 14.06
CS-WB08-LGR-01	115		0855	14.28 14.11		20.16
CS-WB08-LGR-02	193		0854	14.33 14.13		23.99
CS-WB08-LGR-03A	228		0853	14.35 14.17		40.98
CS-WB08-LGR-03B	273		0852	26.03 25.85		60.44
CS-WB08-LGR-04	341		0850	55.57 55.39		91.61

Bioreactor Monitoring

Personnel: J. Bouch, S. Elliott, Tennyson

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: <u>1-29-10</u>		Time: <u>1500</u>							
B3-T1-1	12.9	3.95	6.92	17.39	0.521	-103.4	0.53		Standing water remains in S. half T1.
B3-T1-2	12.4	3.80	6.55	17.04	0.528	-124.3	0.84		
B3-T1-3	12.85	3.45	6.76	14.78	0.521	-125.7	0.58		
B3-T2-1	9.67	5.34	6.78	18.08	0.493	-120.9	0.54	NONE 1-29-10-29	1.3" precip overnight 1/28-29.
B3-T2-2	10.01	5.72	6.31	17.18	0.699	-109.5	0.75		
B3-T3-1	9.96	6.55		17.05	0.521	-103.0	0.55		
B3-T3-2	7.4	6.49		17.87	0.541	-100.1	0.98		
B3-T4-1	6.32	5.10		18.34	0.467	-103.0	0.77		
B3-T5-1	9.33	5.86		19.48	0.455	-101.7	2.49		
B3-T5-2	7.98	5.28		16.28	0.535	-95.5	1.53		
B3-T6-1	11.45	4.90	7.10	22.25	0.466	-110.9	2.20		
B3-T6-2	12.34	4.69	6.96	18.95	0.452	-105.5	0.69		
B3-UIC									

B-3 Transfer System Monitoring

Meter	Flow Meters Readings								
	Monday		Tuesday		Wednesday		Thursday		Friday
Date/Time:	1-25-10	0905	1-26-10	0924	1-27-09	0930	1-28-09	1450	1-29-10
	Rate (gpm) / Cumulative Total (gal)								
T-1	4.94	1044414	8.62	050658	Ø	1054156	Ø	no change	
T-2	6.75	3002444	7.33	3002920	Ø	3003475	Ø	change	
T-3									
T-4									
T-5									
T-6									
B-3 (Total)									
CS-MW16-LGR	Ø	5816990	Ø	589945	Ø	590332	Ø	wo change	
CS-MW16-CC	Ø	161236	Ø	161681	Ø	167412	Ø	change	
B3-EXW01	Ø	227176	off		off				

System powered down - winterized

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)) = *Note: If bag filter pressure drop is > or = 10 psi change filter.

Notes:	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = 0-0=0	PB-1 - PB-2 = Ø	PB-1 - PB-2 =
Tank is 3/4 full	Tank is 3/4 full	Tank is empty	Tank is w.t.	System off for SCADA work and freeze prevention	16LGR = 148.41, 16CC = 193.46
*SCI working on SCADA system					75.68/12, 590,450

71.70 / 134,355 71.93 / 234,967

Week 144
 Quarter 11
 75.35 / 372,398
 16 = 75.64 / 12, 480, 660
 16LGR = 161.83; 16CC = 190.51

Personnel S. Elliott & B. Martin & J. Bouch

Quarterly Monitoring

MPMWs	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Inside Pressure	Zone Pressure		
CS-WB05-LGR-01	99	1.20.10	1045	13.87	21.52		
CS-WB05-LGR-02	182	1.20.10	1120	13.96	15.91		
CS-WB05-LGR03A	216	1.20.10	1445	13.96	37.65		
CS-WB05-LGR03B	262	1.20.10	1345	17.06	58.44		
CS-WB05-LGR04A	277	1.20.10	1545	23.53	68.55		
CS-WB05-LGR04B	329	1.21.10	1400	46.02	91.97		
CS-WB05-BS-01	362	1.21.10	1300	60.47	101.17		
CS-WB05-CC-01	432	1.21.10	1100	91.01	90.71		
CS-WB05-CC-02	460	1.21.10	0945	103.31	104.19		
CS-WB06-UGR-01	20	1.27.10	1400	14.07	18.39		
CS-WB06-LGR-01	93	1.27.10	1325	14.11	16.45		
CS-WB06-LGR-02	174	1.27.10	1255	14.17	40.88		
CS-WB06-LGR03A	207	1.27.10	1100	14.20	38.83		
CS-WB06-LGR03B	260	1.27.10	1025	27.19	64.90		
CS-WB06-LGR-04	320	1.27.10	0945	53.31	89.71		
CS-WB07-UGR-01	14	1.25.10	1430	14.01	17.00		
CS-WB07-LGR-01	90	1.25.10	1350	14.06	17.72		
CS-WB07-LGR-02	175	1.25.10	1315	14.11	35.20		
CS-WB07-LGR03A	208	1.25.10	1130	14.15	35.87		
CS-WB07-LGR03B	257	1.25.10	1100	17.40	61.09		
CS-WB07-LGR-04	318	1.25.10	1015	43.94	90.13		
CS-WB08-UGR-01	38	1.26.10	1350	14.10	20.09		
CS-WB08-LGR-01	115	1.26.10	1300	14.16	20.18		
CS-WB08-LGR-02	193	1.26.10	1100	14.21	24.16		
CS-WB08-LGR03A	228	1.26.10	1030	14.23	40.45		
CS-WB08-LGR03B	273	1.26.10	0950	27.83	59.92		
CS-WB08-LGR-04	341	1.26.10	0910	57.42	90.96		
Monitoring Wells	Sample Date	Sample Time	pH	Temp	SpCond	ORP	DO
B3-MW01	1.18.10	1600	6.42	20.81	0.867	-757.4	0.74
CS-D	1.18.10	1145	6.96	20.74	0.476	-82.0	2.44
CS-MW16-LGR	1.18.10	1045	7.04	20.45	0.492	-87.4	2.63
CS-MW16-CC	1.18.10	1015	7.53	22.11	0.602	-90.3	3.46
CS-MW1-LGR	1.18.10	1420	6.71	21.04	0.485	-79.9	2.47
B3-EXW01	1.18.10	1510	6.82	21.85	0.532	-86.1	1.81

A
A
A
B
B
B

145.70

Bioreactor Monitoring

Personnel: *Tennyson, J. Bouch, ELLIOTT*

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes		
Date: <i>2.5.10</i>		Time: <i>1100</i>									
B3-T1-1	12.9	2.42	6.75	17.31	0.545	-114.5	0.75	✓			
B3-T1-2	12.4	2.05	6.63	16.79	0.545	-101.5	0.63				
B3-T1-3	12.85	1.68	6.72	11.61	0.575	-103.2	0.79	✓			
B3-T2-1	9.67	3.88	6.80	16.41	0.500	-106.4	0.65				
B3-T2-2	10.01	4.18	6.47	15.89	0.685	-94.2	0.78				
B3-T3-1	9.96	6.01	6.81	16.71	0.523	-94.2	0.69				
B3-T3-2	7.4	5.89	6.95	16.11	0.510	-97.3	1.05				
B3-T4-1	6.32	4.43	6.95	16.57	0.495	-113.8	0.88				
B3-T5-1	9.33	5.43	7.04	19.82	0.485	-87.9	1.79				
B3-T5-2	7.98	3.75	6.71	14.54	0.606	-91.5	1.04				
B3-T6-1	11.45	4.2	7.05	21.08	0.482	-88.4	2.20				
B3-T6-2	12.34	3.94	7.04	19.88	0.483	-96.3	1.45				
B3-UIC			7.06	21.35	0.510	-97.8	6.57				

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	<i>02-01-10 12:00</i>	<i>2.2.10 0930</i>	<i>2.3.10 0947</i>	<i>2.4.10 1545</i>	<i>2.5.10 0836</i>
	Rate (gpm) / Cumulative Total (gal)				
T-1		27.5 / 105,339	0 / 107,730	8.22 / 609,670	8.11 / 1104,464
T-2		11.2 / 300,362	0 / 301,194	2.33 / 301,836	2.13 / 3,020,587
T-3					
T-4		System started up			
T-5		@ 1400			
T-6		Ext well not working in auto - well off.			
B-3 (Total)					
CS-MW16-LGR		0 / 593,243	0 / 609,355	11.5 / 629,858	11.34 / 641,338
CS-MW16-CC		0 / 168,944	0 / 174,373	15.5 / 187,950	0 / 189,535
B3-EXW01		0 / 227,172	off	off	off

System off - winterized - some work

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = <i>N/A</i>	PB-1 - PB-2 = <i>52 - 52 = 0</i>	PB-1 - PB-2 = <i>0 - 0 = 0</i>	PB-1 - PB-2 = <i>T/P off</i>	PB-1 - PB-2 = <i>TP is off 0 - 0 = 0</i>
Notes: T6 flow: 76.70 gpm Total: 12,904,920 gal. 16LGR: 126.61', 16CC: 202.85'	16LGR = 125.8 16CC = 205.7 changed BF Tank is 13/16 full	16LGR = 128.26 GAL 16CC = 201.70 (reading) Tank empty - TP on Week 145	16LGR = 131.7 16CC = non-op changed BF syst. on/off for SCADA upgrades. 77.05/13,255.562	Tank is at 1/4 full 77.05/12,222.22

