APPENDIX A
FIELD SAMPLING FORMS

MW-URS-2

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552081210

Well Number: URS Well

Sheet 1 of 1

Sampler Name: Ben Grosser

Date: 11/13/08

Well Location Description:

Weather Conditions: Rainy, cool

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type: Horiba U-22

Analyzer ID No.: M015-08

Pump Type: Sub. Cent. Perist. Other: NA

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

NA

Total Well Depth (FT) : 27.98

Depth to Water (FT) - 6.83

Water Column (FT) = 21.15

Gal/Ft of Casing x 0.1631

Casing Volume (Gal) = 3.45

No.of Volumes ~~min. (3)~~ 10 x ~~3~~ 10

Purge Volume (Gal) = 34.5

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:

Time On: NA

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer: Poly

Bailer Vol. (gal): —

Required Pulls: —

Vol. Purged(gal): —

Other:

Sampling Parameters

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU) ±	Temp (C) ±	pH ±	Cond. ( ) ±	ORP (mV) ±	DO (mg/L) ±	Flow Rate (mL/m) ±	Remarks
800	41	6.83	5.92	16.7	5.08	0.522	213	10.22	—	
	1	—	324	17.8	6.35	0.377	69	9.87		
	5	—	589	17.7	6.72	0.380	30	9.85		
	10	—	668	17.4	6.75	0.383	9	9.96		
	15	—	672	17.4	6.67	0.381	3	9.95		
	20	—	259	17.5	6.38	0.385	0	10.15		
	25	—	468	17.9	6.60	0.384	-10	9.85		
	30	—	363	17.8	6.55	0.383	-15	9.92		
	35	—	313	17.8	6.54	0.381	-15	9.94		

Notes:

Checked by: BA Date:

50362

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Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1210
Well Number: MW-KA-1
Sheet 1 of 1

Sampler Name: JMB
Date: 11/17/08
Well Location Description: S/W T-14 Tel Box
Weather Conditions: Overcast, 40's

Sample Tubing Type: Teflon, Teflon Lined Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: M015-08
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: NA
Bailer Type: Teflon SS Other:

Laboratory Parameters: NA

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	22.00	1 in	0.0408
Depth to Water (FT) -	4.04	2 in	0.1631
Water Column (FT) =	17.96	4 in	0.6524
Gal/Ft of Casing x	0.1631	6 in	1.4680
Casing Volume (Gal) =	2.93	8 in	2.6097
No.of Volumes min.(3) x	10	10 in	4.0776
Purge Volume (Gal) =	29.29	12 in	5.8718

Pump:
Time On: NA
Flow Rate (gpm): -
Pump Time (min): -
Vol. Purged (gals): -

Bailer: Poly
Bailer Vol. (gal):
Required Pulls: -
Vol. Purged(gal): -
Other: -

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1325	-	4.04	-5.01	16.4	5.21	0.223	155	2.34	-	Surged well
	5	-	"	17.2	5.47	0.255	127	0.90	-	
	10	-	"	17.2	5.48	0.240	122	0.60	-	
	15	-	"	17.0	5.51	0.244	119	0.81	-	Surged well
	20	-	"	16.8	5.56	0.246	111	0.90	-	
	25	-	"	16.8	5.66	0.254	100	0.95	-	
	30	-	"	16.9	5.67	0.256	101	0.91	-	
	Purge	water	was	dark	brown.	Sediment	did			
	not	clear	after	10	purged	well	settle			

11/17/08

Notes:

Checked by: Date:

50363

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1210
Well Number: MW-KH-2
Sheet 1 of 1

Sampler Name: JMB
Date: 11/17/08
Well Location Description: B/W #14 & 15 HGS
Weather Conditions: Overcast, 50's

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: M015-08
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: NA
Bailer Type: Teflon SS Other:

Laboratory Parameters: NA

Total Well Depth (FT): 22.04
Depth to Water (FT) - 2.79
Water Column (FT) = 19.25
Gal/Ft of Casing x ~~3.1~~ 0.1631
Casing Volume (Gal) = 3.14
No.of Volumes min.(3) x 10
Purge Volume (Gal) = 31

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:
Time On: NA
Flow Rate (gpm): -
Pump Time (min): -
Vol. Purged (gals): -

Bailer: poly
Bailer Vol. (gal): 31
Required Pulls: -
Vol. Purged(gal): -
Other:

Sampling Parameters

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU) ±	Temp (C) ±	pH ±	Cond. ( ) ±	ORP (mV) ±	DO (mg/L) ±	Flow Rate (mL/m) ±	Remarks
1330	—	2.79	199.0	15.9	5.67	0.673	198	4.42	—	Surged Well
	5	—	~50'	16.2	5.85	0.561	102	3.55	—	
	10	—	"	16.7	5.81	0.610	91	0.17	—	
	15	—	"	16.0	5.88	0.548	83	1.76	—	Surged Well
	20	—	"	16.6	5.93	0.555	82	0.73	—	
	25	—	"	16.7	5.97	0.549	79	1.25	—	
	~31	—	"		5.99	0.552	78	1.17	—	

Purge water gray w/ sediment - Turbidity did not clear up w/ 10 purged well volumes.

JMB 11/17/08

Notes:

Checked by: Date:

50364

MW-KH-3

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552081210

Well Number: MW-3 MW-KH-3

Sheet 1 of 1

Sampler Name: Ben Grosser

Date: 11/13/08

Well Location Description:

Weather Conditions: Rainy, cool

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type: Horriba U-22

Analyzer ID No.: M015-08

Pump Type: Sub. Cent. Perist. Other: NA

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters: NA

Total Well Depth (FT) : 21.75

Depth to Water (FT) - 1.71

Water Column (FT) = 20.04

Gal/Ft of Casing x 0.1631

Casing Volume (Gal) = 3.27

No.of Volumes min. ~~(3)~~ x 10

Purge Volume (Gal) = 32.7

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:

Time On: NA

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer: Poly

Bailer Vol. (gal): —

Required Pulls: —

Vol. Purged(gal): —

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
945	0	1.71	28.2	16.5	6.41	0.363	-14	10.83	—	Clear
	1		999+	17.3	6.60	0.402	-11	10.40		gray
	5		999+	18.0	6.41	0.417	9	10.20		"
	10		999+	17.5	6.28	0.410	28	10.64		"
	15		560+	17.5	6.26	0.404	40	10.59		"
	20		999+	18.0	6.25	0.402	37	10.65		"

Notes: out of drum space, water not clearing.

Checked by: Date:

50365

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Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-BGC-5A

Sheet 1 of 1

Sampler Name: BG & JB

Date: 11-22-09

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT) : 14.50

Depth to Water (FT) - 1.54

Water Column (FT) = ~~0.1631~~ 12.96

Gal/Ft of Casing x 0.1631

Casing Volume (Gal) = 2.11

No.of Volumes min. ~~(3)~~ x 10

Purge Volume (Gal) = ~ 21.14

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1015	~1	–	70.3	12.5	5.97	0.500	97	7.58	–	Surged well
	5	–	14.45	~5.0	6.71	0.451	-21	7.66	–	light grey water
	10	–	743.1	14.0	6.51	0.468	-17	6.01	–	
	15	–	208.6	14.8	6.55	0.458	-19	6.51	–	Surged well
	~20	–	~5.0	14.9	6.45	0.455	-16	3.39	–	
	25	–	"	14.6	6.48	0.462	-20	←	5.50	
1045	30	–	978.0	14.8	6.48	0.455	-19	6.77		

Notes:
- Pumped extra 10 gal from well
- turbidity looked better towards end

Checked by:

Date:

50366

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Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-BGC-513

Sheet 1 of 1

Sampler Name: BG + JB

Date: 11-22-08

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	35.50.	1 in	0.0408
Depth to Water (FT) -	1.80	2 in	~~0.1631~~
Water Column (FT) =	33.70	4 in	0.6524
Gal/Ft of Casing x	0.1631	6 in	1.4680
Casing Volume (Gal) =	5.5	8 in	2.6097
No.of Volumes min. ~~(3)~~ x	10	10 in	4.0776
Purge Volume (Gal) =	~55	12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU) ±	Temp (C) ±	pH ±	Cond. ( ) ±	ORP (mV) ±	DO (mg/L) ±	Flow Rate (mL/m) ±	Remarks
900	1	–	+999	13.4	6.66	0.408	63	3.93	–	Surged Well
	5	–	470	15.0	6.94	0.380	45	3.53	–	
	10	–	50	12.4	7.03	0.336	-30	0.00	–	-Dark Grey Water
	15	–	"	14.5	7.05	0.298	-8	4.90	–	
	20	–	"	15.4	7.06	0.302	-40	5.31	–	
	25	–	"	15.6	7.13	0.307	-47	0.02	–	
	30	–	"	15.4	7.12	0.298	-53	2.39	–	
	35	–	"	13.1	7.21	0.321	-49	0.52	–	Surged Well
	40	–	"	13.2	7.11	0.286	-28	6.70	–	
	45	–	"	13.5	7.17	0.294	-45	5.68	–	
	50	–	"	14.7	7.09	0.314	-56	1.33	–	
	55	–	"	14.2	7.15	0.315	-54	2.80	–	
	60	–	"	14.5	7.13	0.331	-67	1.17	–	
	65	–	"	14.4	7.09	0.307	-59	3.44	–	
1000	70									

Notes:
- Pumped extra 15 gal from well
- Well got better towards end

Checked by: Dat

50367

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Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552081210
Well Number: MW-86-SB
Sheet ___ of ___

Sampler Name: Ken Grosser
Date: 12/2/08
Well Location Description:
Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horiba U22
Analyzer ID No.:
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.:
Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT) : 34.56	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) - 1.29	1 in	0.0408
Water Column (FT) =	2 in	0.1631
Gal/Ft of Casing x	4 in	0.6524
Casing Volume (Gal) =	6 in	1.4680
No.of Volumes min.(3) x	8 in	2.6097
Purge Volume (Gal) =	10 in	4.0776
	12 in	5.8718

Pump:
Time On: 1025
Flow Rate (gpm):
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1025	0	1.29	—	—	—	—	—	—	—	
1030	1/4	1.05	27.1	10.69	6.87	0.407	-10	4.33	50	Clear
1035	1/2	1.05	32.2	13.33	6.94	0.394	-20	7.87	50	"
1040	1/2	1.05	30.9	14.13	6.86	0.400	-25	0.57	50	cloudy
1045	3/4	1.05	30.7	14.14	6.86	0.408	-28	0.31	50	"
1050	3/4	1.05	34.9	14.22	6.89	0.401	-28	1.06	50	"
1055	1	1.05	29.9	13.73	6.89	0.401	-28	1.01	50	clear
*Turbidity is not dropping. We'll try redeveloping										
Redevelopment 12/12/08										
1400	5	—	5.0	15.36	6.13	0.374	63	9.27		dark brown
	10	—	"	16.22	6.67	0.374	-14	5.12		"
	15	—	"	16.50	6.84	0.378	-32	6.26		cloudy
	20	—	"	16.23	7.00	0.378	-49	6.12		"
	25	—	686	16.25	7.00	0.372	-57	4.23		"
	30	—	357	16.31	6.98	0.377	-47	10.98		"
	35	—	124	16.38	6.93	0.379	-57	6.06		clear
	40	—	45	16.56	7.00	0.368	-64	5.74		cloudy
	45	—	186	16.86	7.01	0.378	-54	9.32		clear

Notes:

Checked by: Date:

50368

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Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552081210
Well Number: MW-BGC-6A
Sheet 1 of 1

Sampler Name: Ben Grosser
Date: 11/18/08
Well Location Description:
Weather Conditions: sunny, cold

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horriba U22
Analyzer ID No.: M015-08
Pump Type: Sub. Cent. Perist. Other: NA
Pump ID No.:
Bailer Type: Teflon SS Other:

Laboratory Parameters: NA

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	15.09	1 in	0.0408
Depth to Water (FT) -	1.71	2 in	0.1631
Water Column (FT) =	13.38	4 in	0.6524
Gal/Ft of Casing x	0.1631	6 in	1.4680
Casing Volume (Gal) =	2.18	8 in	2.6097
No.of Volumes min.~~(3)~~ x	10	10 in	4.0776
Purge Volume (Gal) =	21.8	12 in	5.8718

Pump: Whale pump
Time On: NA
Flow Rate (gpm): .3
Pump Time (min):
Vol. Purged (gals):

Bailer: ~~Poly~~ BDG
Bailer Vol. (gal): —
Required Pulls: —
Vol. Purged(gal): —
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1500	5	1.71	+999	15.4	5.53	0.336	223	10.96	—	cloudy
	10		+999	15.8	5.44	0.272	186	11.03		"
	15		324	16.4	5.48	0.280	173	8.67		"
	20		330	16.3	5.54	0.296	152	8.58		"
	25		364	15.8	5.57	0.307	148	8.96		"
	30		300	15.7	5.61	0.331	141	9.93		"
	35		270	16.4	5.54	0.307	144	9.96		"
	40		280	17.0	5.62	0.321	144	10.01		clear
	45		183	16.4	5.60	0.345	144	11.43		clear

Notes: Purged extra to account for water added during drilling.

Checked by: Date:

50369

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-BGC-6B

Sheet 1 of 1

Sampler Name:

Date: 11-22-08

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT) : 41.90

Depth to Water (FT) - 1.93

Water Column (FT) = 39.97

Gal/Ft of Casing x 0.1631

Casing Volume (Gal) = 6.52

No.of Volumes min. ~~(3)~~ x 10

Purge Volume (Gal) = 65.19

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1200	~5	–	~5.0'	15.5	6.47	0.259	31	8.88	–	light grey water
	10	–	"	16.0	5.72	0.239	89	6.94	–	Surged well
	15	–	"	12.7	5.66	0.337	97	8.00	–	
	20	–	"	14.7	5.69	0.235	99	7.74	–	
	25	–	"	14.4	5.61	0.233	105	7.32	–	Surged well
	30	–	"	13.6	5.46	0.231	113	6.62	–	
	35	–	"	15.7	5.47	0.236	116	4.37	–	
	40	–	914.0	16.1	5.47	0.241	115	3.16	–	
	45	–	218.7	16.2	5.50	0.235	112	5.40	–	Turbidity looks
	50	–	153.0	15.9	5.53	0.236	112	5.09	–	good
	55	–	104.0	15.6	5.49	0.227	117	10.16	–	
	60	–	122.6	14.6	5.54	0.236	120	10.27	–	
1300	65	Turbidity looks good.								

Notes:

- Well cleared up nicely.

