

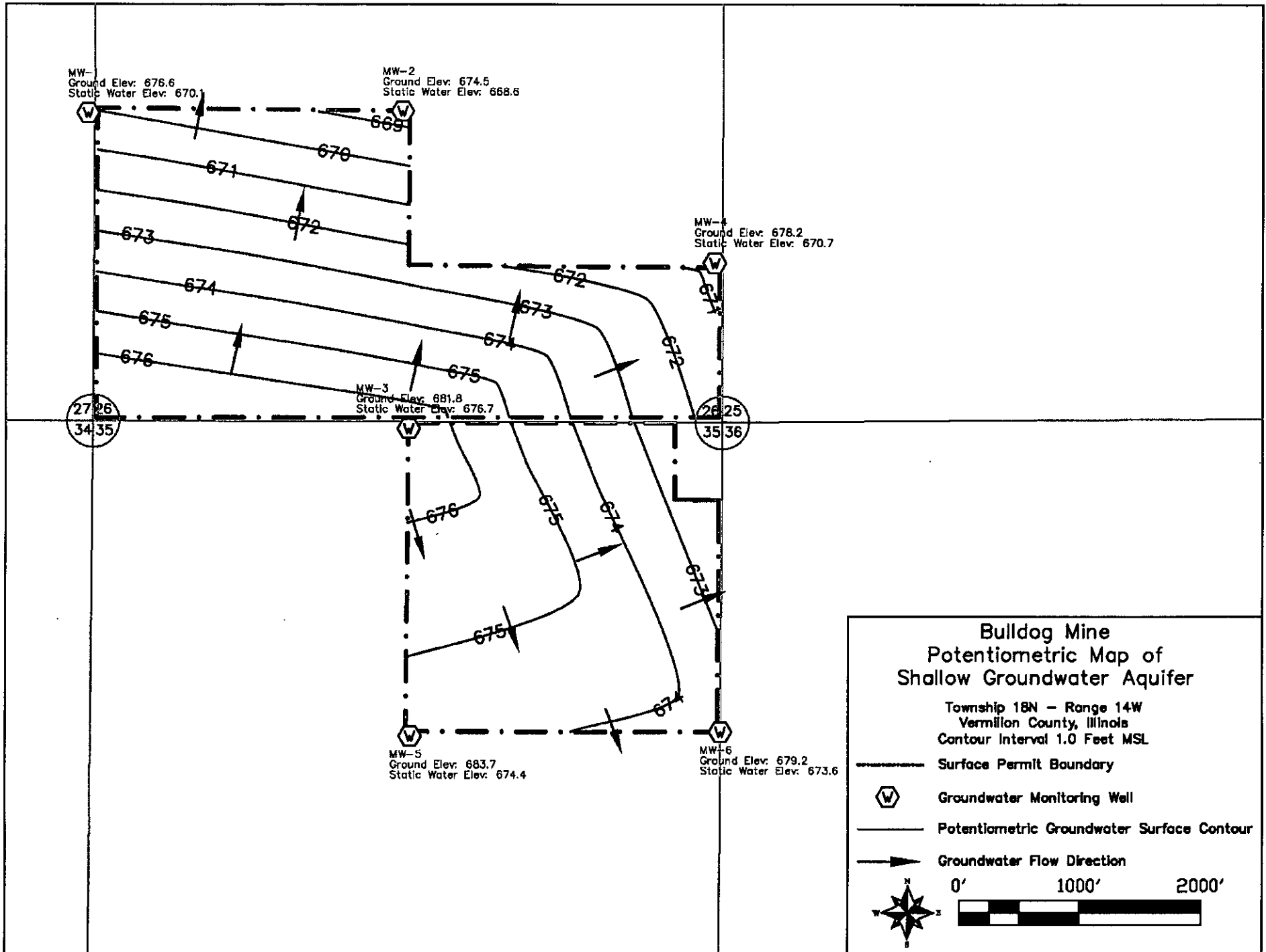
Sunrise Coal, LLC  
Bulldog Mine  
Permit No. 429

# ATTACHMENT III-2B3

POTENTIOMETRIC MAP OF  
SHALLOW GROUNDWATER AQUIFER

SEASONAL GROUNDWATER QUALITY/QUANTITY

LAB ANALYSIS REPORTS



MW-1

Groundwater Monitoring Well

Date Sampled	Water Elevation (msl)	Field pH (su)	Total Acidity (mg/l)	Total Alkalinity (mg/l)	Total Aluminum (mg/l)	Total Antimony (mg/l)	Total Arsenic (mg/l)	Total Barium (mg/l)	Total Beryllium (mg/l)	Total Boron (mg/l)	Total Cadmium (mg/l)	Chloride (mg/l)	Total Chromium (mg/l)	Total Cobalt (mg/l)	Total Copper (mg/l)	Total Cyanide (mg/l)	Total Fluoride (mg/l)
Jan 6, 2012	673.6	7.37	<10	130	0.13	<0.005	<0.002	0.042	<0.005	0.18	<0.005	6	<0.002	<0.005	<0.002	<0.01	<0.1
Feb 14, 2012	673.7	7.62	<10	330	0.092	<0.005	<0.002	0.038	<0.005	0.11	<0.005	10	<0.002	<0.005	<0.002	<0.01	<0.1
Mar 2, 2012	673.9	7.53	<10	310	0.089	<0.005	<0.002	0.04	<0.005	0.18	<0.005	8	<0.002	<0.005	<0.002	<0.01	<0.1
Jan 3, 2013	669.0	7.46	<10	220	0.076	<0.005	<0.002	0.030	<0.005	0.29	<0.005	6	<0.002	<0.005	<0.002	<0.01	<0.1
Feb 8, 2013	673.3	7.37	<10	210	<0.05	<0.005	<0.002	0.047	<0.005	0.27	<0.005	8	<0.002	<0.005	<0.002	<0.01	<0.1
Mar 1, 2013	675.3	7.74	<10	240	<0.05	<0.005	<0.002	0.044	<0.005	0.31	<0.005	10	<0.002	<0.005	<0.002	<0.005	<0.1
Winter Average	673.1	*	<10	240	<b>&lt;0.081</b>	<0.005	<0.002	0.040	<0.005	0.22	<0.005	8	<0.002	<0.005	<0.002	<0.0092	<0.1
Apr 5, 2012	673.6	7.61	<10	270	<0.05	<0.005	<0.002	0.04	<0.005	0.21	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
May 11, 2012	673.4	7.58	<10	290	<0.05	<0.005	<0.002	0.041	<0.005	0.28	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Jun 8, 2012	672.9	7.33	<10	250	<0.05	<0.005	<0.002	0.035	<0.005	0.21	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Apr 4, 2013	674.2	7.43	<10	320	<0.05	<0.005	<0.002	0.039	<0.005	0.26	<0.005	8	<0.002	<0.005	<0.002	<0.010	<0.1
May 2, 2013	674.8	7.38	<10	320	<0.05	<0.005	<0.002	0.039	<0.005	0.27	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Jun 7, 2013	674.4	7.04	<10	270	<0.05	<0.005	<0.002	0.043	<0.005	0.21	<0.005	9	<0.002	<0.005	<0.002	<0.010	<0.1
Spring Average	673.9	*	<10	287	<0.05	<0.005	<0.002	0.040	<0.005	0.24	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Sep 23, 2011	665.0	7.34	<10	180	0.15	<0.005	<0.002	0.035	<0.005	0.26	<0.005	6	<0.002	<0.005	<0.002	<0.010	<0.1
Jul 20, 2012	667.0	7.41	<10	260	<0.05	<0.005	<0.002	0.031	<0.005	0.28	<0.005	13	<0.002	<0.005	<0.002	<0.010	<0.1
Aug 10, 2012	665.1	7.27	<10	290	<0.05	<0.005	<0.002	0.037	<0.005	0.26	<0.005	11	<0.002	<0.005	<0.002	<0.010	<0.1
Sep 7, 2012	663.9	7.42	<10	240	<0.05	<0.005	<0.002	0.042	<0.005	0.31	<0.005	13	<0.002	<0.005	<0.002	<0.010	<0.1
Jul 12, 2013	673.3	7.19	<10	220	<0.05	<0.005	<0.002	0.039	<0.005	0.27	<0.005	9	<0.002	<0.005	<0.002	<0.010	<0.1
Aug 2, 2013	672.5	7.55	<10	240	<0.05	<0.005	<0.002	0.041	<0.005	0.26	<0.005	9	<0.002	<0.005	<0.002	<0.010	<0.1
Summer Average	667.8	*	<10	238	<b>&lt;0.0442</b>	<0.005	<0.002	0.038	<0.005	0.27	<0.005	<10.2	<0.002	<0.005	<0.002	<0.010	<0.1
Oct 20, 2011	664.6	7.3	<10	200	0.21	<0.005	<0.002	0.039	<0.005	0.21	<0.005	6	<0.002	<0.005	<0.002	<0.010	<0.1
Nov 3, 2011	664.3	7.42	<10	190	0.27	<0.005	<0.002	0.044	<0.005	0.26	<0.005	8	<0.002	<0.005	<0.002	<0.010	<0.1
Dec 1, 2011	669.3	7.39	<10	160	0.25	<0.005	<0.002	0.05	<0.005	0.21	<0.005	8	<0.002	<0.005	<0.002	<0.010	<0.1
Oct 12, 2012	662.9	7.28	<10	290	0.094	<0.005	<0.002	0.041	<0.005	0.37	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Nov 9, 2012	664.4	7.37	<10	230	0.078	<0.005	<0.002	0.19	<0.005	0.25	<0.005	8	<0.002	<0.005	<0.002	<0.010	<0.1
Dec 7, 2012	666.9	7.49	<10	260	0.099	<0.005	<0.002	0.027	<0.005	0.23	<0.005	6	<0.002	<0.005	<0.002	<0.010	<0.1
Fall Average	665.4	*	<10	222	0.17	<0.005	<0.002	0.065	<0.005	0.26	<0.005	8	<0.002	<0.005	<0.002	<0.010	<0.1

Date Sampled	Total Iron (mg/l)	Dissolved Iron (mg/l)	Total Lead (mg/l)	Total Manganese (mg/l)	Dissolved Manganese (mg/l)	Total Mercury (mg/l)	Total Molybdenum (mg/l)	Total Nickel (mg/l)	Phenol (mg/l)	Total Selenium (mg/l)	Total Silver (mg/l)	Sulfate (mg/l)	Total Thallium (mg/l)	Total Vanadium (mg/l)	Total Zinc (mg/l)	Total Dissolved Solids (mg/l)	Hardness (mg/l)
Jan 6, 2012	0.25	<0.1	<0.002	0.052	0.014	<0.0002	<0.005	<0.005	0.1	<0.002	<0.002	8	<0.005	<0.002	<0.005	280	210
Feb 14, 2012	0.18	<0.1	<0.002	0.062	0.021	<0.0002	<0.005	<0.005	0.082	<0.002	<0.002	3	<0.005	<0.002	<0.005	380	180
Mar 2, 2012	0.15	<0.1	<0.002	0.041	0.022	<0.0002	<0.005	<0.005	0.066	<0.002	<0.002	3	<0.005	<0.002	<0.005	460	190
Jan 3, 2013	0.89	0.13	<0.002	0.016	<0.01	<0.0002	<0.005	<0.005	0.062	<0.002	<0.002	2	<0.005	<0.002	<0.005	460	250
Feb 8, 2013	0.96	<0.1	<0.002	0.058	0.052	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	5	<0.005	<0.002	<0.005	470	280
Mar 1, 2013	1.1	<0.1	<0.002	0.042	0.036	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	12	<0.005	<0.002	<0.005	450	290
Winter Average	0.59	<b>&lt;0.105</b>	<0.002	0.045	0.029	<b>&lt;0.0002</b>	<b>&lt;0.005</b>	<b>&lt;0.005</b>	<b>&lt;0.062</b>	<b>&lt;0.002</b>	<b>&lt;0.002</b>	<b>&lt;5.3</b>	<0.005	<0.002	<0.005	417	233
Apr 5, 2012	0.17	<0.1	<0.002	0.056	0.056	<0.0002	<0.005	<0.005	0.052	<0.002	<0.002	2	<0.005	<0.002	<0.005	430	200
May 11, 2012	0.23	<0.1	<0.002	0.088	0.061	<0.0002	<0.005	<0.005	0.079	<0.002	<0.002	6	<0.005	<0.002	<0.005	800	200
Jun 8, 2012	0.18	<0.1	<0.002	0.059	0.044	<0.0002	<0.005	<0.005	0.054	<0.002	<0.002	2	<0.005	<0.002	<0.005	720	170
Apr 4, 2013	0.82	<0.1	<0.002	0.053	0.021	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	34	<0.005	<0.002	<0.005	380	220
May 2, 2013	0.63	0.25	<0.002	0.071	0.012	<0.0002	<0.005	<0.005	0.10	<0.002	<0.002	22	<0.005	<0.002	<0.005	370	250
Jun 7, 2013	0.54	0.19	<0.002	0.040	0.025	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	18	<0.005	<0.002	<0.005	360	230
Spring Average	0.43	<b>&lt;0.14</b>	<0.002	0.061	<b>0.037</b>	<b>&lt;0.0002</b>	<b>&lt;0.005</b>	<b>&lt;0.005</b>	<b>&lt;0.0575</b>	<b>&lt;0.002</b>	<b>&lt;0.002</b>	<b>&lt;14</b>	<0.005	<0.002	<0.005	510	212
Sep 23, 2011	0.38	0.27	<0.002	0.097	0.088	<0.0002	<0.005	<0.005	0.079	<0.002	<0.002	2	<0.005	<0.002	<0.005	380	250
Jul 20, 2012	0.21	<0.1	<0.002	0.073	0.060	<0.0002	<0.005	<0.005	0.21	<0.002	<0.002	2	<0.005	<0.002	<0.005	800	180
Aug 10, 2012	0.18	<0.1	<0.002	0.062	0.049	<0.0002	<0.005	<0.005	<0.05	<0.002	<0.002	2	<0.005	<0.002	<0.005	400	180
Sep 7, 2012	0.21	<0.1	<0.002	0.054	0.042	<0.0002	<0.005	<0.005	<0.05	<0.002	<0.002	6	<0.005	<0.002	<0.005	320	200
Jul 12, 2013	0.92	0.25	<0.002	0.038	0.027	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	20	<0.005	<0.002	<0.005	300	270
Aug 2, 2013	0.40	0.21	<0.002	0.028	0.013	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	12	<0.005	<0.002	<0.005	400	230
Summer Average	0.38	<b>&lt;0.172</b>	<0.002	0.059	0.047	<b>&lt;0.0002</b>	<b>&lt;0.005</b>	<b>&lt;0.005</b>	<b>&lt;0.069</b>	<b>&lt;0.002</b>	<b>&lt;0.002</b>	<b>&lt;7.3</b>	<0.005	<0.002	<0.005	433	218
Oct 20, 2011	0.44	0.31	<0.002	0.09	0.082	<0.0002	<0.005	<0.005	0.26	<0.002	<0.002	2	<0.005	<0.002	<0.005	350	250
Nov 3, 2011	0.51	0.26	<0.002	0.1	0.091	<0.0002	<0.005	<0.005	0.21	<0.002	<0.002	4	<0.005	<0.002	<0.005	390	240
Dec 1, 2011	0.48	0.3	<0.002	0.096	0.074	<0.0002	<0.005	<0.005	0.18	<0.002	<0.002	5	<0.005	<0.002	<0.005	360	220
Oct 12, 2012	0.37	0.14	<0.002	0.069	0.052	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	7	<0.005	<0.002	<0.005	380	230
Nov 9, 2012	0.40	0.19	<0.002	0.050	0.037	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	10	<0.005	<0.002	<0.005	290	200
Dec 7, 2012	1.0	<0.1	<0.002	0.010	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	2	<0.005	<0.002	<0.005	500	240
Fall Average	0.53	<b>&lt;0.22</b>	<0.002	0.069	<b>&lt;0.058</b>	<b>&lt;0.0002</b>	<b>&lt;0.005</b>	<b>&lt;0.005</b>	<b>&lt;0.133</b>	<b>&lt;0.002</b>	<b>&lt;0.002</b>	<b>&lt;5</b>	<0.005	<0.002	<0.005	378	230

\*pH is not subject to averaging

Average seasonal variations are indicated by bold text. Red text signifies the highest concentrations and the lowest concentrations are signified with black text.

