APPENDIX E

OTTER CREEK MINE BASELINE REPORT 304E

SURFACE WATER SITES AND POND MONITORING SUMMARIES

APPENDIX E - TABLE E-1
OTTER CREEK MINE - BASELINE REPORT 304E
BASELINE SURFACE WATER MONITORING SUMMARY (2010-2014)

Site ID	Monitoring Event Date	Monitoring Event Time	Personnel	Continuous Recorder	MPE	Crest Gage Cork Level	Elevation	Flow		Comments (re: Field Notebook)
	mm/dd/yr.	(24 hrs)		Feet	Feet	Feet	Feet	cfs	Method	
SW-1 (CR)	3/5/2011	-			3025.08				---	Continuous recorder installed (first data recorded)
	5/13/2011	9:46	RL	-0.178			3024.90	0.000	(4)	Channel dry, no standing water. Pulled TruTrak for download & re-calib. Logger stopped at 5/6/11. gauge reading not recorded.
	6/14/2011	9:30	RL	-0.228			3024.85	0.000	(4)	No surface water (standing or flowing) visible. gauge reading not recorded. Field parameters.
	10/26/2011	8:10	GMK	-0.221			3024.86	0.000	(4)	Gauge reading not recorded. Sample containers dry.
	12/2/2011	11:30	CJL	-0.232			3024.85	0.000	(4)	Gauge reading not recorded. Ground surrounding samples dry.
	1/26/2012	12:15	CJL	-0.045			3025.04	0.000	(4)	Gauge reading not recorded. Snow & frozen conditions at site. "No runoff has occurred" .
	3/14/2012	8:30	RL	-0.140			3024.94	0.000	(4)	Frozen site conditions. gauge reading not recorded. No surface water at site. Channel profile.
	3/23/2012	9:00	CJL	-0.235			3024.85	0.000	(4)	Gauge reading not recorded. Collect samples.
	4/19/2012	8:53	CJL	-0.229			3024.85	0.000	(4)	Site dry, no water sample. gauge reading not recorded.
	5/23/2012	11:17	CJL	-0.229			3024.85	0.000	(4)	Site dry. gauge reading not recorded.
	6/6/2012	11:40	CJL	-0.150			3024.93	0.000	(4)	Site Dry. gauge level not recorded.
	8/28/2012	11:50	CJL	-0.202			3024.88	0.000	(4)	Site dry. gauge Reading not recorded.
	9/18/2012	18:15	CJL	-0.241			3024.84	0.000	(4)	Site dry. gauge Reading not recorded.
	11/16/2012	6:35	CJL	†			-		---	3-4 in. of snow around site. gauge reading not recorded.
	12/20/2012	9:49	RL	-0.147			3024.93	0.000	(4)	Gauge level not recorded. Frozen
	1/14/2013	10:40	CJL	-0.235			3024.85	0.000	(4)	3-4 in. of snow around site. No water in channel. gauge reading not recorded.
	2/6/2013	8:45	RL	0.001			3025.08	0.000	(4)	2-3 in. of snow present. gauge reading not recorded.
	3/6/2013	9:15	RL	-0.170			3024.91	0.000	(4)	No flow. Site dry except 1-2 in. snow cover. gauge level not recorded.
	4/25/2013	9:35	CJ	-0.239			3024.84	0.000	(4)	Area around site is dry. gauge level not recorded.
	5/15/2013	7:15	CJL	-0.140			3024.94	0.000	(4)	Site dry. gauge level not recorded.
	6/13/2013	14:30	CJ	-0.213			3024.87	0.000	(4)	Site damp to slightly muddy. gauge level not recorded.
	7/29/2013	15:20	CJ	-0.226			3024.85	0.000	(4)	Dry. gauge level not recorded.
	3/24/2014	18:50	TS	†			-		---	Dry. Crest gauge frozen in-place.
	4/24/2014	8:45	CJL	-0.147			3024.93	0.000	(4)	No water onsite. Downloaded Rod; Rod not running.
SW-1A	3/14/2012	10:30	RL		3000.00			0.150	(2)	Flow taken with marsh-mcbirney. Flow = 0.15 cfs. Field parameters and sampled.
	5/3/2012	16:40	CJL							Field parameters and sampled.
	8/29/2012	12:20	GMK						(3)	Flow too low to use Marsh McBirney.
	12/6/2012	15:15	CJL							Field parameters and sampled. Sampled at intake of culvert.
	3/7/2013	16:30	TS					1.500	(2)	Field parameters and sampled. Took flow. 1.5 cfs
	6/13/2013	15:30	CJ						(3)	Flowing water through culvert. Field parameters and samples collected.
	7/30/2013	21:30	CJ							Field parameters and sampled.
	4/24/2014	-	-					0.230	(2)	Marsh
	5/21/2014	17:35	CJL					0.100	(2)	Field parameters and sampled. Marsh flow taken.
SW-2 (CR)	6/15/2011	10:40	RL	†	3025.97			29.700	(2)	Q per Marsh McBirney, see flow worksheet. Channel profile.
	7/19/2011	15:15	GMK	1.520			3027.49	6.200	(2)	Continuous recorder installed (first data recorded). Marsh
	8/10/2011	8:45	GMK	0.960			3026.93	3.894	(2)	Marsh
	8/25/2011	16:00	GMK	0.740			3026.71	3.300	(2)	Marsh
	8/30/2011	11:00	GMK	0.760			3026.73	3.400	(2)	Global recorder. Marsh
	9/16/2011	10:08	GMK	0.660			3026.63	2.700	(2)	Gauge height = 0.66. Marsh flow taken = 2.70
	9/29/2011	11:00	GMK	0.680			3026.65	2.300	(2)	Marsh
	10/26/2011	10:00	GMK	1.080			3027.05	8.300	(2)	Gauge level not recorded. Flow measured, volume not recorded. Install Telog.
	11/3/2011	10:40	GMK	1.060			3025.97	4.230	(2)	Depth of water at inlet (culvert): 1.17'. Marsh-McB. flow 4.23 cfs.
	3/14/2012	18:30	RL	2.949			3028.92	34.280	(2)	Gauge reading not recorded. Download continuous recorder. Flow taken w/Marsh-McBirney. Flow = 34.28
	3/29/2012	12:30	RL	2.465			3028.44	13.250	(2)	Marsh
	5/3/2012	14:45	CJL	1.718			3027.69	7.630	(2)	Gauge reading not recorded. Livestock water upgradient of sample point. Field parameters and sampled. Flow in database.
	5/8/2012	16:00	RL	2.180			3028.15	7.590	(2)	Marsh
	6/7/2012	10:40	CJL	1.041			3027.01	3.651	(4)	Gauge reading not recorded. Downloaded telog.
	8/27/2012	13:20	CJL	0.344			3026.31	0.284	(2)	Gauge reading not recorded. Took marsh
	9/6/2012	11:40	GMK	0.358			3026.33	1.844	(4)	Gauge reading not recorded.
	11/27/2012	17:37	CJL	2.093			3028.06	10.469	(4)	Site flooded. Culvert inlet plugged ~2-3 in. water running over crossing. No gauge access.
	11/28/2012	6:50	CJL	1.816			3027.79	7.938	(4)	Site still flooded. No gauge access.
	12/5/2012	10:10	CJL	1.348			3027.32	4.968	(4)	Gauge reading not recorded. Cattle watering above sample point.
	12/20/2012	11:00	RL	1.196			3027.17	4.265	(4)	Gauge reading not recorded.
	3/7/2013	13:10	TS	1.75*			3027.72	7.460	(5)	Water depth 1.75' upstream of culvert. Water flowing over crossing.
	7/30/2013	19:00	CJ	0.265			3026.24	1.680	(4)	Field parameters only. gauge level not recorded.
	8/1/2013	15:30	RL	0.420			3026.39	0.504	(2)	Marsh
	10/22/2013	8:49	CJL	1.114			3027.08	2.892	(2)	Field parameters only. gauge level not recorded. Marsh
	1/9/2014	8:30	CJL	0.890			3026.86	2.878	(2)	Marsh flow 1350.9 gpm. (Thus: = 3.0125 cfs). gauge level not recorded. *(2.878 cfs in spreadsheet)*
	4/29/2014	16:00	CJL	2.180			3028.15	9.938	(2)	Gauge reading not recorded. Completed site repairs . Could not download Telog. Marsh
	5/21/2014	13:15	CJL	1.893			3027.86	6.770	(2)	Field parameter and sampled. Marsh flow taken.
SW-3 (CR)	8/24/2011	16:30	GMK	†	3032.49				---	Install site
	10/21/2011	10:00	GMK	†					---	Site was DRY. No sample collected. Passive sampler bottles were dry.
	12/2/2011	15:15	CJL	†					---	Both samplers are DRY. No water around location.
	1/26/2012	16:00	CJL	†					---	No water in channel nor next to samplers. Both bottles frozen in tubes.
	3/14/2012	17:30	RL	†					---	Field parameters and sampled. Channel profile. Installed TruTrack.
