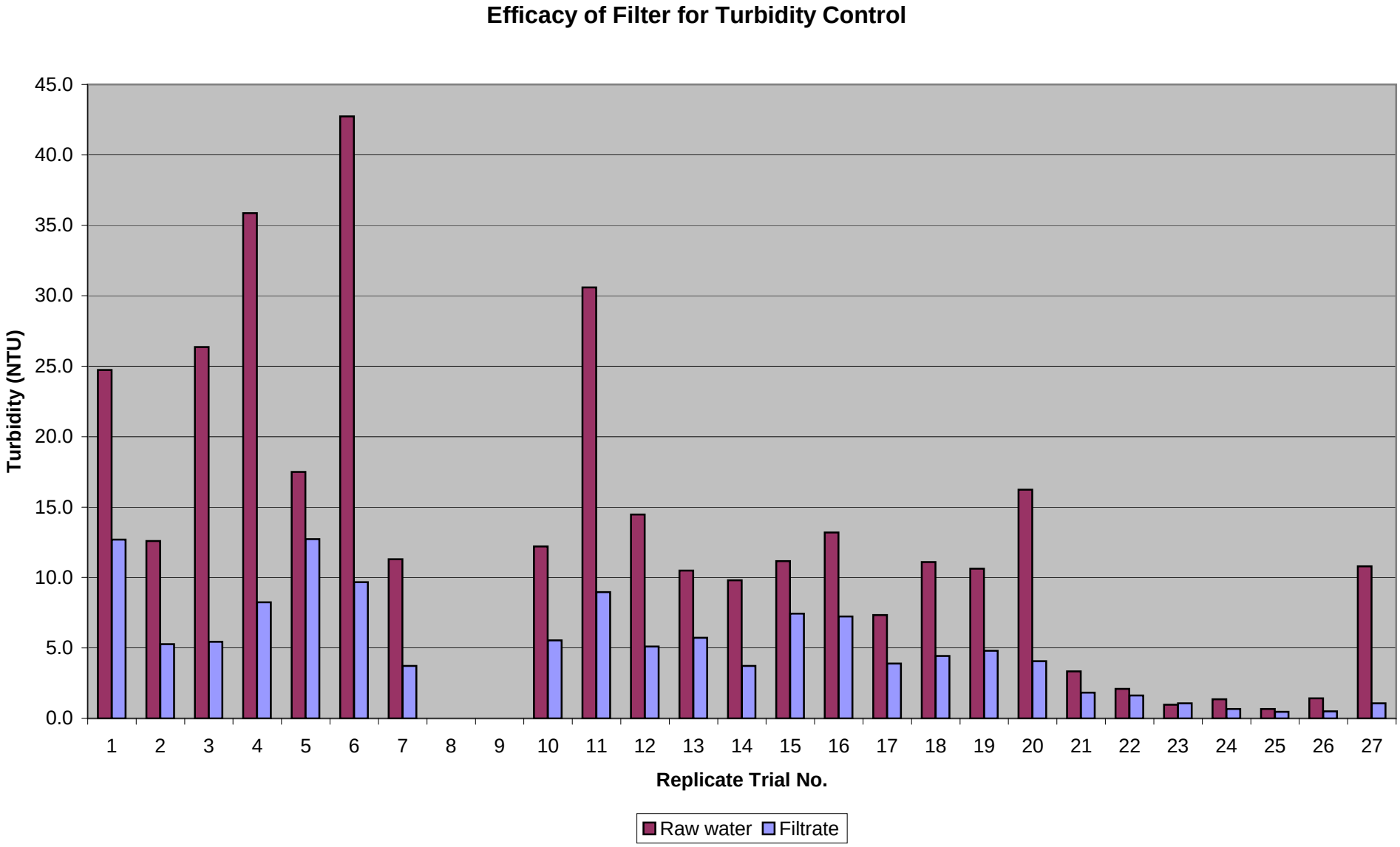