MW-2

Groundwater Monitoring Well

Date Sampled	Water Elevation (msl)	Field pH (su)	Total Acidity (mg/l)	Total Alkalinity (mg/l)	Total Aluminum (mg/l)	Total Antimony (mg/l)	Total Arsenic (mg/l)	Total Barium (mg/l)	Total Beryllium (mg/l)	Total Boron (mg/l)	Total Cadmium (mg/l)	Total Chloride (mg/l)	Total Chromium (mg/l)	Total Cobalt (mg/l)	Total Copper (mg/l)	Total Cyanide (mg/l)	Total Fluoride (mg/l)
Jan 6, 2012	673.0	7.91	<10	150	0.15	<0.005	<0.002	0.058	<0.005	0.21	<0.005	<6	<0.002	<0.005	<0.002	<0.010	<0.1
Feb 14, 2012	672.7	7.92	<10	270	0.12	<0.005	<0.002	0.051	<0.005	0.24	<0.005	8	<0.002	<0.005	<0.002	<0.010	<0.1
Mar 2, 2012	673.1	7.81	<10	270	0.096	<0.005	<0.002	0.054	<0.005	0.18	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Jan 3, 2013	664.4	7.77	<10	260	0.085	<0.005	<0.002	0.058	<0.005	0.25	<0.005	16	<0.002	<0.005	<0.002	<0.010	<0.1
Feb 8, 2013	672.1	7.46	<10	240	0.076	<0.005	<0.002	0.054	<0.005	0.26	<0.005	15	<0.002	<0.005	<0.002	<0.010	<0.1
Mar 1, 2013	674.9	7.80	<10	310	0.051	<0.005	<0.002	0.047	<0.005	0.28	<0.005	16	<0.002	<0.005	<0.002	<0.0050	<0.1
<b>Winter Average</b>	<b>671.7</b>	<b>7.80</b>	<b>&lt;10</b>	<b>250</b>	<b>0.096</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>0.054</b>	<b>&lt;0.005</b>	<b>0.24</b>	<b>&lt;0.005</b>	<b>13</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.0092</b>	<b>&lt;0.1</b>
Apr 5, 2012	672.7	7.72	<10	280	0.072	<0.005	<0.002	0.055	<0.005	0.16	<0.005	21	<0.002	<0.005	<0.002	<0.010	<0.1
May 11, 2012	672.6	7.79	<10	260	0.066	<0.005	<0.002	0.048	<0.005	0.19	<0.005	19	<0.002	<0.005	<0.002	<0.010	<0.1
Jun 8, 2012	672.3	7.62	<10	170	0.058	<0.005	<0.002	0.04	<0.005	0.21	<0.005	14	<0.002	<0.005	<0.002	<0.010	<0.1
Apr 4, 2013	673.2	9.70	<10	280	0.066	<0.005	<0.002	0.048	<0.005	0.23	<0.005	13	<0.002	<0.005	<0.002	<0.010	<0.1
May 2, 2013	674.3	7.48	<10	340	0.050	<0.005	<0.002	0.052	<0.005	0.28	<0.005	17	<0.002	<0.005	<0.002	<0.010	<0.1
Jun 7, 2013	673.7	8.63	<10	320	0.05	<0.005	<0.002	0.041	<0.005	0.20	<0.005	15	<0.002	<0.005	<0.002	<0.010	<0.1
<b>Spring Average</b>	<b>673.1</b>	<b>7.80</b>	<b>&lt;10</b>	<b>275</b>	<b>&lt;0.060</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>0.047</b>	<b>&lt;0.005</b>	<b>0.21</b>	<b>&lt;0.005</b>	<b>17</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.010</b>	<b>&lt;0.1</b>
Sep 23, 2011	663.7	7.69	<10	110	0.5	<0.005	<0.002	0.076	<0.005	0.25	<0.005	<6	<0.002	<0.005	<0.002	<0.010	<0.1
Jul 20, 2012	669.9	7.59	<10	190	0.051	<0.005	<0.002	0.042	<0.005	0.26	<0.005	16	<0.002	<0.005	<0.002	<0.010	<0.1
Aug 10, 2012	662.9	7.47	<10	300	0.051	<0.005	<0.002	0.036	<0.005	0.25	<0.005	13	<0.002	<0.005	<0.002	<0.010	<0.1
Sep 7, 2012	661.3	7.54	<10	310	<0.05	<0.005	<0.002	0.033	<0.005	0.19	<0.005	19	<0.002	<0.005	<0.002	<0.010	<0.1
Jul 12, 2013	673.2	8.66	<10	290	<0.05	<0.005	<0.002	0.045	<0.005	0.29	<0.005	14	<0.002	<0.005	<0.002	<0.010	<0.1
Aug 2, 2013	672.0	7.63	<10	310	<0.05	<0.005	<0.002	0.042	<0.005	0.35	<0.005	13	<0.002	<0.005	<0.002	<0.010	<0.1
<b>Summer Average</b>	<b>667.2</b>	<b>7.62</b>	<b>&lt;10</b>	<b>252</b>	<b>&lt;0.13</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>0.046</b>	<b>&lt;0.005</b>	<b>0.27</b>	<b>&lt;0.005</b>	<b>&lt;14</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.010</b>	<b>&lt;0.1</b>
Oct 20, 2011	662.2	7.62	<10	120	0.42	<0.005	<0.002	0.069	<0.005	0.27	<0.005	<6	<0.002	<0.005	<0.002	<0.010	<0.1
Nov 3, 2011	662.6	7.61	<10	150	0.35	<0.005	<0.002	0.071	<0.005	0.24	<0.005	<6	<0.002	<0.005	<0.002	<0.010	<0.1
Dec 1, 2011	662.6	7.52	<10	150	0.26	<0.005	<0.002	0.066	<0.005	0.28	<0.005	<6	<0.002	<0.005	<0.002	<0.010	<0.1
Oct 12, 2012	660.4	7.31	<10	320	0.089	<0.005	<0.002	0.041	<0.005	0.37	<0.005	17	<0.002	<0.005	<0.002	<0.010	<0.1
Nov 9, 2012	662.6	7.48	<10	270	0.072	<0.005	<0.002	0.025	<0.005	0.31	<0.005	13	<0.002	<0.005	<0.002	<0.010	<0.1
Dec 7, 2012	663.1	7.58	<10	280	0.10	<0.005	<0.002	0.071	<0.005	0.28	<0.005	14	<0.002	<0.005	<0.002	<0.010	<0.1
<b>Full Average</b>	<b>662.3</b>	<b>7.62</b>	<b>&lt;10</b>	<b>215</b>	<b>0.22</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>0.057</b>	<b>&lt;0.005</b>	<b>0.29</b>	<b>&lt;0.005</b>	<b>&lt;10.3</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.010</b>	<b>&lt;0.1</b>

Date Sampled	Total Iron (mg/l)	Dissolved Iron (mg/l)	Total Lead (mg/l)	Total Manganese (mg/l)	Dissolved Manganese (mg/l)	Total Mercury (mg/l)	Total Molybdenum (mg/l)	Total Nickel (mg/l)	Total Phenol (mg/l)	Total Selenium (mg/l)	Total Silver (mg/l)	Total Sulfate (mg/l)	Total Thallium (mg/l)	Total Vanadium (mg/l)	Total Zinc (mg/l)	Total Dissolved Solids (mg/l)	Total Hardness (mg/l)
Jan 6, 2012	0.42	<0.1	<0.002	0.082	0.021	<0.0002	<0.005	<0.005	0.062	<0.002	<0.002	8	<0.005	<0.002	0.005	280	210
Feb 14, 2012	0.35	0.11	<0.002	0.075	0.029	<0.0002	<0.005	<0.005	0.051	<0.002	<0.002	36	<0.005	<0.002	<0.005	680	200
Mar 2, 2012	0.28	0.16	<0.002	0.055	0.032	<0.0002	<0.005	<0.005	<0.05	<0.002	<0.002	42	<0.005	<0.002	<0.005	560	190
Jan 3, 2013	0.73	<0.1	<0.002	0.072	0.066	<0.0002	<0.005	<0.005	0.160	<0.002	<0.002	63	<0.005	<0.002	<0.005	580	290
Feb 8, 2013	0.67	<0.1	<0.002	0.034	0.021	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	70	<0.005	<0.002	<0.005	640	340
Mar 1, 2013	0.53	<0.1	<0.002	0.028	0.016	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	69	<0.005	<0.002	<0.005	540	310
<b>Winter Average</b>	<b>0.50</b>	<b>&lt;0.112</b>	<b>&lt;0.002</b>	<b>0.058</b>	<b>0.031</b>	<b>&lt;0.0002</b>	<b>&lt;0.005</b>	<b>&lt;0.005</b>	<b>&lt;0.064</b>	<b>&lt;0.002</b>	<b>&lt;0.002</b>	<b>48</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>547</b>	<b>257</b>
Apr 5, 2012	0.22	<0.1	<0.002	0.11	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	48	<0.005	<0.002	<0.005	430	200
May 11, 2012	0.29	<0.1	<0.002	0.096	<0.01	<0.0002	<0.005	<0.005	0.084	<0.002	<0.002	31	<0.005	<0.002	<0.005	380	220
Jun 8, 2012	0.21	<0.1	<0.002	0.088	<0.01	<0.0002	<0.005	<0.005	0.072	<0.002	<0.002	42	<0.005	<0.002	<0.005	200	200
Apr 4, 2013	0.60	<0.1	<0.002	0.021	0.013	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	20	<0.005	<0.002	<0.005	580	280
May 2, 2013	0.37	0.19	<0.002	0.038	0.015	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	22	<0.005	<0.002	<0.005	440	240
Jun 7, 2013	0.69	0.28	<0.002	0.024	0.018	<0.0002	<0.005	<0.005	0.011	<0.002	<0.002	71	<0.005	<0.002	<0.005	680	270
<b>Spring Average</b>	<b>0.40</b>	<b>&lt;0.15</b>	<b>&lt;0.002</b>	<b>0.063</b>	<b>&lt;0.013</b>	<b>&lt;0.0002</b>	<b>&lt;0.005</b>	<b>&lt;0.005</b>	<b>&lt;0.046</b>	<b>&lt;0.002</b>	<b>&lt;0.002</b>	<b>39</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>452</b>	<b>235</b>
Sep 23, 2011	1.3	0.98	<0.002	0.12	0.095	<0.0002	<0.005	<0.005	0.17	<0.002	<0.002	5	<0.005	<0.002	0.03	280	250
Jul 20, 2012	0.17	<0.1	<0.002	0.075	0.064	<0.0002	<0.005	<0.005	0.079	<0.002	<0.002	45	<0.005	<0.002	<0.005	200	190
Aug 10, 2012	0.11	<0.1	<0.002	0.081	0.074	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	43	<0.005	<0.002	<0.005	480	180
Sep 7, 2012	0.15	<0.1	<0.002	0.068	0.054	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	37	<0.005	<0.002	<0.005	450	150
Jul 12, 2013	0.43	0.10	<0.002	0.029	0.017	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	40	<0.005	<0.002	<0.005	460	280
Aug 2, 2013	0.41	0.12	<0.002	0.018	0.013	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	64	<0.005	<0.002	<0.005	530	270
<b>Summer Average</b>	<b>0.43</b>	<b>&lt;0.065</b>	<b>&lt;0.002</b>	<b>0.065</b>	<b>0.053</b>	<b>&lt;0.0002</b>	<b>&lt;0.005</b>	<b>&lt;0.005</b>	<b>&lt;0.069</b>	<b>&lt;0.002</b>	<b>&lt;0.002</b>	<b>39</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.0092</b>	<b>400</b>	<b>220</b>
Oct 20, 2011	0.99	0.95	<0.002	0.1	0.097	<0.0002	<0.005	<0.005	0.22	<0.002	<0.002	8	<0.005	<0.002	<0.022	290	250
Nov 3, 2011	1.2	0.93	<0.002	0.14	0.1	<0.0002	<0.005	<0.005	0.28	<0.002	<0.002	4	<0.005	<0.002	<0.016	320	260
Dec 1, 2011	0.98	0.84	<0.002	0.11	0.087	<0.0002	<0.005	<0.005	0.097	<0.002	<0.002	10	<0.005	<0.002	<0.008	350	240
Oct 12, 2012	0.65	<0.1	<0.002	0.088	0.024	<0.0002	<0.005	<0.005	0.081	<0.002	<0.002	14	<0.005	<0.002	0.005	480	190
Nov 9, 2012	0.52	0.16	<0.002	0.063	0.019	<0.0002	<0.005	<0.005	0.065	<0.002	<0.002	16	<0.005	<0.002	0.005	360	160
Dec 7, 2012	0.69	<0.1	<0.002	0.081	0.12	<0.0002	<0.005	<0.005	0.06	<0.002	<0.002	41	<0.005	<0.002	0.005	520	<0.1
<b>Fall Average</b>	<b>0.84</b>	<b>&lt;0.513</b>	<b>&lt;0.002</b>	<b>0.10</b>	<b>0.075</b>	<b>&lt;0.0002</b>	<b>&lt;0.005</b>	<b>&lt;0.005</b>	<b>0.134</b>	<b>&lt;0.002</b>	<b>&lt;0.002</b>	<b>16</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.010</b>	<b>387</b>	<b>&lt;183.4</b>

\*pH is not subject to averaging

Average seasonal variations are indicated by bold text. Red text signifies the highest concentrations and the lowest concentrations are signified with black text.

MW-3  
Groundwater Monitoring Well

Date Sampled	Water Elevation (msl)	Field pH (su)	Total Acidity (mg/l)	Total Alkalinity (mg/l)	Total Aluminum (mg/l)	Total Antimony (mg/l)	Total Arsenic (mg/l)	Total Barium (mg/l)	Total Beryllium (mg/l)	Total Boron (mg/l)	Total Cadmium (mg/l)	Chloride (mg/l)	Total Chromium (mg/l)	Total Cobalt (mg/l)	Total Copper (mg/l)	Total Cyanide (mg/l)	Total Fluoride (mg/l)
Jan 6, 2012	679.1	7.26	<10	250	0.1	<0.005	<0.002	0.048	<0.005	0.35	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Feb 14, 2012	679.3	7.58	<10	250	0.095	<0.005	<0.002	0.042	<0.005	0.31	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Mar 2, 2012	679.1	6.65	<10	260	0.081	<0.005	<0.002	0.036	<0.005	0.25	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Jan 3, 2013	676.3	7.54	<10	290	0.074	<0.005	<0.002	0.043	<0.005	0.19	<0.005	17	<0.002	<0.005	<0.002	<0.010	<0.1
Feb 8, 2013	678.8	7.43	<10	260	0.077	<0.005	<0.002	0.054	<0.005	0.16	<0.005	16	<0.002	<0.005	<0.002	<0.010	<0.1
Mar 1, 2013	680.7	7.66	<10	250	0.057	<0.005	<0.002	0.049	<0.005	0.21	<0.005	14	<0.002	<0.005	<0.002	<0.0050	<0.1
Winter Average	678.9	*	<10	260	0.081	<0.005	<0.002	0.045	<0.005	0.25	<0.005	13	<0.002	<0.005	<0.002	<0.0092	<0.1
Apr 5, 2012	678.5	7.55	<10	250	0.057	<0.005	<0.002	0.039	<0.005	0.22	<0.005	20	<0.002	<0.005	<0.002	<0.010	<0.1
May 11, 2012	677.8	7.54	<10	260	<0.05	<0.005	<0.002	0.034	<0.005	0.29	<0.005	22	<0.002	<0.005	<0.002	<0.010	<0.1
Jun 8, 2012	677.2	7.34	<10	220	<0.05	<0.005	<0.002	0.024	<0.005	0.21	<0.005	17	<0.002	<0.005	<0.002	<0.010	<0.1
Apr 4, 2013	679.2	9.00	<10	240	0.052	<0.005	<0.002	0.041	<0.005	0.28	<0.005	11	<0.002	<0.005	<0.002	<0.010	<0.1
May 2, 2013	679.5	7.32	<10	280	<0.050	<0.005	<0.002	0.046	<0.005	0.24	<0.005	18	<0.002	<0.005	<0.002	<0.010	<0.1
Jun 7, 2013	679.2	7.16	<10	260	<0.050	<0.005	<0.002	0.039	<0.005	0.27	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Spring Average	678.6	*	<10	252	<0.052	<0.005	<0.002	0.037	<0.005	0.25	<0.005	17	<0.002	<0.005	<0.002	<0.010	<0.1
Sep 23, 2011	672.8	7.25	<10	130	0.34	<0.005	<0.002	0.072	<0.005	0.58	<0.005	8	<0.002	<0.005	<0.002	<0.010	<0.1
Jul 20, 2012	674.7	7.26	<10	240	<0.05	<0.005	<0.002	0.02	<0.005	0.22	<0.005	15	<0.002	<0.005	<0.002	<0.010	<0.1
Aug 10, 2012	673.0	7.16	<10	300	<0.05	<0.005	<0.002	0.023	<0.005	0.19	<0.005	18	<0.002	<0.005	<0.002	<0.010	<0.1
Sep 7, 2012	673.3	7.21	<10	270	<0.05	<0.005	<0.002	0.031	<0.005	0.24	<0.005	22	<0.002	<0.005	<0.002	<0.010	<0.1
Jul 12, 2013	678.2	7.11	<10	280	<0.050	<0.005	<0.002	0.045	<0.005	0.31	<0.005	15	<0.002	<0.005	<0.002	<0.010	<0.1
Aug 2, 2013	677.0	7.55	<10	330	<0.050	<0.005	<0.002	0.051	<0.005	0.27	<0.005	18	<0.002	<0.005	<0.002	<0.010	<0.1
Summer Average	674.8	*	<10	238	<0.098	<0.005	<0.002	0.041	<0.005	0.30	<0.005	16	<0.002	<0.005	<0.002	<0.010	<0.1
Oct 20, 2011	674.1	7.15	<10	150	0.28	<0.005	<0.002	0.063	<0.005	0.46	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Nov 3, 2011	674.5	7.07	<10	130	0.23	<0.005	<0.002	0.067	<0.005	0.5	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Dec 1, 2011	678.5	7.28	<10	120	0.16	<0.005	<0.002	0.059	<0.005	0.41	<0.005	9	<0.002	<0.005	<0.002	<0.010	<0.1
Oct 12, 2012	671.4	6.96	<10	270	0.082	<0.005	<0.002	0.049	<0.005	0.28	<0.005	18	<0.002	<0.005	<0.002	<0.010	<0.1
Nov 9, 2012	674.6	7.20	<10	240	0.069	<0.005	<0.002	0.066	<0.005	0.30	<0.005	16	<0.002	<0.005	<0.002	<0.010	<0.1
Dec 7, 2012	674.3	7.45	<10	270	0.088	<0.005	<0.002	0.049	<0.005	0.16	<0.005	18	<0.002	<0.005	<0.002	<0.010	<0.1
Fall Average	674.6	*	<10	197	0.15	<0.005	<0.002	0.059	<0.005	0.35	<0.005	14	<0.002	<0.005	<0.002	<0.010	<0.1