	3/23/2012	10:15	CJL	-0.013			3032.48	0.000	(4)	Site was DRY upon visitation.
	4/19/2012	14:20	CJL	-0.013			3032.48	0.000	(4)	Site Dry
	5/24/2012	8:20	CJL	-0.013			3032.48	0.000	(4)	Site also dry.
	6/7/2012	11:07	CJL	-0.010			3032.48	0.000	(4)	Dry
	8/28/2012	13:00	GMK	-0.011			3032.48	0.000	(4)	Field parameters and sampled.
	9/18/2012	18:00	CJL	-0.014			3032.48	0.000	(4)	Site dry.
	11/15/2012	16:42	CJL	†				-	---	Site has 3-4 inches of snow around it. Site Dry
	12/20/2012	12:05	RL	-0.010			3032.48	0.000	(4)	Downloaded logger. No gauge reading.
	1/14/2013	11:15	CJL	-0.013			3032.48	0.000	(4)	Passive samplers are both dry. 3-4 inches of snow around site, no standing water present.
	2/6/2013	10:00	RL	0.023			3032.51	0.0004	(4)	Both bottles present, full but frozen solid in ground.
	3/5/2013	14:40	RL	-0.013			3032.48	0.000	(4)	No sample, no flow, bottles frozen.
	4/25/2013	13:15	CJ	-0.013			3032.48	0.000	(4)	Both bottles contained water. Sampled and field parameters.
	5/15/2013	12:33	CJL	-0.010			3032.48	0.000	(4)	Downloaded rod, site dry, bottles dry.
	6/13/2013	16:45	CJ	-0.003			3032.49	0.000	(4)	Site has misc debris at site. Field parameters and sampled.
	7/30/2013	18:30	CJ	-0.010			3032.48	0.000	(4)	Dry
	3/24/2014	17:30	TS	†				-	---	Site is dry. Sampled only. Not enough water in samplers to get field params.
	4/24/2014	-	CJL	†				-	---	No water at site. Troll not running
SW-4	4/13/2011	-	GMK		3074.55			-	---	Installed surface site.
	6/14/2011	13:00	RL			0.80	3075.35	14.820	(3) (4)	No surface water. Crest gauge measured @ 0.8' above ground.
	6/14/2011	13:00	RL			0.00		0.000	(3)	As above (Thus: for this day only the gauge and flow would be 0.00')
	10/21/2011	8:30	GMK			0.37	3074.92	1.756	(3) (4)	Crest gauge = 0.37'.
	12/8/2011	8:40	CJL						---	Field parameters and sampled. No height recorded.
	1/27/2012	8:55	CJL						---	Gauge reading not recorded. Site appears dry. 2 to 3-in. snow surrounding site.
	3/14/2012	16:00	RL			0.47	3075.02	3.628	(3) (4)	H(cork) = 0.47' crest gauge. Channel profile
	3/22/2012	17:00	CJL						---	Gauge Reading not recorded. Collect samples.
	4/19/2012	13:31	CJL						---	Site dry. gauge level not recorded.
	5/24/2012	9:24	CJL			0.00		0.000	(3)	Site was dry. Crest gauge = 0.00".
	6/7/2012	12:03	CJL			0.00		0.000	(3)	Site was dry. Crest gauge = 0.00'.
	8/28/2012	14:20	GMK						---	Crest gauge silted-in. No measurement taken due to no water/cork crest.
	9/18/2012	16:40	CJL			0.00		0.000	(3)	Both sites (SW-4 & 5) dry. Crest gauge = 0.00'.
	11/16/2012	10:40	LS					0.000	(3)	No water in channels. gauge reading not recorded.
	12/5/2012	12:00	-						---	Site dry. Gauge level not recorded.
	12/20/2012	14:55	RL						---	Crest gauge frozen.
	1/14/2013	13:35	CJL						---	Both sites (SW-4 & 5) dry. Crest gauge not recorded. Frozen conditions.
	2/6/2013	13:20	RL						---	Frozen conditions. gauge level not recorded.
	3/5/2013	17:20	RL						---	Site dry. Gauge level not recorded.
	4/25/2013	14:30	CJ			0.34	3074.89	1.431	(3) (4)	Crest gauge 4-7/8 in. from bottom of cup. [Thus: 4 7/8" = 4.0875" = 0.3404']
	6/14/2013	8:45	CJ						---	No gauge level or flow recorded. Field params and samples
	7/30/2013	17:10	CJ						---	No gauge level or flow recorded. Dry
	3/24/2014	15:45	TS						---	Site Dry. Crest gauge frozen in-place.
	5/22/2014	11:00	CJL						---	Field parameters and sampled.
SW-5 (CR)	6/14/2011	12:55	RL	-0.280	3076.24		3075.96	0.000	(4)	Dry
	10/21/2011	8:20	GMK	-0.260			3075.98	0.000	(4)	No crest gauge to measure. Site Dry.
	1/27/2012	9:00	CJL	-0.260			3075.98	0.000	(4)	TruTrac site was DRY, Light snow
	3/14/2012	15:40	RL	-0.260			3075.98	0.000	(4)	Downloaded TruTrack. Created channel profile. Dry
	4/19/2012	13:40	CJL	-0.283			3075.96	0.000	(4)	Site Dry
	5/24/2012	9:30	CJL	-0.280			3075.96	0.000	(4)	Site dry
	6/7/2012	10:00	CJL	-0.286			3075.95	0.000	(4)	Dry
	8/28/2012	14:40	GMK	-0.253			3075.99	0.000	(4)	Downloaded TruTrack. No measurement.
	9/18/2012	16:40	CJL	-0.270		0.00	3075.97	0.000	(3)	Both sites (SW-4 & 5) dry. Crest gauge = 0.00'.
	12/20/2012	14:42	RL	-0.237			3076.00	0.000	(4)	Dry
	1/14/2013	13:35	CJL	-0.240			3076.00	0.000	(4)	Both sites (SW-4 & 5) dry. Crest gauge not recorded. Frozen conditions.
	2/6/2013	13:25	RL	-0.227			3076.01	0.000	(4)	No flowing water. Some standing ice.
	3/5/2013	17:15	RL	-0.214			3076.03	0.000	(4)	Site dry except for thin snow cover, frozen
	7/30/2013	17:15	CJ	-0.214			3076.03	0.000	(4)	Dry
	3/24/2014	15:50	TS	-0.201			3076.04	0.000	(4)	Site is dry. Passive sampler and crest gauge are frozen in place.
	5/22/2014	11:10	CJL	-0.171			3076.07	0.000	(4)	Site dry
SW-6	4/13/2011	-	GMK		3128.16				---	Installed surface site.
	6/14/2011	14:25	RL			1.02	3129.18	6.185	(3) (4)	Field Notebook: Crest gauge = 1' 0.3". (Thus: 1.02')
	10/21/2011	7:30	GMK			0.80	3128.96	3.030		Crest gauge = 0.80'.
	12/8/2011	9:10	CJL							Field parameters only. No sample collected, not enough water.
	1/27/2012	8:25	CJL						---	Gauge reading not recorded. Site Dry. Frozen sampler conditions.
	3/14/2012	15:00	RL			0.94	3129.10	4.846	(3) (4)	No surface water present. Crest gauge = 0.94". Channel profile.
	3/14/2012	15:00	RL			0.00		0.000	(3)	As above (Thus: for this day only the gauge and flow would be 0.00')
	3/22/2012	16:35	CJL						---	Site Dry. Site visit replace sample jars. gauge reading not recorded.
	4/19/2012	13:00	CJL						---	Site dry. gauge level not recorded.
	5/24/2012	9:50	CJL			0.00		0.000	(3)	Site was dry. Crest gauge = 0.00".
	6/7/2012	12:40	CJL			0.00		0.000	(3)	Site was dry. Crest gauge = 0.00'.
	8/28/2012	14:55	GMK			1.85	3130.01	34.77	(3) (4)	Crest gauge = 1.85'. Field parameters and sampled.
	9/18/2012	16:20	CJL			0.00		0.000	(3)	Both sites (SW-6 & 7) dry. Crest gauge = 0.00'.
	11/16/2012	10:30	LS						---	Both sites (SW-6 & 7) covered w/ snow. Crest gauge not recorded.
	12/20/2012	14:30	RL						---	Gauge frozen.
	1/14/2013	11:55	CJL						---	Gauge level not recorded. Frozen conditions.
	3/5/2013	16:40	RL						---	Frozen conditions. gauge level not recorded.
	4/25/2013	15:35	CJ			0.00		0.000	(3)	Crest gauge no cork on stick [Thus: 0.00']
	6/14/2013	9:45	CJ			2.08	3130.24	48.90	(3) (4)	Crest gauge 2.08'. Field params and sampled.
	7/30/2013	16:40	CJ						---	Dry. gauge level not recorded.
	3/21/2014	11:40	TS			1.33	3129.49	13.31	(3) (4)	Site Dry. Crest gauge 1.33.
	3/21/2014	11:40	TS			0.00		0.000	(3)	As above (Thus: for this day only the gauge and flow would be 0.00')
	5/22/2014	10:05	CJL			0.89	3129.05	4.130	(3)	Field parameters and sampled. Crest gauge - 0.89'