77.23/13,001,294

Week 145

syst. on/off for SCADA upgrades.
77.05/13,255.562

77.05/12,222.22

Personnel <i>S. Elliott & J. Borch</i>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	<i>2/5/10</i>	<i>1006</i>	<i>13.95</i>	<i>14.26</i>	<i>21.64</i>
CS-WB05-LGR-02	182		<i>1005</i>		<i>14.32</i>	<i>39.91</i>
CS-WB05-LGR-03A	216		<i>1004</i>		<i>14.34</i>	<i>57.09</i>
CS-WB05-LGR-03B	262		<i>1004</i>		<i>15.53</i>	<i>77.04</i>
CS-WB05-LGR-04A	277		<i>1003</i>		<i>22.09</i>	<i>88.24</i>
CS-WB05-LGR-04B	329		<i>1002</i>		<i>44.70</i>	<i>111.44</i>
CS-WB05-BS-01	362		<i>1001</i>		<i>59.04</i>	<i>119.11</i>
CS-WB05-CC-01	432		<i>1000</i>		<i>89.46</i>	<i>122.60</i>
CS-WB05-CC-02	460		<i>0959</i>		<i>101.60</i>	<i>134.50</i>
CS-WB06-UGR-01	20		<i>1034</i>		<i>1034</i>	<i>14.02</i>
CS-WB06-LGR-01	93	<i>1033</i>		<i>14.28</i>	<i>22.51</i>	
CS-WB06-LGR-02	174	<i>1032</i>		<i>14.33</i>	<i>56.38</i>	
CS-WB06-LGR-03A	207	<i>1031</i>		<i>14.35</i>	<i>52.34</i>	
CS-WB06-LGR-03B	260	<i>1030</i>		<i>25.48</i>	<i>75.24</i>	
CS-WB06-LGR-04	320	<i>1029</i>		<i>51.54</i>	<i>114.46</i>	
CS-WB07-UGR-01	14	<i>1047</i>		<i>1047</i>	<i>14.00</i>	
CS-WB07-LGR-01	90		<i>1046</i>	<i>14.27</i>		<i>18.51</i>
CS-WB07-LGR-02	175		<i>1045</i>	<i>14.32</i>		<i>45.20</i>
CS-WB07-LGR-03A	208		<i>1044</i>	<i>14.33</i>		<i>53.39</i>
CS-WB07-LGR-03B	257		<i>1043</i>	<i>15.65</i>		<i>74.60</i>
CS-WB07-LGR-04	318		<i>1042</i>	<i>42.15</i>		<i>113.33</i>
CS-WB08-UGR-01	38		<i>1020</i>	<i>1020</i>		<i>14.00</i>
CS-WB08-LGR-01	115	<i>1019</i>		<i>14.28</i>	<i>20.33</i>	
CS-WB08-LGR-02	193	<i>1018</i>		<i>14.33</i>	<i>28.14</i>	
CS-WB08-LGR-03A	228	<i>1018</i>		<i>14.35</i>	<i>60.23</i>	
CS-WB08-LGR-03B	273	<i>1017</i>		<i>26.03</i>	<i>79.69</i>	
CS-WB08-LGR-04	341	<i>1016</i>		<i>55.57</i>	<i>112.11</i>	

Personnel: J. Bouch, Jensen

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	Sp Cond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (Y/N)	Notes
Date: 2.12.10		Time: 10:10							
B3-T1-1	12.9	1.84	6.55	9.97	0.353	-80.0	0.90	✓	System off due to winterization and SCADA work
B3-T1-2	12.4	1.48	6.50	10.51	0.358	-78.8	0.85	✓	
B3-T1-3	12.85	1.12	6.58	9.54	0.373	-80.0	0.73	✓	
B3-T2-1	9.67	3.35	6.83	15.24	0.336	-86.8	0.76	✓	* DO Membrane may need to be changed *
B3-T2-2	10.01	3.53	6.41	12.20	0.450	-88.42	0.82	✓	
B3-T3-1	9.96	75.82	6.93	15.83	0.322	-85.80	0.88	OK	
B3-T3-2	7.4	5.90	6.98	15.83	0.341	-88.1	1.34	OK	
B3-T4-1	6.32	4.75	6.93	15.17	0.323	-85.8	1.63	OK	
B3-T5-1	9.33	5.53	7.0	19.06	0.319	-88.9	1.75	OK	
B3-T5-2	7.98	4.48	6.78	14.74	0.410	-94.3	0.94		
B3-T6-1	11.45	4.32	7.34	17.75	0.328	3.22	-82.0		
B3-T6-2	12.34	4.10	7.21	19.18	0.324	1.61	-91.2		
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	2-8-10 1500	2-9-10 0841	2-10-10	2-11-10	2-12-10 1000
	Rate (gpm) / Cumulative Total (gal)				
T-1	8.4 1110639	7.63 1119045			
T-2	(?) 0.1% 3021700	0.19 3,022,502			
T-3					
T-4					
T-5					
T-6					
B-3 (Total)					
CS-MW16-LGR	11.34 649990	11.9 661554			
CS-MW16-CC	off	off			
B3-EXW01	off	off			

SYSTEM OFF SCADA work and winterization

SYSTEM OFF SCADA work and winterization

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: if bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 0	PB-1 - PB-2 = 0 - 0 = 0	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =
Notes: Syst. all off over weekend except discharge into T6.		Tank is 1/2 full		1080-Turned off CS-12

Tank 1/2 full 16LGR DTW=1151 (turned on 1/21/6)

TG Q = 81.87 gpm
tot₂ = 13,716,920

Turned off Well 16LGR Trench 1 and 2 Full

81.93 / 13,803,821

Week 146

81.69 / 14,165,972

Personnel		S. Elliott + J. Bouch				
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	2/10/10	0930	14.18	14.26 14.24	22.12
CS-WB05-LGR-02	182		0929		14.32 14.30	50.91
CS-WB05-LGR-03A	216		0928		14.34 14.32	66.80
CS-WB05-LGR-03B	262		0927		15.53 18.19	86.77
CS-WB05-LGR-04A	277		0926		22.09 24.75	95.16
CS-WB05-LGR-04B	329		0925		44.70 47.36	117.91
CS-WB05-BS-01	362		0924		59.04 61.71	126.84
CS-WB05-CC-01	432		0923		89.46 92.10	133.39
CS-WB05-CC-02	460		0922		101.60 104.25	145.31
CS-WB06-UGR-01	20		0957	14.18	14.25 14.19	19.65
CS-WB06-LGR-01	93		0956		14.28 14.24	25.58
CS-WB06-LGR-02	174		0955		14.33 14.29	59.56
CS-WB06-LGR-03A	207		0954		14.35 14.38	58.74
CS-WB06-LGR-03B	260		0953		25.48 25.36	81.62
CS-WB06-LGR-04	320		0952		51.54 51.41	119.15
CS-WB07-UGR-01	14		1011	14.16	14.24 14.20	17.94
CS-WB07-LGR-01	90		1010		14.27 14.25	19.40
CS-WB07-LGR-02	175		1009		14.32 14.30	55.03
CS-WB07-LGR-03A	208		1008		14.33 14.31	63.18
CS-WB07-LGR-03B	257		1008		15.65 15.55	84.39
CS-WB07-LGR-04	318		1007		42.15 42.07	118.40
CS-WB08-UGR-01	38		0944	14.19	14.24 14.23	21.58
CS-WB08-LGR-01	115		0943		14.28 14.26	21.00
CS-WB08-LGR-02	193		0942		14.33 14.31	36.31
CS-WB08-LGR-03A	228		0941		14.35 14.33	66.97
CS-WB08-LGR-03B	273		0940		26.03 25.93	86.42
CS-WB08-LGR-04	341		0939		55.57 55.47	117.84

Bioreactor Monitoring

Personnel: J. Bouch ; S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (Y)	Notes
Date: 2-18-10		Time: 1437							
B3-T1-1	12.9	4.25	6.69	14.86	0.542	-86.0	0.99		
B3-T1-2	12.4	3.96	6.41	10.71	0.528	-78.2	1.05	✓	
B3-T1-3	12.85	3.55	6.48	10.13	0.551	-72.2	0.91		
B3-T2-1	9.67	5.69	6.72	14.15	0.515	-93.3	0.97		
B3-T2-2	10.01	6.05	6.54	14.46	0.696	-80.0	1.04	✓	
B3-T3-1	9.96	8.60	6.80	17.66	0.558	-85.3	1.53		
B3-T3-2	7.4	7.24							
B3-T4-1	6.32	6.22							
B3-T5-1	9.33	9.24							
B3-T5-2	7.98	7.85							
B3-T6-1	11.45	11.23							
B3-T6-2	12.34	12.33							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:		2-16-10	2-17-10	2-18-10	2-19-10
			1610		0924
			Rate (gpm) / Cumulative Total (gal)		
T-1			27.9	9.41	1165291
T-2			11.1	20.68	3037764
T-3					
T-4					
T-5					
T-6					
B-3 (Total)					
CS-MW16-LGR			not running 664908	11.78 671400	11.79 683012
CS-MW16-CC			not running 193832	15.72 202401	15.61 217695
B3-EXW01			off 2274559	14.78 671400	19.75 7293207

Holiday

System off
SCADA work

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =
		53-52 = 1		56-42 = 7
Notes: CS-12 off, T6 dry	CS-12 off.	CS-12 off. Run EXW01 few mins. Tank 1/16 full MW16s FT/P in "auto"	CS-12 off, EXW02 off; LGR = 109.70', CC = 200.86' Tank 3/4 full, T/P not running.	Tank is 3/4 full changed BF

Week 147

Turned off B3-Ex01 and TP for the weekend to ensure that system would be OK. Closed valve.