Date Sampled	Total Iron (mg/l)	Dissolved Iron (mg/l)	Total Lead (mg/l)	Total Manganese (mg/l)	Dissolved Manganese (mg/l)	Total Mercury (mg/l)	Total Molybdenum (mg/l)	Total Nickel (mg/l)	Phenol (mg/l)	Total Selenium (mg/l)	Total Silver (mg/l)	Sulfate (mg/l)	Total Thallium (mg/l)	Total Vanadium (mg/l)	Total Zinc (mg/l)	Total Dissolved Solids (mg/l)	Total Hardness (mg/l)
Jan 6, 2012	0.11	<0.1	<0.002	0.035	<0.01	<0.0002	<0.005	<0.005	0.081	<0.002	<0.002	47	<0.005	<0.002	0.006	380	190
Feb 14, 2012	0.2	<0.1	<0.002	0.027	<0.01	<0.0002	<0.005	<0.005	0.051	<0.002	<0.002	47	<0.005	<0.002	<0.005	600	200
Mar 2, 2012	0.27	0.15	<0.002	0.019	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	65	<0.005	<0.002	<0.005	440	210
Jan 3, 2013	<0.1	<0.1	<0.002	0.021	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	26	<0.005	<0.002	<0.005	500	350
Feb 8, 2013	<0.1	<0.1	<0.002	0.019	<0.01	<0.0002	<0.005	<0.005	0.094	<0.002	<0.002	37	<0.005	<0.002	<0.005	480	330
Mar 1, 2013	<0.1	<0.1	<0.002	0.023	<0.01	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	43	<0.005	<0.002	<0.005	420	310
Winter Average	<0.10	<0.11	<0.002	0.024	<0.01	<0.0002	<0.005	<0.005	<0.056	<0.002	<0.002	44	<0.005	<0.002	<0.0052	470	265
Apr 5, 2012	0.25	<0.1	<0.002	0.025	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	70	<0.005	<0.002	<0.005	420	260
May 11, 2012	0.16	<0.1	<0.002	0.012	<0.01	<0.0002	<0.005	<0.005	0.16	<0.002	<0.002	30	<0.005	<0.002	<0.005	520	260
Jun 8, 2012	0.21	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	0.058	<0.002	<0.002	10	<0.005	<0.002	<0.005	340	210
Apr 4, 2013	<0.1	<0.1	<0.002	0.019	<0.01	<0.0002	<0.005	<0.005	0.13	<0.002	<0.002	51	<0.005	<0.002	<0.005	440	270
May 2, 2013	0.12	<0.1	<0.002	0.023	0.019	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	53	<0.005	<0.002	<0.005	460	280
Jun 7, 2013	0.33	0.20	<0.002	0.038	0.016	<0.0002	<0.005	<0.005	0.018	<0.002	<0.002	41	<0.005	<0.002	<0.005	470	220
Spring Average	<0.195	<0.12	<0.002	<0.021	<0.0125	<0.0002	<0.005	<0.005	<0.071	<0.002	<0.002	43	<0.005	<0.002	<0.005	442	250
Sep 23, 2011	0.64	<0.1	<0.002	0.1	0.037	<0.0002	<0.005	<0.005	0.13	<0.002	<0.002	69	<0.005	<0.002	0.035	260	270
Jul 20, 2012	0.16	<0.1	<0.002	0.012	<0.01	<0.0002	<0.005	<0.005	0.24	<0.002	<0.002	40	<0.005	<0.002	<0.005	340	190
Aug 10, 2012	0.13	<0.1	<0.002	0.010	<0.01	<0.0002	<0.005	<0.005	0.10	<0.002	<0.002	49	<0.005	<0.002	<0.005	330	200
Sep 7, 2012	0.16	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	0.084	<0.002	<0.002	44	<0.005	<0.002	<0.005	430	190
Jul 12, 2013	0.41	0.15	<0.002	0.031	0.024	<0.0002	<0.005	<0.005	0.018	<0.002	<0.002	42	<0.005	<0.002	<0.005	420	250
Aug 2, 2013	0.59	0.32	<0.002	0.036	0.015	<0.0002	<0.005	<0.005	0.01	<0.002	<0.002	43	<0.005	<0.002	<0.005	580	240
Summer Average	0.35	<0.145	<0.002	0.038	<0.018	<0.0002	<0.005	<0.005	<0.097	<0.002	<0.002	48	<0.005	<0.002	<0.01	393	223
Oct 20, 2011	0.49	0.21	<0.002	0.14	0.052	<0.0002	<0.005	<0.005	0.29	<0.002	<0.002	73	<0.005	<0.002	0.029	290	260
Nov 3, 2011	0.41	0.27	<0.002	0.12	0.061	<0.0002	<0.005	<0.005	0.21	<0.002	<0.002	64	<0.005	<0.002	0.015	340	250
Dec 1, 2011	0.29	0.22	<0.002	0.11	0.054	<0.0002	<0.005	<0.005	0.13	<0.002	<0.002	62	<0.005	<0.002	0.009	330	210
Oct 12, 2012	0.34	<0.1	<0.002	0.18	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	14	<0.005	<0.002	<0.005	440	220
Nov 9, 2012	0.26	<0.1	<0.002	0.13	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	18	<0.005	<0.002	<0.005	400	220
Dec 7, 2012	<0.1	<0.1	<0.002	0.014	<0.01	<0.0002	<0.005	<0.005	0.080	<0.002	<0.002	23	<0.005	<0.002	<0.005	620	370
Fall Average	<0.32	<0.17	<0.002	0.12	<0.033	<0.0002	<0.005	<0.005	<0.135	<0.002	<0.002	42	<0.005	<0.002	<0.034	403	255

\*pH is not subject to averaging

Average seasonal variations are indicated by bold text. Red text signifies the highest concentrations and the lowest concentrations are signified with black text.

MW-4  
Groundwater Monitoring Well

Date Sampled	Water Elevation (msl)	Field pH (su)	Total Acidity (mg/l)	Total Alkalinity (mg/l)	Total Aluminum (mg/l)	Total Antimony (mg/l)	Total Arsenic (mg/l)	Total Barium (mg/l)	Total Beryllium (mg/l)	Total Boron (mg/l)	Total Cadmium (mg/l)	Chloride (mg/l)	Total Chromium (mg/l)	Total Cobalt (mg/l)	Total Copper (mg/l)	Total Cyanide (mg/l)	Total Fluoride (mg/l)
Jan 6, 2012	673.1	7.46	<10	210	0.085	<0.005	<0.002	0.042	<0.005	0.21	<0.005	9	<0.002	<0.005	<0.002	<0.010	<0.1
Feb 14, 2012	673.4	7.46	<10	330	0.076	<0.005	<0.002	0.039	<0.005	0.18	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Mar 2, 2012	673.2	7.46	<10	350	0.069	<0.005	<0.002	0.043	<0.005	0.22	<0.005	11	<0.002	<0.005	<0.002	<0.010	<0.1
Jan 3, 2013	670.4	7.42	<10	280	0.096	<0.005	<0.002	0.041	<0.005	0.28	<0.005	13	<0.002	<0.005	<0.002	<0.010	<0.1
Feb 8, 2013	672.6	7.31	<10	260	<0.05	<0.005	<0.002	0.067	<0.005	0.34	<0.005	14	<0.002	<0.005	<0.002	<0.010	<0.1
Mar 1, 2013	674.0	7.68	<10	310	<0.05	<0.005	<0.002	0.053	<0.005	0.39	<0.005	16	<0.002	<0.005	<0.002	<0.0050	<0.1
Winter Average	672.8	*	<10	290	<0.071	<0.005	<0.002	0.048	<0.005	0.27	<0.005	13	<0.002	<0.005	<0.002	<0.0092	<0.1
Apr 5, 2012	672.9	7.37	<10	340	<0.05	<0.005	<0.002	0.047	<0.005	0.26	<0.005	16	<0.002	<0.005	<0.002	<0.010	<0.1
May 11, 2012	672.7	7.40	<10	290	<0.05	<0.005	<0.002	0.041	<0.005	0.30	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Jun 8, 2012	672.5	7.20	<10	250	<0.05	<0.005	<0.002	0.034	<0.005	0.24	<0.005	15	<0.002	<0.005	<0.002	<0.010	<0.1
Apr 4, 2013	673.2	10.0	<10	290	<0.05	<0.005	<0.002	0.046	<0.005	0.41	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
May 2, 2013	674.1	7.38	<10	310	<0.05	<0.005	<0.002	0.048	<0.005	0.39	<0.005	16	<0.002	<0.005	<0.002	<0.010	<0.1
Jun 7, 2013	673.4	7.05	<10	340	<0.05	<0.005	<0.002	0.048	<0.005	0.39	<0.005	24	<0.002	<0.005	<0.002	<0.010	<0.1
Spring Average	673.1	*	<10	303	<0.05	<0.005	<0.002	0.044	<0.005	0.33	<0.005	16	<0.002	<0.005	<0.002	<0.010	<0.1
Sep 23, 2011	665.3	7.08	<10	230	0.13	<0.005	<0.002	0.045	<0.005	0.37	<0.005	9	<0.002	<0.005	<0.002	<0.010	<0.1
Jul 20, 2012	671.0	7.22	<10	280	<0.05	<0.005	<0.002	0.031	<0.005	0.27	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Aug 10, 2012	668.1	7.07	<10	340	<0.05	<0.005	<0.002	0.031	<0.005	0.26	<0.005	14	<0.002	<0.005	<0.002	<0.010	<0.1
Sep 7, 2012	665.9	7.23	<10	270	<0.05	<0.005	<0.002	0.035	<0.005	0.28	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Jul 12, 2013	672.9	7.10	<10	340	<0.05	<0.005	<0.002	0.042	<0.005	0.33	<0.005	19	<0.002	<0.005	<0.002	<0.010	<0.1
Aug 2, 2013	672.6	7.36	<10	370	<0.05	<0.005	<0.002	0.042	<0.005	0.33	<0.005	18	<0.002	<0.005	<0.002	<0.010	<0.1
Summer Average	669.3	*	<10	305	<0.063	<0.005	<0.002	0.038	<0.005	0.31	<0.005	14	<0.002	<0.005	<0.002	<0.010	<0.1
Oct 20, 2011	666.1	7.32	<10	220	0.11	<0.005	<0.002	0.045	<0.005	0.31	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Nov 3, 2011	666.8	7.26	<10	190	0.15	<0.005	<0.002	0.049	<0.005	0.39	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Dec 1, 2011	671.0	7.27	<10	110	0.1	<0.005	<0.002	0.053	<0.005	0.32	<0.005	6	<0.002	<0.005	<0.002	<0.010	<0.1
Oct 12, 2012	664.8	7.05	<10	310	0.072	<0.005	<0.002	0.043	<0.005	0.34	<0.005	15	<0.002	<0.005	<0.002	<0.010	<0.1
Nov 9, 2012	667.7	7.17	<10	290	0.054	<0.005	<0.002	0.058	<0.005	0.39	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Dec 7, 2012	667.9	7.24	<10	320	0.14	<0.005	<0.002	0.047	<0.005	0.33	<0.005	15	<0.002	<0.005	<0.002	<0.010	<0.1
Fall Average	667.4	*	<10	240	0.104	<0.005	<0.002	0.049	<0.005	0.237	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1

Date Sampled	Total Iron (mg/l)	Dissolved Iron (mg/l)	Total Lead (mg/l)	Total Manganese (mg/l)	Dissolved Manganese (mg/l)	Total Mercury (mg/l)	Total Molybdenum (mg/l)	Total Nickel (mg/l)	Phenol (mg/l)	Total Selenium (mg/l)	Total Silver (mg/l)	Sulfate (mg/l)	Total Thallium (mg/l)	Total Vanadium (mg/l)	Total Zinc (mg/l)	Total Dissolved Solids (mg/l)	Hardness (mg/l)
Jan 6, 2012	<0.1	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	47	<0.005	<0.002	<0.005	240	170
Feb 14, 2012	<0.1	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	100	<0.005	<0.002	<0.005	790	220
Mar 2, 2012	<0.1	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	80	<0.005	<0.002	<0.005	600	200
Jan 3, 2013	0.15	<0.1	<0.002	0.027	0.011	<0.0002	<0.005	<0.005	0.070	<0.002	<0.002	61	<0.005	<0.002	<0.005	500	310
Feb 8, 2013	0.12	<0.1	<0.002	0.018	0.01	0.00023	<0.005	<0.005	0.072	<0.002	<0.002	68	<0.005	<0.002	<0.005	440	330
Mar 1, 2013	0.17	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	61	<0.005	<0.002	<0.005	420	320
Winter Average	<0.12	<0.1	<0.002	<0.014	<0.01	<0.0002	<0.005	<0.005	<0.052	<0.002	<0.002	70	<0.005	<0.002	<0.005	498	258
Apr 5, 2012	<0.1	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	69	<0.005	<0.002	<0.005	650	210
May 11, 2012	<0.1	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	50	<0.005	<0.002	<0.005	500	190
Jun 8, 2012	<0.1	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	38	<0.005	<0.002	<0.005	460	180
Apr 4, 2013	0.20	<0.1	<0.002	0.014	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	76	<0.005	<0.002	<0.005	520	300
May 2, 2013	0.16	<0.1	<0.002	0.029	<0.01	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	70	<0.005	<0.002	<0.005	470	290
Jun 7, 2013	0.25	0.13	<0.002	0.024	0.017	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	63	<0.005	<0.002	<0.005	490	340
Spring Average	<0.15	<0.11	<0.002	<0.016	<0.011	<0.0002	<0.005	<0.005	<0.037	<0.002	<0.002	61	<0.005	<0.002	<0.005	515	252
Sep 23, 2011	0.15	<0.1	<0.002	0.013	<0.01	<0.0002	<0.005	<0.005	<0.05	<0.002	<0.002	25	<0.005	<0.002	<0.005	480	310
Jul 20, 2012	<0.1	<0.1	<0.002	0.015	<0.01	<0.0002	<0.005	<0.005	<0.05	<0.002	<0.002	40	<0.005	<0.002	<0.005	440	190
Aug 10, 2012	0.13	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	34	<0.005	<0.002	<0.005	500	200
Sep 7, 2012	0.19	0.11	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	60	<0.005	<0.002	<0.005	370	190
Jul 12, 2013	0.16	<0.1	<0.002	0.038	0.016	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	50	<0.005	<0.002	<0.005	440	370
Aug 2, 2013	0.29	0.15	<0.002	0.043	0.032	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	60	<0.005	<0.002	<0.005	500	340
Summer Average	<0.17	<0.05	<0.002	<0.022	<0.015	<0.0002	<0.005	<0.005	<0.037	<0.002	<0.002	45	<0.005	<0.002	<0.005	455	267
Oct 20, 2011	0.21	<0.1	<0.002	0.018	<0.01	<0.0002	<0.005	<0.005	0.079	<0.002	<0.002	31	<0.005	<0.002	<0.005	490	300
Nov 3, 2011	0.15	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	0.08	<0.002	<0.002	40	<0.005	<0.002	0.009	450	300
Dec 1, 2011	<0.1	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	52	<0.005	<0.002	<0.005	330	240
Oct 12, 2012	0.26	0.032	<0.002	0.021	0.019	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	48	<0.005	<0.002	<0.005	440	230
Nov 9, 2012	0.31	0.11	<0.002	0.016	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	41	<0.005	<0.002	<0.005	400	210
Dec 7, 2012	<0.1	0.11	<0.002	0.032	0.013	<0.0002	<0.005	<0.005	<0.060	<0.002	<0.002	48	<0.005	<0.002	<0.005	520	330
Fall Average	<0.19	<0.092	<0.002	<0.018	<0.012	<0.0002	<0.005	<0.005	<0.062	<0.002	<0.002	43	<0.005	<0.002	<0.006	438	268

\*pH is not subject to averaging  
Average seasonal variations are indicated by bold text. Red text signifies the highest concentrations and the lowest concentrations are signified with black text.