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BASELINE SURFACE WATER MONITORING SUMMARY (2010-2014)

Site ID	Monitoring Event Date	Monitoring Event Time	Personnel	Continuous Recorder	MPE	Crest Gage Cork Level	Elevation	Flow		Comments (re: Field Notebook)
	mm/dd/yr.	(24 hrs)		Feet	Feet	Feet	Feet	cfs	Method	
SW-7	4/13/2011	-	GMK		3119.17				---	Installed surface site.
	6/14/2011	14:51	RL			1.04	3120.21	14.78	(3) (4)	Field Notebook: "Crest gauge = 1' 0.25" (1.04')" Correction: =1.021'
	10/20/2011	8:00	GMK						---	Site was dry. gauge reading not recorded.
	12/8/2011	9:20	CJL						---	Both passive samplers DRY, no sample, no field parameters taken.
	1/27/2012	8:35	CJL						---	Site under 1 to 2-in. of ice, water from snowmelt.
	3/14/2012	15:30	RL			0.90	3120.07	10.88	(3) (4)	H(cork) = 0.90' crest gauge. Channel profile.
	4/19/2012	13:05	CJL						---	Site dry. gauge level not recorded.
	5/24/2012	9:55	CJL			0.00		0.000	(3)	Site was dry. Crest gauge = 0.00".
	6/7/2012	12:30	CJL			0.00		0.000	(3)	Site was dry. Crest gauge = 0.00'.
	8/28/2012	14:50	GMK			1.15	3120.32	19.96	(3) (4)	Crest gauge =1.15'.
	9/18/2012	16:20	CJL			0.00		0.000	(3)	Both sites (SW-6 & 7) dry. Crest gauge = 0.00'.
	11/16/2012	10:30	LS						---	Both sites (SW-6 & 7) covered w/ snow. Crest gauge not recorded.
	12/20/2012	14:30	RL						---	Gauge frozen.
	1/14/2013	11:57	CJL						---	Gauge level not recorded. Frozen conditions.
	3/5/2013	16:40	RL						---	Gauge level not recorded. Frozen conditions.
	4/25/2013	15:15	CJ			0.00		0.000	(3)	Crest gauge no cork on stick. [Thus: crest gauge at 0.00']
	6/14/2013	-	CJ			2.02	3121.19	80.64	(3) (4)	Crest gauge @ 2.02'. No bottles at site.
	7/30/2013	16:45	CJ						---	Dry. gauge level not recorded.
	3/21/2014	11:50	TS						---	Site Dry. Crest gauge frozen.
	5/22/2014	10:15	CJL			0.59	3119.76	3.820	(3) (4)	Field parameters and sampled. Crest gauge - 0.59'
SW-8	8/25/2011	9:00	GMK		3116.02	1.25	3117.27	0.061	(3) (4)	Install site. Sampled. WATER DEPTH =1.25'
	10/20/2011	16:30	GMK			1.45	3117.47	0.513	(3) (4)	Crest gauge = 1.45'. Ponded water.
	12/2/2011	10:35	CJL						---	Site not accessible due to ice.
	1/27/2012	8:13	CJL						---	Site under 6 to 10-in. of ice. Site inaccessible.
	3/14/2012	12:45	RL			1.65	3117.67	1.853	(3) (4)	H(cork) = 1.65 (crest gauge).
	3/14/2012	13:28	RL			1.28	3117.30	0.072	(3) (4)	H = 1.28' at time of sampling. No flow. Channel profile
	4/19/2012	12:40	CJL CJL			1.67	3117.69	0.010 1.934	(1)(3) (4)	Hw 1.34' - flowing ~2-5 gpm, cfs = 0.010. Hgauge 1.67'. Field parameters and sampled.
	5/24/2012	-	CJL CJL			0.91	3116.93	0.002 0.000	(1)(3) (4)	"Crest gauge = 0.91'. Flow < 1.06 gpm".
	6/7/2012	14:00	CJL			0.00		0.000	(4)	Site around gauge is soft, no surface water. Crest gauge = 0.00'.
	6/25/2012	-	RL						---	Channel profile. Sta-3 to SW8 6.905
	8/28/2012	15:25	GMK			1.18	3117.20	0.113	(3) (4)	Site dry. Crest gauge = 1.18'.
	11/16/2012	10:15	CJL					0.000	(3)	Channel is dry. gauge level not recorded.
	1/14/2013	13:04	CJL						---	Dry. gauge level not recorded.
	2/6/2013	12:00	RL					0.000	(3)	No flowing water. Site under some snow. gauge level not recorded.
	3/5/2013	16:05	RL					0.000	(3)	Some snow and ice. No flow. Crest gauge frozen in-place.
	4/25/2013	17:30	CJ			0.33	3116.35	0.000	(3) (4)	Wet cork 4" above bottom of cup. *[Thus: 4" = 0.33']* . Cork residue at 7". *[= 0.5831']*
	6/20/2013	12:25	CJ					0.000	(3)	No flow, standing water @ 1'. gauge level not recorded. Field params and sampled.
	7/30/2013	14:50	CJ					0.000	(3)	Standing water, no flow. gauge level not recorded.
	1/8/2014	-	CJL						---	Dry. gauge level not recorded.
	3/21/2014	10:30	TS			1.80	3117.82	3.440	(3) (4)	Crest gauge was/is ~6" deep, water was flowing. Flow not recorded.
	5/15/2014	10:45	CJ						(3)	Field parameters and sampled. Low flow over road.
SW-9 (CR)	8/24/2011	13:00	GMK	†	3144.84				---	Install site.
	8/25/2011	14:00	GMK	-0.254			3144.59	0.000	(3)	Sampled ponded water. Field params.
	10/20/2011	15:10	GMK	-0.207			3144.63	0.000	(4)	Field parameters and sampled.
	12/2/2011	9:40	CJL	-0.177			3144.66	0.000	(4)	Field parameters and sampled. Thin layer of ice above samplers.
	1/27/2012	7:45	CJL	0.220			3145.06	0.0002	(4)	Passive samplers froze in place. 1 inch of water around westerly sampler. Filled field parameters jar.
	3/14/2012	13:20	RL	0.22*			3145.06	0.0002	(5)	Ha = 0.22, Hb = 0.20. channel profile
	4/19/2012	11:15	CJL	0.030			3144.87	0.000	(4)	Water sample collected. Both samplers full, filled all bottles. Field parameters taken.
	5/24/2012	11:05	CJL	-0.134			3144.71	0.000	(4)	Field parameters and sampled.
	6/7/2012	15:30	CJL	-0.170			3144.67	0.000	(4)	Field parameters and sampled.
	8/28/2012	17:00	GMK	-0.194			3144.65	0.000	(4)	Downloaded Trutrack, field parameters and sampled.
	9/18/2012	16:55	CJL	-0.259			3144.58	0.000	(4)	Sites dry, both sets of samplers are empty (SW 9 and 10)
	10/25/2012	17:47	HS	†				-	---	Dry. Soil Moist
	11/16/2012	9:55	CJL	†				-	---	5-6 inches of snow surrounding area. Both passive samplers are dry.
	12/21/2012	13:13	RL	-0.200			3144.64	0.000	(4)	Dry
	2/6/2013	11:15	RL	-0.197			3144.64	0.000	(4)	Both bottles present, dry. 3-5 inches of snow at site. No flowing water
	3/5/2013	13:45	RL	0.387			3145.23	0.072	(4)	No flow, bottles frozen. Some drifted snow, no sample.
	4/25/2013	18:40	CJ	-0.164			3144.68	0.000	(4)	Field parameters and sampled.
	5/15/2013	16:40	CJL	-0.203			3144.64	0.000	(4)	Download rods, site/bottles dry
	6/14/2013	11:00	CJ	0.548			3145.39	0.370	(4)	Collected water from large bedrock holding pit. Field params and sampled.
	7/30/2013	11:25	CJ	-0.118			3144.72	0.000	(4)	Site contained water from storm runoff, did not sample.
	1/7/2014	12:46	CJL	-0.125			3144.72	0.000	(4)	Inspected site. Bottles filled but frozen
	3/24/2014	9:00	TS	0.449			3145.29	0.154	(4)	Field parameters and sampled. Flowing water about 6".
	5/22/2014	9:10	CJL	0.630			3145.47	0.647	(4)	standing water, no flow visible. Field params and sampled.
SW-10 (CR)	8/24/2011	14:30	GMK	†	3175.46				---	Install site
	10/20/2011	14:55	GMK	-0.216			3175.24	0.000	(4)	Site was DRY - No sample taken. Passive Sampler DRY.
	12/2/2011	9:05	CJL	-0.203			3175.26	0.000	(4)	Field parameters and sampled. Dead deer 30 feet above sight.
	1/27/2012	7:30	CJL	-0.046			3175.41	0.000	(4)	Site DRY, samplers frozen into tubes, no sample, no field parameters taken.
	3/14/2012	14:00	RL	-0.180			3175.28	0.000	(4)	No surface water. Bottles from passive sampler partially frozen. Sampled and field parameters. Channel profile