Personnel <i>S. Elliott & J. Bouch</i>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft. BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	2/18/10	1336	14.11	14.26 14.16	22.52
CS-WB05-LGR-02	182		1335		14.32 14.19	53.46
CS-WB05-LGR-03A	216		1334		14.34 14.22	68.54
CS-WB05-LGR-03B	262		1333		15.53 19.85	88.52
CS-WB05-LGR-04A	277		1333		22.09 26.41	95.62
CS-WB05-LGR-04B	329		1332		44.70 49.01	118.39
CS-WB05-BS-01	362		1331		59.04 63.36	130.00
CS-WB05-CC-01	432		1330		89.46 93.77	135.95
CS-WB05-CC-02	460		1329		101.60 105.92	147.82
CS-WB06-UGR-01	20		1407	14.09	14.25 14.11	18.29
CS-WB06-LGR-01	93		1406		14.28 14.15	28.04
CS-WB06-LGR-02	174		1405		14.33 14.21	61.34
CS-WB06-LGR-03A	207		1404		14.35 14.22	66.29
CS-WB06-LGR-03B	260		1403		25.48 25.24	89.18
CS-WB06-LGR-04	320		1402		51.54 51.28	118.85
CS-WB07-UGR-01	14		1421	14.09	14.24 14.09	17.16
CS-WB07-LGR-01	90		14:20		14.27 14.14	22.17
CS-WB07-LGR-02	175		14:19		14.32 14.19	59.59
CS-WB07-LGR-03A	208		1418		14.33 14.20	69.94
CS-WB07-LGR-03B	257		1418		15.65 15.46	91.17
CS-WB07-LGR-04	318		1417		42.15 41.97	118.30
CS-WB08-UGR-01	38		1353	14.09	14.24 14.12	19.74
CS-WB08-LGR-01	115		1352		14.28 14.16	23.24
CS-WB08-LGR-02	193		1351		14.33 14.20	49.75
CS-WB08-LGR-03A	228		1350		14.35 14.22	68.30
CS-WB08-LGR-03B	273		1349		26.03 25.82	87.75
CS-WB08-LGR-04	341	✓	1348		55.57 55.36	118.43

Bioreactor Monitoring

Personnel: J. Bouch, A. Lindley, Tennyson

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth ('BTOC)	Sump Water Level ('BTOC)	pH	Temp (deg. C)	SpCond (mg/cm)	ORP	DO (mg/L)	Trench Currently Being Used (Y)	Notes
Date: 2-23-10		Time: 0930							
B3-T1-1	12.9	6.76	6.89	16.09	0.441	-81.1	1.33	✓	Ⓢ 0945 7.29
B3-T1-2	12.4	6.48	6.56	14.23	0.437	-84.6	0.33	✓	Ⓢ 1050 6.96
B3-T1-3	12.85	5.75	6.30	13.48	0.456	-85.5	1.08	✓	Ⓢ 1350 6.59
B3-T2-1	9.67	8.22	6.53	14.67	0.439	-92.4	0.41	✓	Ⓢ 1005 8.68
B3-T2-2	10.01	8.27	6.32	14.71	0.671	-79.6	0.44	✓	Ⓢ 1320 8.68
B3-T3-1	9.96	9.12							9.14
B3-T3-2	7.4	7.28							7.28
B3-T4-1	6.32	6.23							6.25
B3-T5-1	9.33	9.23							9.22
B3-T5-2	7.98	7.91							7.93
B3-T6-1	11.45	11.20							11.24
B3-T6-2	12.34	12.23							12.25
B3-UIC			7.02	16.43	0.439	-82.4	5.90		Ⓢ 1400

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday			
Date/Time:	2-22-10 0918	2-23-10 0930	2-24-10 1220	2-25-10 1600	2-26-10			
	Rate (gpm) / Cumulative Total (gal)							
T-1	0.0	1173618	2.10	1178835	26.5	1183570	off	1191145
T-2	0.0	304027	0	3040527	9.81	3041762	off	3044508
T-3								
T-4								
T-5								
T-6								
B-3 (Total)								
CS-MW16-LGR	off	684464	off	689649	10.56	693003	off	695206
CS-MW16-CC	off	222351	off	224082	15.78	232010	off	235269
B3-EXW01	off		off		19.85	2297370	off	2301754

Bag Filter Pressure Reading (Pressure Drop (PB-1) (PB-2) Note: If bag filter pressure drop is > 10 psi change filter.

PB-1 - PB-2 = 0-0	PB-1 - PB-2 = 0-0	PB-1 - PB-2 = 52-52 = 0	PB-1 - PB-2 = N/A	PB-1 - PB-2 =
Notes: Tank = empty 16 wells were off - turned off Friday.	Tank empty Syst. off + winterized overnight	Tank = 1/32 16LGR = 110.2', CC = 189.9' all wells on @ 1041, T/P on 1205	(syst. off) LGR = 89.87' CC = 122.56'	Ⓢ

Week 148
syst off overnight.

B3EXW01 = 91.93'
MW27 = 6.60'

everything off

16:15

New Probe
old Mosdax
worked

Personnel <i>A. Lindley + E.T.</i>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	<i>2/22/10</i>	<i>2/24/10 1510</i>	<i>14.08</i>	<i>14.19</i>	<i>22.72</i>
CS-WB05-LGR-02	182		<i>1509</i>		<i>14.32</i>	<i>53.56</i>
CS-WB05-LGR-03A	216		<i>1508</i>		<i>14.34</i>	<i>68.04</i>
CS-WB05-LGR-03B	262		<i>1507</i>		<i>15.53</i>	<i>88.00</i>
CS-WB05-LGR-04A	277		<i>1506</i>		<i>22.09</i>	<i>93.89</i>
CS-WB05-LGR-04B	329		<i>1505</i>		<i>44.70</i>	<i>116.16</i>
CS-WB05-BS-01	362		<i>1504</i>		<i>59.04</i>	<i>129.88</i>
CS-WB05-CC-01	432		<i>1503</i>		<i>89.46</i>	<i>137.72</i>
CS-WB05-CC-02	460		<i>1502</i>		<i>101.60</i>	<i>150.08</i>
CS-WB06-UGR-01	20		<i>2/24/10</i>		<i>1540</i>	<i>14.08</i>
CS-WB06-LGR-01	93	<i>2/22/10</i>	<i>1539</i>	<i>14.28</i>	<i>26.55</i>	
CS-WB06-LGR-02	174		<i>1538</i>	<i>14.33</i>	<i>60.39</i>	
CS-WB06-LGR-03A	207		<i>1537</i>	<i>14.35</i>	<i>68.31</i>	
CS-WB06-LGR-03B	260		<i>1535</i>	<i>25.48</i>	<i>91.20</i>	
CS-WB06-LGR-04	320		<i>1534</i>	<i>51.54</i>	<i>115.15</i>	
CS-WB07-UGR-01	14		<i>2/24/10</i>	<i>1554</i>	<i>14.06</i>	
CS-WB07-LGR-01	90	<i>2/22/10</i>	<i>1553</i>	<i>14.27</i>		<i>23.36</i>
CS-WB07-LGR-02	175		<i>1552</i>	<i>14.32</i>		<i>59.99</i>
CS-WB07-LGR-03A	208		<i>1551</i>	<i>14.33</i>		<i>70.58</i>
CS-WB07-LGR-03B	257		<i>1549</i>	<i>15.65</i>		<i>91.79</i>
CS-WB07-LGR-04	318		<i>1548</i>	<i>42.15</i>		<i>114.42</i>
CS-WB08-UGR-01	38	<i>2/24/10</i>	<i>1526</i>	<i>14.09</i>	<i>14.24</i>	<i>19.36</i>
CS-WB08-LGR-01	115	<i>2/22/10</i>	<i>1525</i>		<i>14.28</i>	<i>23.57</i>
CS-WB08-LGR-02	193		<i>1524</i>		<i>14.33</i>	<i>53.18</i>
CS-WB08-LGR-03A	228		<i>1522</i>		<i>14.35</i>	<i>66.55</i>
CS-WB08-LGR-03B	273		<i>1521</i>		<i>26.03</i>	<i>86.01</i>
CS-WB08-LGR-04	341		<i>1520</i>		<i>55.57</i>	<i>113.89</i>

Sample
2/22/10 0950
22.45/89.59

Sample
2/22/10 1240
27.06/90.88

Sample
2/22/10 1320
17.29/91.93

Sample
2/22/10 1055
27.68/89.28

Bioreactor Monitoring

Personnel: Tennyson, J. Barch, Stelliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp (deg. C)	SpCond (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (-)	Notes
Date: 3-4-10		Time: 1445							
B3-T1-1	12.9	8.52	6.72	17.65	0.469	-110.7	0.58		
B3-T1-2	12.4	8.19	6.71	16.41	0.470	-93.5	0.45		
B3-T1-3	12.85	7.90	6.69	15.26	0.493	-90.3	0.40		
B3-T2-1	9.67	9.48							
B3-T2-2	10.01	9.35	6.53	0.761	0.761	-99.1	0.58		
B3-T3-1	9.96	9.18							
B3-T3-2	7.4	7.31							
B3-T4-1	6.32	6.29							
B3-T5-1	9.33	9.21							
B3-T5-2	7.98	7.93							
B3-T6-1	11.45	11.23							
B3-T6-2	12.34	DRY							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	3-1-10	3-2-10	3-3-10	3-4-10	3-5-10
	Rate (gpm) / Cumulative Total (gal)				
T-1				0	
T-2				1911454	
T-3		System off	System off	3044507.9	System Off
T-4	off	off	off	off	off
T-5					
T-6					
B-3 (Total)					
CS-MW16-LGR				695,206	
CS-MW16-CC				235,219	
B3-EXW01				2301,754	

Bag Filter Pressure Reading (Pressure Drop (PB-1), (PB-2) Note: If bag filter pressure drop is > 0.1" 10 psi change filter

PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =

Notes: system off for CS-Env. Dept. observations.