MW-5

Groundwater Monitoring Well

Date Sampled	Water Elevation (msl)	Field pH (su)	Total Acidity (mg/l)	Total Alkalinity (mg/l)	Total Aluminum (mg/l)	Total Antimony (mg/l)	Total Arsenic (mg/l)	Total Barium (mg/l)	Total Beryllium (mg/l)	Total Boron (mg/l)	Total Cadmium (mg/l)	Chloride (mg/l)	Total Chromium (mg/l)	Total Cobalt (mg/l)	Total Copper (mg/l)	Total Cyanide (mg/l)	Total Fluoride (mg/l)
Jan 6, 2012	678.5	7.43	<10	180	0.095	<0.005	<0.002	0.057	<0.005	0.28	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Feb 14, 2012	679.7	7.71	<10	270	0.087	<0.005	<0.002	0.052	<0.005	0.23	<0.005	9	<0.002	<0.005	<0.002	<0.010	<0.1
Mar 2, 2012	679.6	7.68	<10	270	0.076	<0.005	<0.002	0.048	<0.005	0.19	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Jan 3, 2013	666.8	7.51	<10	250	0.11	<0.005	<0.002	0.074	<0.005	0.28	<0.005	19	<0.002	<0.005	<0.002	<0.010	<0.1
Feb 8, 2013	674.1	7.37	<10	220	<0.05	<0.005	<0.002	0.064	<0.005	0.16	<0.005	16	<0.002	<0.005	<0.002	<0.010	<0.1
Mar 1, 2013	677.7	7.75	<10	290	<0.05	<0.005	<0.002	0.051	<0.005	0.22	<0.005	14	<0.002	<0.005	<0.002	<0.0050	<0.1
Winter Average	676.1	*	<10	247	<0.078	<0.005	<0.002	0.058	<0.005	0.23	<0.005	14	<0.002	<0.005	<0.002	<0.0092	<0.1
Apr 5, 2012	679.5	7.62	<10	280	<0.05	<0.005	<0.002	0.047	<0.005	0.21	<0.005	26	<0.002	<0.005	<0.002	<0.010	<0.1
May 11, 2012	679.3	7.58	<10	230	<0.05	<0.005	<0.002	0.045	<0.005	0.22	<0.005	25	<0.002	<0.005	<0.002	<0.010	<0.1
Jun 8, 2012	679.1	7.45	<10	240	<0.05	<0.005	<0.002	0.039	<0.005	0.17	<0.005	19	<0.002	<0.005	<0.002	<0.010	<0.1
May 2, 2013	680.8	7.35	<10	400	<0.05	<0.005	<0.002	0.039	<0.005	0.25	<0.005	<6	<0.002	<0.005	<0.002	<0.010	<0.1
Jun 7, 2013	680.0	7.23	<10	370	<0.05	<0.005	<0.002	0.036	<0.005	0.19	<0.005	<6	<0.002	<0.005	<0.002	<0.010	<0.1
Spring Average	679.7	*	<10	304	<0.05	<0.005	<0.002	0.041	<0.005	0.21	<0.005	<16.4	<0.002	<0.005	<0.002	<0.010	<0.1
Sep 23, 2011	671.2	7.26	<10	140	0.26	<0.005	<0.002	0.071	<0.005	0.28	<0.005	6	<0.002	<0.005	<0.002	<0.010	<0.1
Jul 20, 2012	676.0	7.39	<10	250	<0.05	<0.005	<0.002	0.036	<0.005	0.20	<0.005	22	<0.002	<0.005	<0.002	<0.010	<0.1
Aug 10, 2012	672.6	7.35	<10	290	<0.05	<0.005	<0.002	0.036	<0.005	0.19	<0.005	17	<0.002	<0.005	<0.002	<0.010	<0.1
Sep 7, 2012	668.5	7.34	<10	250	<0.05	<0.005	<0.002	0.041	<0.005	0.25	<0.005	20	<0.002	<0.005	<0.002	<0.010	<0.1
Jul 12, 2013	679.4	7.21	<10	360	<0.05	<0.005	<0.002	0.039	<0.005	0.23	<0.005	<6	<0.002	<0.005	<0.002	<0.010	<0.1
Aug 2, 2013	678.8	7.19	<10	370	<0.05	<0.005	<0.002	0.046	<0.005	0.27	<0.005	<6	<0.002	<0.005	<0.002	<0.010	<0.1
Summer Average	674.4	*	<10	277	<0.085	<0.005	<0.002	0.045	<0.005	0.24	<0.005	<12.8	<0.002	<0.005	<0.002	<0.010	<0.1
Oct 20, 2011	668.8	7.21	<10	160	0.29	<0.005	<0.002	0.064	<0.005	0.33	<0.005	9	<0.002	<0.005	<0.002	<0.010	<0.1
Nov 3, 2011	668.8	7.27	<10	130	0.22	<0.005	<0.002	0.072	<0.005	0.41	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Dec 1, 2011	669.2	7.24	<10	140	0.14	<0.005	<0.002	0.066	<0.005	0.37	<0.005	15	<0.002	<0.005	<0.002	<0.010	<0.1
Oct 12, 2012	669.0	7.29	<10	290	0.062	<0.005	<0.002	0.053	<0.005	0.29	<0.005	22	<0.002	<0.005	<0.002	<0.010	<0.1
Nov 9, 2012	665.5	7.38	<10	160	0.054	<0.005	<0.002	0.045	<0.005	0.22	<0.005	15	<0.002	<0.005	<0.002	<0.010	<0.1
Dec 7, 2012	667.9	7.43	<10	260	0.13	<0.005	<0.002	0.087	<0.005	0.35	<0.005	18	<0.002	<0.005	<0.002	<0.010	<0.1
Fall Average	668.2	*	<10	190	0.146	<0.005	<0.002	0.065	<0.005	0.33	<0.005	15	<0.002	<0.005	<0.002	<0.010	<0.1

Date Sampled	Total Iron (mg/l)	Dissolved Iron (mg/l)	Total Lead (mg/l)	Total Manganese (mg/l)	Dissolved Manganese (mg/l)	Total Mercury (mg/l)	Total Molybdenum (mg/l)	Total Nickel (mg/l)	Phenol (mg/l)	Total Selenium (mg/l)	Total Silver (mg/l)	Sulfate (mg/l)	Total Thallium (mg/l)	Total Vanadium (mg/l)	Total Zinc (mg/l)	Dissolved Solids (mg/l)	Hardness (mg/l)
Jan 6, 2012	0.32	<0.1	<0.002	0.092	<0.01	<0.0002	<0.005	<0.005	0.093	<0.002	<0.002	30	<0.005	<0.002	<0.005	270	200
Feb 14, 2012	0.24	<0.1	<0.002	0.035	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	49	<0.005	<0.002	<0.005	390	210
Mar 2, 2012	0.16	<0.1	<0.002	0.027	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	42	<0.005	<0.002	<0.005	440	220
Jan 3, 2013	0.96	0.15	<0.002	0.33	0.21	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	23	<0.005	<0.002	<0.005	440	270
Feb 8, 2013	0.34	<0.1	<0.002	0.012	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	15	<0.005	<0.002	<0.005	540	280
Mar 1, 2013	0.29	<0.1	<0.002	0.015	<0.01	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	15	<0.005	<0.002	<0.005	400	260
Winter Average	0.39	<0.11	<0.002	0.085	<0.01	<0.0002	<0.005	<0.005	<0.05	<0.002	<0.002	29	<0.005	<0.002	<0.005	413	240
Apr 5, 2012	<0.1	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	46	<0.005	<0.002	<0.005	430	210
May 11, 2012	<0.1	<0.1	<0.002	<0.01	<0.01	0.00021	<0.005	<0.005	0.15	<0.002	<0.002	63	<0.005	<0.002	<0.005	410	220
Jun 8, 2012	<0.1	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	0.085	<0.002	<0.002	40	<0.005	<0.002	<0.005	520	180
May 2, 2013	0.42	<0.1	<0.002	0.025	0.014	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	19	<0.005	<0.002	<0.005	430	270
Jun 7, 2013	0.56	<0.1	<0.002	0.018	<0.01	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	21	<0.005	<0.002	<0.005	480	280
Spring Average	<0.26	<0.1	<0.002	0.015	<0.011	<0.000202	<0.005	<0.005	<0.061	<0.002	<0.002	38	<0.005	<0.002	<0.005	454	232
Sep 23, 2011	0.56	<0.1	<0.002	0.22	0.14	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	50	<0.005	<0.002	<0.005	340	250
Jul 20, 2012	<0.1	<0.1	<0.002	0.01	<0.01	<0.0002	<0.005	<0.005	0.057	<0.002	<0.002	37	<0.005	<0.002	<0.005	690	160
Aug 10, 2012	0.11	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	0.086	<0.002	<0.002	41	<0.005	<0.002	<0.005	320	180
Sep 7, 2012	0.28	0.12	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	0.077	<0.002	<0.002	36	<0.005	<0.002	<0.005	350	200
Jul 12, 2013	0.40	<0.1	<0.002	0.021	<0.01	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	15	<0.005	<0.002	<0.005	300	310
Aug 2, 2013	0.38	<0.1	<0.002	0.018	<0.01	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	22	<0.005	<0.002	<0.005	520	280
Summer Average	<0.305	<0.103	<0.002	<0.0482	<0.032	<0.0002	<0.005	<0.005	<0.048	<0.002	<0.002	34	<0.005	<0.002	<0.005	420	230
Oct 20, 2011	0.43	0.12	<0.002	0.16	0.13	<0.0002	<0.005	<0.005	0.18	<0.002	<0.002	58	<0.005	<0.002	<0.005	330	250
Nov 3, 2011	0.51	0.18	<0.002	0.12	0.098	<0.0002	<0.005	<0.005	0.23	<0.002	<0.002	42	<0.005	<0.002	0.006	390	240
Dec 1, 2011	0.42	0.2	<0.002	0.11	0.1	<0.0002	<0.005	<0.005	0.14	<0.002	<0.002	34	<0.005	<0.002	0.006	370	240
Oct 12, 2012	0.45	<0.1	<0.002	0.13	0.052	<0.0002	<0.005	<0.005	0.10	<0.002	<0.002	23	<0.005	<0.002	<0.005	420	260
Nov 9, 2012	0.30	<0.1	<0.002	0.086	0.044	<0.0002	<0.005	<0.005	0.061	<0.002	<0.002	18	<0.005	<0.002	<0.005	220	190
Dec 7, 2012	1.2	<0.1	<0.002	0.47	0.34	<0.0002	<0.005	<0.005	<0.06	0.002	<0.002	20	<0.005	<0.002	<0.005	420	<0.1
Fall Average	0.55	<0.133	<0.002	0.179	0.127	<0.0002	<0.005	<0.005	<0.129	<0.002	<0.002	33	<0.005	<0.002	<0.005	358	<197

\*pH is not subject to averaging

Average seasonal variations are indicated by bold text. Red text signifies the highest concentrations and the lowest concentrations are signified with black text.

MW-6

Groundwater Monitoring Well

Date Sampled	Water Elevation (msl)	Field pH (su)	Total Acidity (mg/l)	Total Alkalinity (mg/l)	Total Aluminum (mg/l)	Total Antimony (mg/l)	Total Arsenic (mg/l)	Total Barium (mg/l)	Total Beryllium (mg/l)	Total Boron (mg/l)	Total Cadmium (mg/l)	Chloride (mg/l)	Total Chromium (mg/l)	Total Cobalt (mg/l)	Total Copper (mg/l)	Total Cyanide (mg/l)	Total Fluoride (mg/l)
Jan 6, 2012	674.1	7.48	<10	200	0.11	<0.005	<0.002	0.054	<0.005	0.16	<0.005	8	<0.002	<0.005	<0.002	<0.010	<0.1
Feb 14, 2012	675.6	7.69	<10	270	0.083	<0.005	<0.002	0.046	<0.005	0.19	<0.005	11	<0.002	<0.005	<0.002	<0.010	<0.1
Mar 2, 2012	675.6	6.66	<10	270	0.067	<0.005	<0.002	0.042	<0.005	0.21	<0.005	14	<0.002	<0.005	<0.002	<0.010	<0.1
Jan 3, 2013	671.5	7.60	<10	330	<0.05	<0.005	<0.002	0.047	<0.005	0.31	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Feb 8, 2013	673.2	7.48	<10	290	<0.05	<0.005	<0.002	0.042	<0.005	0.20	<0.005	8	<0.002	<0.005	<0.002	<0.010	<0.1
Mar 1, 2013	675.0	7.66	<10	280	<0.05	<0.005	<0.002	0.037	<0.005	0.24	<0.005	10	<0.002	<0.005	<0.002	<0.0050	<0.1
<b>Winter Average</b>	<b>674.2</b>	<b>*</b>	<b>&lt;10</b>	<b>273</b>	<b>&lt;0.07</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>0.045</b>	<b>&lt;0.005</b>	<b>0.22</b>	<b>&lt;0.005</b>	<b>10</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.0092</b>	<b>&lt;0.1</b>
Apr 5, 2012	675.6	7.67	<10	270	<0.05	<0.005	<0.002	0.057	<0.005	0.19	<0.005	27	<0.002	<0.005	<0.002	<0.010	<0.1
May 11, 2012	675.5	7.65	<10	280	<0.05	<0.005	<0.002	0.047	<0.005	0.21	<0.005	29	<0.002	<0.005	<0.002	<0.010	<0.1
Jun 8, 2012	675.4	7.47	<10	260	<0.05	<0.005	<0.002	0.04	<0.005	0.18	<0.005	22	<0.002	<0.005	<0.002	<0.010	<0.1
Apr 4, 2013	675.0	9.6	<10	300	<0.05	<0.005	<0.002	0.041	<0.005	0.32	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
May 2, 2013	675.8	7.14	<10	290	<0.05	<0.005	<0.002	0.039	<0.005	0.28	<0.005	13	<0.002	<0.005	<0.002	<0.010	<0.1
Jun 7, 2013	675.8	6.83	<10	260	<0.05	<0.005	<0.002	0.036	<0.005	0.24	<0.005	13	<0.002	<0.005	<0.002	<0.010	<0.1
<b>Spring Average</b>	<b>675.5</b>	<b>*</b>	<b>&lt;10</b>	<b>277</b>	<b>&lt;0.05</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>0.043</b>	<b>&lt;0.005</b>	<b>0.24</b>	<b>&lt;0.005</b>	<b>19</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.010</b>	<b>&lt;0.1</b>
Sep 23, 2011	672.2	7.30	<10	120	0.23	<0.005	<0.002	0.076	<0.005	0.23	<0.005	66	<0.002	<0.005	<0.002	<0.010	<0.1
Jul 20, 2012	673.9	7.35	<10	240	<0.002	<0.005	<0.002	0.035	<0.005	0.14	<0.005	18	<0.002	<0.005	<0.002	<0.010	<0.1
Aug 10, 2012	673.1	7.25	<10	290	<0.05	<0.005	<0.002	0.032	<0.005	0.22	<0.005	14	<0.002	<0.005	<0.002	<0.010	<0.1
Sep 7, 2012	671.9	7.39	<10	230	0.052	<0.005	<0.002	0.045	<0.005	0.28	<0.005	8	<0.002	<0.005	<0.002	<0.010	<0.1
Jul 12, 2013	675.5	6.93	<10	290	<0.05	<0.005	<0.002	0.042	<0.005	0.31	<0.005	18	<0.002	<0.005	<0.002	<0.010	<0.1
Aug 2, 2013	675.1	7.26	<10	290	<0.05	<0.005	<0.002	0.039	<0.005	0.25	<0.005	18	<0.002	<0.005	<0.002	<0.010	<0.1
<b>Summer Average</b>	<b>673.6</b>	<b>*</b>	<b>&lt;10</b>	<b>243</b>	<b>&lt;0.072</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>0.045</b>	<b>&lt;0.005</b>	<b>0.24</b>	<b>&lt;0.005</b>	<b>&lt;13.7</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.010</b>	<b>&lt;0.1</b>
Oct 20, 2011	671.6	7.30	<10	150	0.17	<0.005	<0.002	0.071	<0.005	0.26	<0.005	9	<0.002	<0.005	<0.002	<0.010	<0.1
Nov 3, 2011	671.4	7.38	<10	120	0.12	<0.005	<0.002	0.068	<0.005	0.34	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Dec 1, 2011	671.5	7.50	<10	130	0.18	<0.005	<0.002	0.061	<0.005	0.22	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
Oct 12, 2012	670.9	7.32	<10	280	0.069	<0.005	<0.002	0.052	<0.005	0.27	<0.005	10	<0.002	<0.005	<0.002	<0.010	<0.1
Nov 9, 2012	670.9	7.37	<10	210	<0.05	<0.005	<0.002	0.046	<0.005	0.31	<0.005	8	<0.002	<0.005	<0.002	<0.010	<0.1
Dec 7, 2012	670.9	7.40	<10	350	<0.05	<0.005	<0.002	0.051	<0.005	0.27	<0.005	12	<0.002	<0.005	<0.002	<0.010	<0.1
<b>Fall Average</b>	<b>671.2</b>	<b>*</b>	<b>&lt;10</b>	<b>207</b>	<b>&lt;0.107</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>0.058</b>	<b>&lt;0.005</b>	<b>0.28</b>	<b>&lt;0.005</b>	<b>10</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.010</b>	<b>&lt;0.1</b>