	4/19/2012	11:00	CJL	-0.213			3175.25	0.000	(4)	Site dry, no water found in bottles.
	5/24/2012	10:30	CJL	-0.203			3175.26	0.000	(4)	Field parameters and sampled.
	6/7/2012	15:06	CJL	-0.194			3175.27	0.000	(4)	Field parameters and sampled from passive sampler. Site dry.
	8/28/2012	16:40	GMK	-0.212			3175.25	0.000	(4)	Downloaded trutrack, field parameters and sampled.
	9/18/2012	16:55	CJL	-0.213			3175.25	0.000	(4)	Sites dry, both sets of samplers are empty (SW 9 and 10)
	10/25/2012	18:05	HS	†				-	---	Dry
	11/16/2012	9:50	CJL	†				-	---	5-6 inches of snow surrounding area. Both passive samplers are dry.
	12/21/2012	13:25	RL	-0.200			3175.26	0.000	(4)	Dry
	1/14/2013	12:25	CJL	-0.200			3175.26	0.000	(4)	No water in either passive sampler. 3-4 inches of snow surrounding site.
	2/6/2013	11:20	RL	-0.016			3175.44	0.000	(4)	Both bottles present, dry, empty. 4 inches of snow no flowing water.
	3/5/2013	13:40	RL	-0.200			3175.26	0.000	(4)	Site is dry except for 1-2 inches of drifted snow. No flow, passive samplers frozen in place.
	4/25/2013	18:10	CJ	-0.200			3175.26	0.000	(4)	Field parameters and sampled.
	5/15/2013	16:50	CJL	-0.194			3175.27	0.000	(4)	Download rods, site/bottles dry
	6/14/2013	11:00	CJ	-0.144			3175.32	0.000	(4)	Field params and sampled.
	7/30/2013	11:15	CJ	-0.184			3175.28	0.000	(4)	Dry
	1/7/2014	7:37	CJL	-0.338			3175.12	0.000	(4)	Inspected site. Bottles filled but frozen
	3/24/2014	8:30	TS	-0.180			3175.28	0.000	(4)	Passive samplers were frozen in place, downloaded aquarod, site is dry.
	5/22/2014	8:50	CJL	-0.161			3175.30	0.000	(4)	Field params and sampled. Site dry.
SW-11 (CR)	8/24/2011	9:30	GMK	†	3133.51				---	Install surface water site
	8/25/2011	7:30	GMK	0.234			3133.74	0.019	(4)	Sampled pooled water at site.
	10/20/2011	15:40	GMK	0.551			3134.06	0.190	(4)	Samples collected from water at site. NOT passive samplers.
	12/2/2011	10:20	CJL	0.827			3134.34	0.559	(4)	Samples under 4 inches of ice. Could not access samplers.
	1/27/2012	8:09	CJL	1.246			3134.76	1.671	(4)	Light snow, site under 1-2 feet of ice, inaccessible
	3/14/2012	12:00	RL	†				0.490	(2)	Field parameters and sampled. Download tru-trak.
	4/19/2012	12:15	CJL	0.754			3134.26	0.438	(4)	0.61' of water above ground. Slowly flowing water. Field parameters and sampled.
	5/24/2012	11:55	CJL	0.643			3134.15	0.045 0.286	(1) (4)	Field parameters and sampled. Flowing 10-20 GPM,
	6/7/2012	13:30	CJL	0.574			3134.08	0.212	(4)	Field parameters and sampled.
	6/25/2012	9:50	RL	0.459			3133.97	0.117	(4)	From Sta-2 6.36, 6.75. Downloaded continuous recorder.
	8/28/2012	15:25	GMK	-0.213			3133.30	0.000	(4)	Site dry. Passive samplers full. Field parameters and sampled.
	9/18/2012	17:27	CJL	-0.223			3133.29	0.000	(4)	Sites dry, channels also dry. Passive samplers are empty (Sw11 and 12)
	10/25/2012	17:15	HS	†					---	Dry
	11/16/2012	10:10	CJL	†					---	Both sites under 5-6 inches of snow. Both samplers and channels dry (SW11 and 12)
	12/21/2012	14:15	RL	†					---	Frozen
	1/14/2013	12:55	CJL	†					---	Both set of passive under 1-2 feet of ice. Not accessible.
	2/6/2013	12:10	RL	†					---	Both sites under thick ice. No flowing water (SW 11 and 12)
	3/5/2013	16:10	RL	†					---	Site frozen, no sample.
	4/25/2013	16:40	CJ	†				-	(3)	Flowing stream. Sampled and field parameters.
	5/15/2013	16:15	CJL	0.823			3134.33	0.553	(4)	Download rod, site has 6-8 inches of flowing water.
	6/14/2013	12:00	CJ	1.027			3134.54	0.997	(4)	Site overgrown (veg) slow flow. Field params and sampled.
	7/30/2013	12:15	CJ	0.813			3134.32	0.536	(4)	Site very overgrown, heavy veg growing on water. Field params and sampled.
	1/8/2014	11:00	CJL	1.325			3134.84	1.967	(4)	Dry. gauge level not recorded.
	3/21/2014	10:00	TS	1.424			3134.93	2.381	(4)	Downloaded rod, water was 1' deep.
	4/23/2014	14:30	CJL	1.286			3134.80	1.815	(4)	Downloaded troll
	5/15/2014	10:00	CJ	1.296			3134.81	1.853	(4)	Sampled sw 11 and 12 as mixture. Sw 11 backing up into sw 12.
SW-12 (CR)	8/24/2011	9:30	GMK	†	3133.78				---	Install surface water site
	10/20/2011	16:00	GMK	-0.253			3133.53	0.000	(4)	Sample collected from passive samplers.
	12/2/2011	10:05	CJL	-0.246			3133.53	0.000	(4)	Both passive samplers upheaved out of the ground and frozen in place. No sample or parameters taken.
	1/27/2012	8:09	CJL	1.660			3135.44	6.001	(4)	Light snow, site under 1-2 feet of ice, inaccessible
	3/14/2012	12:05	RL	1.009			3134.79	2.044	(4)	No sample, covered in thick ice.
	3/22/2012	14:00	CJL	0.164			3133.94	0.014	(4)	Samplers under 3-4 inches of slowly flowing water. Ice on bank yet. Aquatic life visible. Field parameters and sampled.
	4/19/2012	12:00	CJL	0.466			3134.25	0.217	(4)	0.51' of water above ground. Slowly flowing. Field parameters and sampled.
	5/24/2012	11:40	CJL	-0.249			3133.53	0.000	(4)	Channel Dry. Both passive samplers empty.
	6/7/2012	13:24	CJL	-0.259			3133.52	0.000	(4)	No surface water around site. No sample taken.
	6/25/2012	9:50	RL	-0.253			3133.53	0.000	(4)	From Sta-2 6.36, 6.75. Downloaded continuous recorder.
	8/28/2012	16:00	GMK	-0.262			3133.52	0.000	(4)	Site dry, Field parameters and sampled from passive samplers.
	9/18/2012	17:27	CJL	-0.253			3133.53	0.000	(4)	Sites dry, channels also dry. Passive samplers are empty (Sw11 and 12)
	10/25/2012	17:08	HS	†				-	---	Dry
	10/21/2012	14:05	RL	†				-	---	Dry
	11/16/2012	10:10	CJL	†				-	---	Both sites under 5-6 inches of snow. Both samplers and channels dry (SW11 and 12)
	1/14/2013	12:55	CJL	0.902			3134.68	1.221	(4)	Both set of passive under 1-2 feet of ice. Not accessible.
	2/6/2013	12:10	RL	1.597			3135.38	5.430	(4)	Both sites under thick ice. No flowing water (SW 11 and 12)
	3/5/2013	16:10	RL	1.342			3135.12	3.442	(4)	Site frozen, no sample.
	4/25/2013	17:00	CJ	0.561			3134.34	0.353	(4)	Field parameters and sampled.
	5/15/2013	16:01	CJL	0.485			3134.27	0.242	(4)	Site has 5-6 inches of standing water. Appears to be water backed from 11 tributary.
	6/20/2013	12:00	CJ	0.571			3134.35	0.369	(4)	No flow, standing back water from sw 11, 4-5'. Field params and sampled.
	7/30/2013	12:30	CJ	-0.190			3133.59	0.000	(4)	Area around site dry.
	1/8/2014	16:00	CJL	1.118			3134.90	2.141	(4)	Dry. gauge level not recorded.
	3/21/2014	9:20	TS	1.056			3134.84	1.843	(4)	Downloaded aquarod. Field params and sampled.
	4/23/2014	14:26	CJL	0.915			3134.70	1.267	(4)	Downloaded troll. Water appears to be backed up from SW 11 channel.
	5/15/2014	10:00	CJ	0.928			3134.71	1.315	(4)	Sampled sw 11 and 12 as mixture. Sw 11 backing up into sw 12.