Checked by: Date:

50370

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: | Well Number: MW-BLC-7A | Sheet 1 of 1

Sampler Name:
Date: 11-2008

Well Location Description:
Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type:
Analyzer ID No.:
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.:
Bailer Type: Teflon SS Other:

Laboratory Parameters:

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	14.47		
Depth to Water (FT) -	3.02	1 in	0.0408
Water Column (FT) =	11.45	2 in	0.1631
Gal/Ft of Casing x	0.1631	4 in	0.6524
Casing Volume (Gal) =	1.87	6 in	1.4680
No.of Volumes min. ~~(3)~~ x	10	8 in	2.6097
Purge Volume (Gal) =	18.67	10 in	4.0776
		12 in	5.8718

Pump:
Time On:
Flow Rate (gpm):
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1425	~5	3.02	~5.0'	15.5	5.43	0.133	110	2.79	–	Surged well
	10	–	"	16.4	5.29	0.129	118	3.52	–	light brown
	15	–	709.0	17.3	5.47	0.129	109	4.00	–	
	20	–	5.0'	17.2	5.37	0.133	118	3.18	–	surged well
	25	–	"	17.3	5.38	0.132	117	3.44	–	
1440	30	–	466.0	18.2	5.42	0.131	109	3.59	–	

Notes: - pumped extra ~15 gal. - replace well pad?
- well cleaned up

Checked by: Date:

50371

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Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-BLC-7B

Sheet 1 of 1

Sampler Name:

Date: 11-22-08

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	42.00	1 in	0.0408
Depth to Water (FT) -	1.89	2 in	0.1631
Water Column (FT) =	40.11	4 in	0.6524
Gal/Ft of Casing x	0.1631	6 in	1.4680
Casing Volume (Gal) =	6.54	8 in	2.6097
No.of Volumes min.(~~3~~) x	10	10 in	4.0776
Purge Volume (Gal) =	65.42	12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1320	5	1.89	<5.0	15.5	6.28	0.134	57	9.46	-	Dark Brown
	10	-	"	15.9	6.19	0.143	34	2.58	-	water
	15	-	"	10.4	6.12	0.135	38	1.89	-	
	20	-	"	14.4	6.15	0.137	35	2.59	-	surged well
	25	-	"	15.0	6.08	0.131	44	2.00	-	
	30	-	"	14.8	6.08	0.130	40	3.65	-	
	35	-	"	14.2	5.91	0.129	44	2.82	-	surged well
	40	-	"	14.5	5.97	0.128	39	2.18	-	
	45	-	"	15.0	5.95	0.126	39	3.38	-	
	50	-	"	14.7	5.95	0.126	41	3.34	-	
	55	-	"	15.0	5.92	0.124	41	2.32	-	Starting to
	60	-	"	15.1	5.96	0.124	37	1.36	-	clear up
	65	-	"	15.3	5.96	0.123	34	2.15	-	surged well
	70	-	"	15.9	5.97	0.119	34	2.02	-	
	75	-	"	15.0	6.04	0.122	33	2.43	-	
1415	80	-	"	14.4	6.06	0.120	33	3.44		

Notes: - pumped extra 15 gal to help clear up turbidity

Checked by: Date:

50372

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-B6C-8A

Sheet 1 of 1

Sampler Name:

Date: 11-22-08

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	22.22		
Depth to Water (FT) -	9.49	1 in	0.0408
Water Column (FT) =	12.73	2 in	0.1631
Gal/Ft of Casing x	0.1631	4 in	0.6524
Casing Volume (Gal) =	2.08	6 in	1.4680
No.of Volumes min.~~(3)~~ x	10	8 in	2.6097
Purge Volume (Gal) =	20.76	10 in	4.0776
		12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1355	5	9.49	~5.0'	12.9	4.03	1.54	230	2.26	-	surged well
	10	-	"	14.7	3.95	1.63	240	3.75	-	
	15	-	"	14.7	3.94	1.67	242	4.29	-	
	20	-	"	15.8	3.92	1.69	242	5.15	-	surged well
	25	-	"	15.8	3.92	1.70	241	5.17	-	
1625	30	-	"	16.0	3.93	1.71	237	5.41	-	

Notes:

- well cleared up - purged extra 10 gal

Checked by: Date:

50373

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-DGC-8B

Sheet 1 of 1

Sampler Name:

Date: 11-22-09

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	45.60	1 in	0.0408
Depth to Water (FT) -	8.98	2 in	0.1631
Water Column (FT) =	36.62	4 in	0.6524
Gal/Ft of Casing x	0.1631	6 in	1.4680
Casing Volume (Gal) =	5.97	8 in	2.6097
No.of Volumes min. ~~(3)~~ x	10	10 in	4.0776
Purge Volume (Gal) =	59.73	12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1505	~5	8.98	5.01	14.5	6.31	0.410	54	8.68	–	Surged well
	10	–	"	13.7	6.25	0.396	25	5.81	–	Dark stream
	15	–	"	14.6	6.30	0.366	12	5.35	–	
	20	–	"	13.7	6.40	0.345	-4	2.29	–	
	25	–	"	14.5	6.44	0.319	-6	3.15	–	surged well
	30	–	"	13.3	6.34	0.311	-1	4.00	–	
	35	–	"	14.0	6.39	0.300	-3	4.71	–	
	40	–	"	13.8	6.45	0.290	-12	5.40	–	
	45	–	"	14.1	6.45	0.288	-17	6.17	–	Starting to
	50	–	"	14.6	6.48	0.286	-21	6.00	–	clear up
	55	–	"	14.8	6.48	0.281	-23	5.91	–	
	60	–	"	14.8	6.49	0.279	-25	5.05	–	
	65	–	"	14.9	6.51	0.276	-25	5.63	–	
1550	70	–	"	14.6	6.50	0.277	-28	5.93	–	

Notes: - Needs lock and compression cap
- purged 10 extra gal

Checked by: Date:

50374

12-5-08

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-BLC-8B

Sheet ___ of ___

Sampler Name:

Date:

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

NA

Total Well Depth (FT) :

Depth to Water (FT) -

Water Column (FT) =

Gal/Ft of Casing x

Casing Volume (Gal) =

No.of Volumes min.(3) x

Purge Volume (Gal) =

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1145	-	8.88								
1150	5	-	-5.01	13.41	5.73	0.354	17	6.87	-	Surged well
	15	-	n	13.86	6.30	0.360	-34	2.49	-	Light grey
	25	-	242.0	14.38	6.33	0.306	-36	4.25	-	water
	35	-	222.0	14.01	6.37	0.306	-43	1.25	-	Surged Well
	45	-	310.0	14.94	6.31	0.309	-38	5.42	-	
	55	-	68.0	14.10	6.35	0.308	-42	0.98	-	

Notes:

* Re-Develop well

Checked by: Date:

50375

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-BCC-9A

Sheet 1 of 1

Sampler Name:

Date: 11-23-08

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT) : 23.00

Depth to Water (FT) - 8.05

Water Column (FT) = 14.95

Gal/Ft of Casing x 0.1631

Casing Volume (Gal) = 2.44

No.of Volumes min.(3) x 10

Purge Volume (Gal) = 24.38

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1045	5	8.05	5.0	14.89	6.67	0.667	-64	3.75	–	surged well
~~1055~~	10	–	"	16.24	6.56	0.722	-74	4.55	–	light grey
	15	–	203.0	16.50	6.57	0.715	-76	4.53	–	
	20	–	"	16.94	6.57	0.726	-82	4.67	–	Well clearing
	25	–	470.0	16.87	6.58	0.699	-77	5.35	–	up
	30	–	82.5	16.63	6.57	0.704	-78	6.02	–	surged well
1105	35	–	40.0	15.64	6.57	0.720	-80	3.06	–	

Notes:

- purged extra 10 gal
- cleared up nicely

Checked by: Date:

50376

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW - BGC - 9B

Sheet 1 of 1

Sampler Name:

Date: 11-23-08

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.: M015-03

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT) : 42.25

Depth to Water (FT) - 7.63

Water Column (FT) = 34.62

Gal/Ft of Casing x 0.1631

Casing Volume (Gal) = 5.65

No.of Volumes min.(3) x 10

Purge Volume (Gal) = 56.57

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
915	5	7.63	424.0	16.02	6.37	0.486	41	7.33	-	Surged well
	10	-	-5.01	14.60	6.75	0.469	-11	6.44	-	Dark grey water
	15	-	"	14.73	7.11	0.455	-30	4.60	-	
	20	-	"	15.23	7.17	0.455	-18	2.74	-	
	25	-	"	14.42	7.16	0.457	-29	6.53	-	
	30	-	"	13.81	7.21	0.456	-28	6.37	-	surged well
	35	-	"	13.93	7.02	0.447	-28	4.49	-	
	40	-	"	14.78	7.02	0.441	-44	4.50	-	
	45	-	"	13.62	7.00	0.447	-20	5.03	-	Starting to clear up
	50	-	"	14.48	7.04	0.443	-36	5.11	-	
	55	-	"	14.70	7.09	0.447	-31	5.64	-	
	60	-	"	13.66	7.11	0.444	-34	5.17	-	
1035	65	-	"	14.89	7.05	0.440	-49	5.21	-	

Notes: - purged 10 extra gal.

Checked by: Date:

50377

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-BGC-10A

Sheet 1 of 1

Sampler Name:

Date: 4-23-08

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT) :	23.02	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) -	8.82	1 in	0.0408
Water Column (FT) =	14.20	2 in	0.1631
Gal/Ft of Casing x	0.1631	4 in	0.6524
Casing Volume (Gal) =	2.32	6 in	1.4680
No.of Volumes min.(3) x	10	8 in	2.6097
Purge Volume (Gal) =	23.26	10 in	4.0776
		12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1220	5	8.82	-50'	16.98	0.85	0.587	-50	5.37	–	Surged well
	10	–	"	17.10	0.54	0.615	-47	3.31	–	Light gray
	15	–	"	16.54	0.54	0.622	-45	4.01	–	
	20	–	"	16.47	0.52	0.629	-46	3.90	–	Surged well
	25	–	147.0	16.04	0.50	0.629	-52	2.95	–	
	30	–	141.0	17.90	0.51	0.629	-51	3.00	–	
1255	35	–	45.0	14.89	0.47	0.53	-58	2.68	–	

Notes:
- pissed extra 10 gal
- well looks good

Checked by: Date:

50378

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-BGC-10B

Sheet 1 of 1

Sampler Name:

Date: 11-23-08

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	37.55	1 in	0.0408
Depth to Water (FT) -	8.36	2 in	0.1631
Water Column (FT) =	29.19	4 in	0.6524
Gal/Ft of Casing x	0.1631	6 in	1.4680
Casing Volume (Gal) =	4.76	8 in	2.6097
No.of Volumes min.(~~3~~) x	10	10 in	4.0776
Purge Volume (Gal) =	47.61	12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1115	5	8.36	'5.0'	13.51	6.99	0.584	11	8.13	-	Surged Well
	10	-	"	14.46	7.12	0.583	-80	5.03	-	light gray water
	15	-	"	14.56	7.17	0.591	-17	5.38	-	
	20	-	"	15.12	7.13	0.583	-36	4.29	-	Clearing up
	25	-	567.0	15.09	7.15	0.580	-45	4.14	-	surged well
	30	-	'5.0'	15.04	7.16	0.585	-41	3.54	-	
	35	-	"	14.99	7.17	0.592	-35	3.95	-	
	40	-	"	15.90	7.20	0.584	-42	3.64	-	Clearing up
	45	-	964.0	15.85	7.20	0.588	-51	3.68	-	Surged well
	50	-	"	16.24	7.19	0.583	-61	3.91	-	
	55	-	"	15.79	7.21	0.587	-53	3.51	-	
1215	60		485.0	16.18	7.18	0.583	-55	3.97	-	looks good.

Notes: purged extra 43 gal

Checked by: Date:

50379

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-BGC-11A

Sheet 1 of 1

Sampler Name:

Date: 11-23-08

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	22.80	1 in	0.0408
Depth to Water (FT) -	8.81	2 in	0.1631
Water Column (FT) =	13.99	4 in	0.6524
Gal/Ft of Casing x	0.1631	6 in	1.4680
Casing Volume (Gal) =	2.28	8 in	2.6097
No.of Volumes min.(3) x	10	10 in	4.0776
Purge Volume (Gal) =	22.82	12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1445	5	8.81	~50'	16.16	6.78	0.667	-5	5.95	-	Surged Well
	10	-	"	16.36	6.31	0.677	1	3.37	-	Lightly pump
	15	-	728.0	16.31	6.26	0.674	0	4.64	-	Water
	20	-	50'	16.52	6.22	0.651	-3	3.05	-	Surged Well
	25	-	"	16.74	6.24	0.649	-1	2.39	-	clearing up
	30	-	124.0	16.13	6.17	0.674	-4	1.88	-	

Notes:

~ purged extra 10 gal

- well looks good

Checked by: Date:

50380

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-BGC-11B

Sheet 1 of 1

Sampler Name:

Date: 11-23-08

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	35.63		
Depth to Water (FT) -	8.63	1 in	0.0408
Water Column (FT) =	27.00	2 in	0.1631
Gal/Ft of Casing x	0.1631	4 in	0.6524
Casing Volume (Gal) =	4.404	6 in	1.4680
No.of Volumes min. ~~(3)~~ x	10	8 in	2.6097
Purge Volume (Gal) =	44.04	10 in	4.0776
		12 in	5.8718

Pump:

Time On:

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1305	5	8.63	5.01	17.10	7.05	0.578	-1	4.20	-	Dark Org
	10	-	"	15.86	7.19	0.593	-47	5.07	-	Surged Well
	15	-	"	16.07	7.12	0.594	-54	6.51	-	
	20	-	"	15.97	7.08	0.598	-57	5.11	-	
	25	-	"	16.22	7.04	0.594	-55	4.01	-	Surged Well
	30	-	"	16.70	7.06	0.593	-47	4.24	-	
	35	-	"	16.96	7.20	0.606	-52	4.33	-	
	40	-	"	16.55	7.06	0.607	-44	3.31	-	-still not
	45	-	"	16.16	7.01	0.611	-49	4.11	-	clearing
	50	-	"	15.23	6.97	0.672	-50	1.99	-	
	55	-	"	16.69	6.99	0.605	-51	5.88	-	Surged Well
	60	-	782.0	15.72	6.97	0.606	-53	4.51	-	
1440	65	-	"	15.77	6.94	0.607	-51	4.47	-	