Date Sampled	Total Iron (mg/l)	Dissolved Iron (mg/l)	Total Lead (mg/l)	Total Manganese (mg/l)	Dissolved Manganese (mg/l)	Total Mercury (mg/l)	Total Molybdenum (mg/l)	Total Nickel (mg/l)	Phenol (mg/l)	Total Selenium (mg/l)	Total Silver (mg/l)	Sulfate (mg/l)	Total Thallium (mg/l)	Total Vanadium (mg/l)	Total Zinc (mg/l)	Total Dissolved Solids (mg/l)	Hardness (mg/l)
Jan 6, 2012	0.18	<0.1	<0.002	0.086	0.043	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	51	<0.005	<0.002	<0.005	360	150
Feb 14, 2012	0.12	<0.1	<0.002	0.055	0.037	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	40	<0.005	<0.002	<0.005	620	180
Mar 2, 2012	0.17	<0.1	<0.002	0.038	0.022	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	49	<0.005	<0.002	<0.005	450	150
Jan 3, 2013	0.34	0.12	<0.002	0.19	0.082	<0.0002	<0.005	<0.005	0.064	<0.002	<0.002	80	<0.005	<0.002	<0.005	600	300
Feb 8, 2013	0.22	<0.1	<0.002	0.044	0.03	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	74	<0.005	<0.002	<0.005	660	300
Mar 1, 2013	0.11	<0.1	<0.002	0.031	0.024	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	65	<0.005	<0.002	<0.005	590	290
<b>Winter Average</b>	<b>0.19</b>	<b>&lt;0.103</b>	<b>&lt;0.002</b>	<b>0.074</b>	<b>0.040</b>	<b>&lt;0.0002</b>	<b>&lt;0.005</b>	<b>&lt;0.005</b>	<b>&lt;0.046</b>	<b>&lt;0.002</b>	<b>&lt;0.002</b>	<b>60</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>547</b>	<b>228</b>
Apr 5, 2012	<0.1	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	42	<0.005	<0.002	<0.005	460	190
May 11, 2012	<0.1	<0.1	<0.002	0.011	<0.01	0.00021	<0.005	<0.005	0.086	<0.002	<0.002	64	<0.005	<0.002	<0.005	510	200
Jun 8, 2012	<0.1	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	0.072	<0.002	<0.002	70	<0.005	<0.002	<0.005	600	180
Apr 4, 2013	0.19	<0.1	<0.002	0.022	0.016	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	20	<0.005	<0.002	<0.005	530	250
May 2, 2013	0.14	<0.1	<0.002	0.029	0.014	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	49	<0.005	<0.002	<0.005	460	280
Jun 7, 2013	0.17	<0.1	<0.002	0.048	0.010	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	42	<0.005	<0.002	<0.005	480	270
<b>Spring Average</b>	<b>&lt;0.133</b>	<b>&lt;0.1</b>	<b>&lt;0.002</b>	<b>&lt;0.019</b>	<b>&lt;0.012</b>	<b>&lt;0.00021</b>	<b>&lt;0.005</b>	<b>&lt;0.005</b>	<b>&lt;0.046</b>	<b>&lt;0.002</b>	<b>&lt;0.002</b>	<b>48</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>507</b>	<b>228</b>
Sep 23, 2011	0.25	<0.1	<0.002	0.3	0.2	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	8	<0.005	<0.002	<0.005	350	230
Jul 20, 2012	0.13	<0.1	<0.002	<0.01	<0.01	<0.0002	<0.005	<0.005	<0.05	<0.002	<0.002	50	<0.005	<0.002	<0.005	690	170
Aug 10, 2012	<0.1	<0.1	<0.002	0.015	<0.01	<0.0002	<0.005	<0.005	0.15	<0.002	<0.002	56	<0.005	<0.002	<0.005	520	180
Sep 7, 2012	<0.1	<0.1	<0.002	0.012	<0.01	<0.0002	<0.005	<0.005	0.099	<0.002	<0.002	30	<0.005	<0.002	<0.005	420	140
Jul 12, 2013	0.22	<0.1	<0.002	0.036	0.017	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	30	<0.005	<0.002	<0.005	520	280
Aug 2, 2013	0.22	<0.1	<0.002	0.025	0.019	<0.0002	<0.005	<0.005	<0.010	<0.002	<0.002	40	<0.005	<0.002	<0.005	410	330
<b>Summer Average</b>	<b>&lt;0.17</b>	<b>&lt;0.1</b>	<b>&lt;0.002</b>	<b>&lt;0.07</b>	<b>&lt;0.043</b>	<b>&lt;0.0002</b>	<b>&lt;0.005</b>	<b>&lt;0.005</b>	<b>&lt;0.0615</b>	<b>&lt;0.002</b>	<b>&lt;0.002</b>	<b>36</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>485</b>	<b>222</b>
Oct 20, 2011	0.18	<0.1	<0.002	0.21	0.18	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	11	<0.005	<0.002	<0.005	320	220
Nov 3, 2011	0.13	<0.1	<0.002	0.16	0.11	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	8	<0.005	<0.002	<0.005	340	200
Dec 1, 2011	0.11	<0.1	<0.002	0.1	0.092	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	10	<0.005	<0.002	<0.005	320	180
Oct 12, 2012	<0.1	<0.1	<0.002	0.023	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	40	<0.005	<0.002	<0.005	450	200
Nov 9, 2012	<0.1	<0.1	<0.002	0.019	<0.01	<0.0002	<0.005	<0.005	<0.050	<0.002	<0.002	31	<0.005	<0.002	<0.005	310	160
Dec 7, 2012	0.50	<0.1	<0.002	0.240	0.12	<0.0002	<0.005	<0.005	<0.060	<0.002	<0.002	40	<0.005	<0.002	<0.005	240	290
<b>Fall Average</b>	<b>&lt;0.19</b>	<b>&lt;0.1</b>	<b>&lt;0.002</b>	<b>0.13</b>	<b>&lt;0.087</b>	<b>&lt;0.0002</b>	<b>&lt;0.005</b>	<b>&lt;0.005</b>	<b>&lt;0.050</b>	<b>&lt;0.002</b>	<b>&lt;0.002</b>	<b>23</b>	<b>&lt;0.005</b>	<b>&lt;0.002</b>	<b>&lt;0.005</b>	<b>330</b>	<b>208</b>

Sunrise Coal Company  
Allerton Mine, Permit No. 429  
Summary of Background Analysis Obtained from Groundwater Monitoring

Monitoring wells MW-1 through MW-6 are screened in unweathered glacial till at the glacial till-limestone bedrock interface. The purpose of monitoring wells MW-1 through MW-6 is to monitor shallow groundwater quality and quantity in the area surrounding the proposed surface permit area. This shallow aquifer supports the private water wells that exist in the region.

The groundwater monitoring plan is designed to monitor impacts to water quality and quantity that may be caused by surface operations at the Bulldog Mine. The well locations were selected based on the belief that groundwater generally follows flow paths similar to the flow of surface water runoff. Assuming that is correct, and based on ground surface elevations, three (3) wells were located what was believed to be up-gradient, and three (3) wells were located what was believed to be down-gradient from the permit area. Monitoring began at these wells on September 23, 2011. Upon obtaining seasonal background water monitoring data it was determined that only well MW-3 is located up-gradient, and wells MW-1, MW-2, MW-4, MW-5 and MW-6 are located down-gradient from the permit area.

Monitoring well MW-3 is located at the up-gradient extents of the permit area. This well provides background data by monitoring the quality and quantity of shallow groundwater before it passes through the permit area.

Monitoring wells MW-1, MW-2, MW-4, MW-5 and MW-6 are located at the down-gradient extents of the permit area. These wells provide the quality and quantity of shallow groundwater passing through the permit area.

Most of the monitoring constituents did not exhibit any seasonal variations. However, a few constituents did exhibit only slight seasonal variations. Average seasonal variations are shown with either red bold text, or black bold text on the groundwater monitoring data tables included in this attachment. Red text signifies the highest concentrations and the lowest concentrations are signified with black text.

Groundwater monitoring well MW-1 is located near the northwest corner of the north surface permit area. The ground surface elevation at well MW-1 is 676.6 MSL and the bottom elevation is 647.6 MSL. Data collected thus far indicates the seasonal average, potentiometric surface at well MW-1 ranged from 665.4 to 673.9 MSL.

Monitoring well MW-2 is located near the midpoint of the north permit boundary. The ground surface elevation at well MW-2 is 674.5 MSL and the bottom elevation is 642.5 MSL. Data collected thus far at MW-2 indicates the seasonal average, potentiometric surface ranges from 662.3 to 673.1 MSL.

Monitoring well MW-3 is located near the northwest corner of the south surface permit area. The ground surface elevation at well MW-3 is 681.8 MSL and the bottom elevation is 643.8 MSL. Data collected thus far at MW-3 indicates the seasonal average, potentiometric surface ranges from 674.6 to 678.9 MSL.

Groundwater monitoring well MW-4 is located near the northeast corner of the north surface permit area. The ground surface elevation at well MW-4 is 678.2 MSL and the bottom elevation is 643.2 MSL. Data collected thus far indicates the seasonal average, potentiometric surface at well MW-4 ranges from 667.4 to 673.1MSL.

Monitoring well MW-5 is located near the southwest corner of the south surface permit area. The ground surface elevation at well MW-5 is 683.7 MSL and the bottom elevation is 638.7 MSL. Data collected thus far at well MW-5 indicates the seasonal average, potentiometric surface ranges from 668.2 to 679.7 MSL.

Sunrise Coal Company  
Allerton Mine, Permit No. 429  
Summary of Background Analysis Obtained from Groundwater Monitoring

Groundwater monitoring well MW-6 is located near the southeast corner of the south surface permit area. The ground surface elevation at well MW-6 is 679.2 MSL and the bottom elevation is 625.2 MSL. Data collected thus far indicates the seasonal average, potentiometric surface at well MW-6 ranges from 671.2 to 675.5 MSL.

Samples collected at all six wells exhibited near neutral to slightly alkaline pH, and acidity less than alkalinity. The wells routinely exhibited concentration levels below method detection limits for antimony, arsenic, beryllium, cadmium, chromium, cobalt, copper, cyanide, fluoride, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium and zinc. Wells MW-4 and MW-6 also exhibited concentrations below method detection limits for phenols and dissolved iron. Wells MW-4, MW-5 and MW-6 also exhibited concentrations below method detection limits for dissolved manganese. Seasonal averages for all detectable concentrations are compliant with Class I Groundwater Standards except for seasonal concentrations for phenols during the fall of 2011 at wells MW-1, MW-2, MW-3 and MW-5.

The water well reports included in Attachment III-2B1a and the residential water usage information contained in Attachment III-2B1b indicate that groundwater for domestic use is obtained from drilled wells finished in the unconsolidated materials, or from drilled wells tapping the underlying sandstone and limestone bedrock formations. The wells tap stringers or lenses of sand, and/or gravel contained in the unconsolidated materials above bedrock. The other wells tap into the bedrock sandstones and limestones. The yield of these wells is generally limited to less than one-hundred gallons per day, and may be only adequate for normal household domestic usage.

Groundwater monitoring wells installed by Sunrise Coal in the unconsolidated deposits indicate water levels fluctuate seasonally in response to variations in precipitation recharge and some wells may go dry in the late summer or early fall. The general flow direction of these water-bearing deposits appears to be aligned with the present surface watercourses.

The probability of developing adequate groundwater supplies from the unconsolidated deposits, and from the sandstone and limestone bedrock is only fair. The drift is mainly composed of fine-grained materials. Substantial sand and gravel beds and sandstone bedrock deposits are scarce.

In summary, the Bulldog Mine will be required by IDNR and IEPA to protect the shallow, surficial aquifers from adverse impacts by constructing properly designed, constructed, and tested low-permeability compacted clay liners beneath coal stockpiles, coal refuse disposal areas, and drainage control facilities that collect water from coal processing and/or coal refuse disposal areas. The low-permeability liners will also protect the deeper bedrock aquifers that are located below the shallow sand and gravel deposits but above the coal to be mined. Although reliable bedrock aquifers beneath the coal seam to be mined are scarce or nearly non-existent it is extremely unlikely the Bulldog Mine will cause any adverse impacts to the groundwater at these depths. Impervious limestones and shales separate the coal seam and any underlying aquifers from one another. The impervious materials alone are sufficient to prevent migration of groundwater from the coal seam to any underlying aquifer. However, when considering the impervious materials and the vertical distance separation between the coal seam and any underlying aquifers it becomes easily recognizable that the underground mining operation will not create any adverse impacts to the regional groundwater system.



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-2907-01  
Date Received: 9/26/2011  
Date Reported: 11/3/2011

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 9/23/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Elevation	665 feet		HMS	9/23/2011
pH	7.34 SU	SM 4500-H+ B	HMS	9/23/2011
Temperature	15.7 deg C	SM 2550 B	HMS	9/23/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	10/4/2011
Alkalinity, Total	180 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	10/4/2011
Chloride	<6 mg/L	SM 4500-CL B	MJL	10/4/2011
Iron, Total	0.38 mg/L	EPA 200.7	MJL	10/13/2011
Iron, Dissolved	0.27 mg/L	EPA 200.7	MJL	10/13/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/4/2011
Hardness	250 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	10/12/2011
Manganese, Total	0.097 mg/L	EPA 200.7	MJL	10/13/2011
Manganese, Dissolved	0.088 mg/L	EPA 200.7	MJL	10/13/2011
Sulfate	<2 mg/L	D51690,02	CCV	10/3/2011
Solids, Total Dissolved	380 mg/L	SM 2540 C	CCV	9/30/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Aluminum, Total	0.15 mg/L	EPA 200.7	MJL	10/13/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Boron, Total	0.26 mg/L	EPA 200.7	MJL	10/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-2907-01

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 9/23/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.035 mg/L	EPA 200.7	MJL	10/13/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	10/6/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	10/14/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Phenol (ics)	0.079 mg/L	EPA 510 A, B	MLI	10/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-2907-01

Page 3 of 3

Revised Report 11/3/2011: Reported water level in elevation.

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-2907-02  
Date Received: 9/26/2011  
Date Reported: 11/3/2011

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 9/23/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Elevation	663.7 feet		HMS	9/23/2011
pH	7.69 SU	SM 4500-H+ B	HMS	9/23/2011
Temperature	15.6 deg C	SM 2550 B	HMS	9/23/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	10/4/2011
Alkalinity, Total	110 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	10/4/2011
Chloride	<6 mg/L	SM 4500-CL B	MJL	10/4/2011
Iron, Total	1.3 mg/L	EPA 200.7	MJL	10/13/2011
Iron, Dissolved	0.98 mg/L	EPA 200.7	MJL	10/13/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/4/2011
Hardness	250 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	10/12/2011
Manganese, Total	0.12 mg/L	EPA 200.7	MJL	10/13/2011
Manganese, Dissolved	0.095 mg/L	EPA 200.7	MJL	10/13/2011
Sulfate	5 mg/L	D51690,02	CCV	10/3/2011
Solids, Total Dissolved	280 mg/L	SM 2540 C	CCV	9/30/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Aluminum, Total	0.50 mg/L	EPA 200.7	MJL	10/13/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Boron, Total	0.25 mg/L	EPA 200.7	MJL	10/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-2907-02

Page 2 of 3

**Sample Identification**

Allerton Mine

Date Sampled: 9/23/2011

MW-2

Sampled by: HMS

**Sample Analysis**

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.076 mg/L	EPA 200.7	MJL	10/13/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	10/6/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	10/14/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Phenol (ics)	0.17 mg/L	EPA 510 A, B	MLI	10/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Zinc, Total	0.030 mg/L	EPA 200.7	MJL	10/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-2907-02

Page 3 of 3

Revised Report 11/3/2011: Reported water level in elevation.

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-2907-03  
Date Received: 9/26/2011  
Date Reported: 11/3/2011

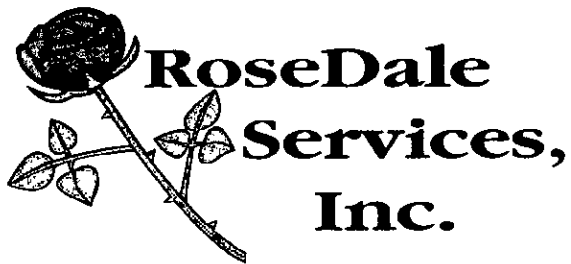
### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 9/23/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Elevation	672.8 feet		HMS	9/23/2011
pH	7.25 SU	SM 4500-H+ B	HMS	9/23/2011
Temperature	16.3 deg C	SM 2550 B	HMS	9/23/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	10/4/2011
Alkalinity, Total	130 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	10/4/2011
Chloride	8 mg/L	SM 4500-CL B	MJL	10/4/2011
Iron, Total	0.64 mg/L	EPA 200.7	MJL	10/13/2011
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	10/13/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/4/2011
Hardness	270 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	10/12/2011
Manganese, Total	0.10 mg/L	EPA 200.7	MJL	10/13/2011
Manganese, Dissolved	0.037 mg/L	EPA 200.7	MJL	10/13/2011
Sulfate	69 mg/L	D51690,02	CCV	10/3/2011
Solids, Total Dissolved	260 mg/L	SM 2540 C	CCV	9/30/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Aluminum, Total	0.34 mg/L	EPA 200.7	MJL	10/13/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Boron, Total	0.58 mg/L	EPA 200.7	MJL	10/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-2907-03

Page 2 of 3

### Sample Identification

Allerton Mine

Date Sampled: 9/23/2011

MW-3

Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.072 mg/L	EPA 200.7	MJL	10/13/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	10/6/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	10/14/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Phenol (ics)	0.13 mg/L	EPA 510 A, B	MLI	10/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Zinc, Total	0.035 mg/L	EPA 200.7	MJL	10/13/2011



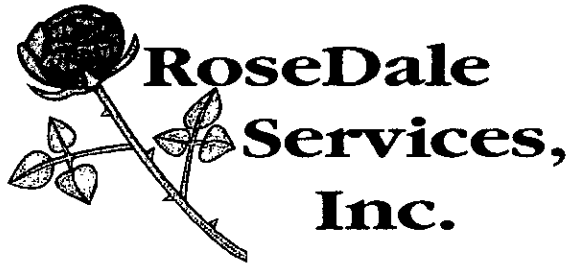
1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-2907-03

Page 3 of 3

Revised Report 11/3/2011: Reported water level in elevation.

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-2907-04  
Date Received: 9/26/2011  
Date Reported: 11/3/2011

### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 9/23/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Elevation	665.3 feet		HMS	9/23/2011
pH	7.08 SU	SM 4500-H+ B	HMS	9/23/2011
Temperature	14.33 deg C	SM 2550 B	HMS	9/23/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	10/4/2011
Alkalinity, Total	230 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	10/4/2011
Chloride	9 mg/L	SM 4500-CL B	MJL	10/4/2011
Iron, Total	0.15 mg/L	EPA 200.7	MJL	10/13/2011
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	10/13/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/4/2011
Hardness	310 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	10/12/2011
Manganese, Total	0.013 mg/L	EPA 200.7	MJL	10/13/2011
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	10/13/2011
Sulfate	25 mg/L	D51690,02	CCV	10/3/2011
Solids, Total Dissolved	480 mg/L	SM 2540 C	CCV	9/30/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Aluminum, Total	0.13 mg/L	EPA 200.7	MJL	10/13/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Boron, Total	0.37 mg/L	EPA 200.7	MJL	10/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-2907-04

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 9/23/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.045 mg/L	EPA 200.7	MJL	10/13/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	10/6/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	10/14/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Phenol (ics)	<0.05 mg/L	EPA 510 A, B	MLI	10/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-2907-04

Page 3 of 3

Revised Report 11/3/2011: Reported water level in elevation.

Reviewed by *Rodger Wilco*



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-2907-05  
Date Received: 9/26/2011  
Date Reported: 11/3/2011

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 9/23/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Elevation	671.2 feet		HMS	9/23/2011
pH	7.26 SU	SM 4500-H+ B	HMS	9/23/2011
Temperature	14.3 deg C	SM 2550 B	HMS	9/23/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	10/4/2011
Alkalinity, Total	140 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	10/4/2011
Chloride	6 mg/L	SM 4500-CL B	MJL	10/4/2011
Iron, Total	0.56 mg/L	EPA 200.7	MJL	10/13/2011
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	10/13/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/4/2011
Hardness	250 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	10/12/2011
Manganese, Total	0.22 mg/L	EPA 200.7	MJL	10/13/2011
Manganese, Dissolved	0.14 mg/L	EPA 200.7	MJL	10/13/2011
Sulfate	50 mg/L	D51690,02	CCV	10/3/2011
Solids, Total Dissolved	340 mg/L	SM 2540 C	CCV	9/30/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Aluminum, Total	0.26 mg/L	EPA 200.7	MJL	10/13/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Boron, Total	0.28 mg/L	EPA 200.7	MJL	10/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-2907-05

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 9/23/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.071 mg/L	EPA 200.7	MJL	10/13/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	10/6/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	10/14/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	10/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011



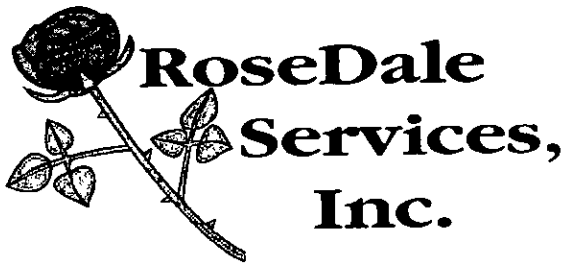
1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-2907-05

Page 3 of 3

Revised Report 11/3/2011: Reported water level in elevation.