APPENDIX E - TABLE E-1
OTTER CREEK MINE - BASELINE REPORT 304E
BASELINE SURFACE WATER MONITORING SUMMARY (2010-2014)

Site ID	Monitoring Event Date	Monitoring Event Time	Personnel	Continuous Recorder	MPE	Crest Gage Cork Level	Elevation	Flow		Comments (re: Field Notebook)
	mm/dd/yr.	(24 hrs)		Feet	Feet	Feet	Feet	cfs	Method	
SW-13 (CR)	5/13/2011	13:47	RL	†	3075.00				---	Logger not calibrated, restart logger
								0.018	(1)	
	6/14/2011	11:40	RL	0.198			3075.20	0.034	(4)	Field parameters and sampled. 1 L/2 seconds flow.
	10/21/2011	9:30	GMK	†				0.034	---	Field parameters and sampled.
	12/8/2011	9:55	CJL	†					---	Field parameters and sampled.
								0.0024	(1)	
	3/14/2012	16:40	RL	0.171			3075.17	0.0206	(4)	Field parameters and sampled. Channel profile. Flow = 1L/15 sec *(Thus = 0.00236 cfs)*
	3/23/2012	9:30	CJL	-0.207			3074.79	0.000	(4)	Site is DRY
	4/19/2012	13:55	CJL	-0.266			3074.73	0.000	(4)	Site Dry
	5/24/2012	8:56	CJL	-0.157			3074.84	0.000	(4)	Dry
	6/7/2012	11:33	CJL	-0.119			3074.88	0.000	(4)	Dry
	8/28/2012	13:50	GMK	-0.210			3074.79	0.000	(4)	Field parameters and sampled.
	9/18/2012	15:50	CJL	-0.279			3074.72	0.000	(4)	Site dry. Passive samplers empty.
	11/15/2012	17:00	CJL	†					---	Passive samplers empty. Site dry.
	12/20/2012	12:32	RL	-0.249			3074.75	0.000	(4)	Downloaded logger. Site dry
	1/14/2013	11:33	CJL	-0.262			3074.74	0.000	(4)	Passive samplers are both dry. 3-4 inches of snow around site, no standing water present.
	2/6/2013	10:25	RL	0.597			3075.60	1.222	(4)	Ice present over samplers, frozen, stream is flowing. Will return to sample tomorrow.
								0.011	(1)	
	2/7/2013	14:30	RL	0.482			3075.48	0.609	(4)	Collected sample of flowing water beneath ice. Q = 5 gpm.
	3/7/2013	12:50	TS	-0.128			3074.87	0.000	(4)	No flow, no sample, some snow.
	4/25/2013	19:30	CJ	-0.059			3074.94	0.000	(4)	Field parameters and sampled from standing water.
	5/15/2013	14:15	CJL	-0.030			3074.97	0.000	(4)	Site/bottles dry
	6/20/2013	13:20	CJ	-0.072			3074.93	0.000	(4)	Heavy runoff/flash flooding, posts cut, debris, field params and sampled.
	7/30/2013	18:00	CJ	-0.056			3074.94	0.000	(4)	Dry
	3/24/2014	12:45	TS	†					---	Site is dry
	5/22/2014	11:40	CJL	†					---	Site dry
SW-14	4/13/2011	-	GMK		3052.85				---	Installed surface site.
	6/14/2011	15:50	RL			1.06	3053.91	20.68	(3) (4)	Crest gauge = 1.06'.
	10/25/2011	16:00	GMK			0.50	3053.35	1.785	(3) (4)	Crest gauge = 0.50'.
	12/1/2011	13:40	CJL						---	Crest gauge frozen in PVC.
	1/25/2012	13:15	CJL						---	Crest gauge frozen and could not be pulled.
	3/15/2012	8:10	RL						---	Crest gauge frozen. Channel profile. No sample.
	3/22/2012	14:10	CJL						---	Site visit for sampling. gauge reading not recorded.
	4/18/2012	16:50	CJL						---	Site Dry. gauge level not recorded.
	5/24/2012	14:20	CJL			0.000		0.000	(3)	Crest gauge = 0.00'.
	6/7/2012	10:00	CJL			0.000		0.000	(3)	Site was dry. Crest gauge = 0.00'.
	8/27/2012	15:20	CJL			0.046	3052.90	0.001	(3) (4)	Crest gauge reads = 0.55". (Thus: 0.55" = 0.0458')
	9/18/2012	15:05	CJL			0.000		0.000	(3)	Both sites (SW-14 & 15) dry. Crest gauge = 0.00'.
	10/25/2012	13:22	HS						---	Dry, no water.. Need more cork in crest gauge.
	11/15/2012	14;00	LS			0.000		0.000	(3)	Site has 3-4-inches snow around it. Crest gauge - 0.00'.
	12/20/2012	16:15	RL						---	Dry. gauge level not recorded.
	1/14/2013	15:10	CJL						---	Both sites (SW-14 & 15) 3-4 in. snow around sites. Crest gauge frozen in-place.
	2/7/2013	11:00	RL					0.000	(3)	Frozen site conditions. gauge level not recorded. No water.
	3/5/2013	9:15	RL						---	Frozen site conditions. gauge level not recorded.
	4/26/2013	9:40	CJ			0.250	3053.10	0.208	(3) (4)	Crest gauge: faint trace cork ~3" from bottom of cup. (Thus: 3" = 0.25']
	6/20/2013	-	CJ						---	Gauge level not recorded.
	7/29/2013	16:00	CJ						---	Dry. gauge level not recorded.
	1/8/2014	7:50	CJL						---	Crest gauge frozen in-place.
	3/25/2014	11:20	TS						---	Crest gauge frozen in-place. Site dry.
	5/21/2014	10:44	CJL			0.000		0.000	---	Site Dry. Cleared debris. Broken bottle. Needs additional cork. Crest gauge - 0.0'
SW-15	4/13/2011	-	GMK		3054.02				---	Installed surface site.
	6/14/2011	15:45	RL			0.89	3054.91	18.100	(3) (4)	Crest gauge = 0.89'.
	10/25/2011	15:45	GMK			0.60	3054.62	7.068	(3) (4)	Crest gauge = 0.60'.
	1/25/2012	13:20	CJL						---	Crest gauge frozen in PVC.
	3/15/2012	8:30	RL			0.68	3054.70	9.944	(3) (4)	Crest gauge H(cork) = 0.68'. Channel profile.
	4/18/2012	16:53	CJL						---	Site dry, no water elevation recorded.
	5/24/2012	14:25	CJL			0.00		0.000	(3)	Site was dry. Crest gauge = 0.00'.
	6/7/2012	-	CJL			0.00		0.000	(3)	Site area was dry. Crest gauge = 0.00'.
	8/27/2012	15:30	GMK			0.00		0.000	(3)	Site dry. Crest gauge = 0.00'.
	9/18/2012	15:05	CJL			0.00		0.000	(3)	Both sites (SW-14 & 15) dry. Crest gauge = 0.00'.
	11/15/2012	14:10	CJL			0.00		0.000	(3)	Site has 3-4-inches snow around it. Crest gauge - 0.00'.
	12/20/2012	15:30	RL						---	gauge level not recorded.
	1/14/2013	15:10	CJL						---	Both sites (SW-14 & 15) 3-4 in. snow around sites. Crest gauge frozen in-place.
	2/7/2013	11:00	RL						(3)	No flowing water. Some ice. gauge level not recorded.
	3/5/2013	9:18	RL						---	Frozen site conditions. gauge level not recorded.
	7/29/2013	16:15	CJ						---	Dry. gauge level not recorded.
	1/8/2014	7:50	CJL						---	Crest gauge frozen in-place.
	3/25/2014	11:10	TS						---	Crest gauge frozen in-place. Site dry.
	5/21/2014	10:50	CJL			0.00		0.000	---	Site Dry. Needs additional cork. Crest Gauge - 0.0'.
SW-16	6/15/2011	15:00	RL	†	3054.423			24.930	(2)	Field parameters and sampled. Channel profile. Marsh
								6.200	(2)	Marsh
	7/19/2011	14:08	GMK	1.390			3054.42	5.886	(4)	
								3.890	(2)	Marsh
	8/10/2011	11:45	BH	1.310			3055.73	4.555	(4)	
								2.879	(2)	Marsh
	8/25/2011	16:00	GMK	1.190			3055.61	3.083	(4)	
								3.000	(2)	Marsh
	8/30/2011	10:00	GMK	1.190			3055.61	3.083	(4)	
								2.550	(2)	Marsh. Gauge height = 1.19
	9/16/2011	9:43	RL	1.170			3055.59	2.899	(4)	
								2.200	(2)	Marsh
	9/28/2011	10:00	GMK	1.230			3055.65	3.504	(4)	
								3.600	(2)	Installed Telog. Flow taken using Marsh McBirney.
	10/26/2011	12:10	GMK	1.212			3055.64	3.303	(4)	
								3.120	(2)	Field parameters and flow from Marsh McBirney - 3.12 cfs. Computer battery died and would not recharge. No
	11/3/2011	11:00	GMK	1.237			3055.66	3.587	(4)	telog reading.
								5.070	(2)	Marsh
	3/7/2012	13:30	GMK	7.552			3061.98	948.614	(4)	
	3/15/2012	9:40	RL	†				23.700	(2)	Field parameters and flow from Marsh McBirney. Channel Profile
								12.100	(2)	Stream gauging @ SW-16
	3/28/2012	16:30	RL	1.494			3055.92	8.031	(4)	
								6.920	(2)	Field parameters and sampled. Flow in database
	5/3/2012	15:00	CJL	1.367			3055.79	5.474	(4)	
								6.510	(2)	Marsh
	5/8/2012	16:40	RL	1.248			3055.67	3.722	(4)	
	6/7/2012	7:30	CJL	†					---	Downloaded telog. Rabbit living in underground sprinkler box.
	9/6/2012	13:10	GMK	0.913			3055.34	2.086	(4)	Field parameters and sampled.
	12/6/2012	12:50	CJL	1.562			3055.99	9.683	(4)	Field parameters and sampled. Livestock watering upgradient of sample location.
	12/20/2012	15:30	RL	1.415			3055.84	6.357	(4)	Could not communicate with telog.
								5.070	(2)	Took flow measurements, ice above and below crossing. Flow = 5.07 cfs
	3/7/2013	13:25	TS	1.590			3056.01	10.430	(4)	
	7/30/2013	19:45	CJ	1.285			3055.71	4.198	(4)	Field parameters and sampled.
								0.540	(2)	Marsh
	8/1/2013	12:00	CJ	1.330			3055.75	4.866	(4)	
								2.225	(2)	Field parameters only.
	10/22/2013	10:35	CJL	1.449			3055.87	7.041	(4)	
								1.515	(2)	Field parameters and sampled. Marsh flow = 641.786 gpm
	1/9/2014	10:20	CJL	1.474			3055.90	7.587	(4)	
	3/20/2014	-	CJL	†				28.503	(2)	Marsh
	4/24/2014	-	CJL	†				7.194	(2)	Marsh. Repairs
	5/21/2014	13:45	CJL	†				7.739	(2)	field params and sampled. Marsh flow taken.
SW-17	4/12/2011	16:30	GMK		3092.3				---	Checked site. No gauge installed.
	4/13/2011	-	GMK						---	Installed surface site.
	4/26/2011	12:10	GMK						(3)	Gauge level not recorded. Flow measured; volume not recorded in field book.
	6/14/2011	17:30	RL			0.92	3093.22	46.310	(3) (4)	Field parameters. Crest gauge = 0.92
	10/25/2011	16:40	GMK			0.69	3092.99	22.543	(3) (4)	
	12/1/2011	13:00	CJL			0.23	3092.53	1.595	(3) (4)	Field parameters only. Not enough water to sample. Crest gauge - 0.23'. Mud filled inlet.
	1/25/2012	10:28	CJL						---	Gauge reading not recorded. 2 to 3-in. water and 1/2-inch ice surround site.
	3/15/2012	9:00	RL			0.52	3092.82	11.399	(3) (4)	Crest gauge H(cork) = 0.52'. Channel profile. Field parameters and sampled.
	4/18/2012	16:30	CJL						---	Site Dry. gauge level not recorded.
	5/24/2012	13:55	CJL			0.00		0.000	(3)	Site was dry. "Crest gauge = 0.00'.
	6/7/2012	9:02	CJL			0.00		0.000	(3)	Site area was dry. Crest gauge = 0.00'.
	8/27/2012	15:00	GMK			0.00		0.000	(3)	Site area was dry. Crest gauge = 0.00'.
	9/6/2012	13:10	GMK						---	Gauge level not recorded.
	9/18/2012	14:40	CJL					0.000	(3)	Channel Dry. gauge level not recorded.
	10/25/2012	12:50	HK					0.000	(3)	Dry - no water. gauge level not recorded.
	11/15/2012	13:40	CJL			0.00		0.000	(3)	Site has 3-4-inches snow around it. Crest gauge - 0.00'.
	12/20/2012	15:20	RL						---	Site Dry. gauge level not recorded.
	1/14/2013	14:40	CJL						---	Frozen conditions. gauge level not recorded. Sampling site dry.
	3/5/2013	13:45	RL						---	Standing snow 1". Crest gauge frozen in-place.
	6/13/2013	18:20	CJ						---	Water at 50' downstream from site. No gauge level or flow recorded. Field params and sampled.
	7/30/2013	19:45	CJ						---	Gauge level not recorded. Dry
	1/8/2014	7:50	CJL						---	Crest gauge frozen in-place.
	3/25/2014	10:30	TS						---	Site dry. Crest gauge frozen in-place.
	5/21/2014	10:20	CJL			0.00			---	Site dry. Missing one bottle. Needs additional cork. Crest Gauge - 0.0'

APPENDIX E - TABLE E-1
OTTER CREEK MINE - BASELINE REPORT 304E
BASELINE SURFACE WATER MONITORING SUMMARY (2010-2014)