Personnel <i>J. Bouch + S. Elliott</i>						
Weekly Water Level Monitoring						
Well/Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	3/4/10	1342	14.04	14.26 14.09	22.30
CS-WB05-LGR-02	182		1341		14.32 14.13	52.86
CS-WB05-LGR-03A	216		1340		14.34 14.17	67.59
CS-WB05-LGR-03B	262		1339		15.53 23.05	87.52
CS-WB05-LGR-04A	277		1338		22.09 29.57	93.92
CS-WB05-LGR-04B	329		1337		44.70 52.23	116.40
CS-WB05-BS-01	362		1336		59.04 66.59	129.78
CS-WB05-CC-01	432		1335		89.46 96.98	148.84
CS-WB05-CC-02	460		1334		101.60 109.12	160.81
CS-WB06-UGR-01	20		1413	14.07	14.25 14.04	17.40
CS-WB06-LGR-01	93		1413		14.28 14.10	23.22
CS-WB06-LGR-02	174		1411		14.33 14.12	57.53
CS-WB06-LGR-03A	207		1410		14.35 14.15	68.55
CS-WB06-LGR-03B	260		1410		25.48 25.18	91.44
CS-WB06-LGR-04	320		1408		51.54 51.26	116.35
CS-WB07-UGR-01	14		1428	14.04	14.24 14.07	16.68
CS-WB07-LGR-01	90		1427		14.27 14.11	22.77
CS-WB07-LGR-02	175		1426		14.32 14.13	58.49
CS-WB07-LGR-03A	208		1425		14.33 14.18	69.46
CS-WB07-LGR-03B	257		1424		15.65 15.29	90.65
CS-WB07-LGR-04	318		1423		42.15 41.85	115.48
CS-WB08-UGR-01	38		1359	14.02	14.24 14.04	19.08
CS-WB08-LGR-01	115		1357		14.28 14.10	22.99
CS-WB08-LGR-02	193		1356		14.33 14.13	53.43
CS-WB08-LGR-03A	228		1355		14.35 14.16	66.90
CS-WB08-LGR-03B	273		1355		26.03 25.75	86.35
CS-WB08-LGR-04	341	✓	1353		55.57 55.32	116.60

Personnel <i>Tennyson, Bouch, Rice</i>						
<i>3-12-10 B-3 system off all week</i>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	<i>3/12/10</i>	<i>1109</i>	<i>13.99</i>	<i>14.07</i> <i>14.06</i>	<i>21.88</i>
CS-WB05-LGR-02	182		<i>1108</i>		<i>14.11</i> <i>14.10</i>	<i>48.29</i>
CS-WB05-LGR-03A	216		<i>1107</i>		<i>14.14</i> <i>14.11</i>	<i>62.85</i>
CS-WB05-LGR-03B	262		<i>1106</i>		<i>16.17</i> <i>24.13</i>	<i>82.79</i>
CS-WB05-LGR-04A	277		<i>1104</i>		<i>22.70</i> <i>30.68</i>	<i>88.96</i>
CS-WB05-LGR-04B	329		<i>1103</i>		<i>45.33</i> <i>53.33</i>	<i>111.41</i>
CS-WB05-BS-01	362		<i>1102</i>		<i>59.67</i> <i>67.67</i>	<i>126.11</i>
CS-WB05-CC-01	432		<i>1100</i>		<i>90.08</i> <i>98.07</i>	<i>148.91</i>
CS-WB05-CC-02	460		<i>1058</i>		<i>102.24</i> <i>110.21</i>	<i>160.91</i>
CS-WB06-UGR-01	20		<i>1037</i>	<i>14.01</i>	<i>14.04</i> <i>14.03</i>	<i>17.13</i>
CS-WB06-LGR-01	93		<i>1036</i>		<i>14.07</i> <i>14.05</i>	<i>18.68</i>
CS-WB06-LGR-02	174		<i>1035</i>		<i>14.11</i> <i>14.10</i>	<i>52.53</i>
CS-WB06-LGR-03A	207		<i>1034</i>		<i>14.14</i> <i>14.11</i>	<i>65.71</i>
CS-WB06-LGR-03B	260		<i>1033</i>		<i>21.60</i> <i>25.13</i>	<i>88.60</i>
CS-WB06-LGR-04	320		<i>1031</i>		<i>47.66</i> <i>51.22</i>	<i>111.47</i>
CS-WB07-UGR-01	14		<i>1048</i>	<i>14.00</i>	<i>14.05</i> <i>14.02</i>	<i>15.34</i>
CS-WB07-LGR-01	90		<i>1047</i>		<i>14.10</i> <i>14.05</i>	<i>20.84</i>
CS-WB07-LGR-02	175		<i>1046</i>		<i>14.14</i> <i>14.09</i>	<i>55.68</i>
CS-WB07-LGR-03A	208		<i>1045</i>		<i>14.17</i> <i>14.13</i>	<i>65.19</i>
CS-WB07-LGR-03B	257		<i>1043</i>		<i>15.58</i> <i>15.24</i>	<i>86.39</i>
CS-WB07-LGR-04	318		<i>1041</i>		<i>42.13</i> <i>49.83</i>	<i>110.47</i>
CS-WB08-UGR-01	38		<i>1025</i>	<i>14.01</i>	<i>14.03</i> <i>14.03</i>	<i>18.83</i>
CS-WB08-LGR-01	115		<i>1023</i>		<i>14.08</i> <i>14.06</i>	<i>22.00</i>
CS-WB08-LGR-02	193		<i>1021</i>		<i>14.12</i> <i>14.10</i>	<i>50.53</i>
CS-WB08-LGR-03A	228		<i>1019</i>		<i>14.14</i> <i>14.11</i>	<i>62.62</i>
CS-WB08-LGR-03B	273		<i>1018</i>		<i>18.87</i> <i>25.66</i>	<i>82.07</i>
CS-WB08-LGR-04	341		<i>1015</i>		<i>48.45</i> <i>55.26</i>	<i>111.88</i>

Bioreactor Monitoring

Personnel: J. Bouch; S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 3-12-10		Time: 0935							
B3-T1-1	12.9	9.30	6.45	18.13	0.437	-120.0	0.53		System off due to maintenance - no water being discharged.
B3-T1-2	12.4	9.03	6.36	17.38	0.440	-85.8	0.54		
B3-T1-3	12.85	8.78	6.29	16.27	0.476	-99.3	0.46		
B3-T2-1	9.67	DRY							
B3-T2-2	10.01	10.0							
B3-T3-1	9.96	9.18							
B3-T3-2	7.4	7.33							
B3-T4-1	6.32	6.32							
B3-T5-1	9.33	9.22							
B3-T5-2	7.98	DRY							
B3-T6-1	11.45	11.18							
B3-T6-2	12.34	DRY							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	3-8-10 1340	2-9-10	3-10-10	3-11-10	
Rate (gpm) / Cumulative Total (gal)					
T-1	Ø 1191145				
T-2	Ø 3044507				
T-3					
T-4	System off	System off	System off	System off	System off
T-5					
T-6					
B-3 (Total)					
CS-MW16-LGR	Ø 1695,206				
CS-MW16-CC	Ø 235,269				
B3-EXW01	off				

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =
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Notes:

Bioreactor Monitoring

Personnel: J. Bouch; S. Elliott										
Trench Sumps Water Levels ('BTOC)										
Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (v)	Notes	
Date: 3-18-10		Time: 1230								
B3-T1-1	12.9	10.15	6.29	18.52	0.519	-112.8	0.49		*System off due to SCADA work	
B3-T1-2	12.4	9.87	6.35	17.89	0.520	-101.0	0.43			
B3-T1-3	12.85	9.52	6.36	14.80	0.590	-110.1	0.38			
B3-T2-1	9.67	9.60								
B3-T2-2	10.01	10.00								
B3-T3-1	9.96	9.18								
B3-T3-2	7.4	7.39								
B3-T4-1	6.32	DRY								
B3-T5-1	9.33	9.25								
B3-T5-2	7.98	7.97								
B3-T6-1	11.45	11.20								
B3-T6-2	12.34	DRY								
B3-UIC										
B-3 Transfer System Monitoring										
Flow Meters Readings										
Meter	Monday	Tuesday	Wednesday	Thursday	Friday					
Date/Time:	3-15-10	3-16-10	3-17-10	3-18-10	3-19-10	1530				
Rate (gpm) / Cumulative Total (gal)										
T-1	System off	System off	off	off	27.5	1191521				
T-2					10.5	3044656				
T-3										
T-4							SCADA work finishing.			
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR					off					
CS-MW16-CC					stopped	240420				
B3-EXW01					off					
Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)= *Note: If bag filter pressure drop is > or = 10 psi change filter.										
PB-1 - PB-2 =		PB-1 - PB-2 =		PB-1 - PB-2 =		PB-1 - PB-2 =		PB-1 - PB-2 = 53-53 = 0		
Notes: Tank = 13/16 16CC ≈ 16-20 ppm Filled tank first B4 starting J/A										