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-2907-06  
Date Received: 9/26/2011  
Date Reported: 11/3/2011

### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 9/23/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Elevation	672.2 feet		HMS	9/23/2011
pH	7.30 SU	SM 4500-H+ B	HMS	9/23/2011
Temperature	17.1 deg C	SM 2550 B	HMS	9/23/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	10/4/2011
Alkalinity, Total	120 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	10/4/2011
Chloride	<6 mg/L	SM 4500-CL B	MJL	10/4/2011
Iron, Total	0.25 mg/L	EPA 200.7	MJL	10/13/2011
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	10/13/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/4/2011
Hardness	230 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	10/12/2011
Manganese, Total	0.30 mg/L	EPA 200.7	MJL	10/13/2011
Manganese, Dissolved	0.20 mg/L	EPA 200.7	MJL	10/13/2011
Sulfate	8 mg/L	D51690,02	CCV	10/3/2011
Solids, Total Dissolved	350 mg/L	SM 2540 C	CCV	9/30/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Aluminum, Total	0.23 mg/L	EPA 200.7	MJL	10/13/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Boron, Total	0.23 mg/L	EPA 200.7	MJL	10/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-2907-06

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 9/23/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.076 mg/L	EPA 200.7	MJL	10/13/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	10/6/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	10/14/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	10/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	10/13/2011
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	10/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-2907-06

Page 3 of 3

Revised Report 11/3/2011: Reported water level in elevation.

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3138-01  
Date Received: 10/21/2011  
Date Reported: 11/21/2011

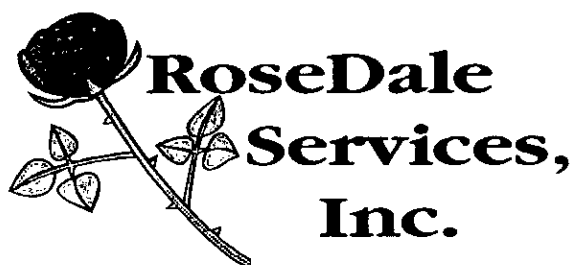
### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 10/20/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	15.19 feet		HMS	10/20/2011
Elevation	665664.5 feet		HMS	10/20/2011
pH	7.30 SU	SM 4500-H+ B	HMS	10/20/2011
Temperature	13.8 deg C	SM 2550 B	HMS	10/20/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	10/31/2011
Alkalinity, Total	200 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	10/31/2011
Chloride	<6 mg/L	SM 4500-CL B	MJL	10/31/2011
Iron, Total	0.44 mg/L	EPA 200.7	MJL	11/3/2011
Iron, Dissolved	0.31 mg/L	EPA 200.7	MJL	11/3/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/31/2011
Hardness	250 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	10/31/2011
Manganese, Total	0.090 mg/L	EPA 200.7	MJL	11/3/2011
Manganese, Dissolved	0.082 mg/L	EPA 200.7	MJL	11/3/2011
Sulfate	<2 mg/L	D51690,02	CCV	10/25/2011
Solids, Total Dissolved	350 mg/L	SM 2540 C	CCV	10/25/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Aluminum, Total	0.21 mg/L	EPA 200.7	MJL	11/3/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3138-01

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 10/20/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.21 mg/L	EPA 200.7	MJL	11/3/2011
Barium, Total	0.039 mg/L	EPA 200.7	MJL	11/3/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/2/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	11/5/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Phenol (ics)	0.26 mg/L	EPA 510 A, B	MLI	11/11/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3138-01

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3138-02  
Date Received: 10/21/2011  
Date Reported: 11/21/2011

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 10/20/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	15.58 feet		HMS	10/20/2011
Elevation	662.2 feet		HMS	10/20/2011
pH	7.62 SU	SM 4500-H+ B	HMS	10/20/2011
Temperature	12.6 deg C	SM 2550 B	HMS	10/20/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	10/31/2011
Alkalinity, Total	120 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	10/31/2011
Chloride	<6 mg/L	SM 4500-CL B	MJL	10/31/2011
Iron, Total	0.99 mg/L	EPA 200.7	MJL	11/3/2011
Iron, Dissolved	0.95 mg/L	EPA 200.7	MJL	11/3/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/31/2011
Hardness	250 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	10/31/2011
Manganese, Total	0.10 mg/L	EPA 200.7	MJL	11/3/2011
Manganese, Dissolved	0.097 mg/L	EPA 200.7	MJL	11/3/2011
Sulfate	8 mg/L	D51690,02	CCV	10/24/2011
Solids, Total Dissolved	290 mg/L	SM 2540 C	CCV	10/24/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Aluminum, Total	0.42 mg/L	EPA 200.7	MJL	11/3/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3138-02

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 10/20/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.27 mg/L	EPA 200.7	MJL	11/3/2011
Barium, Total	0.069 mg/L	EPA 200.7	MJL	11/3/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/2/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	11/5/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Phenol (ics)	0.22 mg/L	EPA 510 A, B	MLI	11/11/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Zinc, Total	0.022 mg/L	EPA 200.7	MJL	11/3/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3138-02

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3138-03  
Date Received: 10/21/2011  
Date Reported: 11/21/2011

### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 10/20/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	9.74 feet		HMS	10/20/2011
Elevation	674.1 feet		HMS	10/20/2011
pH	7.15 SU	SM 4500-H+ B	HMS	10/20/2011
Temperature	15.8 deg C	SM 2550 B	HMS	10/20/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	10/31/2011
Alkalinity, Total	150 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	10/31/2011
Chloride	10 mg/L	SM 4500-CL B	MJL	10/31/2011
Iron, Total	0.49 mg/L	EPA 200.7	MJL	11/3/2011
Iron, Dissolved	0.21 mg/L	EPA 200.7	MJL	11/3/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/31/2011
Hardness	260 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	11/3/2011
Manganese, Total	0.14 mg/L	EPA 200.7	MJL	11/3/2011
Manganese, Dissolved	0.052 mg/L	EPA 200.7	MJL	11/3/2011
Sulfate	73 mg/L	D51690,02	CCV	10/24/2011
Solids, Total Dissolved	290 mg/L	SM 2540 C	CCV	10/24/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Aluminum, Total	0.28 mg/L	EPA 200.7	MJL	11/3/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3138-03

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 10/20/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.46 mg/L	EPA 200.7	MJL	11/3/2011
Barium, Total	0.063 mg/L	EPA 200.7	MJL	11/3/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/2/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	11/5/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Phenol (ics)	0.29 mg/L	EPA 510 A, B	MLI	11/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Zinc, Total	0.029 mg/L	EPA 200.7	MJL	11/3/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3138-03

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3138-04  
Date Received: 10/21/2011  
Date Reported: 11/21/2011

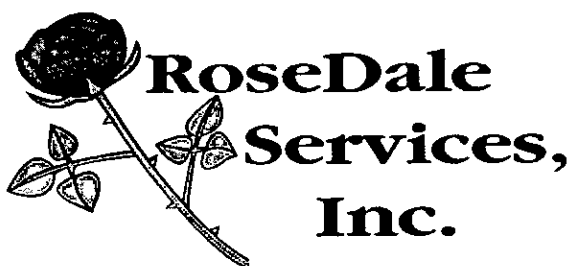
### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 10/20/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	14.69 feet		HMS	10/20/2011
Elevation	666.1 feet		HMS	10/20/2011
pH	7.32 SU	SM 4500-H+ B	HMS	10/20/2011
Temperature	12.7 deg C	SM 2550 B	HMS	10/20/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	10/31/2011
Alkalinity, Total	220 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	10/31/2011
Chloride	12 mg/L	SM 4500-CL B	MJL	10/31/2011
Iron, Total	0.21 mg/L	EPA 200.7	MJL	11/3/2011
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	11/3/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/31/2011
Hardness	300 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	11/3/2011
Manganese, Total	0.018 mg/L	EPA 200.7	MJL	11/3/2011
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	11/3/2011
Sulfate	31 mg/L	D51690,02	CCV	10/24/2011
Solids, Total Dissolved	490 mg/L	SM 2540 C	CCV	10/24/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Aluminum, Total	0.11 mg/L	EPA 200.7	MJL	11/3/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3138-04

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 10/20/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.31 mg/L	EPA 200.7	MJL	11/3/2011
Barium, Total	0.045 mg/L	EPA 200.7	MJL	11/3/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/2/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	11/5/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Phenol (ics)	0.079 mg/L	EPA 510 A, B	MLI	11/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3138-04

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3138-05  
Date Received: 10/21/2011  
Date Reported: 11/21/2011

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 10/20/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	17.89 feet		HMS	10/20/2011
Elevation	668.8 feet		HMS	10/20/2011
pH	7.21 SU	SM 4500-H+ B	HMS	10/20/2011
Temperature	12.6 deg C	SM 2550 B	HMS	10/20/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	10/31/2011
Alkalinity, Total	160 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	10/31/2011
Chloride	9 mg/L	SM 4500-CL B	MJL	10/31/2011
Iron, Total	0.43 mg/L	EPA 200.7	MJL	11/3/2011
Iron, Dissolved	0.12 mg/L	EPA 200.7	MJL	11/3/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/31/2011
Hardness	250 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	10/31/2011
Manganese, Total	0.16 mg/L	EPA 200.7	MJL	11/3/2011
Manganese, Dissolved	0.13 mg/L	EPA 200.7	MJL	11/3/2011
Sulfate	58 mg/L	D51690,02	CCV	10/24/2011
Solids, Total Dissolved	330 mg/L	SM 2540 C	CCV	10/24/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Aluminum, Total	0.29 mg/L	EPA 200.7	MJL	11/3/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3138-05

Page 2 of 3

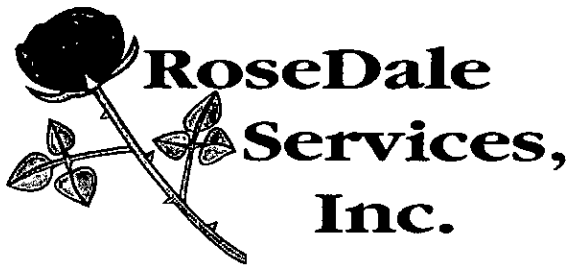
### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 10/20/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.33 mg/L	EPA 200.7	MJL	11/3/2011
Barium, Total	0.064 mg/L	EPA 200.7	MJL	11/3/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/2/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	11/5/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Phenol (ics)	0.18 mg/L	EPA 510 A, B	MLI	11/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011

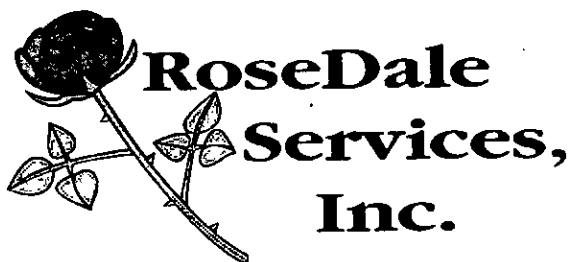


1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3138-05

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3138-06  
Date Received: 10/21/2011  
Date Reported: 11/21/2011

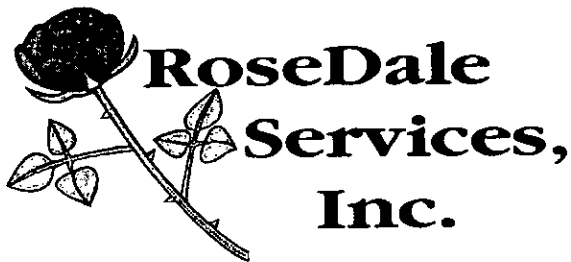
### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 10/20/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	10.81 feet		HMS	10/20/2011
Elevation	671.6 feet		HMS	10/20/2011
pH	7.30 SU	SM 4500-H+ B	HMS	10/20/2011
Temperature	14.9 deg C	SM 2550 B	HMS	10/20/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	10/31/2011
Alkalinity, Total	150 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	10/31/2011
Chloride	9 mg/L	SM 4500-CL B	MJL	10/31/2011
Iron, Total	0.18 mg/L	EPA 200.7	MJL	11/3/2011
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	11/3/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	10/31/2001
Hardness	220 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	11/3/2011
Manganese, Total	0.21 mg/L	EPA 200.7	MJL	11/3/2011
Manganese, Dissolved	0.18 mg/L	EPA 200.7	MJL	11/3/2011
Sulfate	11 mg/L	D51690,02	CCV	10/24/2011
Solids, Total Dissolved	320 mg/L	SM 2540 C	CCV	10/24/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Aluminum, Total	0.17 mg/L	EPA 200.7	MJL	11/3/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3138-06

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 10/20/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.26 mg/L	EPA 200.7	MJL	11/3/2011
Barium, Total	0.071 mg/L	EPA 200.7	MJL	11/3/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/2/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	11/5/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	11/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/3/2011
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	11/3/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3138-06

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3252-01  
Date Received: 11/7/2011  
Date Reported: 11/21/2011

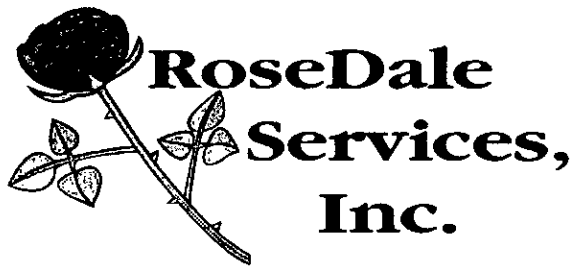
### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 11/3/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	15.44 feet		HMS	11/3/2011
Elevation	664.3 feet		HMS	11/3/2011
pH	7.42 SU	SM 4500-H+ B	HMS	11/3/2011
Temperature	12.1 deg C	SM 2550 B	HMS	11/3/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	11/15/2011
Alkalinity, Total	190 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	11/15/2011
Chloride	8 mg/L	SM 4500-CL B	MJL	11/15/2011
Iron, Total	0.51 mg/L	EPA 200.7	MJL	11/14/2011
Iron, Dissolved	0.26 mg/L	EPA 200.7	MJL	11/14/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	11/15/2011
Hardness	240 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	11/14/2011
Manganese, Total	0.10 mg/L	EPA 200.7	MJL	11/14/2011
Manganese, Dissolved	0.091 mg/L	EPA 200.7	MJL	11/14/2011
Sulfate	4 mg/L	D51690,02	CCV	11/10/2011
Solids, Total Dissolved	390 mg/L	SM 2540 C	CCV	11/10/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Aluminum, Total	0.27 mg/L	EPA 200.7	MJL	11/14/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3252-01

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 11/3/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.26 mg/L	EPA 200.7	MJL	11/14/2011
Barium, Total	0.044 mg/L	EPA 200.7	MJL	11/14/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/16/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	11/16/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Phenol (ics)	0.21 mg/L	EPA 510 A, B	MLI	11/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3252-01

Page 3 of 3

Reviewed by Rodger Wilson



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3252-02  
Date Received: 11/7/2011  
Date Reported: 11/21/2011

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 11/3/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	15.16 feet		HMS	11/3/2011
Elevation	662.6 feet		HMS	11/3/2011
pH	7.61 SU	SM 4500-H+ B	HMS	11/3/2011
Temperature	11.5 deg C	SM 2550 B	HMS	11/3/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	11/15/2011
Alkalinity, Total	150 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	11/15/2011
Chloride	<6 mg/L	SM 4500-CL B	MJL	11/15/2011
Iron, Total	1.2 mg/L	EPA 200.7	MJL	11/14/2011
Iron, Dissolved	0.93 mg/L	EPA 200.7	MJL	11/14/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	11/15/2011
Hardness	260 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	11/14/2011
Manganese, Total	0.14 mg/L	EPA 200.7	MJL	11/14/2011
Manganese, Dissolved	0.10 mg/L	EPA 200.7	MJL	11/14/2011
Sulfate	4 mg/L	D51690,02	CCV	11/10/2011
Solids, Total Dissolved	320 mg/L	SM 2540 C	CCV	11/10/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Aluminum, Total	0.35 mg/L	EPA 200.7	MJL	11/14/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3252-02

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 11/3/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.24 mg/L	EPA 200.7	MJL	11/14/2011
Barium, Total	0.071 mg/L	EPA 200.7	MJL	11/14/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/16/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	11/16/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Phenol (ics)	0.28 mg/L	EPA 510 A, B	MLI	11/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Zinc, Total	0.016 mg/L	EPA 200.7	MJL	11/14/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3252-02

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3252-03  
Date Received: 11/7/2011  
Date Reported: 11/21/2011