Site ID	Monitoring Event Date	Time	Personnel	Continuous Recorder	MPE	Crest Gage Cork Level	Elevation	Flow		Comments (re: Field Notebook)
	mm/dd/yr.	(24 hrs)		Feet	Feet	Feet	Feet	cfs	Method	
SW-18	4/12/2011	16:30	GMK		3080.69				---	Site presently under several feet of water. Depth not recorded.
	6/15/2011	8:55	RL			1.25	3081.94	24.160	(3) (4)	Crest gauge height = 1.25. no flow
	10/25/2011	12:00	GMK			0.90	3081.59	12.876	(3) (4)	No water in sample jars.
	12/1/2011	10:45	CJL						---	Crest gauge frozen in mud. Could not pull gauge out for measurement
	1/26/2012	15:16	CJL						---	Crest gauge frozen. 3 to 4-in. snowmelt [water] surrounding site. Field parameters taken
	3/15/2012	11:40	RL			0.65	3081.34	6.258	(3) (4)	No visible surface water. H(cork) = 0.65'. Channel profile.
	3/22/2012	10:20	CJL						---	Site visit for sampling. gauge reading not recorded.
	4/18/2012	13:37	CJL						---	Site Dry. gauge level not recorded.
	5/23/2012	15:32	CJL			0.00		0.000	(3)	Site was dry. Crest gauge = 0.00".
	6/6/2012	16:00	CJL			0.00		0.000	(3)	Site was dry. Crest gauge = 0.00'.
	9/18/2012	11:00	CJL						---	Site Dry. gauge level not recorded.
	12/21/2012	8:55	RL						---	Gauge level not recorded.
	1/14/2013	13:50	CJL						---	Crest gauge frozen in-place.
	2/6/2013	8:45	RL			0.20	3080.89	0.459	(3) (4)	Crest gauge frozen in-place. Hw = 0.2 @ thalweg.
	3/4/2013	8:15	RL					0.000	(3)	Frozen. Snow covered. No flow. gauge level not recorded.
	4/26/2013	13:00	CJ						---	Crest gauge cap off, broken housing at base - no cork on staff.
	6/20/2013	16:05	CJ						---	Heavy storm wash - missing equipment. gauge level not recorded.
	7/29/2013	19:30	CJ						---	Dry. gauge level not recorded.
	1/9/2014	-	TS						---	Site cover with 4" of snow. Crest gauge frozen.
	3/20/2014	7:30	TS						---	Site Dry. gauge level not recorded.
SW-19	4/12/2011	16:30	GMK		3108.28				---	Site presently under several feet of water. Depth not recorded.
	6/15/2011	7:50	RL			1.01	3109.29	7.055	(3) (4)	Crest gauge height = 1.01'
	9/16/2011	8:30	GMK						---	Gauge level not recorded.
	10/25/2011	12:10	GMK			1.20	3109.48	11.070	(3) (4)	Site was dry. "Crest gauge = 1.2'. "
	10/25/2011	12:50	GMK			0.00		0.000	(3)	Site was dry. "Crest gauge = 0.0'. "
	12/1/2011	11:05	CJL			0.15	3108.43	0.043	(3) (4)	Crest gauge frozen, water surrounding PVC, approximate water depth = .15'.
	1/26/2012	14:58	CJL						---	Crest gauge frozen in PVC. 1-inch standing water around site.
	3/15/2012	12:10	RL			0.95	3109.23	5.988	(3) (4)	No visible surface water. Crest gauge=> H= 0.95'. Channel profile
	4/18/2012	13:12	CJL						---	Site Dry. Water elevation not [gauge] recorded.
	5/23/2012	15:12	CJL			0.00		0.000	(3)	Crest gauge = 0.00". Site Dry.
	6/6/2012	16:30	CJL			0.00		0.000	(3)	Crest gauge = 0.00'. Site Dry.
	8/27/2012	18:15	CJL			0.00		8.300	(1)	Field parameters and sampled. Flow from database.
	9/18/2012	13:05	CJL			0.00		0.000	(3)	Crest gauge = 0.00'. Site Dry.
	1/14/2013	16:05	CJL						---	Crest gauge frozen in-place.
	3/4/2013	7:30	RL						---	Frozen. Snow covered. No flow. gauge level not recorded.
	4/26/2013	13:50	CJ			0.50	3108.78	1.073	(3) (4)	Cork at 6" above cup; wet cork. *[Thus: 6" = 0.5']*
	6/20/2013	-	CJ			1.17	3109.45	10.462	(3) (4)	Crest gauge @ ~14" (= ~1.1667')
	7/29/2013	19:45	CJ						---	Dry. gauge level not recorded.
	1/9/2014	-	TS						---	Site cover with 1" of snow. Crest gauge frozen.
	3/19/2014	8:30	TS						---	Site Dry. gauge level not recorded.
	5/21/2014	16:45	CJL						---	Field Parameters and sampled.
SW-20 (CR)	4/13/2011	-	GMK	†	3118.98				---	Installed surface site.
	6/15/2011	7:00	RL	-0.156			3118.82	0.000	(4)	Installed continuous site.
	10/25/2011	12:30	GMK	-0.151			3118.83	0.000	(4)	Field Parameters and sampled. No Height recorded.
	12/1/2011	11:10	CJL	-0.148			3118.83	0.000	(4)	Both passive samplers do not have any water in them, site DRY
	1/26/2012	14:52	CJL	0.082			3119.06	0.0363	(4)	Both passive samplers frozen in place, snow surrounding site, no run-off visible.
	3/15/2012	12:30	RL	-0.151			3118.83	0.000	(4)	Passive samplers frozen in ground. No sample collected. truTrack downloaded. Channel profile.
	3/22/2012	10:00	CJL	-0.154			3118.83	0.000	(4)	Checked passive samplers. Site Dry.
	4/182012	13:07	CJL	-0.148			3118.83	0.000	(4)	Site dry, no sample collected
	5/23/2012	14:45	CJL	-0.144		0.00	3118.84	0.000	(4) (3)	Crest gauge = 0.00".
	6/6/2012	15:25	CJL	-0.157			3118.82	0.000	(4)	Site Dry. gauge level not recorded.
	8/27/2012	17:43	CJL	-0.164			3118.82	0.000	(4)	Site Dry. gauge level not recorded.
	9/18/2012	13:15	CJL	-0.171		0.00	3118.81	0.000	(4) (3)	Crest gauge = 0.00'. Site Dry.
	12/21/2012	7:30	RL	-0.141			3118.84	0.000	(4)	Gauge level not recorded.
	1/14/2013	16:10	CJL	-0.148			3118.83	0.000	(4)	3-4 in. snow on ground. gauge level not recorded.
	2/7/2013	7:20	RL	0.010			3118.99	0.000	(4)	Frozen site conditions. gauge level not recorded.
	3/4/2013	7:35	RL	-0.059			3118.92	0.000	(4)	Frozen. Snow covered. No flow. gauge level not recorded.
	4/26/2013	14:00	CJ	-0.154			3118.83	0.000	(4)	Gauge level not recorded.
	5/15/2013	12:25	CJL	†				-	---	Gauge level not recorded.
	6/20/2013	15:35	CJ	-0.121			3118.86	0.000	(4)	Gauge level not recorded.
	7/29/2013	19:50	CJ	-0.164			3118.82	0.000	(4)	Dry. gauge level not recorded.
	1/9/2014	-	TS	†				-	---	Site cover with ~ 6" of snow. Crest gauge frozen.
	3/19/2014	7:54	TS	-0.157			3118.82	0.000	(4)	Site Dry. gauge level not recorded.
	5/14/2014	15:40	CJ	-0.161			3118.82	0.000	(3)	field parameters only. No sample.
							3118.98	0.000	(3)	
	5/21/2014	16:26	CJL	-0.157			3118.98	0.000	(4)	Wiped gauge clean of cork, reset in PVC
SW-21	4/12/2011	16:30	GMK		3114.77				---	Site presently under several feet of water. Depth not recorded.
	6/15/2011	6:44	RL			0.75	3115.52	7.270	(3) (4)	Crest gauge = 0.75'
	12/1/2011	11:20	CJL			0.00		0.000	(3)	Site dry around gauge. Crest gauge = 0.0'.
	1/26/2012	15:39	CJL						---	Crest gauge frozen in PVC. 2 to 3-in. of runoff snowmelt around gauge.
	3/15/2012	13:00	RL			0.80	3115.57	8.183	(3) (4)	No surface water. H(cork) = 0.80'. Channel profile
	4/18/2012	12:50	CJL						---	Site Dry. gauge level not recorded.
	6/6/2012	15:15	CJL			0.00		0.000	(3)	Site Dry. Crest gauge 0.00'.
	8/27/2012	17:20	CJL			0.00		0.000	(3)	Site Dry. Crest gauge 0.00".
	9/18/2012	13:25	CJL			0.00		0.000	(3)	Site Dry. Crest gauge 0.00'.
	1/14/2013	16:20	CJL						---	Site Dry. Crest gauge frozen in-place.
	2/7/2013	7:15	RL					0.000	(3)	Site Dry, no flow. gauge level not recorded.
	3/4/2013	7:25	RL					0.000	(3)	Frozen conditions. No flow. gauge level not recorded.
	6/20/2013	-	CJ			0.50	3115.27	2.513	(3) (4)	Crest gauge @ ~ 6".
	7/29/2013	20:00	CJ						---	Dry. gauge level not recorded.
	3/19/2014	7:28	TS						---	Site was dry and crest gauge was frozen in place.
	5/21/2014	16:09	CJL			0.90	3115.67	11.860	(3) (4)	Ha - .90'
SW-22 (CR)	6/15/2011	17:15	RL	†	3100.28				-	Field parameters and sampled. Hw out 2.9', Hw in 4.0
	8/25/2011	-	GMK	†				3.230	(2)	Marsh
								1.234	(2)	
	9/16/2011	9:00	RL	1.892			3102.17	10.038	(4)	6.03 feet below m.p. Marsh
								2.100	(2)	
	9/29/2011	10:00	GMK	1.889			3102.17	10.009	(4)	Marsh
								4.200	(2)	
	10/26/2011	13:20	GMK	1.956			3102.24	10.660	(4)	Field parameters and sampled. Took flow with marsh mcbirney at 1300.
								5.530	(2)	Field parameters. Flow from marsh mcbirney - 5.53. Calculated flow = 8.2 cfs. Middle of culvert inlet - 1.9' water
	11/3/2011	12:30	GMK	2.023			3102.30	11.329	(4)	depth at 0.61 ft/sec.
	3/15/2012	14:00	RL	†				14.150	(2)	Field parameters and sampled. Flow was recorded in database as 5.1 cfs.
								10.700	(2)	
	3/29/2012	13:05	RL	1.853			3102.13	9.665	(4)	Recorded flow w/ Marsh McBirney
								5.100	(2)	
	5/3/2012	15:30	CJL	1.627			3101.91	7.630	(4)	Field parameters and sampled. Flow was recorded in database as 5.1 cfs
								5.156	(2)	
	5/8/2012	18:08	CJL	1.484			3101.76	6.442	(4)	Marsh
								0.620	(2)	
	8/27/2012	13:00	CJL	0.518			3100.80	0.500	(4)	Marsh
	8/29/2012	9:50	GMK	0.499			3100.78	0.422	(4)	downloaded level troll
	9/6/2012	14:00	GMK	†					---	Field parameters and sampled.
	12/6/2012	13:15	CJL	†					---	Field parameters and sampled. Sampled above intake of culvert crossing.
	12/21/2012	8:05	RL	†					---	frozen
	3/7/2013	14:30	TS	†				5.220	(2)	ice on either side of culvert, took flow reading. Flow = 5.22 cfs
	4/29/2013	12:00	CJ	†					---	worked on site.
	7/30/2013	20:50	CJ	†					---	field params and sampled.
	8/1/2013	-	RL	†				2.000	(2)	Marsh
								2.520	(2)	
	10/24/2013	17:03	CJL	0.985			3101.27	2.919	(4)	Marsh
	1/9/2014	11:45	CJL	2.565			3102.85	17.377	(4)	couldn't find flow under ice. Field params and sampled.
								5.870	(2)	
	4/24/2014	9:30	CJL	-2.083			3098.20	2.442	(4)	Marsh
								5.820	(2)	
	5/21/2014	14:40	CJL	0.162			3100.44	0.781	(4)	field params and sampled. Marsh flow taken.
SW-23	2/3/2011	13:05	-		3128.87				---	Flow will be calculated from culvert. gauge level not recorded.
	6/15/2011	6:00	RL					0.100	(1)	Three flows measured: 3.5g/4.62 sec, 3.5 g/4.73 sec, 3.5g/4.62 sec. Average 3.5g/4.65 sec. (Thus: Flow at 45.161gpm = 0.1007 cfs). gauge level not recorded.
	8/30/2011	17:40	GMK						---	Site was dry
	10/25/2011	13:00	GMK			0.00		0.000	(3)	Site was dry. Crest gauge = 0.0'.
	3/15/2012	13:30	RL			2.23	3131.10	0.550	(3) (4)	Rise of cork at crest 2.23'. Water ponded above culvert.
								0.267	(1)	This day at 1.83' at 13:20. Q = 5 gal/2.5 sec at end culvert. *(Thus: 120gpm = 0.267 cfs). Channel profile.*
	3/15/2012	13:20	RL			1.83	3130.70	0.290	(3) (4)	
								0.141	(1)	Hg = 1.73 ft. bottom crest gauge to top of water. Volumetric flow 2g/1.9 sec. at culvert mouth. (Thus: 63.158g/min = 0.141cfs).
	3/29/2012	12:45	CJL			1.73	3130.60	0.230	(3) (4)	
								0.069	(1)	Standing water around gauge = 1.67'. Bucket gauge 3.5g/6.75sec = 31.11 gpm. (Thus: = 0.0693 cfs)
	4/18/2012	12:40	CJL			1.67	3130.54	0.190	(3) (4)	
								0.058	(1)	Q at 2.75 g/6.33 sec = 26.07gpm volumetric test. *(Thus: = 0.058 cfs)*
	4/19/2012	15:10	CJL			1.78	3130.65	0.264	(3) (4)	
	5/2/2012	14:00	CJL			1.59	3130.46	0.170	(1)	Crest gauge prior to exchange 1.59'. Culvert outlet Q = 2.5g/3.86 sec = 38.86gpm (Thus: = 0.0867 cfs).
SW-23 (SG)	5/2/2012	14:00	CJL			1.58	3130.45	0.154	(3) (4)	Exchanged crest gauge with staff gauge. Staff gauge reading after installment 1.58'
								0.016	(1)	Hg = 1.53. Q = 1.5g/12.55 sec. *(Thus: = 0.0159 cfs)* Q = 7.2 gpm *(Thus: = 0.016 cfs)*
	5/8/2012	17:50	RL			1.53	3130.40	0.125	(3) (4)	
	5/23/2012	14:35	CJL			0.00		0.000	(3)	Site Dry. No Discharge from culvert. Staff gauge 0.00".
	6/6/2012	15:03	CJL			0.61		0.000	(3)	No discharge thru culvert. Staff gauge = 0.61'
	6/25/2012		RL						---	Survey culvert and gauge relatively from Sta-4
	8/27/2012	9:36	CJL					0.000	(3)	Inspection. Pond Dry. gauge level not recorded.
	9/18/2012	13:40	CJL			0.00		0.000	(3)	Channel Dry. Staff gauge = 0.00'
	1/14/2013	16:35	CJL						---	Site dry. Crest gauge not recorded.
	2/6/2013	15:10	RL			0.14	3129.01	0.000	(3) (4)	Replaced crest gauge at site. Some snow melting … [water] is to 0.14' on staff gauge
	3/4/2013	7:15	RL						---	Site frozen, drifted snow. No flow. gauge level not recorded.
	4/29/2013	13:00	CJ			0.73	3129.60	0.000	(3) (4)	Area around gauge muddy. Cork at 8 3/4 in. [Thus: 8 3/4" = 0.7289']
						2.51	3131.38	0.730	(3) (4)	
	7/29/2013	20:15	CJ			3.14	3132.01	0.900	(3) (4)	Previous crests at 3.14' & 2.51' ; dripping bottom. Dry
	1/9/2014	-	CJL						---	Site dry. Crest gauge not recorded.
	4/23/2014	15:46	CJL					0.000	(3)	No water at site. gauge level not recorded.
								0.129	(1)	Field Parameters taken, sampled. Volumetric (Bucket) - 5 gal/5.80 sec = 57.72 GPM. (0.1286 cfs)Livestock
	5/21/2014	15:10	CJL			1.74	3130.61	0.230	(3) (4)	watering..... Staff gauge = 1.74'