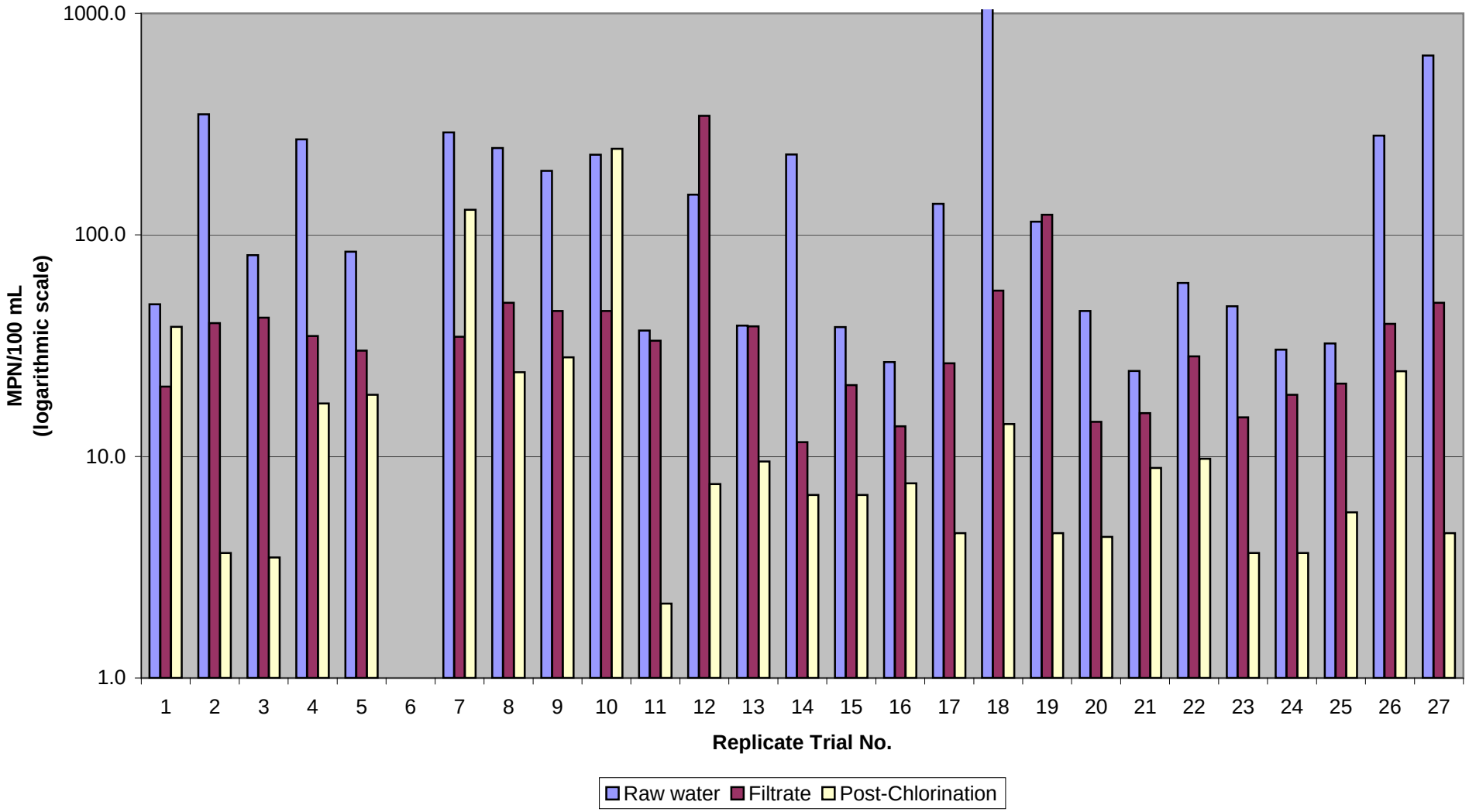