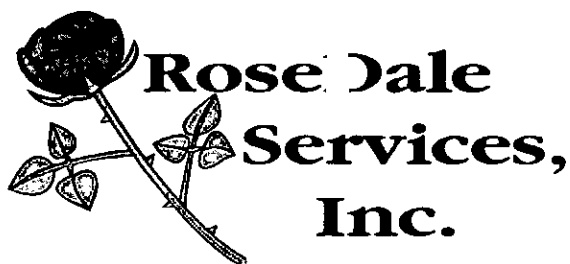
### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 11/3/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	9.31 feet		HMS	11/3/2011
Elevation	674.5 feet		HMS	11/3/2011
pH	7.07 SU	SM 4500-H+ B	HMS	11/3/2011
Temperature	11.5 deg C	SM 2550 B	HMS	11/3/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	11/15/2011
Alkalinity, Total	130 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	11/15/2011
Chloride	12 mg/L	SM 4500-CL B	MJL	11/15/2011
Iron, Total	0.41 mg/L	EPA 200.7	MJL	11/14/2011
Iron, Dissolved	0.27 mg/L	EPA 200.7	MJL	11/14/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	11/15/2011
Hardness	250 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	11/14/2011
Manganese, Total	0.12 mg/L	EPA 200.7	MJL	11/14/2011
Manganese, Dissolved	0.061 mg/L	EPA 200.7	MJL	11/14/2011
Sulfate	64 mg/L	D51690,02	CCV	11/10/2011
Solids, Total Dissolved	340 mg/L	SM 2540 C	CCV	11/10/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Aluminum, Total	0.23 mg/L	EPA 200.7	MJL	11/14/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3252-03

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 11/3/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.50 mg/L	EPA 200.7	MJL	11/14/2011
Barium, Total	0.067 mg/L	EPA 200.7	MJL	11/14/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/16/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	11/16/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Phenol (ics)	0.21 mg/L	EPA 510 A, B	MLI	11/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Zinc, Total	0.015 mg/L	EPA 200.7	MJL	11/14/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3252-03

Page 3 of 3

Reviewed by Rodger Wilko



1125 E. Walnut Street  
Boonville, IN 47601

**Sunrise Coal, LLC**  
1183 East Canvasback Drive  
Terre Haute, IN 47802

**Lab Number: 2011-3252-04**  
**Date Received: 11/7/2011**  
**Date Reported: 11/21/2011**

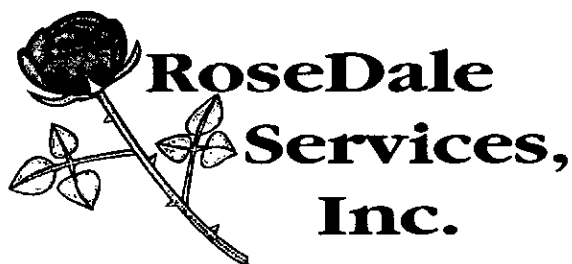
### Sample Identification

**Allerton Mine**  
**MW-4**

**Date Sampled: 11/3/2011**  
**Sampled by: HMS**

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	13.99 feet		HMS	11/3/2011
Elevation	666.8 feet		HMS	11/3/2011
pH	7.26 SU	SM 4500-H+ B	HMS	11/3/2011
Temperature	11.6 deg C	SM 2550 B	HMS	11/3/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	11/15/2011
Alkalinity, Total	190 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	11/15/2011
Chloride	10 mg/L	SM 4500-CL B	MJL	11/15/2011
Iron, Total	0.15 mg/L	EPA 200.7	MJL	11/14/2011
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	11/14/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	11/15/2011
Hardness	300 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	11/15/2011
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	11/14/2011
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	11/14/2011
Sulfate	40 mg/L	D51690,02	CCV	11/10/2011
Solids, Total Dissolved	450 mg/L	SM 2540 C	CCV	11/10/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Aluminum, Total	0.15 mg/L	EPA 200.7	MJL	11/14/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3252-04

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 11/3/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.39 mg/L	EPA 200.7	MJL	11/14/2011
Barium, Total	0.049 mg/L	EPA 200.7	MJL	11/14/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/16/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	11/16/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Phenol (ics)	0.080 mg/L	EPA 510 A, B	MLI	11/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Zinc, Total	0.009 mg/L	EPA 200.7	MJL	11/14/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3252-04

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3252-05  
Date Received: 11/7/2011  
Date Reported: 11/21/2011

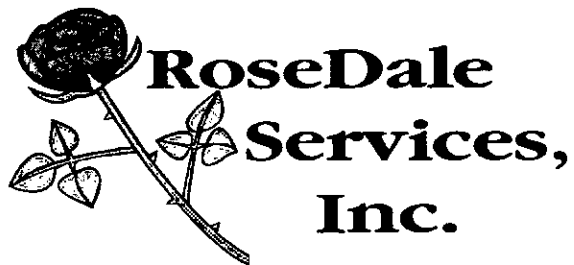
### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 11/3/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	17.94 feet		HMS	11/3/2011
Elevation	668.8 feet		HMS	11/3/2011
pH	7.27 SU	SM 4500-H+ B	HMS	11/3/2011
Temperature	11.8 deg C	SM 2550 B	HMS	11/3/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	11/15/2011
Alkalinity, Total	130 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	11/15/2011
Chloride	12 mg/L	SM 4500-CL B	MJL	11/15/2011
Iron, Total	0.51 mg/L	EPA 200.7	MJL	11/14/2011
Iron, Dissolved	0.18 mg/L	EPA 200.7	MJL	11/14/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	11/15/2011
Hardness	240 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	11/14/2011
Manganese, Total	0.12 mg/L	EPA 200.7	MJL	11/14/2011
Manganese, Dissolved	0.098 mg/L	EPA 200.7	MJL	11/14/2011
Sulfate	42 mg/L	D51690,02	CCV	11/10/2011
Solids, Total Dissolved	390 mg/L	SM 2540 C	CCV	11/10/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Aluminum, Total	0.20 mg/L	EPA 200.7	MJL	11/14/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3252-05

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 11/3/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.41 mg/L	EPA 200.7	MJL	11/14/2011
Barium, Total	0.072 mg/L	EPA 200.7	MJL	11/14/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/16/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	11/16/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Phenol (lcs)	0.23 mg/L	EPA 510 A, B	MLI	11/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Zinc, Total	0.006 mg/L	EPA 200.7	MJL	11/14/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3252-05

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3252-06  
Date Received: 11/7/2011  
Date Reported: 11/21/2011

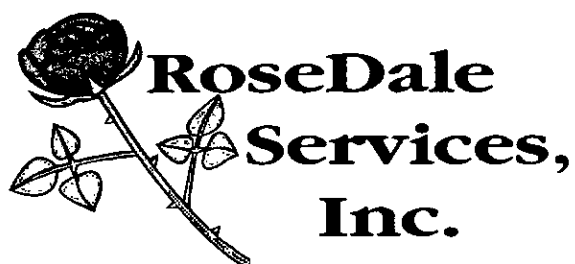
### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 11/3/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	10.98 feet		HMS	11/3/2011
Elevation	671.4 feet		HMS	11/3/2011
pH	7.38 SU	SM 4500-H+ B	HMS	11/3/2011
Temperature	12.2 deg C	SM 2550 B	HMS	11/3/2011
Acidity, Total	<10 mg/L as CaCO3	SM 2310 B	MJL	11/15/2011
Alkalinity, Total	120 mg/L as CaCO3	SM 2320 B	MJL	11/15/2011
Chloride	10 mg/L	SM 4500-CL B	MJL	11/15/2011
Iron, Total	0.13 mg/L	EPA 200.7	MJL	11/14/2011
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	11/14/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	11/15/2011
Hardness	200 mg/L as CaCO3	SM 2340 C	MJL	11/15/2011
Manganese, Total	0.16 mg/L	EPA 200.7	MJL	11/14/2011
Manganese, Dissolved	0.11 mg/L	EPA 200.7	MJL	11/14/2011
Sulfate	8 mg/L	D51690,02	CCV	11/10/2011
Solids, Total Dissolved	340 mg/L	SM 2540 C	CCV	11/10/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Aluminum, Total	0.12 mg/L	EPA 200.7	MJL	11/14/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3252-06

Page 2 of 3

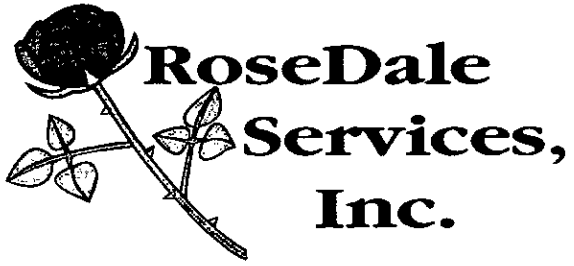
### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 11/3/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.34 mg/L	EPA 200.7	MJL	11/14/2011
Barium, Total	0.068 mg/L	EPA 200.7	MJL	11/14/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	11/16/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	11/16/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Phenol (lcs)	<0.050 mg/L	EPA 510 A, B	MLI	11/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	11/14/2011
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	11/14/2011

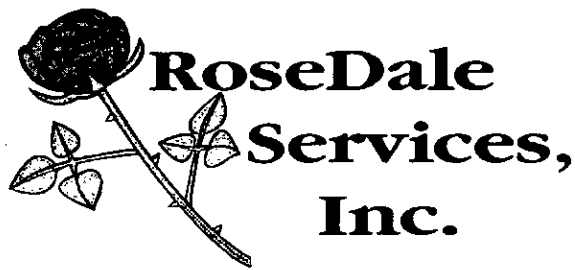


1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3252-06

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3423-01  
Date Received: 12/2/2011  
Date Reported: 1/5/2012

### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 12/1/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	10.90 feet		HMS	12/1/2011
Elevation	671.5 feet		HMS	12/1/2011
pH	7.50 SU	SM 4500-H+ B	HMS	12/1/2011
Temperature	12.9 deg C	SM 2550 B	HMS	12/1/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	12/9/2011
Alkalinity, Total	130 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	12/9/2011
Chloride	12 mg/L	SM 4500-CL B	MJL	12/9/2011
Iron, Total	0.11 mg/L	EPA 200.7	MJL	12/13/2011
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	12/13/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	12/9/2011
Hardness	180 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	12/13/2011
Manganese, Total	0.10 mg/L	EPA 200.7	MJL	12/13/2011
Manganese, Dissolved	0.092 mg/L	EPA 200.7	MJL	12/13/2011
Sulfate	10 mg/L	D51690,02	CCV	12/8/2011
Solids, Total Dissolved	320 mg/L	SM 2540 C	CCV	12/8/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Aluminum, Total	0.18 mg/L	EPA 200.7	MJL	12/13/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3423-01

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 12/1/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.22 mg/L	EPA 200.7	MJL	12/13/2011
Barium, Total	0.061 mg/L	EPA 200.7	MJL	12/13/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	12/14/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	12/27/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	12/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3423-01

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3423-02  
Date Received: 12/2/2011  
Date Reported: 1/5/2012

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 12/1/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	17.50 feet		HMS	12/1/2011
Elevation	669.2 feet		HMS	12/1/2011
pH	7.24 SU	SM 4500-H+ B	HMS	12/1/2011
Temperature	10.5 deg C	SM 2550 B	HMS	12/1/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	12/9/2011
Alkalinity, Total	140 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	12/9/2011
Chloride	15 mg/L	SM 4500-CL B	MJL	12/9/2011
Iron, Total	0.42 mg/L	EPA 200.7	MJL	12/13/2011
Iron, Dissolved	0.20 mg/L	EPA 200.7	MJL	12/13/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	12/9/2011
Hardness	240 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	12/13/2011
Manganese, Total	0.11 mg/L	EPA 200.7	MJL	12/13/2011
Manganese, Dissolved	0.10 mg/L	EPA 200.7	MJL	12/13/2011
Sulfate	34 mg/L	D51690,02	CCV	12/8/2011
Solids, Total Dissolved	370 mg/L	SM 2540 C	CCV	12/8/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Aluminum, Total	0.14 mg/L	EPA 200.7	MJL	12/13/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3423-02

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 12/1/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.37 mg/L	EPA 200.7	MJL	12/13/2011
Barium, Total	0.066 mg/L	EPA 200.7	MJL	12/13/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	12/13/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	12/27/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Phenol (ics)	0.14 mg/L	EPA 510 A, B	MLI	12/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Zinc, Total	0.006 mg/L	EPA 200.7	MJL	12/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3423-02

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

**Sunrise Coal, LLC**  
**1183 East Canvasback Drive**  
**Terre Haute, IN 47802**

**Lab Number: 2011-3423-03**  
**Date Received: 12/2/2011**  
**Date Reported: 1/5/2012**

### Sample Identification

**Allerton Mine**  
**MW-4**

**Date Sampled: 12/1/2011**  
**Sampled by: HMS**

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	9.85 feet		HMS	12/1/2011
Elevation	671.0 feet		HMS	12/1/2011
pH	7.27 SU	SM 4500-H+ B	HMS	12/1/2011
Temperature	13.2 deg C	SM 2550 B	HMS	12/1/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	12/9/2011
Alkalinity, Total	110 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	12/9/2011
Chloride	6 mg/L	SM 4500-CL B	MJL	12/9/2011
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	12/13/2011
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	12/13/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	12/13/2011
Hardness	240 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	12/13/2011
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	12/13/2011
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	12/13/2011
Sulfate	52 mg/L	D51690,02	CCV	12/8/2011
Solids, Total Dissolved	330 mg/L	SM 2540 C	CCV	12/8/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Aluminum, Total	0.10 mg/L	EPA 200.7	MJL	12/13/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3423-03

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 12/1/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.32 mg/L	EPA 200.7	MJL	12/13/2011
Barium, Total	0.053 mg/L	EPA 200.7	MJL	12/13/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	12/13/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	12/27/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	12/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Zinc, Total	0.009 mg/L	EPA 200.7	MJL	12/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3423-03

Page 3 of 3

Reviewed by *Rodger Wilco*



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3423-04  
Date Received: 12/2/2011  
Date Reported: 1/5/2012

### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 12/1/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.30 feet		HMS	12/1/2011
Elevation	678.5 feet		HMS	12/1/2011
pH	7.28 SU	SM 4500-H+ B	HMS	12/1/2011
Temperature	12.5 deg C	SM 2550 B	HMS	12/1/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	12/13/2011
Alkalinity, Total	120 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	12/13/2011
Chloride	9 mg/L	SM 4500-CL B	MJL	12/13/2011
Iron, Total	0.29 mg/L	EPA 200.7	MJL	12/13/2011
Iron, Dissolved	0.22 mg/L	EPA 200.7	MJL	12/13/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	12/9/2011
Hardness	210 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	12/13/2011
Manganese, Total	0.11 mg/L	EPA 200.7	MJL	12/13/2011
Manganese, Dissolved	0.054 mg/L	EPA 200.7	MJL	12/13/2011
Sulfate	62 mg/L	D51690,02	CCV	12/8/2011
Solids, Total Dissolved	330 mg/L	SM 2540 C	CCV	12/8/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Aluminum, Total	0.16 mg/L	EPA 200.7	MJL	12/13/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3423-04

Page 2 of 3

**Sample Identification**

Allerton Mine  
MW-3

Date Sampled: 12/1/2011  
Sampled by: HMS

**Sample Analysis**

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.41 mg/L	EPA 200.7	MJL	12/13/2011
Barium, Total	0.059 mg/L	EPA 200.7	MJL	12/13/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	12/13/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	12/27/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Phenol (ics)	0.13 mg/L	EPA 510 A, B	MLI	12/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Zinc, Total	0.009 mg/L	EPA 200.7	MJL	12/13/2011

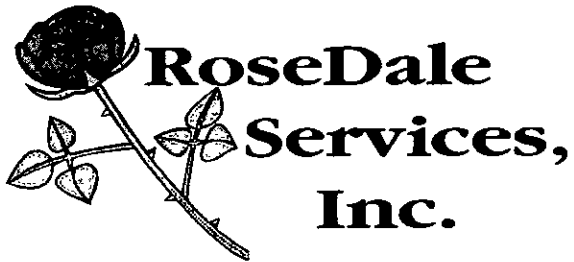


1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3423-04

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3423-05  
Date Received: 12/2/2011  
Date Reported: 1/5/2012

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 12/1/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	10.40 feet		HMS	12/1/2011
Elevation	669.3 feet		HMS	12/1/2011
pH	7.39 SU	SM 4500-H+ B	HMS	12/1/2011
Temperature	14.1 deg C	SM 2550 B	HMS	12/1/2011
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	12/13/2011
Alkalinity, Total	160 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	12/13/2011
Chloride	8 mg/L	SM 4500-CL B	MJL	12/13/2011
Iron, Total	0.48 mg/L	EPA 200.7	MJL	12/13/2011
Iron, Dissolved	0.30 mg/L	EPA 200.7	MJL	12/13/2011
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	12/9/2011
Hardness	220 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	12/13/2011
Manganese, Total	0.096 mg/L	EPA 200.7	MJL	12/13/2011
Manganese, Dissolved	0.074 mg/L	EPA 200.7	MJL	12/13/2011
Sulfate	5 mg/L	D51690,02	CCV	12/8/2011
Solids, Total Dissolved	360 mg/L	SM 2540 C	CCV	12/8/2011
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Aluminum, Total	0.25 mg/L	EPA 200.7	MJL	12/13/2011
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3423-05

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 12/1/2011  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.21 mg/L	EPA 200.7	MJL	12/13/2011
Barium, Total	0.050 mg/L	EPA 200.7	MJL	12/13/2011
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	12/13/2011
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	12/27/2011
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Phenol (ics)	0.18 mg/L	EPA 510 A, B	MLI	12/15/2011
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	12/13/2011
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	12/13/2011



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2011-3423-05

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2011-3423-06  
Date Received: 12/2/2011  
Date Reported: 1/5/2012

**Sample Identification**

Allerton Mine  
MW-2

Date Sampled: 12/1/2011  
Sampled by: HMS

**Sample Analysis**

Parameter	Result	Method	Analyst	Analysis Date
Depth	NA feet		HMS	12/1/2011

Reviewed by *Rodger Wilko*



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-0037-01  
Date Received: 1/9/2012  
Date Reported: 2/16/2012