APPENDIX E - TABLE E-1
OTTER CREEK MINE - BASELINE REPORT 304E
BASELINE SURFACE WATER MONITORING SUMMARY (2010-2014)

Site ID	Monitoring Event Date	Monitoring Event Time	Personnel	Continuous Recorder	MPE	Crest Gage Cork Level	Elevation	Flow		Comments (re: Field Notebook)
	mm/dd/yr.	(24 hrs)		Feet	Feet	Feet	Feet	cfs	Method	
SW-24 (CR)	5/13/2011	8:50	RL	†	3036.90				-	Standing water at site. Continuous recorder installed.
	6/14/2011	10:30	GMK	-0.143			3036.76	0.000	(4)	No surface water but muddy around site.
	10/25/2011	7:45	GMK	-0.154			3036.75	0.000	(4)	Site was dry. No surface water. gauge level not recorded.
	3/14/2012	9:40	RL	0.040			3036.94	0.001	(4)	No flow observed. Several areas of ponded water. gauge level not recorded. Channel profile
	4/19/2012	8:55	CJL	-0.275			3036.63	0.000	(4)	Site Dry, no water present. gauge level not recorded.
	5/13/2012	11:43	CJL	-0.282			3036.62	0.000	(4)	Gauge level not recorded.
	5/23/2012	11:43	CJL	-0.278			3036.62	0.000	(4)	Download AquaRod; not running; no data since last download. Full as of 9/12/12.
	6/6/2012	11:50	CJL	-0.156			3036.74	0.000	(4)	Site Dry. gauge level not recorded.
	8/28/2012	12:16	GMK	-0.168			3036.73	0.000	(4)	Site Dry. gauge level not recorded.
	11/16/2012	6:50	CJL	†				-	-	Site had no water in channel. gauge level not recorded.
	12/20/2012	10:00	RL	-0.137			3036.76	0.000	(4)	Gauge level not recorded.
	1/14/2013	10:47	CJL	-0.196			3036.70	0.000	(4)	3-4 in. snow surrounding site. gauge reading not recorded.
	3/6/2013	9:25	RL	-0.190			3036.71	0.000	(4)	No flow. [Site] covered in 5-6 in. snow. gauge level not recorded.
	5/15/2013	7:00	CJL	-0.131			3036.77	0.000	(4)	Ggauge level not recorded. Download AquaRod data.
	7/29/2013	15:25	CJ	-0.111			3036.79	0.000	(4)	Dry. gauge level not recorded.
	3/24/2014	18:30	TS	-0.183			-0.18	0.000	(4)	Dry. gauge level not recorded.
SW-25	10/26/2011	8:30	GMK	†	3016.18				---	Field parameters and sampled. Samples collected from upstream inlet of highway culvert at home creek.
	4/6/2013	11:30	CJL	†					---	Continuous [i.e., periodic] recorder installed. Marsh-McBirney flow taken, not recorded.
	4/9/2013	15:15	CJL	2.163			3018.34	6.184 6.388	(2) (4)	Marsh
	4/25/2013	12:00	CJ	2.241			3018.42	7.456	(4)	Checked Troll monitoring transducer. Download data.
	7/30/2013	21:15	CJ	0.982			3017.16	0.204	(4)	Field parameters only.
	8/1/2013	12:17	CJ	1.124			3017.30	0.340 0.367	(2) (4)	Marsh
	10/22/2013	15:00	CJ	1.694			3017.87	2.619 2.200	(2) (4)	Field parameters only. Marsh
	1/8/2014	8:15	CJL	1.533			3017.71	1.221 1.423	(2) (4)	Marsh-McBirney flow recorded 547.54 gpm (Thus:=1.2210 cfs). gauge level not recorded.
	3/20/2014	13:17	CJL	2.640			3018.82	24.883 15.238	(2) (4)	Marsh
	4/23/2014	11:00	CJL	2.499			3018.68	8.208 11.993	(2) (4)	Marsh
	4/24/2014	14:00	CJL	2.497			3018.68	11.951	(4)	High water moved screen & weighted block securing Troll. gauge level not recorded.
	5/21/2014	11:40	CJL	2.348			3018.53	7.425 9.138	(2) (4)	Field parameters and sampled. Marsh Flow taken. 3332.63 gpm, 7.425 cfs.