Notes:
- purged extra 20 gal
- started to clear up around ~55 gal

Checked by: Date:

50381

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3532081210
Well Number: MW-RGC-12A
Sheet ___ of ___

Sampler Name: Ron Grosser
Date: 12/11/08
Well Location Description:
Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horiba U-22
Analyzer ID No.:
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: Whale pump
Bailer Type: Teflon SS Other:

~~Laboratory Parameters:~~

Well Development

Total Well Depth (FT) :	22.65	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) -	7.07	1 in	0.0408
Water Column (FT) =	15.58	2 in	0.1631
Gal/Ft of Casing x	0.1631	4 in	0.6524
Casing Volume (Gal) =	2.54	6 in	1.4680
No.of Volumes min (3) x	~~25.4~~ 10	8 in	2.6097
Purge Volume (Gal) =	~~25.4~~	10 in	4.0776
		12 in	5.8718

Pump:
Time On: 1500
Flow Rate (gpm): —
Pump Time (min): ~~1460~~
Vol. Purged (gals): 45

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( ) mS/cm	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1500	5	7.07	-5.0	16.51	6.09	0.378	17	2.88		dark brown
	10		"	15.05	5.84	0.378	35	3.54		
	15		"	16.76	5.73	0.365	45	3.22		
	20		"	16.56	5.70	0.368	45	3.57		
	25		"	16.71	5.76	0.368	45	4.21		light brown
	30		"	16.14	5.68	0.365	45	3.73		cloudy
	35		"	16.04	5.73	0.354	39	3.38		
	40		"	15.83	5.73	0.365	41	3.87		clear
	45		290	16.65	5.65	0.357	40	3.40		clear

Notes:

Checked by: Date:

50382

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3550081210
Well Number: MW-RGC-12B
Sheet ___ of ___

Sampler Name: Ben Grosser
Date: 12/1/08
Well Location Description:
Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horiba U22
Analyzer ID No.:
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: Whale pump
Bailer Type: Teflon SS Other:

Laboratory Parameters: Well development

Total Well Depth (FT) :	41.10	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) -	7.33	1 in	0.0408
Water Column (FT) =	33.77	2 in	0.1631
Gal/Ft of Casing x	0.1631	4 in	0.6524
Casing Volume (Gal) =	5.5	6 in	1.4680
No.of Volumes min (3) x	10	8 in	2.6097
Purge Volume (Gal) =	55	10 in	4.0776
		12 in	5.8718

Pump:
Time On: 1400
Flow Rate (gpm): —
Pump Time (min): 60
Vol. Purged (gals): 70

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( ) mS/cm	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1400	5	7.33	805	16.34	5.97	0.621	71	9.38		brown
	10		-5.0	16.13	5.96	0.636	27	6.51		"
	15		"	16.06	6.23	0.639	24	5.52		"
	20		"	15.08	6.37	0.646	-1	5.76		"
	25		"	15.06	6.38	0.637	-4	3.69		light brown
	30		"	15.58	6.50	0.646	-6	3.47		"
	35		"	15.66	6.44	0.643	-1	3.69		"
	40		"	15.61	6.45	0.650	-4	3.42		cloudy
	45		"	15.75	6.49	0.649	-6	4.43		"
	50		"	15.49	6.45	0.657	-4	5.05		"
	55		522	15.55	6.44	0.653	-9	6.89		"
	60		679	14.76	6.53	0.640	-23	6.07		"
	65		450	15.16	6.49	0.658	-16	5.09		"
	70		258	15.03	6.63	0.653	-31	4.19		"

Notes:

Checked by: Date:

50383

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1210
Well Number: MW-URS-2
Sheet 1 of 1

Sampler Name: 11/19/08
Date: 2MB

Well Location Description:
Weather Conditions: Sunny, 40's

Sample Tubing Type: Teflon Teflon Lined Other: Poly
Analyzer Type: Horiba U-22
Analyzer ID No.: M015-08
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: GeoPump S008-39
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See chain of custody

Total Well Depth (FT): 27.98
Depth to Water (FT) - 6.53
Water Column (FT) = 21.45
Gal/Ft of Casing x
Casing Volume (Gal) = NA
No.of Volumes min.(3) x
Purge Volume (Gal) =

Low Flow

Intake: 14.00'

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump: see above
Time On: 925
Flow Rate (gpm): 100 mL/min
Pump Time (min): ~~35~~ 55
Vol. Purged (gals): ~1.5

Bailer:
Bailer Vol. (gal):
Required Pulls: NA
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
925	–	6.53	START	Pump						
930	–	6.58	4.0	9.3	5.76	0.438	234	6.96	–	Flow cell 2/3 Full
935	~0.05	6.59	3.3	11.1	5.73	0.418	222	1.29	150	Clear water
940	~0.15	6.59	0.0	11.8	5.75	0.419	212	1.04	100	
945	~0.25	6.59	0.0	12.5	5.82	0.418	162	0.93	"	
950	~0.35	6.60	0.0	13.0	5.98	0.413	39	0.87	"	
955	~0.45	6.60	0.0	13.8	5.94	0.407	18	0.41	"	
1000	~1.0	6.61	0.0	13.7	5.92	0.406	12	0.00	"	
1005	~1.25	6.61	0.0	14.3	5.91	0.405	11	0.00	"	
1010	~1.5	6.61	0.0	14.1	5.92	0.405	12	0.00	"	
1015	Well stable: Disconnect Horiba									
1020	Sample Well									
1100	Sampled well as a Dup					MW-Dup-1				

11/19/08

Notes:
No turbidity issues, Low DO.

Checked by: Date:

50384

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1210
Well Number: MW-KH-1
Sheet 1 of 1

Sampler Name: JMB
Date: 11-20-09
Well Location Description: Tue Box #7
Weather Conditions: Sunny

Sample Tubing Type: Teflon Teflon Lined Other: Poly
Analyzer Type: Horiba U-22
Analyzer ID No.: N015-08
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: Geo Pump 5008-39
Bailer Type: Teflon SS Other:

Laboratory Parameters: See COC

Total Well Depth (FT): 22.00
Depth to Water (FT) - 4.15
Water Column (FT) = 17.85
Gal/Ft of Casing x
Casing Volume (Gal) = N/A
No.of Volumes min.(3) x
Purge Volume (Gal) =

Low Flow

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	~~0.1631~~
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Intake: 11.00'

Pump:
Time On: 955
Flow Rate (gpm): 225 ml/min
Pump Time (min): 40
Vol. Purged (gals): ~3

Bailer:
Bailer Vol. (gal):
Required Pulls: N/A
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
955	-	4.15	START PUMP							
1000	~0.10	4.19	9.4	16.7	5.33	0.336	213	0.00	225	Clear Water
1005	~0.75	4.19	0.0	17.3	5.40	0.831	204	0.00	"	
1010	~1.25	4.19	0.0	17.3	5.40	0.794	199	0.00	"	
1015	~1.75	4.19	0.0	17.3	5.42	0.730	193	0.00	"	
1020	~2.50	4.19	0.0	17.4	5.43	0.730	191	0.00	"	
1025	~3.00	4.19	0.0	17.4	5.43	0.731	191	0.00	"	
1030	Well Stable; Disconnect Horiba									
1035	Sample Well									

11/20/09

Notes:
No turbidity issues. No DO?

Checked by: Date:

50385

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1210
Well Number: MW-KH-2
Sheet 1 of 1

Sampler Name: JMB
Date: 11-19-08
Well Location Description:
Weather Conditions: Sunny; 40's

Sample Tubing Type: Teflon Teflon Lined Other: Poly
Analyzer Type: Horiba U-22
Analyzer ID No.: M015-08
Pump Type: Sub. Cent. ~~Perist.~~ Other:
Pump ID No.: GeoPump S008-39
Bailer Type: Teflon SS Other:

Laboratory Parameters: See COC

Total Well Depth (FT): 22.04
Depth to Water (FT) - 2.96
Water Column (FT) =
Gal/Ft of Casing x
Casing Volume (Gal) = NA
No.of Volumes min.(3) x
Purge Volume (Gal) =

Low Flow

Intake: 16.02'

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:
Time On: 1515
Flow Rate (gpm): 2.00
Pump Time (min): 45
Vol. Purged (gals): 3

Bailer:
Bailer Vol. (gal):
Required Pulls: NA
Vol. Purged(gal):
Other:

Sampling Parameters

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU) ±	Temp (C) ±	pH ±	Cond. ( ) ±	ORP (mV) ±	DO (mg/L) ±	Flow Rate (mL/m) ±	Remarks
1515	–	2.96	START PUMP							
1520	"	2.97	0.0	15.5	5.51	0.485	157	5.88	–	Clear Water
1525	~0.2	2.97	12.6	16.9	6.05	0.473	135	0.00	200	
1530	~0.75	2.97	0.0	16.9	6.24	0.505	102	0.00	"	
1535	~1.50	2.97	0.0	17.1	6.26	0.562	100	0.00	"	
1540	~2.00	2.97	0.0	17.1	6.39	0.684	70	0.00	"	
1545	~2.50	2.97	0.0	17.3	6.39	0.686	71	0.00	"	
1550	~3.00	2.97	0.0	17.3	6.40	0.687	70	0.00	"	
1555	Well stable; Disconnect Horiba									
1600	Sample Well									

11/19/08

Notes:
- No turbidity issues, Low DO.

Checked by: Date:

50386

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1210
Well Number: MW-KH-3
Sheet 1 of 1

Sampler Name: JmB
Date: 11/19/08
Well Location Description: L/U 14'7
Weather Conditions: Sunny; 40's

Sample Tubing Type: Teflon Teflon Lined ~~Other:~~ poly
Analyzer Type: Horiba U-22
Analyzer ID No.: M015-08
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: Geo Pump S2008-39
Bailer Type: Teflon SS Other:

Laboratory Parameters: See COC

Total Well Depth (FT): 21.75
Depth to Water (FT) - 1.58
Water Column (FT) = 20.17
Gal/Ft of Casing x
Casing Volume (Gal) = N/A
No.of Volumes min.(3) x
Purge Volume (Gal) =

Low Flow

Intake: 11.00'

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:
Time On: 1215
Flow Rate (gpm): 150 mL/min
Pump Time (min): 55
Vol. Purged (gals): ~2

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal): N/A
Other:

Sampling Parameters

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU) ±	Temp (C) ±	pH ±	Cond. ( ) ±	ORP (mV) ±	DO (mg/L) ±	Flow Rate (mL/m) ±	Remarks
1215	-	1.58	START PUMP							
1220	-	1.59	41.8	14.8	5.21	0.388	102	7.41	-	Flow Cell 1/2 Full
1225	~0.25	1.60	25.9	16.4	5.48	0.590	78	0.00	150	Clear water
1230	~0.35	1.60	5.7	16.7	5.55	0.436	62	0.00	"	
1235	~0.65	1.60	0.0	16.8	5.67	0.552	39	0.00	"	
1240	~0.85	1.60	0.0	17.1	5.65	0.660	28	0.00	"	
1245	~1.05	1.60	0.0	17.2	5.68	0.719	17	0.00	"	
1250	~1.25	1.60	0.0	17.1	5.71	0.726	6	0.00	"	
1255	~1.75	1.60	0.0	17.3	5.71	0.725	3	0.00	"	
1300	~2.0	1.60	0.0	17.3	5.70	0.725	1	0.00	"	
1305	Well Stable; Disconnect Horiba									
1310	Sample Well									

11/19/08

Notes: - No turbidity issues. Low DO.

Checked by: Date:

50387

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3557081210
Well Number: MW-BGC-5A
Sheet ___ of ___

Sampler Name: Ben Crosser
Date: 12/2/08
Well Location Description:
Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horiba U22
Analyzer ID No.:
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.:
Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT) : 14.45	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) - 1.09	1 in	0.0408
Water Column (FT) =	2 in	0.1631
Gal/Ft of Casing x	4 in	0.6524
Casing Volume (Gal) =	6 in	1.4680
No.of Volumes min.(3) x	8 in	2.6097
Purge Volume (Gal) =	10 in	4.0776
	12 in	5.8718

Pump:
Time On: 850
Flow Rate (gpm):
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( ) mS/cm	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
850	<1/4	1.16	35.1	16.41	6.12	0.564	83	2.21	100	Clear
855	1/4	1.14	25.6	15.48	6.14	0.561	57	6.16	150	"
900	1/2	1.12	14.8	16.35	6.18	0.548	52	6.49	150	"
905	<3/4	1.11	12.6	15.74	6.19	0.558	43	6.32	50	"
910	<3/4	1.11	7.9	15.64	6.17	0.554	44	2.59	50	"
915	<3/4	1.11	7.8	15.72	6.18	0.553	42	2.33	50	"
920	<1	1.11	8.2	15.68	6.17	0.552	42	2.39	50	"

Notes: Sampled at 920

Checked by: Date:

50388

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552081210
Well Number: MW-BGC-5B
Sheet ___ of ___

Sampler Name: Ben Grosser
Date: 12/14/08
Well Location Description:
Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: MOIS-03
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: 5008-39
Bailer Type: Teflon SS Other:

Laboratory Parameters:

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	34.45	1 in	0.0408
Depth to Water (FT) -	1.12	2 in	0.1631
Water Column (FT) =		4 in	0.6524
Gal/Ft of Casing x		6 in	1.4680
Casing Volume (Gal) =		8 in	2.6097
No.of Volumes min.(3) x		10 in	4.0776
Purge Volume (Gal) =		12 in	5.8718

Pump:
Time On: 1155
Flow Rate (gpm):
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU) ±	Temp (C) ±	pH ±	Cond. ( ) ±	ORP (mV) ±	DO (mg/L) ±	Flow Rate (mL/m) ±	Remarks
1155	0	1.12	–	–	–	–	–	–	–	Pump On
1200	1/4	1.14	64.6	15.61	6.87	0.411	-9	4.43	100	
1205	1/2	1.14	71.1	15.15	6.72	0.388	-20	7.16	50	
1210	3/4	1.14	48.3	16.50	6.44	0.412	-2	2.45	100	
1215	<1	1.14	21.0	16.79	6.66	0.400	-18	1.40	100	
1220	1	1.14	54.4	15.63	6.86	0.388	-42	11.86	50	
1225	~~2~~ 1.5	1.22	14.1	17.12	6.86	0.382	-53	1.02	~~50~~ 300	
1230	2	1.19	27.4	16.71	6.98	0.387	-68	1.15	50	
1235	2 1/4	1.16	19.1	16.66	6.98	0.384	-71	0.58	50	
1240	2 1/2	1.16	15.0	16.81	6.98	0.382	-72	0.66	50	
1245	2 3/4	1.16	9.8	16.89	6.97	0.382	-73	0.59	100	
1250	3 1/4	1.16	6.4	17.06	6.98	0.381	-77	0.31	100	
1255	3	1.18	6.2	17.22	6.98	0.380	-81	0.06	150	
1300	3 1/2	1.18	6.0	17.25	6.98	0.380	-81	0.08	150	
1305	3 3/4	1.18	2.6	17.32	7.00	0.379	-83	0.01	150	
1310	4 1/4	1.18	2.4	17.32	7.00	0.380	-86	0.00	150	
1315	4 1/2	1.18	2.1	17.30	7.01	0.380	-86	0.00	150	