Personnel <i>S. Elliott + J. Borch</i>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	<i>3/19/10</i>	<i>1124</i>	<i>13.99</i>	^{14.07} <i>14.07</i>	<i>21.88</i>
CS-WB05-LGR-02	182		<i>1123</i>		^{14.11} <i>14.10</i>	<i>46.47</i>
CS-WB05-LGR-03A	216		<i>1123</i>		^{14.14} <i>14.11</i>	<i>61.09</i>
CS-WB05-LGR-03B	262		<i>1122</i>		^{16.17} <i>24.43</i>	<i>81.07</i>
CS-WB05-LGR-04A	277		<i>1121</i>		^{22.70} <i>30.96</i>	<i>87.61</i>
CS-WB05-LGR-04B	329		<i>1120</i>		^{45.33} <i>53.62</i>	<i>110.09</i>
CS-WB05-BS-01	362		<i>1119</i>		^{59.67} <i>67.97</i>	<i>124.25</i>
CS-WB05-CC-01	432		<i>1118</i>		^{90.08} <i>98.38</i>	<i>144.51</i>
CS-WB05-CC-02	460		<i>1117</i>		^{102.24} <i>110.51</i>	<i>157.01</i>
CS-WB06-UGR-01	20		<i>1055</i>	<i>13.98</i>	^{14.04} <i>14.01</i>	<i>16.76</i>
CS-WB06-LGR-01	93		<i>1054</i>		^{14.07} <i>14.05</i>	<i>16.09</i>
CS-WB06-LGR-02	174		<i>1053</i>		^{14.11} <i>14.09</i>	<i>50.46</i>
CS-WB06-LGR-03A	207		<i>1052</i>		^{14.14} <i>14.10</i>	<i>63.90</i>
CS-WB06-LGR-03B	260		<i>1051</i>		^{21.60} <i>25.08</i>	<i>86.79</i>
CS-WB06-LGR-04	320		<i>1050</i>		^{47.66} <i>51.19</i>	<i>110.28</i>
CS-WB07-UGR-01	14		<i>1108</i>	<i>13.98</i>	^{14.05} <i>14.02</i>	<i>16.65</i>
CS-WB07-LGR-01	90		<i>1107</i>		^{14.10} <i>14.04</i>	<i>18.89</i>
CS-WB07-LGR-02	175		<i>1106</i>		^{14.14} <i>14.08</i>	<i>53.55</i>
CS-WB07-LGR-03A	208		<i>1105</i>		^{14.17} <i>14.12</i>	<i>62.56</i>
CS-WB07-LGR-03B	257		<i>1104</i>		^{15.58} <i>15.22</i>	<i>83.76</i>
CS-WB07-LGR-04	318		<i>1103</i>		^{42.13} <i>41.81</i>	<i>108.88</i>
CS-WB08-UGR-01	38		<i>1040</i>	<i>13.99</i>	^{14.03} <i>13.99</i>	<i>16.70</i>
CS-WB08-LGR-01	115		<i>1039</i>		^{14.08} <i>14.04</i>	<i>21.32</i>
CS-WB08-LGR-02	193		<i>1038</i>		^{14.12} <i>14.07</i>	<i>47.75</i>
CS-WB08-LGR-03A	228		<i>1037</i>		^{14.14} <i>14.10</i>	<i>61.16</i>
CS-WB08-LGR-03B	273		<i>1036</i>		^{18.87} <i>25.61</i>	<i>80.61</i>
CS-WB08-LGR-04	341	<i>✓</i>	<i>1035</i>		^{48.45} <i>55.20</i>	<i>110.68</i>

Bioreactor Monitoring

Personnel: A. Lindley, J. Borch

Trench Sumps Water Levels ('BTOC)

Sump-ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 3/23/10		Time: 0940							
B3-T1-1	12.9	6.69	6.42	20.06	0.882	-107.4	0.39	✓	Ⓢ 0945
B3-T1-2	12.4	6.29	6.42	18.67	1.112	-93.9	0.39	✓	Ⓢ 1315
B3-T1-3	12.85	5.73	6.45	18.99	0.900	-109.6	0.40	✓	Ⓢ 1350
B3-T2-1	9.67	8.15	6.46	19.55	1.709	-88.5	1.04	✓	Ⓢ 1005
B3-T2-2	10.01	8.50	6.45	17.59	1.180	-87.7	0.38		Ⓢ 1045
B3-T3-1	9.96	9.12							
B3-T3-2	7.4	7.35							
B3-T4-1	6.32	6.22							CS-MW27-UGR
B3-T5-1	9.33	9.25							sampled @ 1440
B3-T5-2	7.98	7.80							DTW @ 7.60
B3-T6-1	11.45	11.18							Parameters OVER →
B3-T6-2	12.34	12.30							
B3-UIC			7.40	24.16	0.653	-77.7	4.89		Ⓢ 1400

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	3/22/10 0900	3/23/10 0930	3/24/10 0845	3/25/10 1030	3/26/10 1030
	Rate (gpm) / Cumulative Total (gal)				
T-1	25.3 / 1738255	26.8 / 1262820	26.4 / 1290138	9.55 / 1321497	8.63 / 1352357
T-2	10.4 / 3063114	10.9 / 3072892	10.7 / 3083060	3.35 / 3096303	2.87 / 3108492
T-3					
T-4					
T-5					
T-6					
B-3 (Total)					
CS-MW16-LGR	Ø / 695213	Ø / 695213	Ø / 695213	Ø / 695213	Ø / 695213
CS-MW16-CC	17.69 / 310019	30.18 / 345963	30.07 / 388161	29.40 / 434162	29.40 / 476161
B3-EXW01	Ø / 2301754	Ø / 2301754	Ø / 2301754	Ø / 2301754	Ø / 2301754

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)) = *Note: if bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 54 - 49 = 6 PB-1 - PB-2 = 52 - 52 = 0 PB-1 - PB-2 = 54 - 53 = 1 PB-1 - PB-2 = 0 - 0 = 0 PB-1 - PB-2 = 0 - 0 = 0

Notes: Tank 3/4 full changed BF Tank is 10/16 full Tank is 13/16 full Tank is 3/4 full 16 CC = 315.4
16 LGR = 105.8
Tank 7/16 full

Personnel		J. Bouch, A. Lindley					
Weekly Water Level Monitoring							
CS-WB05-LGR-01	99	3/24/10	1000	13.99	^{14.07} 14.03	21.83	3/22/10 26.47 / 82.73 @ 1320
CS-WB05-LGR-02	182		959		^{14.11} 14.08	48.38	
CS-WB05-LGR-03A	216		^{14.14} 14.11		63.09		
CS-WB05-LGR-03B	262		^{16.17} 24.34		83.05		
CS-WB05-LGR-04A	277		^{22.70} 30.90		89.70		
CS-WB05-LGR-04B	329		^{45.33} 53.54		112.21		
CS-WB05-BS-01	362		^{59.67} 67.91		125.71		
CS-WB05-CC-01	432		^{90.08} 98.32		112.84		
CS-WB05-CC-02	460		└	952	^{102.24} 110.45	125.43	
CS-WB06-UGR-01	20	3/24/10	927	13.98	^{14.04} 14.02	17.38	3/22/10 26.67 / 87.39 @ 1000
CS-WB06-LGR-01	93		926		^{14.07} 14.03	17.17	
CS-WB06-LGR-02	174		^{14.11} 14.08		51.84		
CS-WB06-LGR-03A	207		^{14.14} 14.12		64.63		
CS-WB06-LGR-03B	260		^{21.60} 25.06		87.52		
CS-WB06-LGR-04	320		└		922	^{47.66} 51.16	
CS-WB07-UGR-01	14		3/24/10	942	14.00	^{14.05} 14.00	16.92
CS-WB07-LGR-01	90		941	^{14.10} 14.03		18.68	
CS-WB07-LGR-02	175		^{14.14} 14.08	53.48			
CS-WB07-LGR-03A	208		^{14.17} 14.10	64.02			
CS-WB07-LGR-03B	257		^{15.58} 15.21	85.23			
CS-WB07-LGR-04	318		└	937		^{42.13} 41.75	111.21
CS-WB08-UGR-01	38		3/24/10	909	13.99	^{14.03} 13.99	19.18
CS-WB08-LGR-01	115		908	^{14.08} 14.03		21.03	
CS-WB08-LGR-02	193		^{14.12} 14.08	48.54			
CS-WB08-LGR-03A	228		^{14.14} 14.10	63.00			
CS-WB08-LGR-03B	273		^{18.87} 25.58	82.45			
CS-WB08-LGR-04	341		└	902		^{48.45} 55.16	112.74

①

3.22.10

14.02

Psi

1420 3/22/10
 Atm 14.01 Inner
 zone → 82.27 25.61

CS-WB08-LGR3B
3/24/10 @ 1045 25.68/82.43

	PH	Temp	cond	DO	ORP
MW-27	6.54	16.96	0.763	0.47	-86.3

sampled @
1440

Bioreactor Monitoring

Personnel: J. Bouchard; S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 3-30-10		Time: 1030							
B3-T1-1	12.9	5.13	6.46	21.51	0.890	-134.7	0.59		
B3-T1-2	12.4	5.51	6.92	21.35	0.820	-96.1	0.49	✓	
B3-T1-3	12.85	4.70	7.26	21.79	0.665	-94.3	1.89	✓	
B3-T2-1	9.67	6.96	6.45	21.09	1.408	-112.1	0.49		
B3-T2-2	10.01	7.23	6.47	18.06	1.179	-111.5	0.69	✓	
B3-T3-1	9.96	9.17							
B3-T3-2	7.4	DRY							
B3-T4-1	6.32	6.28							
B3-T5-1	9.33	9.45							
B3-T5-2	7.98	9.25							
B3-T6-1	11.45	11.18							
B3-T6-2	12.34	12.31							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings									
Meter	Monday		Tuesday		Wednesday		Thursday		Friday
Date/Time:	3-29-10	1020	3-30-10	1030	3-31-10	0900	4-1-10	1030	4-2-10
	Rate (gpm) / Cumulative Total (gal)								
T-1	2.34	1429324	8.86	1454423	8.84	1477859	0	1485038	
T-2	9.05	3138922	2.94	3149178	2.91	3158452	0	3162169	
T-3									
T-4									
T-5									
T-6									
B-3 (Total)									
CS-MW16-LGR	0	695213	0	695213	0	695213	0	695213	
CS-MW16-CC	25.86	589022	25.77	626471	25.77	651863	0	670793	
B3-EXW01	0	2301954	0	2301954	0	2301954	0	2301954	
Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)) - *Note: If bag filter pressure drop is > or = 10 psi change filter.									
	PB-1 - PB-2 = 56.44 = 12		PB-1 - PB-2 = 0 - 0 = 0		PB-1 - PB-2 = 0 - 0 = 0		PB-1 - PB-2 = 0 - 0 = 0		PB-1 - PB-2 =
Notes:	Tank is 1/4 full changed the BF		Tank is 1/4 full MW16 LGR = 112.0 MW16 CC = 300.6		- Tank is 7/16 full - turned off well @ 1500 - started logging 1455		Turned off CC well yesterday. Tank is empty		