Notes: SG = Staff gage
CR = Continuous Recorder
MPE = Elevation at ground level (base of gage)
WL = Water Level (above ground level [i.e., base of gage])
cfs = cubic feet per second
* Manual measurement
† - No continuous recorder data at time of site visit.
Method (1): Field flow measured by captured flow into graduated bucket and digital watch (time).
Method (2): Flow measured per Marsh-McBirney equipment.
Method (3): Visible observation without flow measurement. May/may not have corresponding gage measurement.
Method (4): Channel rating curve calculation.
Method (5): Channel rating curve calculation using manual water depth measurement.
See Table 3-1 Surface Water Monitoring Network for gauge location, equipment installed and scheduled monitoring frequency.

APPENDIX E - TABLE E-2
OTTER CREEK MINE - BASELINE REPORT 304E
BASELINE SURFACE WATER IMPOUNDMENT (POND) MONITORING SUMMARY (2011 - 2014)

Pond	Monitoring		Staff Gauge			Comment (re: Field Notebook)
Site ID	Date	Time	MPE	SWL	Elevation	
						Height measurement not reported. Field parameters and sampled. No visible surface water
P1	10/27/2010	15:30				flowing into or out of pond.
P1	6/24/2011	8:00				SWL not reported. Field parameters and sampled.
P1	8/30/2011	15:35		9.08		field params and water level
P1	10/21/2011	9:00		9.40	3172.19	Water level recorded as below M.P. (measuring point)Field parameters and sampled.
P1	2/7/2012	14:40		9.25	3172.34	Water level recorded as below M.P. (measuring point)Field parameters and sampled.
P1	5/3/2012	7:45		8.79	3172.80	Notebook: "Hpond - 8.79". Field parameters and sampled.
P1	9/6/2012	11:15	3181.59	DRY		Pond dry, no sample.
P1	12/5/2012	9:55		DRY		no sample collected.
P1	3/5/2013	17:50		11.38	3170.21	Field parameters and sampled.
P1	5/15/2013	14:40		10.74	3170.85	Field parameters and sampled.
P1	7/30/2013	17:45		8.20	3173.39	Field parameters and sampled.
P1	1/8/2014	16:25		8.34	3173.25	Field parameters and sampled.
P1	3/24/2014	11:50		7.25	3174.34	Field parameters and sampled.
P1	5/22/2014	11:20		7.55	3174.04	Field parameters and sampled. Pond not discharging, Levestock using as water source.
P2	10/27/2010	13:35		DRY		Pond is dry, no surface water visible.
P2	6/24/2011	7:40				Notebook eludes to water present & sample collected. Water heigth not reported.
P2	8/30/2011	17:00		DRY		
P2	10/25/2011	14:30		DRY		"Pond was Dry"
P2	2/6/2012			DRY		Staff gauge reads 0.27. Site covered in ice, no liquid water
P2	5/3/2012	13:30		DRY		"Pond was Dry" Staff Gauge = 0.00'
P2	8/29/2012	10:30	---	DRY		Site Dry
P2	12/5/2012	11:00		DRY		no sample collected.
P2	3/5/2013	11:30		FROZEN		
P2	5/15/2013	15:10		DRY		
P2	7/29/2013	17:00		DRY		
P2	3/25/2014	8:15		DRY		Dry
P2	5/21/2014	9:00		DRY		"Site Dry"
P3	10/27/2010	17:00				Field Parameters and sampled. No visible flow into or out of pond. Cattle watering at pond.
P3	6/24/2011	8:45				Field Parameters and sampled. No height recorded.
P3	8/30/2011	14:55		6.16		field params and water level
P3	10/21/2011	8:10		6.92	3114.73	Water level recorded as below M.P. (measuring point). Field parameters and sampled.
P3	2/7/2012	15:30		3.59	3118.06	Water level recorded as below M.P. (measuring point). Field parameters and sampled.
P3	5/3/2012	8:30		7.61	3114.04	Notebook: "Hpond - 7.61". Field parameters and sampled.
P3	5/24/2012	9:56		DRY		Pond Dry. Looks as if water absent for several days.
P3	9/6/2012	10:45		5.97	3115.68	Field Parameters and sampled.
P3	12/6/2012	9:25		6.94	3114.71	Field parameters and sampled. Pond Elevation - 6.94
						Frozen water in pond several inches. No new inflow/melting has occurred. 3-4 inches of snow
P3	1/14/2013	12:00	3121.65	FROZEN		around site.
P3	3/5/2013	17:00		6.21	3115.44	Field Parameters and sampled.
P3	5/15/2013	15:10		DRY		
P3	7/30/2013	17:00		6.50	3115.15	Field Parameters and sampled.
P3	3/21/2014	12:00		5.53	3116.12	Field Parameters and sampled.
P3	5/22/2014	10:20		6.37	3115.28	Field Parameters and sampled. Ha - 6.37 - Water level. Livestock H2O source.
P4	8/25/2011	8:10				Field Parameters and sampled. No height recorded.
P4	8/30/2011	14:15		8.81		field params and water level
P4	10/20/2011	17:05		12.55	3133.41	Water level recorded as below M.P. (measuring point). Field parameters and sampled.
P4	2/8/2012	8:30		8.15	3137.81	Water level recorded as below M.P. (measuring point). Field parameters and sampled.
P4	5/3/2012	9:20		12.21	3133.75	Notebook: "Hpond -12.21' ". Field parameters and sampled.
P4	9/6/2012	7:30		DRY		No sample collected.
P4	12/5/2012	12:00		Dry		no sample collected.
P4	1/14/2013	13:10		DRY		
P4	3/5/2013	16:00		DRY		
P4	4/25/2013	17:30	3145.96	DRY		DRY BUT MUDDY
P4	5/15//2013	15:10		DRY		
P4	7/30/2013	15:40		11.12	3134.84	Field Parameters and sampled.
P4	1/8/2014			DRY		
P4	3/21/2014	11:00		4.90	3141.06	Field Parameters and sampled.
P4	5/22/2014	9:40		10.07	3135.89	Field Parameters and sampled. Ha - 10.07' - water level. No outflow visible.
Shorty Creek Reservoir						
P5	10/28/2010	14:00				Field Parameters and sampled. No inflow/outflow visible. Bugs vixible under water surface.
P5	6/24/2011	9:15				Field notebook: Water level not reported. Field parameters and sampled
P5	8/30/2011	13:05		6.88		
P5	10/20/2011	14:10		7.58	3237.83	Water level recorded as below M.P. (measuring point). Field parameters and sampled.
P5	2/7/2012	16:30		7.39	3238.02	Water level recorded as below M.P. (measuring point). Field parameters and sampled.
P5	5/3/2012	10:30		6.27	3239.14	Notebook: "Hw - 6.27 ". Field parameters and sampled
P5	9/6/2012	9:40		8.54	3236.87	Field parameters and sampled.
P5	12/6/2012	8:35	3245.41	9.37	3236.04	Field parameters and sampled. Pond elevation - 9.37'.
P5	3/7/2013	11:53		9.40	3236.01	Field parameters and sampled.
P5	5/15/2013	17:35		12.12	3233.29	Field parameters and sampled. No inflow/outflow from pond. Elevation 12.12'.
P5	7/30/2013	10:15				Could not locate laser level MP. Field parameters and sampled.
P5	1/8/2014	14:55		9.34	3236.07	Field parameters and sampled.
P5	3/24/2014	10:35		3.14	3242.27	Field parameters and sampled. Pond was covered with 1/2" of ice.
P5	5/22/2014	8:20		5.35	3240.06	Ha - 5.35' Top of water. Field parameters and sampled.
P6	6/24/2011	7:05				Field Parameters and sampled. No height recorded.
P6	8/30/2011	17:25		9.74		
P6	10/25/2011	13:10		8.65	3163.24	Water level recorded as below M.P. (measuring point). Field parameters and sampled.
P6	2/8/2012	13:15		8.04		Field parameters and sample.
P6	5/3/2012	12:30		7.28	3164.61	Notebook: "Hpond - 7.28 ". Field parameters and sampled.
P6	09/06/12	14:20		9.93	3161.96	Field parameters and sampled.
						Field parameters and sampled. Lievestock utilizing pond water for drinking water. Pond
P6	12/06/12	14:15	3171.89	8.53	3163.36	elevation 8.53'.
P6	03/07/13	15:00		8.55	3163.34	Field parameters and sampled.
P6	05/16/13	11:10		8.80	3163.09	Field parameters and sampled.
P6	07/30/13	20:20				Could not locate laser level MP. Field parameters and sampled.
						Field parameters and sampled. No flow taken, picture taken, 29 F, 15 inches of ice augered
P6	01/09/14	11:20				through.
P6	3/20/2014	17:20		8.76	3163.13	Field parameters and sampled. Pond discharging. Water elevation - 8.76'
P6	5/21/2014	15:40		8.67	3163.22	Field Parameters and sampled. Pond discharging

Notes: MPE = Measuring Point Elevation (above mean seal level)
SWL = Static Water Level