Notes: Turbidity is all over the place from 4.6 to over 100. Turned pump up → turbidity dropped to teens. Water has been consistently clear

Checked by: Date:

Sampled at 1315

50389

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1210
Well Number: MW-BGC-6A
Sheet 1 of 1

Sampler Name: Jim
Date: 11-20-08
Well Location Description: N/W Corner of Site
Weather Conditions: Sunny, 50's

Sample Tubing Type: Teflon Teflon Lined Other: Poly
Analyzer Type: Horiba U-22
Analyzer ID No.: M015-08
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: Geo Pump 5008-39
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See CoC

Total Well Depth (FT): 15.08
Depth to Water (FT) - 1.78
Water Column (FT) = 13.30
Gal/Ft of Casing x N/A
Casing Volume (Gal) =
No.of Volumes min.(3) x
Purge Volume (Gal) =

Low Flow

Intake: 10.08'

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	~~0.1631~~
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:
Time On: 1250
Flow Rate (gpm): 200 mL/min
Pump Time (min): 50
Vol. Purged (gals): ~3.5

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal): N/A
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1250	–	1.78	START Pump							
1255	–	1.84	0.0	17.5	6.21	0.386	222	6.94	200	Clear Water
1300	~0.25	1.88	'0.0'	17.7	6.19	0.401	221	6.47	"	
1305	~0.75	1.90	'0.0'	17.8	6.16	0.375	223	6.38	"	
1310	~1.50	1.91	'0.0'	17.5	6.16	0.364	223	6.31	"	
1315	~2.00	1.92	'0.0'	17.6	6.15	0.354	225	5.74	"	
1320	~2.50	1.92	'0.0'	17.5	6.14	0.353	225	5.39	"	
1325	~3.00	1.92	'0.0'	17.5	6.14	0.353	227	5.40	"	
1330	~3.50	1.92	'0.0'	17.0	6.13	0.352	228	5.39	"	
1335	Well Stable; Disconnect Horiba									
1340	Sample Well									

11/20/08

Notes: No DO issues on this perimeter well (as compared to 4 existing interior)

Checked by: Date:

50390

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1210
Well Number: MW-B6C-6B
Sheet ___ of ___

Sampler Name: JMB
Date: 11-24-08
Well Location Description: NW corner
Weather Conditions: Sunny 40's

Sample Tubing Type: Teflon Teflon Lined Other: Poly
Analyzer Type: Horiba U-22
Analyzer ID No.: M075-03
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: Geo Pump 5008-54
Bailer Type: Teflon SS Other:

Laboratory Parameters:
See COC

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	42.35		
Depth to Water (FT) -	~~1.77~~ 1.97	1 in	0.0408
Water Column (FT) =	40.38	2 in	0.1631
Gal/Ft of Casing x	0.1631	4 in	0.6524
Casing Volume (Gal) =	6.59	6 in	1.4680
No.of Volumes min.(3) x		8 in	2.6097
Purge Volume (Gal) =	NA	10 in	4.0776
		12 in	5.8718

Intake! 37.35

Pump:
Time On: 815
Flow Rate (gpm):
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

NA

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
815	-	1.97	START PUMP							
820	~0.10	1.98	15.9	14.88	5.43	0.322	114	3.33	225	Clear water
825	~0.25	1.98	25.1	15.30	5.43	0.310	112	1.55	"	Drained flow cell
830	~1.0	1.99	6.5	15.61	5.35	0.300	124	2.81	"	
835	~1.50	1.99	9.1	15.37	5.30	0.300	128	1.03	"	
840	2.00	1.99	8.7	15.37	5.20	0.299	136	0.78	"	
845	2.50	1.99	7.8	15.38	5.11	0.294	147	0.47	"	
850	~3.00	1.99	6.9	15.98	5.11	0.293	148	0.40	"	
855	~4	1.99	5.9	5.10	16.38	0.293	149	0.40	"	
900	Well Stable; Disconnect Horiba									
905	Sample Well									
Sampled well as a DUP			930							

11/24/08

Notes:

Checked by: Date:

50391

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552081210
Well Number: MW-BGC-7A
Sheet ___ of ___

Sampler Name: Ben Grossel
Date: 12/2/08
Well Location Description:
Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined ~~Other~~
Analyzer Type: Horiba U22
Analyzer ID No.:
Pump Type: Sub. Cent. ~~Perist.~~ Other:
Pump ID No.:
Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT) : 14.37	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) - 2.60	1 in	0.0408
Water Column (FT) =	2 in	0.1631
Gal/Ft of Casing x	4 in	0.6524
Casing Volume (Gal) =	6 in	1.4680
No.of Volumes min.(3) x	8 in	2.6097
Purge Volume (Gal) =	10 in	4.0776
	12 in	5.8718

Pump:
Time On: 1240
Flow Rate (gpm):
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( ) mS/cm	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1240	0	2.60	—	—	—	—	—	—	—	
1245	<1/4	2.60	13.2	13.70	5.11	0.168	152	11.94	50	
1250	1/4	2.60	5.2	14.53	5.07	0.172	157	6.62	50	
1255	<1/2	2.60	5.6	15.04	5.05	0.173	161	6.33	50	
1300	1/2	2.60	0.0	15.47	5.04	0.173	162	6.41	50	
1305	<3/4	2.60	0.0	15.59	5.03	0.173	164	6.51	50	
1310	3/4	2.60	0.0	15.91	5.02	0.173	165	6.51	50	

Notes: Sampled at 1310

Checked by: Date:

50392

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552081210
Well Number: MW-BGG-7B
Sheet ___ of ___

Sampler Name:
Date: 12/2/08
Well Location Description:
Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horiba U22
Analyzer ID No.:
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.:
Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT) : 42.45
Depth to Water (FT) - 1.50
Water Column (FT) =
Gal/Ft of Casing x
Casing Volume (Gal) =
No.of Volumes min.(3) x
Purge Volume (Gal) =

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:
Time On: 1150
Flow Rate (gpm):
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( ) mS/cm	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1150	0	1.50	—	—	—	—	—	—	—	
1155	<1/4	1.53	36.5	16.87	5.85	0.145	125	3.01	50	
1200	1/4	1.52	12.2	17.67	5.74	0.146	85	1.43	50	
1205	<1/4	1.52	11.1	17.19	5.78	0.147	63	1.32	50	
1210	1/4	1.52	7.3	17.07	5.80	0.146	60	1.36	50	
1215	<3/4	1.52	7.9	16.34	5.78	0.143	68	1.39	50	
1220	3/4	1.52	8.0	15.11	5.73	0.147	67	1.37	50	

Notes: Sampled at 1220

Checked by: Date:

50393

12-4-08

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1210
Well Number: MW-BGC-8A
Sheet 1 of 1

Sampler Name: JMS
Date: 12-4-08
Well Location Description: S border
Weather Conditions: Sunny 50's

Sample Tubing Type: Teflon Teflon Lined Other: poly
Analyzer Type: Horiba U-22
Analyzer ID No.: m015-09
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: Pne # 12214
Bailer Type: Teflon SS Other:

Laboratory Parameters: See COC

Total Well Depth (FT): 22.22
Depth to Water (FT) - 9.53
Water Column (FT) = 12.69
Gal/Ft of Casing x
Casing Volume (Gal) = N/A
No.of Volumes min.(3) x
Purge Volume (Gal) =

Low flow

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

pump intake @ 17'

Pump:
Time On: 1035
Flow Rate (gpm): 125 mL/min
Pump Time (min): 40
Vol. Purged (gals): ~1.5

Bailer:
Bailer Vol. (gal):
Required Pulls: N/A
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1035	-	9.53	START PUMP							
1040	~0.1	9.55	14.0	15.3	3.70	0.966	245	8.03	125	Clear water
1045	~0.2	9.55	12.5	15.7	3.77	2.55	264	0.00	"	
1050	~0.5	9.55	7.7	15.7	3.85	1.73	263	0.00	"	
1055	~0.7	9.55	6.3	15.8	3.97	1.64	262	0.00	"	
1100	~1.0	9.55	8.4	15.9	3.98	1.63	260	0.00	"	
1105	~1.2	9.55	7.9	16.0	3.98	1.63	260	0.00	"	
1110	well	stable; Discontinue Horiba								
1115	Sample	well								

12/4/08

Notes: - Low DO throughout purging.

Checked by: Date:

50394

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Low Flow Well Purge and Sampling Field Sheet

Project Number:	Well Number:	Sheet ___ of ___
3552-08-1210	MW-BGC-8B	

Sampler Name: JMB
Date: 12-4-08

Well Location Description: SW perimeter
Weather Conditions: Sunny 40's

Sample Tubing Type: Teflon Teflon Lined Other: Poly
Analyzer Type: Horiba U22
Analyzer ID No.: M015-08
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: Pine #
Bailer Type: Teflon SS Other:

Laboratory Parameters: See COC

Total Well Depth (FT): 45.60
Depth to Water (FT) - 8.82
Water Column (FT) = 36.78
Gal/Ft of Casing x
Casing Volume (Gal) = N/A
No.of Volumes min.(3) x
Purge Volume (Gal) =

Low Flow

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

pump intake @ 40'

Pump:
Time On: 945
Flow Rate (gpm): 150 mL/min
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

N/A

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
945	–	8.82	START	PUMP						
950	~0.1	8.91	85.8	13.9	6.17	0.236	69	0.00	150	
955	~0.2	8.91	76.1	14.5	6.33	0.727	15	0.00	"	
1000	~0.3	8.91	75.8	14.4	6.39	0.670	-1	0.00	"	
1005	~0.5	8.91	52.0	15.0	6.44	0.561	-25	0.00	"	
1010	~0.7	8.91	50.9	15.2	6.43	0.411	-45	0.00	"	
1015	~0.8	8.91	53.4	15.2	6.44	0.410	-45	0.00	"	

Turbidity is not dropping well needs to be re-developed.

Notes:
* No sample collected on 12/4/08 JMB 12/4/08

Checked by: Date:

757-487-0066 Mike Young

50395

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Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-B6C-8B

Sheet ___ of ___

Sampler Name:

Date: 12-8-09

Well Location Description:

Weather Conditions:

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type:

Analyzer ID No.:

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.:

Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT) : 9.00	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) - 9.03	1 in	0.0408
Water Column (FT) =	2 in	0.1631
Gal/Ft of Casing x	4 in	0.6524
Casing Volume (Gal) =	6 in	1.4680
No.of Volumes min.(3) x	8 in	2.6097
Purge Volume (Gal) =	10 in	4.0776
	12 in	5.8718

Pump:

Time On: 1420

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time 1420 Pump	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1420	–	9.03	START PUMP							
1425	~0.1	9.05	49.9	13.14	6.26	0.304	185	2.47	200	
1430	~0.25	9.05	45.5	14.43	6.45	0.296	37	0.57	"	
1435	~0.5	9.05	26.2	15.01	6.60	0.296	-23	0.29	"	
1440	~0.75	9.05	9.4	15.21	6.67	0.297	-49	0.25	"	
1445	~1.0	9.05	8.0	15.40	6.67	0.297	-56	0.19	"	
1450	~1.25	9.05	0.3	15.46	6.66	0.296	-61	0.18	"	
1455	~1.5	9.05	0.0	15.36	6.65	0.295	-66	0.00	"	
1500 ~~1600~~	~2.0	9.05	0.0	15.52	6.65	0.294	-68	0.00	"	
1505	~2.5	9.05	0.0	15.72	6.65	0.293	-69	0.00	"	
1510	Well Stable; Disconnect Pump									
1515	Sample Well									

Notes:

Checked by: Date:

50396

12-4-08

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1710
Well Number: MW-66C-9A
Sheet ___ of ___

Sampler Name: [illegible]
Date: 12-04-08
Well Location Description: S borders
Weather Conditions: Sunny 50's

Sample Tubing Type: Teflon Teflon Lined Other: poly
Analyzer Type: Horiba U-22
Analyzer ID No.: M015-08
Pump Type: Sub. Cent. ~~Perist.~~ Other:
Pump ID No.: Pike # 12214
Bailer Type: Teflon SS Other:

Laboratory Parameters: See COC

Total Well Depth (FT): 23.00
Depth to Water (FT) - 7.95
Water Column (FT) = 15.05
Gal/Ft of Casing x N/A
Casing Volume (Gal) = N/A
No.of Volumes min.(3) x N/A
Purge Volume (Gal) = N/A

Low Flow

Pump Intake @ 18'

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:
Time On:
Flow Rate (gpm):
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal): N/A
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1250	–	7.95	START PUMP							
1255	~0.1	7.96	21.3	16.4	6.54	0.342	-43	0.00	200	Clear water
1300	~0.25	7.97	15.6	16.4	6.49	2.13	-48	0.00	"	
1305	~0.5	7.97	9.5	16.1	6.47	0.735	-50	0.00	"	
1310	~0.75	7.97	6.5	16.2	6.46	0.495	-53	0.00	"	
1315	~1.0	7.97	0.8	16.2	6.45	0.456	-53	0.00	"	
1320	~1.25	7.97	2.7	16.3	6.45	0.455	-56	0.00	"	
1325	~1.5	7.97	1.8	16.5	6.44	0.455	-56	0.00	"	
1330	Well Stable, disconnect Horiba									
1335	Sample Well									

Notes:

Checked by: Date:

50397

12-4-09

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1210
Well Number: MW-BGC-9B
Sheet 1 of 1

Sampler Name: MJS
Date: 12-4-08
Well Location Description: S. Border
Weather Conditions: Sunny 50's

Sample Tubing Type: Teflon Teflon Lined ~~Other:~~ poly
Analyzer Type: Horiba U-22
Analyzer ID No.: M015-08
Pump Type: Sub. Cent. ~~Perist.~~ Other:
Pump ID No.: Pine # 12214
Bailer Type: Teflon SS Other:

Laboratory Parameters: see COC

Total Well Depth (FT): 42.25
Depth to Water (FT) - 7.51
Water Column (FT) = 34.74
Gal/Ft of Casing x
Casing Volume (Gal) =
No.of Volumes min.(3) x
Purge Volume (Gal) =

Low Flow

Pump intake: @ 37.25'

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	~~0.1631~~
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:
Time On:
Flow Rate (gpm):
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	± Turbidity (NTU)	± Temp (C)	± pH	± Cond. ( )	± ORP (mV)	± DO (mg/L)	± Flow Rate (mL/m)	Remarks
1155	-	7.51	START PUMP							
1200	~0.1	7.53	3.9	16.0	6.62	0.312	36	0.52	200	clear water
1205	~0.25	7.53	2.4	16.2	6.76	0.378	4	0.00	"	
1210	~0.5	7.53	2.3	16.2	6.83	0.472	-11	0.00	"	
1215	~0.75	7.53	1.9	16.2	6.84	0.455	-19	0.00	"	
1220	~1.0	7.53	0.0	16.2	6.84	0.445	-21	0.00	"	
1225	~1.25	7.53	0.0	16.2	6.84	0.445	-21	0.00	"	
1230	~1.5	7.53	0.0	16.3	6.84	0.444	-22	0.00	"	
1235	Well stable; disconnect Horiba									
1240	Sample well									

Notes: - no DO measured

12/4/08

Checked by: Date:

50398

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Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1210
Well Number: MW-36C-10A
Sheet 1 of 1

Sampler Name: JMB
Date: 12-4-08
Well Location Description: SE
Weather Conditions: Sunny 50's

Sample Tubing Type: Teflon Teflon Lined ~~Other:~~ poly
Analyzer Type: Horiba U-22
Analyzer ID No.: M015-08
Pump Type: Sub. Cent. ~~Peristal.~~ Other:
Pump ID No.: Pine # 12214
Bailer Type: Teflon SS Other:

Laboratory Parameters:
See COC

Total Well Depth (FT): 23.02
Depth to Water (FT) - 8.68
Water Column (FT) = 14.34
Gal/Ft of Casing x
Casing Volume (Gal) = N/A
No.of Volumes min.(3) x
Purge Volume (Gal) =

low flow

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

pump intake

Pump:
Time On:
Flow Rate (gpm):
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

N/A

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1410	-	8.68	START PUMP							
1415	~0.1	8.71	13.8	16.5	6.45	0.456	-60	0.00	200	clear water
1420	~0.25	8.71	12.7	16.4	6.43	0.826	-75	0.00	"	
1425	~0.5	8.71	5.0	16.4	6.42	0.804	-79	0.00	"	
1430	~0.75	8.71	2.7	16.6	6.41	0.753	-78	0.00	"	
1435	~1.0	8.71	6.4	16.6	6.40	0.690	-80	0.00	"	
1440	~1.5	8.71	2.3	16.5	6.41	0.615	-81	0.00	"	
1445	~1.75	8.71	0.0	16.6	6.41	0.614	-83	0.00	"	
1450	~2.0	8.71	0.0	16.6	6.40	0.615	-81	0.00	"	
1455	Well stable; Disconnect Horiba									
1500	Sample well									

12/4/08

Notes: - no DO measured.

Checked by: Date:

50399

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Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-BGC-10B

Sheet ___ of ___

Sampler Name: Ben Grosser

Date: 12/4/08

Well Location Description:

Weather Conditions: Sunny, Warm

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type: Horiba U-22

Analyzer ID No.: M015-03

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.: 5008-39

Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT) : 35

Depth to Water (FT) - 8.15

Water Column (FT) =

Gal/Ft of Casing x

Casing Volume (Gal) =

No.of Volumes min.(3) x

Purge Volume (Gal) =

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:

Time On: 1340

Flow Rate (gpm):

Pump Time (min):

Vol. Purged (gals):

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1340	0	8.15	–	–	–	–	–	–	–	On
1345	<1/4	8.19	0.0	16.26	7.21	0.589	-34	3.52	50	
1350	<1/2	8.20	0.0	16.30	7.14	0.591	-71	2.99	100	
1355	<3/4	8.20	0.0	16.14	7.16	0.591	-77	2.94	100	
1400	<1	8.20	0.0	16.25	7.17	0.591	-79	2.87	100	
1405	<1/4	8.20	0.0	16.20	7.18	0.592	-81	2.87	100	

Notes:

Sampled at 1405

Checked by: Date:

50400

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Low Flow Well Purge and Sampling Field Sheet

Project Number: 355208120
Well Number: MW-BGC-11A
Sheet ___ of ___

Sampler Name: Ben Grosser
Date: 12/4/08
Well Location Description:
Weather Conditions: Sunny 40s

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: M015-03
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: 5008-39
Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT) : 22.87
Depth to Water (FT) - 8.55
Water Column (FT) =
Gal/Ft of Casing x
Casing Volume (Gal) =
No.of Volumes min.(3) x
Purge Volume (Gal) =

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:
Time On: 1030
Flow Rate (gpm):
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU) ±	Temp (C) ±	pH ±	Cond. ( ) ±	ORP (mV) ±	DO (mg/L) ±	Flow Rate (mL/m) ±	Remarks
1030	0	8.55	–	–	–	–	–	–	–	Pump On
1035	< 1/4	8.56	19.9	14.96	6.04	0.676	63	3.99	75	clear
1040	1/4	8.57	13.8	16.05	6.01	0.672	60	3.41	75	"
1045	< 1/2	8.57	8.8	15.38	6.00	0.684	57	0.86	50	"
1050	1/2	8.56	7.2	15.24	5.99	0.683	55	0.67	50	"
1055	< 3/4	8.56	7.4	15.33	5.99	0.681	52	0.52	50	"
1100	3/4	8.56	7.4	15.54	5.99	0.680	51	0.44	50	"
1105	< 1	8.56	0.5	15.69	5.98	0.681	49	0.28	50	"
1110	1	8.56	0.0	15.68	5.98	0.684	48	0.29	50	"
1115	1 1/4	8.56	0.0	15.83	5.98	0.684	47	0.31	50	"

Notes:
Sampled at 1115

Checked by: Date:

50401

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 5552081210
Well Number: MW-BGC-11B
Sheet ___ of ___

Sampler Name: Ben Grosser
Date: 12/4/08
Well Location Description:
Weather Conditions: Sunny, cool

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horiba
Analyzer ID No.: M015-03
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: 5008-39
Bailer Type: Teflon SS Other:

Laboratory Parameters:

Total Well Depth (FT): 35.94
Depth to Water (FT) - 8.30
Water Column (FT) =
Gal/Ft of Casing x
Casing Volume (Gal) =
No.of Volumes min.(3) x
Purge Volume (Gal) =

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:
Time On: 930
Flow Rate (gpm):
Pump Time (min):
Vol. Purged (gals):

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	± Turbidity (NTU)	± Temp (C)	± pH	± Cond. ( ) mS/cm	± ORP (mV)	± DO (mg/L)	± Flow Rate (mL/m)	Remarks
930	0	8.30	–	–	–	–	–	–	–	Pump on
935	<1/4	8.36	0.0	12.72	6.12	0.703	63	6.54	100	clear
940	1/4	8.36	0.0	14.16	6.39	0.688	30	2.56	100	"
945	<1/2	8.36	2.0	15.27	6.43	0.682	-6	1.26	75	"
950	1/2	8.36	2.0	15.53	6.48	0.683	-20	1.16	75	"
955	3/4	8.36	5.9	15.69	6.46	0.680	-24	1.35	75	"
1000	<1	8.36	2.1	15.97	6.53	0.672	-26	3.80	75	
1005	1	8.36	2.0	15.46	6.60	0.678	-33	1.36	75	
1010	1 1/4	8.36	0.0	15.50	6.63	0.675	-36	1.21	75	
1015	<1 1/2	8.36	0.0	15.48	6.63	0.674	-39	1.26	75	

Notes:
Sampled at 1015

Checked by: Date:

50402

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-08-1210
Well Number: MW-B6C-12A
Sheet 1 of 1

Sampler Name: [illegible]
Date: 12-5-08
Well Location Description: B border
Weather Conditions: cloudy; 40's

Sample Tubing Type: Teflon Teflon Lined Other: poly
Analyzer Type: Horiba U22
Analyzer ID No.: M015-03
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: Pine # 10214
Bailer Type: Teflon SS Other:

Laboratory Parameters: See COC

Total Well Depth (FT) :
Depth to Water (FT) - 7.73
Water Column (FT) =
Gal/Ft of Casing x
Casing Volume (Gal) =
No.of Volumes min.(3) x
Purge Volume (Gal) =

N/A Low Flow

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump intake

Pump:
Time On: 1010
Flow Rate (gpm): 200 ml/min
Pump Time (min): 45
Vol. Purged (gals): ~2

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:
N/A

Sampling Parameters

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	± Turbidity (NTU)	± Temp (C)	± pH	± Cond. ( )	± ORP (mV)	± DO (mg/L)	± Flow Rate (mL/m)	Remarks
1010	—	7.73	START PUMP							
1015	~0.1	7.75	35.2	15.00	5.64	0.368	43	0.72	200	
1020	~0.5	7.75	24.3	15.25	5.60	0.369	32	0.00	"	
1025	~0.75	7.75	15.9	15.62	5.60	0.368	27	0.00	"	Clear water
1030	~1.0	7.75	10.9	15.31	5.61	0.369	24	0.00	"	
1035	~1.5	7.75	8.2	15.22	5.62	0.366	20	0.00	"	
1040	~1.75	7.75	7.6	15.50	5.63	0.363	19	0.00	"	
1045	~2.0	7.75	6.2	15.22	5.63	0.366	17	0.00	"	
1050	Well stable; Disconnect Horiba									
1055	Sample Well									
1115	Sampled well as a Dup									

Notes:

Checked by: Date:

50403

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:	Well Number:	Sheet 1 of 1
3552-08-1210	MW-B6C-12B	

Sampler Name: JMB
Date: 12-5-08
Well Location Description: E border
Weather Conditions: Cloudy; 40's

Sample Tubing Type: Teflon Teflon Lined Other: Poly
Analyzer Type: Horiba U22
Analyzer ID No.: M015-03
Pump Type: Sub. Cent. Perist. Other:
Pump ID No.: Pine # 12214
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See COC

Total Well Depth (FT) :
Depth to Water (FT) - 7.98
Water Column (FT) =
Gal/Ft of Casing x
Casing Volume (Gal) = NA
No.of Volumes min.(3) x
Purge Volume (Gal) =

low flow

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

pump intake @

Pump:
Time On: 910
Flow Rate (gpm): 200 mL/min
Pump Time (min): 45
Vol. Purged (gals): ~1.5

Bailer:
Bailer Vol. (gal):
Required Pulls: NA
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
910	–	7.98	START PUMP							
915	~0.1	8.00	33.1	14.76	6.15	0.514	39	1.56	200	fairly clear –
920	~0.25	8.00	31.1	15.36	6.18	0.513	12	0.16	"	will watch
925	~0.5	8.00	18.8	15.23	6.26	0.515	25	0.00	"	
930	~0.75	8.00	11.6	15.38	6.14	0.511	4	0.00	"	turbidity
935	~1.0	8.00	9.1	15.37	6.14	0.513	4	0.00	"	looks good
940	~1.25	8.00	6.4	15.35	6.14	0.514	3	0.00	"	
945	~1.5	8.00	7.8	15.40	6.14	0.514	4	0.00	"	
950	Well stable; Disconnect Horiba									
955	Sample Well									

12/5/08

Notes:

Checked by: Date:

50404

Engineer Proving Ground U.S. Army Garrison Fort Belvoir, Virginia 2005 BRAC Environmental Restoration Program	PROJECT NUMBER 3572-09-1263	WELL NUMBER MW-B6C-13	SHEET 1 OF 1
	Development WELL PURGE AND SAMPLING FIELD SHEET		

		CASING DIAMETER	GAL/FT OF CASING
DEPTH TO WATER (FT): = 8.19'			
WELL DEPTH (FT): 23.19'		2 IN.	0.1632
WATER COLUMN (FT): = 15.00		4 IN.	0.6528
GAL/FT OF CASING x 0.1632		6 IN.	1.4688
CASING VOLUME (GAL) = 2.45		8 IN.	2.611
NO. OF VOLUMES min.(3) ~10		10 IN.	4.0797
PURGE VOLUME (GAL) = 24.5 gal		12 IN.	5.8748

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. PERIST. | OTHER:
TIME ON: 945
FLOW RATE (gpm): Whale pump
PUMP TIME (min): 50
VOL. PURGED (gals): 55

BAILER : TEFLON, SS ,OTHER:
BAILER VOL.. (gal) .25 / .33
REQUIRED PULLS:
VOL. PURGED (gals):
OTHER:

NA

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (µmhos/cm)	ORP mV	Dissolved Oxygen mg/L	Remarks (color, odor, sheen, sediment, etc.)
945	—	8.19							Surged well
	15	—	460	18.75	4.98	3.96	37	1.72	light grey
	20	—	5.0	16.72	5.12	4.52	31	2.00	Surged well
	25	—	"	16.84	5.16	3.12	30	2.33	
	30	—	524.0	16.21	5.41	3.59	17	2.45	
	35	—	143.0	16.15	5.52	3.50	12	2.02	Surged well
	40	—	72.1	16.05	5.69	2.19	1	2.38	
	45	—	54.5	16.27	5.77	2.64	-4	2.27	
	50	—	44.3	16.01	5.72	2.53	-2	1.94	
	55	—	26.5	16.10	5.69	2.09	-4	3.24	
1035	Stopped	pump							

6/9/09

Attachment 6 well purge form

50405

Engineer Proving Ground U.S. Army Garrison Fort Belvoir, Virginia 2005 BRAC Environmental Restoration Program	PROJECT NUMBER 3552-09-1263	WELL NUMBER MW-BGC-14	SHEET 1 OF 1
	Development	WELL PURGE AND SAMPLING FIELD SHEET	

		CASING DIAMETER	GAL/FT OF CASING
DEPTH TO WATER (FT): =	9.21		
WELL DEPTH (FT):	21.16	2 IN.	0.1632
WATER COLUMN (FT): =	11.95	4 IN.	0.6528
GAL/FT OF CASING x	0.1632	6 IN.	1.4688
CASING VOLUME (GAL) =	1.95	8 IN.	2.611
NO. OF VOLUMES min.(3) x	10	10 IN.	4.0797
PURGE VOLUME (GAL) =	19.5	12 IN.	5.8748