S. Elliott

MW16 LGR = 300.69

Personnel: J. Douclet, S. Elliott						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	3/31/10	1016	14.03	^{14.07} 14.07	21.79
CS-WB05-LGR-02	182		1015		^{14.11} 14.12	45.58
CS-WB05-LGR-03A	216		1014		^{14.14} 14.14	60.12
CS-WB05-LGR-03B	262		1013		^{16.17} 24.40	80.08
CS-WB05-LGR-04A	277		1012		^{22.70} 30.94	86.36
CS-WB05-LGR-04B	329		1011		^{45.33} 53.59	108.83
CS-WB05-BS-01	362		1011		^{59.67} 67.95	123.55
CS-WB05-CC-01	432		1009		^{90.08} 98.35	109.03
CS-WB05-CC-02	460		1009		^{102.24} 110.49	121.47
CS-WB06-UGR-01	20		0945	14.03	^{14.04} 14.03	17.42
CS-WB06-LGR-01	93		0944		^{14.07} 14.09	16.38
CS-WB06-LGR-02	174		0943		^{14.11} 14.11	49.46
CS-WB06-LGR-03A	207		0942		^{14.14} 14.14	63.30
CS-WB06-LGR-03B	260		0941		^{21.60} 25.10	86.19
CS-WB06-LGR-04	320		0940		^{47.66} 51.19	109.00
CS-WB07-UGR-01	14		0959		14.04	^{14.05} 14.03
CS-WB07-LGR-01	90		0958	^{14.10} 14.08		48.45
CS-WB07-LGR-02	175		0957	^{14.14} 14.12		52.11
CS-WB07-LGR-03A	208		0956	^{14.17} 14.14		62.16
CS-WB07-LGR-03B	257		0955	^{15.58} 15.24		83.36
CS-WB07-LGR-04	318		0954	^{42.13} 41.80		107.41
CS-WB08-UGR-01	38		0930	14.00		^{14.03} 14.02
CS-WB08-LGR-01	115		0930		^{14.08} 14.07	20.91
CS-WB08-LGR-02	193		0929		^{14.12} 14.10	47.86
CS-WB08-LGR-03A	228		0928		^{14.14} 14.14	60.17
CS-WB08-LGR-03B	273		0927		^{18.87} 25.60	79.62
CS-WB08-LGR-04	341	✓	0926		^{48.45} 55.19	109.65

Bioreactor Monitoring

Personnel: J. Bouch, S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 4/9/10		Time: 1020							
B3-T1-1	12.9	8.94	6.53	21.23	0.604	-145.6	0.41	✓	
B3-T1-2	12.4	8.55	6.50	20.52	0.746	-121.6	0.60	✓	
B3-T1-3	12.85	8.34	6.46	21.90	0.479	-119.5	0.59	✓	
B3-T2-1	9.67	9.23							
B3-T2-2	10.01	9.74	6.61	19.50	0.796	-122.9	0.65	✓	
B3-T3-1	9.96	9.19							
B3-T3-2	7.4	DRY							
B3-T4-1	6.32	DRY							
B3-T5-1	9.33	9.28							
B3-T5-2	7.98	7.87							
B3-T6-1	11.45	11.16							
B3-T6-2	12.34	12.32							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	4.5.10 1700	4.6.10	4.7.10	4.8.10	4.9.10 1050
	Rate (gpm) / Cumulative Total (gal)				
T-1		25.8	1497197		7.11
T-2		9.93	3166319		0.0
T-3					157065199
T-4					31691666
T-5					
T-6					
B-3 (Total)					
CS-MW16-LGR		off			off
CS-MW16-CC		26.46	704408		7.8, 30
B3-EXW01		off			715, 730

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =
	52.52 = 0			
Notes: - noon → turned on MW16-CC - system off over weekend	0730 → tank overflowing transfer pump went come on in auto			- MW16-CC turned on @ 0945 Tank 1/4 full @ 1050 Turned off CC and TP

Tank 13/16 @ 0857
 16CC = 286.2
 Turned off 16CC
 and TP * Floats were sticking
 Week 154

in order to be able to
 test the new float on
 Monday.

Personnel: S Elliott + J Burch						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	4.9.10	0957	14.12	14.00 14.18	21.70
CS-WB05-LGR-02	182		0956		14.05 14.22	40.13
CS-WB05-LGR-03A	216		0955		14.07 14.24	54.47
CS-WB05-LGR-03B	262		0954		16.97 24.52	74.43
CS-WB05-LGR-04A	277		0953		23.50 31.06	80.58
CS-WB05-LGR-04B	329		0952		46.1.3 53.70	103.06
CS-WB05-BS-01	362		0951		60.47 68.05	118.52
CS-WB05-CC-01	432		0950		90.88 98.45	137.38
CS-WB05-CC-02	460		0950		103.04 110.60	149.86
CS-WB06-UGR-01	20		0925	14.11	14.00 14.11	17.27
CS-WB06-LGR-01	93		0924		14.03 14.17	16.50
CS-WB06-LGR-02	174		0923		14.07 14.31	46.51
CS-WB06-LGR-03A	207		0922		14.08 14.25	60.30
CS-WB06-LGR-03B	260		0921		21.74 25.19	83.19
CS-WB06-LGR-04	320		0920		47.81 51.28	103.51
CS-WB07-UGR-01	14		0939	14.12	13.98 14.12	16.57
CS-WB07-LGR-01	90		0938		14.02 14.18	18.00
CS-WB07-LGR-02	175		0937		14.05 14.21	48.16
CS-WB07-LGR-03A	208		0936		14.09 14.25	57.09
CS-WB07-LGR-03B	257		0935		15.72 15.34	78.31
CS-WB07-LGR-04	318		0934		42.28 41.89	101.49
CS-WB08-UGR-01	38		0910	14.11	13.99 14.13	18.99
CS-WB08-LGR-01	115		0909		14.02 14.17	20.73
CS-WB08-LGR-02	193		0908		14.04 14.21	43.55
CS-WB08-LGR-03A	228		0907		14.08 14.24	54.86
CS-WB08-LGR-03B	273		0906		19.01 26.33	74.33
CS-WB08-LGR-04	341	✓	0905		48.58 55.91	104.58

Bioreactor Monitoring

Personnel: J. Bouch, E. Lemmyson; S. Elliott

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: 4.16.10		Time: 10:40							
B3-T1-1	12.9	8.98	6.44	22.18	0.707	-148.0	0.38		
B3-T1-2	12.4	8.51	6.49	21.31	0.843	-120.2	0.68	✓	DO = 0.61
B3-T1-3	12.85	8.10	6.62	22.56	0.585	-127.3	0.67	✓	
B3-T2-1	9.67	8.99	6.38	23.14	0.819	-105.0	0.55		
B3-T2-2	10.01	8.95	6.49	20.97	0.873	-116.3	0.51	✓	
B3-T3-1	9.96	8.54							CS-MW27 = 8.16
B3-T3-2	7.1	dry							pH Temp SpCond ORP DO
B3-T4-1	6.33	6.20							6.44 18.09 0.600 -86.5 0.56
B3-T5-1	9.33	9.24							
B3-T5-2	7.98	7.20	6.31	19.64	0.685	-86.2	0.59		
B3-T6-1	11.45	11.17							
B3-T6-2	12.34	12.28							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	4-2-10 1200	4-13-10 0900	4-14-10 1030	4-15-10 1115	4-16-10
	Rate (gpm) / Cumulative Total (gal)				
T-1	21.4 / 1572129	22.0 / 1535465	21.4 / 156591		10.4 / 1574007
T-2	9.2 / 317640	8.80 / 318327	9.24 / 3193530		0.0 / 3196527
T-3					
T-4					
T-5					
T-6					
B-3 (Total)	725280				
CS-MW16-LGR	28.91	27.97			6.95 21.36 → 9.83
CS-MW16-CC	off		28.13	804071	814, 187 → 31.56
B3-EXW01	off				

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)) = *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 41 - 38 = 3	PB-1 - PB-2 = 54 - 22 = 32	PB-1 - PB-2 = 50 - 28 = 22	PB-1 - PB-2 =	PB-1 - PB-2 =
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Notes: BCC on 20940, system was off over weekend. Tank = 1 3/32 full by gage. Tank is 1/2 full Changed BF. Tank 1/4 full Changed BF. MW16LGR = 137.88 MW16CC = 168.29 system off. Wells turned on @ 1130

16cc = 296.85" Turned off CC @ Week 155 1620

EXW01 = 125.20' CC DTW = 267.10', 16LGR = 132.36' Conic = 48.4% full, guikpad = 28.95 in. full