Efficacy of Filter for Turbidity Control
Turbidity (NTU)
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27
Replicate Trial No.
Raw water
Filtrate

Efficacy of Filter for Microbiological Quality Control



Lab Pilot Testing of Filter

	Sl. No.	1	2	3	4	5	6	7
	Replicate	*05/12/2010*	*06/12/2010*	*07/12/2010*	*10/12/2010*	*14/12/2010*	*20/12/2010*	*21/12/2010*
Influent Water Turbidity (NTU)	*1*	26.7	12.6	28.9	33.8	19.2	39.2	11.2
	2	23.4	12.1	27.2	34.6	16.6	42.5	11.8
	3	24.1	13.1	23.0	39.2	16.7	46.5	10.9
	AVERAGE	**24.7**	**12.6**	**26.4**	**35.9**	**17.5**	**42.7**	**11.3**
Filter Effluent Turbidity (NTU)	*1*	12.1	5.1	5.5	7.7	13.1	9.7	3.6
	2	13.2	5.4	5.2	8.2	12.3	9.2	3.8
	3	12.8	5.3	5.6	8.8	12.8	10.1	3.8
	AVERAGE	**12.7**	**5.3**	**5.4**	**8.2**	**12.7**	**9.7**	**3.7**
TURBIDITY CONTROL	**C/CO**	**0.51**	**0.42**	**0.21**	**0.23**	**0.73**	**0.23**	**0.33**
TURBIDITY LRV	**log(C/CO)**	**0.29**	**0.38**	**0.69**	**0.64**	**0.14**	**0.65**	**0.48**
Influent Water Volume (L)		20.7	19.8	21.4	20.4	20.1	21.5	20.9
Total Water Effluent (L)		19.7	19.7	20.5	20.2	20.0	19.6	20.0
Time required (min)		16.0	16.0	16.0	18.0	14.0	15.3	15.5
Chlorine residual after 30 min (mg/L)		BDL	1.5	0.9	0.8	1.5	0.1	1.0
Chlorine residual after 24 hrs (mg/L)		BDL	0.2	BDL	BDL	0.2	BDL	BDL
Influent MPN (raw)	*1*	31.0	NVO	>1600	250.0	84.0		180.0
	2	84.0	NVO	81.0	350.0	84.0		440.0
	3	31.0	350.0	>1600	210.0	84.0		250.0
	AVERAGE	**48.7**	**350.0**	**81.0**	**270.0**	**84.0**		**290.0**
Filter effluent MPN	*1*	17.0	62.0	36.0	21.0	38.0		45.0
	2	28.0	27.0	52.0	39.0	26.0		27.0
	3	17.0	31.0	39.0	45.0	26.0		32.0
	AVERAGE	**20.7**	**40.0**	**42.3**	**35.0**	**30.0**		**34.7**
FILTER MPN CONTROL	**C/CO**	**0.4**	**0.1**	**0.5**	**0.1**	**0.4**		**0.1**
FILTER MPN LRV	**log(C/CO)**	**0.4**	**0.9**	**0.3**	**0.9**	**0.4**		**0.9**
Final MPN (after Chlorination)	*1*	35.0	4.5	4.5	17.0	17.0		150.0
	2	NVO	2.0	4.0	13.0	17.0		120.0
	3	42.0	4.5	2.0	22.0	23.0		120.0

	AVERAGE	**38.5**	**3.7**	**3.5**	**17.3**	**19.0**	**130.0**
FILTER + CHLOR MPN CONTROL	**C/CO**		**0.01**	**0.04**	**0.06**	**0.23**	
FILTER + CHLOR MPN LRV	**log(C/CO)**		**1.98**	**1.36**	**1.19**	**0.65**	

ADDITIONAL NOTES

08/12/2010 No incubator available - tests not performed

13/12/2010 Stopping experiment due to filter shortcutting

BDL - Below detectable limit

NVO - No value obtained

H2S Strip Tests!	***Raw***
	Filt
	30 min
	24 hr
Days of Storage	
	1
COD (mg/L)	*2*
Influent (Raw) Water	*3*
	AVERAGE
	1
COD (mg/L)	*2*
Filtered Water	*3*
	AVERAGE
	1
COD (mg/L)	*2*
Chlorinated Water (30 min)	*3*
	AVERAGE