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. PERIST. | chale pump | OTHER:
TIME ON: 1045
FLOW RATE (gpm): -
PUMP TIME (min): 50
VOL. PURGED (gals): 65

BAILER : TEFLON, SS ,OTHER:
BAILER VOL.. (gal) .25 / .33
REQUIRED PULLS:
VOL. PURGED (gals):
OTHER:

NA

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (µmhos/cm)	ORP mV	Dissolved Oxygen mg/L	Remarks (color, odor, sheen, sediment, etc.)
1045	-	9.21							surged well
	25	-	469.0	19.47	5.91	0.454	-9	1.88	
	30	-	-5.0	17.83	5.92	0.446	-9	2.01	surged well
	35	-	200.0	17.52	5.74	0.443	-2	2.27	
	40	-	-5.0	17.38	5.63	0.403	2	2.05	surged well
	45	-	377.0	17.36	5.63	0.429	4	2.07	
	50	-	509.0	17.28	5.71	0.679	-1	1.79	
	55	-	85.2	17.26	5.68	0.399	1	2.23	
	60	-	0.0	17.42	5.73	0.601	-3	2.40	
1135	65	-	0.0	17.01	5.80	0.778	-7	1.92	

6/9/09

Attachment 6 well purge form

50406

Engineer Proving Ground U.S. Army Garrison Fort Belvoir, Virginia 2005 BRAC Environmental Restoration Program	PROJECT NUMBER 3552-09-1263	WELL NUMBER MW-B6C-15	SHEET 1 OF 1
	Developing	WELL PURGE AND SAMPLING FIELD SHEET	

		CASING DIAMETER	GAL/FT OF CASING
DEPTH TO WATER (FT): =	5.29		
WELL DEPTH (FT):	16.09	2 IN.	0.1632
WATER COLUMN (FT): =	10.9	4 IN.	0.6528
GAL/FT OF CASING	x 0.1632	6 IN.	1.4688
CASING VOLUME (GAL) =	1.76	8 IN.	2.611
NO. OF VOLUMES min.(3) x	10	10 IN.	4.0797
PURGE VOLUME (GAL) =	17.6	12 IN.	5.8748

METHOD OF PURGING (circle one)

PUMP: SUB. CENT. PERIST. | Whale Pump OTHER
TIME ON: 1150
FLOW RATE (gpm):
PUMP TIME (min): 41.5
VOL. PURGED (gals): 25

BAILER : TEFLON, SS ,OTHER:
BAILER VOL.. (gal) .25 / .33
REQUIRED PULLS:
VOL. PURGED (gals):
OTHER:

NA

Time	Water Volume Discharged (gal)	Water Level (ft BTOC)	Turbidity (NTU)	Temperature (°C)	pH	Conductivity (µmhos/cm)	ORP mV	Dissolved Oxygen mg/L	Remarks (color, odor, sheen, sediment, etc.)
1150	-	5.29							
1210	20		558	21.05	5.94	2.58	-11	1.59	cloudy, gray
1213	25		29.3	19.56	6.08	8.64	-14	1.19	rel. clear
1217	30		995	19.31	5.84	2.52	-5	1.89	cloudy, gray
1222	40		174	19.18	6.04	5.74	-17	1.56	rel. clear
1228	50		0.0	18.78	6.12	5.59	-21	1.71	" "
1231	55		0.0	19.68	6.10	6.00	-21	2.02	" "

purged dry

Attachment 6 well purge form

50407

6-16-09

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-09-1263
Well Number: MW-BGC-5A
Sheet 1 of 1

Sampler Name: JMB
Date: 6-16-09
Well Location Description: N perimeter
Weather Conditions: Overcast, 70s

Sample Tubing Type: Teflon ~~Teflon-Lined~~ Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: 01065
Pump Type: Sub. Cent. ~~Perist.~~ Other:
Pump ID No.: 04837
Bailer Type: Teflon SS Other: N/A

Laboratory Parameters: See COC

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	15		
Depth to Water (FT) -	1.30	1 in	0.0408
Water Column (FT) =	13.70	2 in	0.1631
Gal/Ft of Casing x	N/A	4 in	0.6524
Casing Volume (Gal) =		6 in	1.4680
No.of Volumes min.(3) x		8 in	2.6097
Purge Volume (Gal) =		10 in	4.0776
		12 in	5.8718

Pump:
Time On: 955
Flow Rate (gpm): ~150 ml/min
Pump Time (min): ~1hr 15min
Vol. Purged (gals): ~3

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal): N/A
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
955	–	1.30	START	PUMP						
1000	–	1.30	94.8	18.63	6.98	0.90	-73	4.25		
1005	Had pump issue w/ tubing. Had to disconnect pump + replace									
1010	tubing. Started pump @ 1015									
1020	~0.25	1.30	107.0	19.74	7.17	0.889	-82	4.36	150	Slight orange tint
1025	~0.75	1.30	65.9	19.23	7.49	2.03	-97	3.51	"	
1030	~1	1.30	46.7	19.40	7.56	2.69	-101	3.39	"	
1035	~1.5	1.30	30.4	19.40	7.71	2.69	-109	3.21	"	
1040	~1.75	1.30	19.9	19.58	7.74	2.70	-110	3.14	"	
1045	~2	1.30	11.5	19.68	7.84	2.32	-116	3.07	"	
1050	~2.5	1.30	8.6	19.61	7.85	2.45	-117	3.04	"	
1055	~2.75	1.30	8.1	19.37	7.87	2.46	-118	3.04	"	
1100	~3	1.30	8.5	19.25	7.87	2.47	-119	3.03	"	
1105	Well stable; Disconnect Horiba									
1110	Sample well									

6/16/09

Notes:

Checked by: Date:

50408

6-16-09

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552091263
Well Number: MW-BGL-5B
Sheet 1 of 1

Sampler Name: Randall Morrison
Date: 6-16-09
Well Location Description: North Perimeter
Weather Conditions: Overcast 72°F

Sample Tubing Type: Teflon (Teflon Lined) Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: 12364
Pump Type: Sub. Cent. (Perist.) Other:
Pump ID No.: 01129
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See COC

Total Well Depth (FT) (RM) ~~36~~ 35
Depth to Water (FT) - 1.15
Water Column (FT) = 33.5
Gal/Ft of Casing x .163
Casing Volume (Gal) = 5.46
No.of Volumes min.(3) x 3
Purge Volume (Gal) = 16.4

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
(2 in)	(0.163)
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

pump @ 30

Pump:
Time On: 0905
Flow Rate (gpm): 130 ml/min
Pump Time (min): 85 min
Vol. Purged (gals): ~2 gal

Bailer:
Bailer Vol. (gal): NA
Required Pulls: NA
Vol. Purged(gal): NA
Other:

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU) ±	Temp (C) ±	pH ±	Cond. (S/cm) ±	ORP (mV) ±	DO (mg/L) ±	Flow Rate (mL/m) ±	Remarks
0905		1.15	0.0					7		slightly turbid
0910 ~~0910~~	~.1	1.16	0.0	22.40	6.15	0.409	-115	2.87	45	
0915	~.1	1.16	7.4	18.82	6.33	0.422	-128	1.50	≈	
0920	~.1	1.18	23.7	18.58	6.38	0.443	-136	0.71	150	
0925	~.1	1.20	11.5	18.49	6.39	0.537	-140	0.44	~150	
0930	~.1	1.20	110.0	18.30	6.40	0.520	-142	0.25	130	
0935	~.1	1.17	47.7	18.78	6.42	0.469	-143	0.22	≈	
0940	~.1	1.17	42.4	18.78	6.44	0.461	-142	0.20	145	
0945	~.1	1.17	38.9	18.84	6.46	0.439	-143	0.20	≈	
0950	~.1	1.17	53.6	18.83	6.48	0.420	-143	0.17	≈	
0955	~.1	1.18	88.7	18.89	6.50	0.401	-143	0.15	145	
1000	~.1	1.17	100.0	19.65	6.52	0.467	-142	0.15	140	
1005	~.1	1.16	42.0	20.21	6.53	0.381	-139	0.25	130	
1010	~.1	1.16	27.1	20.32	6.55	0.387	-137	0.28	130	
1015	~.1	1.16	10.8	20.33	6.55	0.389	-134	0.27	≈	
1020	~.2	1.17	5.7	20.65	6.58	0.389	-134	0.28	130	
1025	~.2	1.16	6.0	20.62	6.59	0.389	-134	0.27	≈	
1030	~.2	1.16	5.3	20.74	6.59	0.388	-134	0.28	≈	
- well stable			stabilized							
- disconnected Horiba										
Sampled @ 1035										

Notes: sampled @ 1035

Checked by: Date:

50409

6-16-09

MACTEC

Low Flow Well Purge and ~~Sampling~~ Field Sheet

Project Number: 3552-09-1263
Well Number: MW-BGL-6A
Sheet ___ of ___

Sampler Name: JMJ
Date: 6-16-09
Well Location Description: NW corner
Weather Conditions: Overcast 70s

Sample Tubing Type: Teflon ~~Teflon Lined~~ Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: 01065
Pump Type: Sub. Cent. ~~Peristal.~~ Other:
Pump ID No.: 04837
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: Fe COC

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	~15		
Depth to Water (FT) -	2.28	1 in	0.0408
Water Column (FT) =		2 in	0.1631
Gal/Ft of Casing x	NA	4 in	0.6524
Casing Volume (Gal) =		6 in	1.4680
No.of Volumes min.(3) x		8 in	2.6097
Purge Volume (Gal) =		10 in	4.0776
		12 in	5.8718

Pump:
Time On: 1410
Flow Rate (gpm): 150 ml/min
Pump Time (min): 50 min
Vol. Purged (gals): 0.5 gal

Bailer:
Bailer Vol. (gal):
Required Pulls: NA
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1410	-	2.28	START PUMP							
1415	~0.1	2.45	0.0	18.78	6.61	0.727	-54	4.39	150	clear water
1420	~0.25	2.44	0.0	19.21	6.89	0.561	-65	3.57	"	
1425	~0.75	2.45	0.0	19.32	7.05	0.998	-75	3.30	"	
1430	~1	2.45	0.0	19.44	7.17	1.60	-82	3.34	"	
1435	~1.5	2.44	0.0	19.63	7.39	1.69	-94	3.41	"	
1440	~1.75	2.44	0.0	19.68	7.45	1.66	-97	3.40	"	
1445	~2	2.44	0.0	19.86	7.46	1.69	-100	3.39	"	
1450	~2.5	2.45	0.0	19.88	7.45	1.70	-101	3.39	"	
1455	Well stable		disconnect Horiba							
1500	Sample Well									

Notes:

Checked by: Date:

50410

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552091263
Well Number: MW-BGC-6B
Sheet 1 of 1

Sampler Name: Randall Morrison
Date: 6/16/09
Well Location Description: North West Corner
Weather Conditions: Cloudy Breezy 72°F

Sample Tubing Type: Teflon (Teflon Lined) Other:
Analyzer Type: Horiba - U22
Analyzer ID No.: 12364
Pump Type: Sub. Cent. (Peristal.) Other:
Pump ID No.: 01129
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See COC

Total Well Depth (FT):	42	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) -	2.21	1 in	0.0408
Water Column (FT) =	39.8	2 in	0.1631
Gal/Ft of Casing x	.163	4 in	0.6524
Casing Volume (Gal) =	6.49	6 in	1.4680
No.of Volumes min.(3) x		8 in	2.6097
Purge Volume (Gal) =	NA	10 in	4.0776
		12 in	5.8718

pump intake @ 37'

Pump:
Time On: 1415
Flow Rate (gpm): 100 ml/min
Pump Time (min): 35 min
Vol. Purged (gals): ~.8 gal

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1415		2.22								No Flow out of cell
1420	~.1	2.22	124.0	19.93	4.54	0.331	147	4.26	100	
1425	~.1	2.22	72.1	19.81	4.65	0.323	159	1.86	≈	Clear
1430	~.1	2.26	0.0	20.46	4.61	0.305	149	0.48	100	
1435	~.1	2.21	0.0	20.75	4.57	0.302	150	0.41	≈	
1440	~.1	2.21	0.0	21.39	4.57	0.302	148	0.45	100	
1445	~.1	2.21	0.0	21.90	4.58	0.301	147	0.47	≈	
1450	~.1	2.21	0.0	21.76	4.59	0.302	147	0.49	100	
1455 ~~1505~~	~.1	2.21	0.0	21.72	4.58	0.302	147	0.48	≈	
- Stabilized @		1455								
- Disconnected		from	Horiba							
- Sampled		@ 1505								

Notes:

Checked by: Date:

50411

6-17-09

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:	Well Number:	Sheet ___ of ___
3552-09-1263	MW-BGC-7A	

Sampler Name: DWB
Date: 6-17-09

Well Location Description: W. Perimeter
Weather Conditions: overcast 70s

Sample Tubing Type: Teflon ~~Teflon Lined~~ Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: 01065
Pump Type: Sub. Cent. ~~Perist.~~ Other:
Pump ID No.: 04837
Bailer Type: Teflon SS Other: NA

Laboratory Parameters:
Gel LOC

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	15	1 in	0.0408
Depth to Water (FT) -	2.95	2 in	0.1631
Water Column (FT) =	12.05	4 in	0.6524
Gal/Ft of Casing x	NA	6 in	1.4680
Casing Volume (Gal) =		8 in	2.6097
No.of Volumes min.(3) x		10 in	4.0776
Purge Volume (Gal) =		12 in	5.8718

Pump:
Time On: 835
Flow Rate (gpm): 175 mL/min
Pump Time (min): 50
Vol. Purged (gals): ~2.5

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
835	–	2.95	START PUMP							
840	~0.1	2.97	0.01	18.39	7.40	0.274	-42	3.77	175	clear water
845	~0.25	2.97	1.5	18.62	7.80	0.244	-59	3.28	"	
850	~0.5	2.97	8.6	18.60	8.05	0.478	-72	3.10	"	
855	~0.75	2.97	8.5	18.55	8.27	0.92	-84	2.99	"	
900	~1.25	2.97	9.1	18.60	8.36	1.35	-93	2.93	"	
905	~1.5	2.97	7.9	18.60	8.51	1.44	-99	2.85	"	
910	~1.75	2.97	6.2	18.62	8.55	1.43	-102	2.84	"	
915	~2.5	2.97	8.3	18.61	8.56	1.42	-102	2.84	"	
920	Well Stable; Disconnect Horiba									
925	Sample Well									

6/17/09

Notes:

Checked by: Date:

50412

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552091263
Well Number: MW-BGC-78
Sheet 1 of 1

Sampler Name: Randall Manning
Date: 6/17/09
Well Location Description:
Weather Conditions: Drizzle, Overcast 72°F

Sample Tubing Type: Teflon (Teflon Lined) Other:
Analyzer Type: Horiba U-22 ~~12364~~
Analyzer ID No.: 12364 ~~01129~~
Pump Type: Sub. Cent. (Perist.) Other:
Pump ID No.: 01129
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See chain of custody

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT):	42		
Depth to Water (FT) -	2.25	1 in	0.0408
Water Column (FT) =	39.75	2 in	0.1631
Gal/Ft of Casing x	.1631	4 in	0.6524
Casing Volume (Gal) =		6 in	1.4680
No.of Volumes min.(3) x	N/A	8 in	2.6097
Purge Volume (Gal) =		10 in	4.0776
		12 in	5.8718

Pump @ 37'

Pump:
Time On: 0841
Flow Rate (gpm): 90 mL/min
Pump Time (min): 35 min
Vol. Purged (gals): ~.8 gal

Bailer:
Bailer Vol. (gal):
Required Pulls: N/A
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
0841		2.25		Pump started						
0845	~.1	2.25	24.2	19.58	5.69	0.194	-17	3.59	90	Clear
0850	~.2	2.25	0.0	19.62	5.75	0.181	-25	1.37	90	
0855	~.3	2.26	0.0	19.55	5.78	0.173	-27	0.85	≈	
0900	~.4	2.26	0.0	19.48	5.81	0.172	-29	0.67	≈	
0905	~.5	2.26	0.0	19.43	5.87	0.171	-32	0.54	90	
0910	~.6	2.25	0.0	19.39	5.88	0.170	-33	0.53	≈	
0915	~.8	2.25	0.0	19.38	5.89	0.170	-34	0.54		
Stabilized @ 0915										
Discontinued Hach										
Sampled @ 0925										

Notes:

Checked by: Date:

50413

6/16/09

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-09-1263
Well Number: MW-BGC-8A
Sheet ___ of _____

Sampler Name: JMB
Date: 6-16-09
Well Location Description: S. perimeter
Weather Conditions: overcast · 70's

Sample Tubing Type: Teflon ~~Teflon Lined~~ Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: 61065
Pump Type: Sub. Cent. ~~Perist.~~ Other:
Pump ID No.: 04837
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See COC

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	~20	1 in	0.0408
Depth to Water (FT) -	9.44	2 in	0.1631
Water Column (FT) =	10.56	4 in	0.6524
Gal/Ft of Casing x	NA	6 in	1.4680
Casing Volume (Gal) =		8 in	2.6097
No.of Volumes min.(3) x		10 in	4.0776
Purge Volume (Gal) =		12 in	5.8718

Pump:
Time On: 1225
Flow Rate (gpm): 175 mL/min
Pump Time (min): 50
Vol. Purged (gals): ~2

Bailer:
Bailer Vol. (gal):
Required Pulls: NA
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1225	-	9.44	START	PUMP						
1230	~0.1	9.45	0.0	17.28	7.00	4.50	-74	3.92	175	Clear water
1235	~0.25	9.45	0.0	17.29	6.93	2.30	-70	3.58	"	
1240	~0.5	9.45	0.0	18.43	6.53	2.34	-50	3.43	"	
1245	~0.75	9.45	0.0	18.89	6.45	2.29	-46	3.37	"	
1250	~1	9.45	0.0	18.93	6.45	2.46	-45	3.35	"	
1255	~1.25	9.45	0.0	19.01	6.44	2.49	-45	3.38	"	
1300	~1.5	9.45	0.0	19.27	6.43	2.50	-44	3.37	"	
1305	~1.75	9.45	0.0	19.26	6.43	2.50	-45	3.37	"	
1310	Well stable; disconnect Horiba									
1315	Sample well									

- Sampled well as a Dup ID = MW-BGC-Dup03

6/19/09

Notes: -MW-BGC-Dup03

Checked by: Date:

50414

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:	Well Number:	Sheet 1 of 1
3552-09-1263	MW-BGC-8B	

Sampler Name: Randall Morrison
Date: 6/16/09
Well Location Description: Southern Perimeter
Weather Conditions: Overcast 70°F

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: 12364
Pump Type: Sub. Cent. Perist Other:
Pump ID No.: 0429
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: Gel Col

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	44	1 in	0.0408
Depth to Water (FT) -	9.06	2 in	0.1631
Water Column (FT) =	35	4 in	0.6524
Gal/Ft of Casing x	.163	6 in	1.4680
Casing Volume (Gal) =	5.7	8 in	2.6097
No.of Volumes min.(3) x	NA	10 in	4.0776
Purge Volume (Gal) =		12 in	5.8718

Pump intake @ 39'

Pump: 1220
Time On: ~~35 min~~
Flow Rate (gpm): 100 mL/min
Pump Time (min): 35 min
Vol. Purged (gals): .6 gal

Bailer:
Bailer Vol. (gal): NA
Required Pulls: NA
Vol. Purged(gal): NA
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1220		9.06								
1225					6.30	0.321				Clear
		*Re calibrated			Back on @			1230*		
1230	~.1	9.06	0.0	18.88	5.69	0.381	-94	1.49	100	
1235	~.1	9.08	0.0	19.12	5.98	0.339	-101	0.50	≈	
1240	~.1	9.08	0.0	19.07	6.00	0.336	-102	0.45	≈	
1245	~.1	9.06	0.0	19.01	6.06	0.330	-104	0.29	100	
1250	~.1	9.06	0.0	19.00	6.08	0.329	-105	0.25	≈	
1255	~.1	9.06	0.0	19.02	6.09	0.329	-105	0.25		
Stabilized @ 1255										
Disconnected from Horiba										
sampled @ 1305										

Notes:

Checked by: Date:

50415

6-17-09

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-09-1263
Well Number: MW-B&C-9A
Sheet 1 of 1

Sampler Name: JMB
Date: 6-17-09
Well Location Description: Summer
Weather Conditions: Overcast 70s

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: 01005
Pump Type: Sub. Cent. ~~Perist.~~ Other:
Pump ID No.: 04837
Bailer Type: Teflon SS Other: NA

Laboratory Parameters:
See COC

Total Well Depth (FT) :	20	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) -	8.07	1 in	0.0408
Water Column (FT) =	11.93	2 in	0.1631
Gal/Ft of Casing x		4 in	0.6524
Casing Volume (Gal) =		6 in	1.4680
No.of Volumes min.(3) x		8 in	2.6097
Purge Volume (Gal) =		10 in	4.0776
		12 in	5.8718

Pump:
Time On: 1020
Flow Rate (gpm): 175 ml/min
Pump Time (min): 1hr 10min
Vol. Purged (gals): 3

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1020	-	8.07	START PUMP							
1025	~0.1	8.10	30.7	18.45	8.37	1.68	-93	4.69	175	Clear water
1030	~0.2	8.08	26.3	17.85	8.72	1.57	-110	3.19	≈	
1035	~0.3	8.09	20.9	17.81	8.78	1.71	-114	3.09	≈	
1040	~0.5	8.09	19.3	17.79	8.84	2.81	-118	3.01	"	
1045	~0.75	8.09	16.4	17.86	8.92	4.75	-123	2.93	"	
1050	~0.1	8.09	15.8	17.83	8.97	5.17	-126	2.88	"	
1055	~1.25	8.09	12.4	17.72	9.03	4.55	-130	2.86	"	
1100	~1.5	8.09	11.8	17.71	9.06	4.35	-131	2.84	"	
1105	~1.75	8.09	9.3	17.89	9.08	4.39	-133	2.80	"	
1110	~2	8.09	3.5	18.07	9.10	4.50	-134	2.79	"	
1115	~2.5	8.09	2.8	18.11	9.11	4.51	-135	2.79	"	
1120	~3	8.09	3.4	18.13	9.12	4.51	-135	2.78	"	
1125	Well stable; Disconnect Horiba									
1130	Sample well									

6/17/09

Notes:

Checked by: Date:

50416

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3557091263
Well Number: MW-BGC-9B
Sheet 1 of 1

Sampler Name: Randall Morrison
Date: 6/17/09
Well Location Description:
Weather Conditions: Overcast 72°F

Sample Tubing Type: Teflon (Teflon Lined) Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: 12364
Pump Type: Sub. Cent. (Perist.) Other:
Pump ID No.: 01129
Bailer Type: Teflon SS Other: N4

Laboratory Parameters: See chain of Custody

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	42	1 in	0.0408
Depth to Water (FT) -	7.64	(2 in)	(0.1631)
Water Column (FT) =	34.36	4 in	0.6524
Gal/Ft of Casing x	.1631	6 in	1.4680
Casing Volume (Gal) =	5.6	8 in	2.6097
No.of Volumes min.(3) x	N/A	10 in	4.0776
Purge Volume (Gal) =		12 in	5.8718

Pump intake @ 37'

Pump:
Time On: 1020
Flow Rate (gpm): 150
Pump Time (min): 40 min
Vol. Purged (gals): 1.6

Bailer:
Bailer Vol. (gal): N/A
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU) ±	Temp (C) ±	pH ±	Cond. ( ) ±	ORP (mV) ±	DO (mg/L) ±	Flow Rate (mL/m) ±	Remarks
1020		Pump Started								Clear
1025	~.1	7.65	2.8	17.77	6.59	0.461	-128	3.87	150	
1030	~.3	7.65	0.0	17.55	7.61	0.473	-141	0.51	150	
1035	~.4	7.66	7.8	17.55	7.22	0.486	-147	0.78	≈	
1040	~.5	7.66	8.3	17.58	7.31	0.479	-150	0.77	≈	
1045	~.8	7.65	8.7	17.61	7.36	0.477	-151	0.76	150	
1050	~1.1	7.66	0.0	17.62	7.38	0.477	-152	0.72	≈	
1055	~1.3	7.67	7.69	17.59	7.40	0.478	-153	0.74	150	
1100	~1.6	7.69	7.64	17.61	7.44	0.479	-153	0.73	≈	
Stabilized @ 1100										
DO reconnected Horiba										
Sampled @ 1105										

Notes:

Checked by: Date:

50417

6-17-09

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:	Well Number:	Sheet ___ of ___
3552-09-1263	MW-BGC-10A	

Sampler Name: [illegible]
Date: 6-17-09

Well Location Description: Spermatic
Weather Conditions: Sunny 70s

Sample Tubing Type: Teflon Teflon Lined Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: 01065
Pump Type: Sub. Cent. ~~Perist.~~ Other:
Pump ID No.: 04837
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See COC

Total Well Depth (FT) : ~20
Depth to Water (FT) - 8.85
Water Column (FT) = 11.15
Gal/Ft of Casing x
Casing Volume (Gal) =
No.of Volumes min.(3) x
Purge Volume (Gal) =

Casing Diameter:	Gal/Ft of Casing:
1 in	0.0408
2 in	0.1631
4 in	0.6524
6 in	1.4680
8 in	2.6097
10 in	4.0776
12 in	5.8718

Pump:
Time On: 1205
Flow Rate (gpm): 175 ml/min
Pump Time (min): 50 min
Vol. Purged (gals): 3.5

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other: NA

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1205	-	8.85	START PUMP							
1210	~0.1	8.91	104.0	17.73	9.60	1.81	-160	4.54	175	
1215	~0.75	8.91	30.4	17.27	9.52	1.15	-155	3.56	"	
1220	~1	8.91	18.2	17.06	9.51	2.84	-156	3.18	"	
1225	~1.5	8.91	12.1	17.05	9.53	3.74	-158	3.04	"	
1230	~2	8.91	8.3	17.01	9.57	3.95	-161	2.94	"	
1235	~2.5	8.91	5.8	16.95	9.58	3.65	-166	2.85	"	
1240	~3	8.91	7.3	17.03	9.59	3.64	-166	2.84	"	
1245	~3.5	8.91	6.4	17.01	9.58	3.65	-167	2.86	"	
1250	Well stable; Disconnect Horiba									
1255	Sample Well									

6/17/09

Notes:

Checked by: Date:

50418

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:	Well Number:	Sheet 1 of 1
555209/283	BW-BGC-10B	

Sampler Name: Randall Manning
Date: 6/17/09
Well Location Description: ~~[illegible]~~
Weather Conditions: Drizzle, Cloudy 70°F

Sample Tubing Type: Teflon (Teflon Lined) Other:
Analyzer Type: HUG16 077
Analyzer ID No.: 12364
Pump Type: Sub. Cent. (Perist.) Other:
Pump ID No.: 01129
Bailer Type: Teflon SS Other: N/A

Laboratory Parameters: See Chain of Custody

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	35.00	1 in	0.0408
Depth to Water (FT) -	8.44	(2 in)	(0.1631)
Water Column (FT) =	N/A	4 in	0.6524
Gal/Ft of Casing x		6 in	1.4680
Casing Volume (Gal) =	N/A	8 in	2.6097
No.of Volumes min.(3) x		10 in	4.0776
Purge Volume (Gal) =		12 in	5.8718

Pump @ 30'

Pump:
Time On: 1205
Flow Rate (gpm): 145 ml/min
Pump Time (min): 40 min
Vol. Purged (gals): ~2.2 gal

Bailer:
Bailer Vol. (gal):
Required Pulls: N/A
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1205		8.44		Pump started						
1210	~.15	8.47	80.24	18.77	7.25	0.659	-132	2.06	150	Clear
1215	~.25	8.47	81.90	18.44	7.31	0.745	-135	0.70	≈	
1220	~.4	8.47	37.0	18.15	7.33	0.999	-136	0.86	150	
1225	~.6	8.46	24.3	18.11	7.32	0.842	-135	0.50	≈	
1230	~1.2	8.49	8.8	18.03	7.32	0.673	-135	0.52	≈	
1235	~1.5	8.48	7.2	18.36	7.31	0.655	-135	0.55	145	
1240	~1.8	8.48	0.0	18.55	7.31	0.652	-135	0.53	≈	
1245	~2.2	8.48	2.3	18.50	7.31	0.656	-135	0.57	≈	
Stabilized @ 1245										
Disconnected from Horiba										
Sampled @ 1300										

Randall Manning

Notes:

Checked by: Date:

50419

6-17-09

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:	Well Number:	Sheet ___ of ___
3552-09-1263	MW-B6L-11A	