Personnel <i>S. Elliott + J. Bach</i>						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	<i>4/14/10</i>	<i>1017</i>	<i>14.09</i>	<i>14.07</i> <i>14.15</i>	<i>21.73</i>
CS-WB05-LGR-02	182		<i>1016</i>		<i>14.11</i> <i>14.18</i>	<i>36.63</i>
CS-WB05-LGR-03A	216		<i>1015</i>		<i>14.14</i> <i>14.22</i>	<i>50.70</i>
CS-WB05-LGR-03B	262		<i>1014</i>		<i>16.17</i> <i>24.49</i>	<i>70.66</i>
CS-WB05-LGR-04A	277		<i>1013</i>		<i>22.70</i> <i>31.04</i>	<i>77.34</i>
CS-WB05-LGR-04B	329		<i>1013</i>		<i>45.33</i> <i>53.68</i>	<i>99.98</i>
CS-WB05-BS-01	362		<i>1012</i>		<i>59.67</i> <i>68.01</i>	<i>115.03</i>
CS-WB05-CC-01	432		<i>1011</i>		<i>90.08</i> <i>98.42</i>	<i>132.63</i>
CS-WB05-CC-02	460		<i>1010</i>		<i>102.24</i> <i>110.56</i>	<i>144.62</i>
CS-WB06-UGR-01	20		<i>4/14/10</i>		<i>0944</i>	<i>14.11</i>
CS-WB06-LGR-01	93	<i>0943</i>		<i>14.07</i> <i>14.15</i>	<i>16.47</i>	
CS-WB06-LGR-02	174	<i>0942</i>		<i>14.11</i> <i>14.19</i>	<i>44.81</i>	
CS-WB06-LGR-03A	207	<i>0941</i>		<i>14.14</i> <i>14.23</i>	<i>58.08</i>	
CS-WB06-LGR-03B	260	<i>0940</i>		<i>21.60</i> <i>25.16</i>	<i>80.98</i>	
CS-WB06-LGR-04	320	<i>0939</i>		<i>47.66</i> <i>51.25</i>	<i>100.24</i>	
CS-WB07-UGR-01	14	<i>4/14/10</i>	<i>1000</i>	<i>14.09</i>	<i>14.05</i> <i>14.09</i>	<i>16.48</i>
CS-WB07-LGR-01	90		<i>0958</i>		<i>14.10</i> <i>14.13</i>	<i>17.91</i>
CS-WB07-LGR-02	175		<i>0957</i>		<i>14.14</i> <i>14.18</i>	<i>45.01</i>
CS-WB07-LGR-03A	208		<i>0956</i>		<i>14.17</i> <i>14.22</i>	<i>53.45</i>
CS-WB07-LGR-03B	257		<i>0955</i>		<i>15.58</i> <i>15.30</i>	<i>74.66</i>
CS-WB07-LGR-04	318		<i>0954</i>		<i>42.13</i> <i>41.87</i>	<i>98.54</i>
CS-WB08-UGR-01	38	<i>4/14/10</i>	<i>0927</i>	<i>14.09</i>	<i>14.03</i> <i>14.10</i>	<i>18.51</i>
CS-WB08-LGR-01	115		<i>0926</i>		<i>14.08</i> <i>14.14</i>	<i>20.77</i>
CS-WB08-LGR-02	193		<i>0925</i>		<i>14.12</i> <i>14.18</i>	<i>40.37</i>
CS-WB08-LGR-03A	228		<i>0924</i>		<i>14.14</i> <i>14.22</i>	<i>51.29</i>
CS-WB08-LGR-03B	273		<i>0923</i>		<i>18.87</i> <i>26.44</i>	<i>70.76</i>
CS-WB08-LGR-04	341		<i>0922</i>		<i>48.45</i> <i>56.03</i>	<i>101.27</i>

Bioreactor Monitoring

Personnel: A. Lindley, J. Bouda, S. Elliott.

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: <u>4/20/10</u>		Time: <u>0930</u>							
B3-T1-1	12.9	5.65	6.54	23.06	0.931	-123.7	0.27		Sampled @ 0935
B3-T1-2	12.4	5.34	6.52	22.24	1.119	-113.0	0.31	✓	Sampled @ 1340 DNA 4/21/10 0930
B3-T1-3	12.85	5.00	6.85	22.41	0.730	-91.0	0.25		Sampled @ 1410
B3-T2-1	9.67	7.11	6.56	23.09	0.979	-90.2	0.84	✓	Sample @ 1010
B3-T2-2	10.01	7.93	6.46	21.19	1.148	-113.7	0.30		Sample @ 1045
B3-T3-1	9.96	8.76	6.44	21.19	1.050	-91.1	0.54		
B3-T3-2	7.4	Dry							
B3-T4-1	6.32	6.18							
B3-T5-1	9.33	9.28							
B3-T5-2	7.98	7.79							
B3-T6-1	11.45	11.24							
B3-T6-2	12.34	12.26							
B3-UIC			7.30	22.87	0.623	-82.4	5.58		Sample @ 1115

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday		Tuesday		Wednesday		Thursday		Friday	
Date/Time:	<u>4/19/10</u>	<u>0925</u>	<u>4/20/10</u>	<u>0920</u>	<u>4-21-10</u>		<u>4-22-10</u>	<u>0830</u>	<u>4-23-10</u>	<u>0830</u>
	Rate (gpm) / Cumulative Total (gal)									
T-1	19.3	1652288	22.5	1,681,770	22.6	1710240	21.8	1741946	Ø	1745427
T-2	7.85	323,0038	9.36	3,242,787	9.41	3,254,336	9.41	3268753	Ø	3269636
T-3										
T-4										
T-5										
T-6										
B-3 (Total)										
CS-MW16-LGR	9.88	785,937	9.94	750,122	Ø	760,793	9.55	771,414	Ø	771,836
CS-MW16-CC	19.27	896,987	19.27	924,576	Ø	945,032	18.94	966,215	Ø	967,051
B3-EXW01	Ø	2301754	Ø	2361754	Ø	231,4485	12.68	2379311	Ø	2329416

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2) = *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 = 37-50 = 18

PB-1 - PB-2 = 40-40 = 0

PB-1 - PB-2 = 43-41 = 2

PB-1 - PB-2 = 44-41 = 3

PB-1 - PB-2 =

Notes: Tank $\frac{3}{4}$ changed bag filter

Tank $\frac{3}{16}$ full

Tank $\frac{3}{4}$ full

Tank is $\frac{3}{4}$ full
System turned off at 10:20 for sprinkler head maint.

Kept System off to dry out trench for drilling on Monday

Tank is empty
MW16CC = 156.41
MW16LGR = 92.3

B3EXW01 = 93.5

Personnel: J. Bouch, A. Lindley						
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	4/23	0855	13.82	14.00 13.91	21.37
CS-WB05-LGR-02	182		0854		14.05 13.94	51.40
CS-WB05-LGR-03A	216		0853		14.07 13.96	46.97
CS-WB05-LGR-03B	262		0852		16.97 23.90	86.94
CS-WB05-LGR-04A	277 ✓		0851		23.50 30.43	94.63
CS-WB05-LGR-04B	329 ✓		0850		46.13 53.09	117.32
CS-WB05-BS-01	362		0849		60.47 67.45	127.95
CS-WB05-CC-01	432		0848		90.88 97.84	133.52
CS-WB05-CC-02	460		0847		103.04 109.98	145.45
CS-WB06-UGR-01	20		0930	13.87	14.00 13.86	17.39
CS-WB06-LGR-01	93		0929		14.03 13.91	21.32
CS-WB06-LGR-02	174		0928		14.07 13.94	57.19
CS-WB06-LGR-03A	207		0927		14.08 13.98	66.04
CS-WB06-LGR-03B	260		0926		21.74 24.89	88.95
CS-WB06-LGR-04	320 ✓		0925		47.81 50.97	117.48
CS-WB07-UGR-01	14		0944	13.87	13.98 13.86	17.02
CS-WB07-LGR-01	90		0943		14.02 13.89	18.28
CS-WB07-LGR-02	175		0942		14.05 13.94	53.24
CS-WB07-LGR-03A	208		0941		14.09 13.97	65.02
CS-WB07-LGR-03B	257		0940		15.72 15.05	86.22
CS-WB07-LGR-04	318 ✓		0939		42.28 41.62	116.93
CS-WB08-UGR-01	38		0916	13.85	13.99 13.86	19.19
CS-WB08-LGR-01	115		0915		14.02 13.91	20.83
CS-WB08-LGR-02	193		0914		14.04 13.94	47.54
CS-WB08-LGR-03A	228		0912		14.08 13.96	67.32
CS-WB08-LGR-03B	273		0910		19.01 26.16	86.77
CS-WB08-LGR-04	341		0908		48.58 55.74	117.37

Bioreactor Monitoring

Personnel: *Bouch, Elliott*

Trench Sumps Water Levels ('BTOC)

Sump ID	Sump Depth (ft BTOC)	Sump Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (mS/cm)	ORP	DO (mg/L)	Trench Currently Being Used (✓)	Notes
Date: <i>4-30-10</i>		Time: <i>1020 6.58</i>		<i>23.08</i>	<i>0.967</i>	<i>-153.9</i>	<i>0.55</i>		
B3-T1-1	12.9	<i>6.05</i>	<i>6.69</i>	<i>23.94</i>	<i>0.718</i>	<i>-103.7</i>	<i>0.35</i>		* MW-27: WL = 7.88
B3-T1-2	12.4	<i>5.75</i>	<i>6.58</i>	<i>22.77</i>	<i>1.135</i>	<i>-120.8</i>	<i>0.32</i>	✓	pH = 6.53
B3-T1-3	12.85	<i>5.48</i>	<i>6.93</i>	<i>24.07</i>	<i>0.658</i>	<i>-89.5</i>	<i>0.38</i>	✓	Temp = 18.80
B3-T2-1	9.67	<i>7.50</i>	<i>6.52</i>	<i>24.08</i>	<i>1.039</i>	<i>-112.5</i>	<i>0.45</i>		Cond. = 0.812
B3-T2-2	10.01	<i>7.85</i>	<i>6.51</i>	<i>22.55</i>	<i>1.245</i>	<i>-124.4</i>	<i>0.42</i>	✓	ORP = -74.1
B3-T3-1	9.96	<i>9.19</i>							DO = 0.58
B3-T3	7.4	<i>DRY</i>							
B3-T4	6.32	<i>6.28</i>							
B3-T5-1	9.33	<i>9.29</i>							
B3-T5-2	7.98	<i>DRY</i>							
B3-T6-1	11.45	<i>11.1</i>							
B3-T6-2	12.34	<i>12.31</i>							
B3-UIC									