8	9	10	11	12	13	14	15	16	17	18
22/12/2010	*23/12/2010*	*05/01/2011*	*06/01/2011*	*07/01/2011*	*10/01/2011*	*11/01/2011*	*13/01/2011*	*14/01/2011*	*17/01/2011*	*19/01/2011*
		12.2	32.0	15.0	10.2	9.4	11.9	16.0	7.5	11.8
		12.0	29.7	13.8	10.6	11.5	10.5	12.0	7.3	11.2
		12.4	30.1	14.6	10.7	8.5	11.1	11.6	7.2	10.3
		12.2	**30.6**	**14.5**	**10.5**	**9.8**	**11.2**	**13.2**	**7.3**	**11.1**
		6.1	8.9	5.0	5.5	3.8	7.4	7.5	4.0	4.8
		5.4	9.1	5.3	6.1	3.7	7.8	7.2	3.8	4.3
		5.1	8.9	5.0	5.6	3.7	7.1	7.0	3.9	4.2
		5.5	**9.0**	**5.1**	**5.7**	**3.7**	**7.4**	**7.2**	**3.9**	**4.4**
		0.45	**0.29**	**0.35**	**0.55**	**0.38**	**0.67**	**0.55**	**0.53**	**0.40**
		0.34	**0.53**	**0.45**	**0.26**	**0.42**	**0.18**	**0.26**	**0.27**	**0.40**
		~20	~20	~20	~20	~20	~20	~20	~20	~20
		~20	~20	~20	~20	~20	~20	~20	~20	~20
		13.0	14.0	17.0	15.0	13.0	19.0	14.0	15.0	16.0
		1.5	1.0	0.2	0.1	0.1	0.8	0.0	1.5	0.2
		0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
280.0	180.0	250.0	39.0	62.0	54.0	130.0	48.0	21.0	54.0	1600.0
210.0	54.0	210.0	46.0	350.0	52.0	540.0	34.0	26.0	150.0	56.0
250.0	350.0	>1600	26.0	44.0	11.0	22.0	33.0	33.0	210.0	1600.0
246.7	**194.7**	**230.0**	**37.0**	**152.0**	**39.0**	**230.7**	**38.3**	**26.7**	**138.0**	**1085.3**
52.0	39.0	45.0	32.0	62.0	39.0	17.0	27.0	11.0	31.0	54.0
52.0	45.0	32.0	20.0	920.0	38.0	11.0	14.0	17.0	24.0	19.0
44.0	52.0	59.0	48.0	54.0	39.0	6.8	22.0	13.0	24.0	95.0
49.3	**45.3**	**45.3**	**33.3**	**345.3**	**38.7**	**11.6**	**21.0**	**13.7**	**26.3**	**56.0**
0.2	**0.2**	**0.2**	**0.9**		**1.0**	**0.1**	**0.5**	**0.5**	**0.2**	**0.1**
0.7	**0.6**	**0.7**	**0.0**		**0.0**	**1.3**	**0.3**	**0.3**	**0.7**	**1.3**
33.0	38.0	280.0	0.0	4.5	13.0	7.8	7.8	6.1	4.5	11.0
26.0	24.0	>1600	2.0	14.0	4.5	4.5	7.8	7.3	4.5	17.0
13.0	22.0	210.0	4.5	4.0	11.0	7.8	4.5	9.3	4.5	14.0

24.0	**28.0**	**245.0**	**2.2**	**7.5**	**9.5**	**6.7**	**6.7**	**7.6**	**4.5**	**14.0**
0.10	**0.14**		**0.06**	**0.05**	**0.24**	**0.03**	**0.17**	**0.28**	**0.03**	**0.01**
1.01	**0.84**		**1.23**	**1.31**	**0.61**	**1.54**	**0.76**	**0.55**	**1.49**	**1.89**
		CONTAMIN.								raw seems to be cont. i.e. >1600
							n/a	n/a	n/a	positive
							n/a	n/a	n/a	n/a
							n/a	n/a	negative	negative
							n/a	n/a	negative	negative