Sampler Name: [illegible]
Date: 6-17-09

Well Location Description: SE corner
Weather Conditions: Sunny 80s

Sample Tubing Type: Teflon ~~Teflon Lined~~ Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: 01065
Pump Type: Sub. Cent. ~~Perist.~~ Other:
Pump ID No.: 04837
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: Sel COC

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	20	1 in	0.0408
Depth to Water (FT) -	8.80	2 in	0.1631
Water Column (FT) =	11.20	4 in	0.6524
Gal/Ft of Casing x	NA	6 in	1.4680
Casing Volume (Gal) =		8 in	2.6097
No.of Volumes min.(3) x		10 in	4.0776
Purge Volume (Gal) =		12 in	5.8718

Pump:
Time On: 1345
Flow Rate (gpm): 175 mL/min
Pump Time (min): 70
Vol. Purged (gals): ~3.5

Bailer:
Bailer Vol. (gal):
Required Pulls: NA
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1345	-	8.80	START PUMP							
1350	~0.1	8.84	9.3	18.47	7.06	1.01	-29	5.66	175	
1355	~0.25	8.84	2.0	17.87	7.63	0.591	-53	4.31	"	
1400	~.30	8.81	2.27	17.41	8.06	2.94	-73	3.74	"	
1405	~.40	8.84	6.28	17.32	8.26	6.31	-87	3.55	"	
1410	~.80	8.84	5.00	17.06	8.57	4.00	-105	3.29	"	
1415	~1.2	8.83	3.8	17.03	8.60	3.80	-106	3.27	"	
1420	~1.5	8.86	6.1	17.09	8.78	2.90	-116	3.17	"	
1425	~2.0	8.86	7.8	17.12	9.02	2.14	-128	3.09	"	
1430	~2.6	8.85	6.9	17.03	9.13	1.93	-139	3.07	"	
1435	~3.2	8.86	6.8	16.98	9.23	1.53	-139	3.05	"	
1440	~3.5	8.86	5.9	16.99	9.23	1.52	-141	3.03		
Stabilized @ 1440										
	Disconnected Horiba									
	Sampled @ 1455									

Notes:

Checked by: Date:

50420

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-09-1263
Well Number: MW-BEC-1B
Sheet 1 of 1

Sampler Name: Randall Morrison
Date: 6/17/09
Well Location Description:
Weather Conditions: Overcast Breezy 72°F

Sample Tubing Type: Teflon (Teflon Lined) Other:
Analyzer Type: Horiba U22
Analyzer ID No.: 12364
Pump Type: Sub. Cent. (Peristal) Other:
Pump ID No.: 01129
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See chain of custody

Total Well Depth (FT) :	38	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) -	8.64	1 in	0.0408
Water Column (FT) =	N/A	(2 in)	(0.1631)
Gal/Ft of Casing x		4 in	0.6524
Casing Volume (Gal) =		6 in	1.4680
No.of Volumes min.(3) x		8 in	2.6097
Purge Volume (Gal) =		10 in	4.0776
		12 in	5.8718

Pump @ 33

Pump:
Time On: ~~1040~~ 1340
Flow Rate (gpm): 125 ml/min
Pump Time (min): 40 min
Vol. Purged (gals): 1.5 gal

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1340		8.69		Pump On						
1345	~.1	8.66	66.7	18.14	6.07	0.99	-65	0.53		Clear
1350	~.2	8.69	41.1	17.99	6.34	0.93	-69	0.80	125	
1355	~.3	8.70	12.5	17.93	6.36	0.93	-70	0.62	"	
1400	~.4	8.69	7.3	17.88	6.37	0.93	-71	0.52		
1405	~.5	8.70	2.1	17.86	6.39	0.92	-73	0.42		
1410	~.8	8.69	3.7	17.55	6.39	0.92	-73	0.41		
1415	~1.2	8.69	2.0	17.48	6.40	0.91	-74	0.42		
1420	~1.5	8.69	0.0	17.44	6.40	0.91	-74	0.42		
	stabilized @ 1420									
	Disconnected Horiba									
	Sampled @ 1425									

Notes:

Checked by: Date:

50421

6-18-09

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number:

Well Number: MW-B6C-12A

Sheet ___ of _____

Sampler Name: JWB

Date: 6-18-09

Well Location Description: E perimeter

Weather Conditions: Sunny 80's

Sample Tubing Type: Teflon Teflon Lined Other:

Analyzer Type: Horiba U22

Analyzer ID No.: 01065

Pump Type: Sub. Cent. Perist. Other:

Pump ID No.: 04837

Bailer Type: Teflon SS Other: NA

Laboratory Parameters: see COC

Total Well Depth (FT) :	~20	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) -	8.39	1 in	0.0408
Water Column (FT) =	11.62	2 in	0.1631
Gal/Ft of Casing x	NA	4 in	0.6524
Casing Volume (Gal) =		6 in	1.4680
No.of Volumes min.(3) x		8 in	2.6097
Purge Volume (Gal) =		10 in	4.0776
		12 in	5.8718

Pump:

Time On: 1245

Flow Rate (gpm): 175

Pump Time (min): 50

Vol. Purged (gals): 2.5

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal):

Other: NA

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1245	–	8.39	START PUMP							
1250	~0.1	8.40	36.4	17.76	6.88	0.546	6	5.05	250	
1255	~0.25	8.41	21.9	18.55	7.35	0.534	-13	3.94	175	
~~1230~~ 1300	~0.75	8.41	16.8	18.09	7.56	0.543	-25	3.58	"	
1305	~1	8.41	12.4	18.00	7.76	0.018	-36	3.35	"	
1310	~1.5	8.41	7.8	18.36	7.92	0.999	-44	3.15	"	
1315	~1.75	8.41	6.1	18.08	8.09	1.06	-54	3.14	"	
1320	~2	8.41	7.8	18.36	8.10	1.07	-55	3.16	"	
1325	~2.5	8.41	1.2	18.42	8.11	1.05	-55	3.15		
1330	Well Stable, Disconnect Horiba									
1335	Sample Well									

Notes:

Checked by: Date:

50422

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-09-1263
Well Number: MW-BGC-12B
Sheet 1 of 1

Sampler Name: Randall Plummer
Date: 6/18/09
Well Location Description: East
Weather Conditions: Overcast 76°F

Sample Tubing Type: Teflon (Teflon Lined) Other:
Analyzer Type: Horiba U-22
Analyzer ID No.: 12364
Pump Type: Sub. Cent. ~~Perist.~~ Other:
Pump ID No.: 0129
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See Chain of Custody

Total Well Depth (FT) : 41	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) - 8.75	1 in	0.0408
Water Column (FT) = NA	2 in	0.1631
Gal/Ft of Casing x	4 in	0.6524
Casing Volume (Gal) =	6 in	1.4680
No.of Volumes min.(3) x	8 in	2.6097
Purge Volume (Gal) =	10 in	4.0776
	12 in	5.8718

Pump @ 35'

Pump:
Time On: 1251
Flow Rate (gpm): 125
Pump Time (min): 39 min
Vol. Purged (gals): 1.5

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1251		8.75		Pump ON						
1255	~1.1	8.75	235.0	18.13	5.87	0.457	-22	1.05	250	Clear
1300	~1.2	8.76	200.0	18.51	5.94	0.455	-26	0.91	125	
1305	~1.3	8.76	24.0	18.77	5.97	0.453	-29	0.78		125
1310	~1.4	8.76	17.2	18.95	5.99	0.453	-30	0.67	125	
1315	~1.6	8.75	11.0	19.02	6.00	0.454	-31	0.60		
1320	~1.0	8.75	9.8	19.17	6.01	0.455	-32	0.61		
1325	~1.2	8.76	2.1	19.16	6.01	0.456	-32	0.62	125	
1330	~1.5	8.75	0.0	19.09	6.02	0.455	-33	0.61		
Stabilized @ 1330										
Decommissioned Horiba U22										
Sampled @ 1340										

Notes:

Checked by: Date:

50423

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 5552-09-1263 | Well Number: MW-BEC-13 | Sheet 1 of 1

Sampler Name: [illegible] | Well Location Description:

Date: 6/18/09 | Weather Conditions: Overcast, Humid 80s

Sample Tubing Type: Teflon (Teflon Lined) Other:

Analyzer Type: Horiba U-22

Analyzer ID No.: 12364

Pump Type: Sub. Cent. (Perist.) Other:

Pump ID No.: 01124

Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See chain of custody

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	23.25	1 in	0.0408
Depth to Water (FT) -	8.17	(2 in)	(0.1631) Pump @ 18'
Water Column (FT) =		4 in	0.6524
Gal/Ft of Casing x		6 in	1.4680
Casing Volume (Gal) =	NA	8 in	2.6097
No.of Volumes min.(3) x		10 in	4.0776
Purge Volume (Gal) =		12 in	5.8718

Pump:

Time On: 1410

Flow Rate (gpm): 125 ml/min

Pump Time (min): 35 min

Vol. Purged (gals): ~1.5 gal

Bailer:

Bailer Vol. (gal):

Required Pulls:

Vol. Purged(gal): NA

Other:

Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
Sampling Parameters			±	±	±	±	±	±	±	
1410		8.17	Pump on							
1415	~.1	8.18	140.0	18.25	5.15	1.07	90	1.03	~140	Clear
1420	~.2	8.18	103.0	17.79	5.08	1.06	100	0.21	≈	
1425	~.4	8.17	73.5	18.63	5.14	1.06	96	0.24	≈	
1430	~.6	8.17	34.6	18.64	5.16	1.07	96	0.21	125	
1435	~.8	8.18	10.0	18.60	5.17	1.06	93	0.40	≈	
1440	~1.2	8.17	5.3	18.71	5.19	1.06	91	0.39	125	
1445	~1.5	8.17	4.4	18.86	5.20	1.06	91	0.40	≈	
Stabilized @ 1445										
Disconnected Pump										
Sampled @ 1455										

Notes:

Checked by: Date:

50424

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-09-1263
Well Number: MW-BGC-14
Sheet 1 of 1

Sampler Name: Randall Mounts
Date: 6/18/09
Well Location Description: Overcast
Weather Conditions: 80°F

Sample Tubing Type: Teflon (Teflon Lined) Other:
Analyzer Type: Horiba-U-22
Analyzer ID No.: 12364
Pump Type: Sub. Cent. (Perist.) Other:
Pump ID No.: 01129
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See COC

Total Well Depth (FT) :	21.31	Casing Diameter:	Gal/Ft of Casing:
Depth to Water (FT) -	9.24	1 in	0.0408
Water Column (FT) =		(2 in)	(0.1631)
Gal/Ft of Casing x		4 in	0.6524
Casing Volume (Gal) =		6 in	1.4680
No.of Volumes min.(3) x		8 in	2.6097
Purge Volume (Gal) =		10 in	4.0776
		12 in	5.8718

pump @ 16'

Pump:
Time On: 1540
Flow Rate (gpm): 125 ml/min
Pump Time (min): 40 min
Vol. Purged (gals): ~1.6

Bailer:
Bailer Vol. (gal):
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1540		Pump On								
1545	~.1	9.24	12.1	18.91	6.19	0.311	-20	0.20	145	Clear
1550	~.2	9.26	14.1	19.09	6.19	0.296	-19	0.25	120	
1555	~.4	9.25	11.0	18.91	6.18	0.293	-20	0.24		
1600	~.5	9.25	2.2	18.95	6.17	0.292	-19	0.24	120	
1605	~.8	9.26	3.8	18.94	6.14	0.292	-16	0.22	~	
1610	~1.2	9.25	0.0	18.89	6.12	0.290	-16	0.21	125	
1615	~1.4	9.25	0.0	18.89	6.12	0.289	-15	0.22	~	
1620	~1.6	9.25	0.0	18.90	6.13	0.288	-14	0.20	~	
Stabilized @ 1620										
Disconnected from Horiba										
Sampled @ 1636										

Notes:

Checked by: Date:

50425

6/18/09

MACTEC

Low Flow Well Purge and Sampling Field Sheet

Project Number: 3552-09-1263
Well Number: MW-B6C-15
Sheet ___ of _____

Sampler Name: JMB
Date: 6-18-09
Well Location Description: N of SG + SG
Weather Conditions: Sunny

Sample Tubing Type: Teflon ~~Teflon Lined~~ Other:
Analyzer Type: Horiba U-22XL
Analyzer ID No.: 01065
Pump Type: Sub. Cent. ~~Perist.~~ Other:
Pump ID No.: 04837
Bailer Type: Teflon SS Other: NA

Laboratory Parameters: See COC

		Casing Diameter:	Gal/Ft of Casing:
Total Well Depth (FT) :	15.80	1 in	0.0408
Depth to Water (FT) -	5.27	2 in	0.1631
Water Column (FT) =	10.53	4 in	0.6524
Gal/Ft of Casing x	NA	6 in	1.4680
Casing Volume (Gal) =	NA	8 in	2.6097
No.of Volumes min.(3) x	NA	10 in	4.0776
Purge Volume (Gal) =	NA	12 in	5.8718

Pump:
Time On: 1420
Flow Rate (gpm): 200 mL/min
Pump Time (min): 60 min
Vol. Purged (gals): ~3.5

Bailer:
Bailer Vol. (gal): NA
Required Pulls:
Vol. Purged(gal):
Other:

Sampling Parameters			±	±	±	±	±	±	±	
Time	Water Volume Discharged (gal)	Water Level (if BTOC)	Turbidity (NTU)	Temp (C)	pH	Cond. ( )	ORP (mV)	DO (mg/L)	Flow Rate (mL/m)	Remarks
1420	-	5.27	START PUMP							
1425	~0.1	5.30	27.6	20.68	7.40	4.73	-23	5.27	250	
1430	~0.25	5.31	17.7	20.07	7.68	4.64	-36	4.04	200	
1435	~0.75	5.31	5.3	19.87	7.85	8.37	-46	3.58	"	
1440	~1	5.31	2.4	19.85	7.93	7.37	-50	3.44	"	
1445	~1.5	5.31	7.1	19.90	7.95	6.42	-53	3.30	"	
1450	~2	5.31	8.3	19.80	7.99	5.70	-56	3.22	"	
1455	~2.25	5.31	8.0	19.80	8.01	5.18	-57	3.11	"	
1500	~2.5	5.31	7.2	19.81	8.02	5.11	-58	3.09	"	
1505	~3	5.31	4.1	19.89	8.03	5.10	-57	3.09	"	
1510	~3.5	5.31	6.6	19.89	8.03	5.10	-57	3.07	"	
1515	Well Stable; Disconnect Horiba									
1520	Sample Lock									

Notes:
Sampled well as a Dup; MW-B6C-Dup04

Checked by: Date:

50426