B-3 Transfer System Monitoring

Flow Meters Readings

Meter	Monday	Tuesday	Wednesday	Thursday	Friday
Date/Time:	<i>4.26.10</i>	<i>4.27.10</i>	<i>4.28.10</i>	<i>4.29.10</i>	<i>4.30.10</i>
			<i>0840</i>		
	Rate (gpm) / Cumulative Total (gal)				
T-1			<i>4.19</i>	<i>1746.098</i>	<i>22.1</i>
T-2			<i>0.04</i>	<i>3,269,636</i>	<i>8.01</i>
T-3	<i>System off</i>	<i>System off</i>			
T-4	<i>System off</i>	<i>System off</i>			
T-5	<i>for bedrock</i>	<i>for bedrock</i>			
T-6	<i>drilling/sampling</i>	<i>for bedrock</i>			
B-3 (Total)		<i>sampling</i>			
CS-MW16-LGR			<i>10.0</i>	<i>772,829</i>	<i>783454</i>
CS-MW16-CC			<i>19.65</i>	<i>968875</i>	<i>990004</i>
B3-EXW01			<i>12.54</i>	<i>2,330,944</i>	<i>2,344,368</i>

Bag Filter Pressure Reading (Pressure Drop (PB-1) - (PB-2)) = *Note: If bag filter pressure drop is > or = 10 psi change filter.

PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =	PB-1 - PB-2 =
			<i>42-40 = 2</i>	<i>43-40 = 0</i>
Notes:	<i>MW16 wells + Exw01 well turned on for sampling</i>	<i>turned on in pm by ET, don't know when?</i>	<i>tank 1/2 full</i>	<i>Tank is 9/16 full</i>
				<i>Tank is 1/2 full</i>

Week *157*
 month *36*
 Quarter *12*

Personnel		S. Elliott + J. Bosch				
Weekly Water Level Monitoring						
Well Interval	Sampling Port Depth (ft BTOC)	Sample Date	Sample Time	Pressure at TOC (psi)	Pressure in MP (psi)	Zone Pressure (psi)
CS-WB05-LGR-01	99	4.28.10	0856	14.07	^{14.07} 14.18	21.86
CS-WB05-LGR-02	182		0855		^{14.11} 14.20	53.61
CS-WB05-LGR-03A	216		0854		^{14.14} 14.28	68.45
CS-WB05-LGR-03B	262		0853		^{16.17} 24.13	88.41
CS-WB05-LGR-04A	277		0853		^{22.70} 30.65	94.73
CS-WB05-LGR-04B	329		0852		^{45.33} 53.29	116.98
CS-WB05-BS-01	362		0851		^{59.67} 67.63	129.92
CS-WB05-CC-01	432		0850		^{90.08} 98.03	139.21
CS-WB05-CC-02	460		0849		^{102.24} 110.17	151.82
CS-WB06-UGR-01	20		0928	14.10	^{14.04} 14.09	17.48
CS-WB06-LGR-01	93		0927		^{14.07} 14.15	22.14
CS-WB06-LGR-02	174		0926		^{14.11} 14.21	57.58
CS-WB06-LGR-03A	207		0925		^{14.14} 14.23	68.06
CS-WB06-LGR-03B	260		0924		^{21.60} 25.12	90.95
CS-WB06-LGR-04	320		0923		^{47.66} 51.17	115.99
CS-WB07-UGR-01	14		0941	14.09	^{14.05} 14.12	16.75
CS-WB07-LGR-01	90		0940		^{14.10} 14.14	18.49
CS-WB07-LGR-02	175		0939		^{14.14} 14.19	55.54
CS-WB07-LGR-03A	208		0938		^{14.17} 14.20	68.81
CS-WB07-LGR-03B	257		0937		^{15.58} 15.28	90.00
CS-WB07-LGR-04	318		0936		^{42.13} 41.81	115.30
CS-WB08-UGR-01	38		0910	14.07	^{14.03} 14.14	19.21
CS-WB08-LGR-01	115		0909		^{14.08} 14.19	21.13
CS-WB08-LGR-02	193		0908		^{14.12} 14.23	52.52
CS-WB08-LGR-03A	228		0907		^{14.14} 14.21	67.42
CS-WB08-LGR-03B	273		0906		^{18.87} 26.27	86.87
CS-WB08-LGR-04	341		0905		^{48.45} 55.81	115.47

Personnel <i>J. Bouch, A. Lindley, S. Elliott</i>					
Quarterly Monitoring					
MPMWS	Sampling Port Depth (R. BTCC)	Sample Date	Sample Time	Inside Pressure	Zone Pressure
CS-WB05-LGR-01	59	4/22/10	1240	13.89	21.73
CS-WB05-LGR-02	182	4.22.10	1015	13.94	49.02
CS-WB05-LGR03A	216	4/22/10	0930	13.94	69.11
CS-WB05-LGR03B	262	4.19.10	1100	26.44 26.44	80.11
CS-WB05-LGR04A	277	4/22/10	0845	32.44	91.78
CS-WB05-LGR04B	329	4.21.10	1500	55.29	114.40
CS-WB05-BS-01	362	4.21.10	1400	69.72	125.39
CS-WB05-CC-01	432	4.21.10	1030	100.31	118.05
CS-WB05-CC-02	460	4.21.10	0900	112.57	133.19
CS-WB06-UGR-01	20	4.29.10	1415	13.89	17.27
CS-WB06-LGR-01	93	4.29.10	1330	13.93	21.93
CS-WB06-LGR-02	174	4.29.10	1100	13.99	57.15
CS-WB06-LGR03A	207	4.29.10	1010	14.02	67.66
CS-WB06-LGR03B	260	4.19.10	1520	27.07	85.93
CS-WB06-LGR-04	320	4.29.10	0930	52.95	115.45
CS-WB07-UGR-01	14	4/28/10	1445	14.01	16.73
CS-WB07-LGR-01	90	4/28/10	1400	14.05	18.44
CS-WB07-LGR-02	175	4/28/10	1145	14.13	55.53
CS-WB07-LGR03A	208	4/28/10	1100	14.12	68.78
CS-WB07-LGR03B	257	4/19/10	1415	17.25	80.83
CS-WB07-LGR-04	318	4/28/10	1020	43.74	115.19
CS-WB08-UGR-01	38	4/27/10	1400	14.00	19.15
CS-WB08-LGR-01	115	4/27/10	1300	14.05	21.10
CS-WB08-LGR-02	193	4/27/10	1100	14.03	52.03
CS-WB08-LGR03A	228	4/27/10	1020	17.25 17.25	68.44
CS-WB08-LGR03B	273	4/19/10	1000	28.37	81.99
CS-WB08-LGR-04	341	4/27/10	0920	57.86	118.12

C
C
C
B
B
B
A
A
A
A

13.90
13.91
13.94
13.96
13.86
13.90
13.92
13.92
13.99
14.02
14.03
14.00
13.94
14.00
13.97
13.98

Bob's sample
4-27-10/0945

Personnel: *Boch, Elliott, Lindley*

Weekly Piezometer Water Levels ('BTOC) and Monthly Field Parameters

Piezometer ID	TD (ft BTOC)	Date Sampled	Weekly/Monthly Writvils		Monthly Field Parameters				Notes	
			Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (ms/cm)	ORP (mV)		DO (mg/L)
CS-MW-27	17.0	4/22/10	1500	1.15	6.59	18.23	0.790	-87.0	0.73	Noble's samples collected not constructed yet
CS-MW-28	TBD									
CS-MW-29	TBD									
CS-MW-30	TBD									
CS-MW-31	TBD									
CS-MW-32	TBD									
CS-MW-33	TBD									
CS-MW-34	TBD									
CS-MW-35	TBD									

Quarterly Monitoring Well Field Parameters

Monitoring Well ID	Date Sampled	Sample Time	Water Level (ft BTOC)	pH	Temp. (deg. C)	SpCond. (ms/cm)	ORP (mV)	DO (mg/L)	Notes
B3-MW01	4.22.10	1100		6.54	21.22	1.014	-117.9	0.57	
CS-D	4.26.10	1015		7.01	21.30	0.523	-90.7	1.89	
CS-MW16-LGR	4.26.10	1415		7.04	23.03	0.542	-102.8	1.69	
CS-MW16-CC	4.26.10	1345		7.79	23.37	0.659	-109.8	1.31	
CS-B3-EXW01	4.26.10	1500		7.39	22.50	0.501	-110.0	2.80	
CS-B3-EXW02	4.26.10	0905							
CS-MW1-LGR	4.26.10	0905		7.01	21.18	0.511	-92.2	1.89	

CS-MW-1CC	4.26.10	1000		7.19	21.29	0.689	-103.0	1.01	
CS-4	4.26.10	1135		7.19	20.92	0.555	-97.3	3.70	
MW-25	4.26.10	1540		7.66	22.05	0.456	-100.8	4.82	
MW9-LGR	4.26.10	1600		7.06	21.06	0.522	-89.9	4.92	
MW9-CC	4.26.10	1630		7.15	21.03	0.685	-105.3	0.99	
MW2-LGR	4.26.10	1645		8.57	21.39	0.444	-94.2	1.20	
MW24-LGR	4.26.10	1905		7.14	21.89	0.553	-96.0	1.19	