19	20	21	22	23	24	25	26	27		
20/01/2011	*21/01/2011*	*24/01/2011*	*25/01/2011*	*27/01/2011*	*28/01/2011*	*01/02/2011*	*02/02/2011*	*03/02/2011*		
10.3	21.0	3.4	2.1	1.0	1.8	0.6	1.6	13.1		
11.5	16.6	3.6	2.1	1.0	1.0	0.8	1.4	9.7		
10.1	11.1	3.0	2.1	0.9	1.3	0.6	1.3	9.6		
10.6	**16.2**	**3.3**	**2.1**	**1.0**	**1.4**	**0.7**	**1.4**	**10.8**		
4.8	4.2	1.9	1.6	1.1	0.8	0.5	0.5	1.2		
4.9	4.1	1.8	1.7	1.0	0.6	0.5	0.5	1.1		
4.7	3.9	1.8	1.6	1.1	0.6	0.4	0.5	0.9		
4.8	**4.1**	**1.8**	**1.6**	**1.1**	**0.7**	**0.5**	**0.5**	**1.1**		
0.45	**0.25**	**0.55**	**0.78**	**1.10**	**0.49**	**0.70**	**0.35**	**0.10**	**0.379**	Ave % reduction
0.35	**0.60**	**0.26**	**0.11**	**-0.04**	**0.31**	**0.15**	**0.46**	**1.01**	**0.465**	Ave. LRV
~20	~20	~18	~18	~18	~18	~18	~18	~18		
~20	~20	~18	~18	~18	~18	~18	~18	~18		
15.0	15.0	15.0	16.0	15.0	15.0	16.0	15.0	15.0		
0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.0	0.4		
0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2		
62.0	24.0	17.0	130.0	26.0	32.0	38.0	430.0	280.0		
220.0	17.0	23.0	26.0	95.0	26.0	20.0	350.0	1600.0		
62.0	95.0	33.0	26.0	22.0	33.0	39.0	62.0	54.0		
114.7	**45.3**	**24.3**	**60.7**	**47.7**	**30.3**	**32.3**	**280.7**	**644.7**		
28.0	12.0	13.0	49.0	20.0	17.0	14.0	47.0	45.0		
280.0	14.0	17.0	14.0	11.0	17.0	33.0	40.0	45.0		
62.0	17.0	17.0	22.0	14.0	23.0	17.0	32.0	58.0		
123.3	**14.3**	**15.7**	**28.3**	**15.0**	**19.0**	**21.3**	**39.7**	**49.3**		
	0.3	**0.6**	**0.5**	**0.3**	**0.6**	**0.7**	**0.1**	**0.1**	**0.4**	Ave % reduction
	0.5	**0.2**	**0.3**	**0.5**	**0.2**	**0.2**	**0.8**	**1.1**	**0.6**	Ave LRV
4.5	4.5	11.0	7.8	4.5	4.5	7.8	20.0	4.5		
4.5	4.0	7.8	4.5	4.5	2.0	4.5	6.8	4.5		
4.5	4.5	7.8	17.0	2.0	4.5	4.5	46.0	4.5		

4.5	**4.3**	**8.9**	**9.8**	**3.7**	**3.7**	**5.6**	**24.3**	**4.5**		
0.04	**0.10**	**0.36**	**0.16**	**0.08**	**0.12**	**0.17**	**0.09**	**0.01**	**0.11**	Ave % reduction
1.41	**1.02**	**0.44**	**0.79**	**1.11**	**0.92**	**0.76**	**1.06**	**2.16**	**1.13**	Ave LRV

			H2S checked 48 hrs later		H2S checked 60 hrs later			last day remnants of stored water
n/a	n/a	negative	positive	n/a	positive	negative	positive	n/a
n/a	n/a	negative	positive	negative	positive	negative	negative	n/a
negative	negative	negative	positive	negative	negative	negative	negative	n/a
negative	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
0	1	4	5	7	8	12	13	14
							22.4	cont. 0
							22.4	38.4
							22.4	12.8
							22.4	**25.6**
							12.8	3.2
							12.8	28.8
							16.0	19.2
							13.9	**17.1**
							9.6	28.8
							9.6	6.4
							3.2	9.6
							7.5	**14.9**

obvs
cont knocked out