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.15 feet		HMS	1/6/2012
Elevation	673.6 feet		HMS	1/6/2012
pH	7.37 SU	SM 4500-H+ B	HMS	1/6/2012
Temperature	11.7 deg C	SM 2550 B	HMS	1/6/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	1/16/2012
Alkalinity, Total	130 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	1/16/2012
Chloride	6 mg/L	SM 4500-CL B	MJL	1/16/2012
Iron, Total	0.25 mg/L	EPA 200.7	MJL	1/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	1/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	1/16/2012
Hardness	210 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	1/16/2012
Manganese, Total	0.052 mg/L	EPA 200.7	MJL	1/31/2012
Manganese, Dissolved	0.014 mg/L	EPA 200.7	MJL	1/31/2012
Sulfate	8 mg/L	D51690,02	CCV	1/12/2012
Solids, Total Dissolved	280 mg/L	SM 2540 C	CCV	1/12/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-0037-01

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Aluminum, Total	0.13 mg/L	EPA 200.7	MJL	1/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Boron, Total	0.18 mg/L	EPA 200.7	MJL	1/31/2012
Barium, Total	0.042 mg/L	EPA 200.7	MJL	1/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	1/13/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	1/16/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Phenol (ics)	0.10 mg/L	EPA 510 A, B	MLI	1/12/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-0037-01

Page 3 of 3

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012

Reviewed by

*Rodger Wilke*



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-0037-02  
Date Received: 1/9/2012  
Date Reported: 2/16/2012

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.76 feet		HMS	1/6/2012
Elevation	673.0 feet		HMS	1/6/2012
pH	7.91 SU	SM 4500-H+ B	HMS	1/6/2012
Temperature	12.5 deg C	SM 2550 B	HMS	1/6/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	1/16/2012
Alkalinity, Total	150 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	1/16/2012
Chloride	<6 mg/L	SM 4500-CL B	MJL	1/16/2012
Iron, Total	0.42 mg/L	EPA 200.7	MJL	1/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	1/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	1/16/2012
Hardness	210 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	1/31/2012
Manganese, Total	0.082 mg/L	EPA 200.7	MJL	1/31/2012
Manganese, Dissolved	0.021 mg/L	EPA 200.7	MJL	1/31/2012
Sulfate	8 mg/L	D51690,02	CCV	1/12/2012
Solids, Total Dissolved	280 mg/L	SM 2540 C	CCV	1/12/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-0037-02

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Aluminum, Total	0.15 mg/L	EPA 200.7	MJL	1/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Boron, Total	0.21 mg/L	EPA 200.7	MJL	1/31/2012
Barium, Total	0.058 mg/L	EPA 200.7	MJL	1/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	1/13/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	1/16/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Phenol (ics)	0.062 mg/L	EPA 510 A, B	MLI	1/12/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-0037-02

Page 3 of 3

### Sample Identification

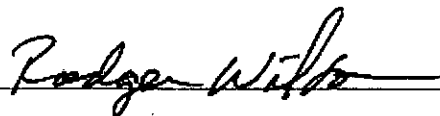
Allerton Mine  
MW-2

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Zinc, Total	0.005 mg/L	EPA 200.7	MJL	1/31/2012

Reviewed by

A handwritten signature in black ink, appearing to read "Rodger Wilko", is written over a horizontal line.



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-0037-03  
Date Received: 1/9/2012  
Date Reported: 2/16/2012

### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.68 feet		HMS	1/6/2012
Elevation	679.12 feet		HMS	1/6/2012
pH	7.26 SU	SM 4500-H+ B	HMS	1/6/2012
Temperature	11.8 deg C	SM 2550 B	HMS	1/6/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	1/16/2012
Alkalinity, Total	250 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	1/16/2012
Chloride	10 mg/L	SM 4500-CL B	MJL	1/16/2012
Iron, Total	0.11 mg/L	EPA 200.7	MJL	1/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	1/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	1/16/2012
Hardness	190 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	1/16/2012
Manganese, Total	0.035 mg/L	EPA 200.7	MJL	1/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	1/31/2012
Sulfate	47 mg/L	D51690,02	CCV	1/12/2012
Solids, Total Dissolved	380 mg/L	SM 2540 C	CCV	1/12/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-0037-03

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 1/6/2012

Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Aluminum, Total	0.10 mg/L	EPA 200.7	MJL	1/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Boron, Total	0.35 mg/L	EPA 200.7	MJL	1/31/2012
Barium, Total	0.048 mg/L	EPA 200.7	MJL	1/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	1/13/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	1/16/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Phenol (ics)	0.081 mg/L	EPA 510 A, B	MLI	1/12/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-0037-03

Page 3 of 3

**Sample Identification**

Allerton Mine  
MW-3

Date Sampled: 1/6/2012  
Sampled by: HMS

**Sample Analysis**

Parameter	Result	Method	Analyst	Analysis Date
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Zinc, Total	0.006 mg/L	EPA 200.7	MJL	1/31/2012

Reviewed by *Rodger Wilko*



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-0037-04  
Date Received: 1/9/2012  
Date Reported: 2/16/2012

### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.69 feet		HMS	1/6/2012
Elevation	673.1 feet		HMS	1/6/2012
pH	7.46 SU	SM 4500-H+ B	HMS	1/6/2012
Temperature	12.4 deg C	SM 2550 B	HMS	1/6/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	1/16/2012
Alkalinity, Total	210 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	1/16/2012
Chloride	9 mg/L	SM 4500-CL B	MJL	1/16/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	1/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	1/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	1/16/2012
Hardness	170 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	1/31/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	1/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	1/31/2012
Sulfate	47 mg/L	D51690,02	CCV	1/12/2012
Solids, Total Dissolved	240 mg/L	SM 2540 C	CCV	1/12/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-0037-04

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Aluminum, Total	0.085 mg/L	EPA 200.7	MJL	1/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Boron, Total	0.21 mg/L	EPA 200.7	MJL	1/31/2012
Barium, Total	0.042 mg/L	EPA 200.7	MJL	1/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	1/13/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	1/16/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	1/12/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-0037-04

Page 3 of 3

### Sample Identification

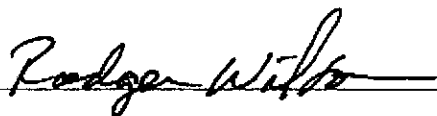
Allerton Mine  
MW-4

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012

Reviewed by

  
\_\_\_\_\_



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-0037-05  
Date Received: 1/9/2012  
Date Reported: 2/16/2012

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	8.17 feet		HMS	1/6/2012
Elevation	678.5 feet		HMS	1/6/2012
pH	7.43 SU	SM 4500-H+ B	HMS	1/6/2012
Temperature	13.1 deg C	SM 2550 B	HMS	1/6/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	1/16/2012
Alkalinity, Total	180 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	1/16/2012
Chloride	12 mg/L	SM 4500-CL B	MJL	1/16/2012
Iron, Total	0.32 mg/L	EPA 200.7	MJL	1/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	1/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	1/16/2012
Hardness	200 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	1/31/2012
Manganese, Total	0.092 mg/L	EPA 200.7	MJL	1/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	1/31/2012
Sulfate	30 mg/L	D51690,02	CCV	1/12/2012
Solids, Total Dissolved	270 mg/L	SM 2540 C	CCV	1/12/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-0037-05

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Aluminum, Total	0.095 mg/L	EPA 200.7	MJL	1/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Boron, Total	0.28 mg/L	EPA 200.7	MJL	1/31/2012
Barium, Total	0.057 mg/L	EPA 200.7	MJL	1/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	1/13/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	1/16/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Phenol (ics)	0.093 mg/L	EPA 510 A, B	MLI	1/12/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-0037-05

Page 3 of 3

**Sample Identification**

Allerton Mine  
MW-5

Date Sampled: 1/6/2012  
Sampled by: HMS

**Sample Analysis**

Parameter	Result	Method	Analyst	Analysis Date
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012

Reviewed by *Rodger Wilder*



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-0037-06  
Date Received: 1/9/2012  
Date Reported: 2/16/2012

### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	8.33 feet		HMS	1/6/2012
Elevation	674.1 feet		HMS	1/6/2012
pH	7.48 SU	SM 4500-H+ B	HMS	1/6/2012
Temperature	13.2 deg C	SM 2550 B	HMS	1/6/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	1/16/2012
Alkalinity, Total	200 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	1/16/2012
Chloride	8 mg/L	SM 4500-CL B	MJL	1/16/2012
Iron, Total	0.18 mg/L	EPA 200.7	MJL	1/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	1/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	1/16/2012
Hardness	150 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	1/31/2012
Manganese, Total	0.086 mg/L	EPA 200.7	MJL	1/31/2012
Manganese, Dissolved	0.043 mg/L	EPA 200.7	MJL	1/31/2012
Sulfate	51 mg/L	D51690,02	CCV	1/12/2012
Solids, Total Dissolved	360 mg/L	SM 2540 C	CCV	1/12/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-0037-06

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Aluminum, Total	0.11 mg/L	EPA 200.7	MJL	1/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Boron, Total	0.16 mg/L	EPA 200.7	MJL	1/31/2012
Barium, Total	0.054 mg/L	EPA 200.7	MJL	1/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	1/13/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	1/16/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	1/12/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-0037-06

Page 3 of 3

### Sample Identification

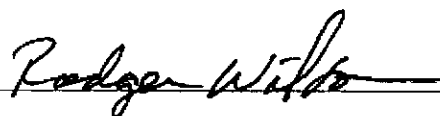
Allerton Mine  
MW-6

Date Sampled: 1/6/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	1/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	1/31/2012

Reviewed by

  
\_\_\_\_\_



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1153-01  
Date Received: 2/15/2012  
Date Reported: 3/16/2012

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 2/14/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.00 feet		HMS	2/14/2012
pH	7.62 SU	SM 4500-H+ B	HMS	2/14/2012
Temperature	8.0 deg C	SM 2550 B	HMS	2/24/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	2/20/2012
Alkalinity, Total	330 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	2/20/2012
Chloride	10 mg/L	SM 4500-CL B	MJL	2/20/2012
Iron, Total	0.18 mg/L	EPA 200.7	MJL	2/29/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	2/29/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	2/20/2012
Hardness	180 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	2/29/2012
Manganese, Total	0.062 mg/L	EPA 200.7	MJL	2/29/2012
Manganese, Dissolved	0.021 mg/L	EPA 200.7	MJL	2/29/2012
Sulfate	3 mg/L	D51690,02	CCV	2/16/2012
Solids, Total Dissolved	380 mg/L	SM 2540 C	CCV	2/20/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Aluminum, Total	0.092 mg/L	EPA 200.7	MJL	2/29/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1153-01

Page 2 of 3

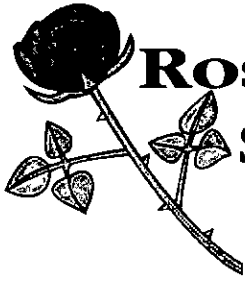
### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 2/14/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Boron, Total	0.11 mg/L	EPA 200.7	MJL	2/29/2012
Barium, Total	0.038 mg/L	EPA 200.7	MJL	2/29/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	2/27/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	2/24/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Phenol (ics)	0.082 mg/L	EPA 510 A, B	MLI	2/23/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012



**RoseDale  
Services,  
Inc.**

1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1153-01

Page 3 of 3

Reviewed by

*Rodger Wilder*



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1153-02  
Date Received: 2/15/2012  
Date Reported: 3/16/2012

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 2/14/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.08 feet		HMS	2/14/2012
pH	7.92 SU	SM 4500-H+ B	HMS	2/14/2012
Temperature	7.9 deg C	SM 2550 B	HMS	2/24/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	2/20/2012
Alkalinity, Total	270 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	2/20/2012
Chloride	8 mg/L	SM 4500-CL B	MJL	2/20/2012
Iron, Total	0.35 mg/L	EPA 200.7	MJL	2/29/2012
Iron, Dissolved	0.11 mg/L	EPA 200.7	MJL	2/29/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	2/20/2012
Hardness	200 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	2/29/2012
Manganese, Total	0.075 mg/L	EPA 200.7	MJL	2/29/2012
Manganese, Dissolved	0.029 mg/L	EPA 200.7	MJL	2/29/2012
Sulfate	36 mg/L	D51690,02	CCV	2/16/2012
Solids, Total Dissolved	680 mg/L	SM 2540 C	CCV	2/20/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Aluminum, Total	0.12 mg/L	EPA 200.7	MJL	2/29/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1153-02

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 2/14/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Boron, Total	0.24 mg/L	EPA 200.7	MJL	2/29/2012
Barium, Total	0.051 mg/L	EPA 200.7	MJL	2/29/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	2/27/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	2/24/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Phenol (ics)	0.051 mg/L	EPA 510 A, B	MLI	2/23/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1153-02

Page 3 of 3

Reviewed by Rodger Wilko



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1153-03  
Date Received: 2/15/2012  
Date Reported: 3/16/2012

### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 2/14/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.50 feet		HMS	2/14/2012
pH	7.58 SU	SM 4500-H+ B	HMS	2/14/2012
Temperature	7.7 deg C	SM 2550 B	HMS	2/24/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	2/20/2012
Alkalinity, Total	250 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	2/20/2012
Chloride	12 mg/L	SM 4500-CL B	MJL	2/20/2012
Iron, Total	0.20 mg/L	EPA 200.7	MJL	2/29/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	2/29/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	2/20/2012
Hardness	200 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	2/29/2012
Manganese, Total	0.027 mg/L	EPA 200.7	MJL	2/29/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	2/29/2012
Sulfate	47 mg/L	D51690,02	CCV	2/16/2012
Solids, Total Dissolved	600 mg/L	SM 2540 C	CCV	2/20/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Aluminum, Total	0.095 mg/L	EPA 200.7	MJL	2/29/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1153-03

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 2/14/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Boron, Total	0.31 mg/L	EPA 200.7	MJL	2/29/2012
Barium, Total	0.042 mg/L	EPA 200.7	MJL	2/29/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MJL	2/27/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	2/24/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Phenol (ics)	0.051 mg/L	EPA 510 A, B	MLI	2/23/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1153-03

Page 3 of 3

Reviewed by Rodger Wilko



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1153-04  
Date Received: 2/15/2012  
Date Reported: 3/16/2012

### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 2/14/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.42 feet		HMS	2/14/2012
pH	7.46 SU	SM 4500-H+ B	HMS	2/14/2012
Temperature	8.8 deg C	SM 2550 B	HMS	2/24/2012
Acidity, Total	<10 mg/L as CaCO3	SM 2310 B	MJL	2/20/2012
Alkalinity, Total	330 mg/L as CaCO3	SM 2320 B	MJL	2/20/2012
Chloride	12 mg/L	SM 4500-CL B	MJL	2/20/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	2/29/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	2/29/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	2/20/2012
Hardness	220 mg/L as CaCO3	SM 2340 C	MJL	2/29/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	2/29/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	2/29/2012
Sulfate	100 mg/L	D51690,02	CCV	2/16/2012
Solids, Total Dissolved	790 mg/L	SM 2540 C	CCV	2/20/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Aluminum, Total	0.076 mg/L	EPA 200.7	MJL	2/29/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1153-04

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 2/14/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Boron, Total	0.18 mg/L	EPA 200.7	MJL	2/29/2012
Barium, Total	0.039 mg/L	EPA 200.7	MJL	2/29/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	2/27/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	2/24/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	2/23/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1153-04

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

**Sunrise Coal, LLC**  
1183 East Canvasback Drive  
Terre Haute, IN 47802

**Lab Number: 2012-1153-05**  
**Date Received: 2/15/2012**  
**Date Reported: 3/16/2012**

### Sample Identification

**Allerton Mine**  
**MW-5**

**Date Sampled: 2/14/2012**  
**Sampled by: HMS**

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.00 feet		HMS	2/14/2012
pH	7.71 SU	SM 4500-H+ B	HMS	2/14/2012
Temperature	7.5 deg C	SM 2550 B	HMS	2/24/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	2/20/2012
Alkalinity, Total	270 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	2/20/2012
Chloride	9 mg/L	SM 4500-CL B	MJL	2/20/2012
Iron, Total	0.24 mg/L	EPA 200.7	MJL	2/29/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	2/29/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	2/20/2012
Hardness	210 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	2/29/2012
Manganese, Total	0.035 mg/L	EPA 200.7	MJL	2/29/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	2/29/2012
Sulfate	49 mg/L	D51690,02	CCV	2/16/2012
Solids, Total Dissolved	390 mg/L	SM 2540 C	CCV	2/20/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Aluminum, Total	0.087 mg/L	EPA 200.7	MJL	2/29/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1153-05

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 2/14/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Boron, Total	0.23 mg/L	EPA 200.7	MJL	2/29/2012
Barium, Total	0.052 mg/L	EPA 200.7	MJL	2/29/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	2/27/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	2/24/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	2/23/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012



**RoseDale  
Services,  
Inc.**

1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1153-05

Page 3 of 3

Reviewed by Rodger Wilko



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1153-06  
Date Received: 2/15/2012  
Date Reported: 3/16/2012

### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 2/14/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.83 feet		HMS	2/14/2012
pH	7.69 SU	SM 4500-H+ B	HMS	2/14/2012
Temperature	9.5 deg C	SM 2550 B	HMS	2/24/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	2/20/2012
Alkalinity, Total	270 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	2/20/2012
Chloride	11 mg/L	SM 4500-CL B	MJL	2/20/2012
Iron, Total	0.12 mg/L	EPA 200.7	MJL	2/29/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	2/29/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	2/20/2012
Hardness	180 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	2/29/2012
Manganese, Total	0.055 mg/L	EPA 200.7	MJL	2/29/2012
Manganese, Dissolved	0.037 mg/L	EPA 200.7	MJL	2/29/2012
Sulfate	40 mg/L	D51690,02	CCV	2/16/2012
Solids, Total Dissolved	620 mg/L	SM 2540 C	CCV	2/20/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Aluminum, Total	0.083 mg/L	EPA 200.7	MJL	2/29/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1153-06

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 2/14/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Boron, Total	0.19 mg/L	EPA 200.7	MJL	2/29/2012
Barium, Total	0.046 mg/L	EPA 200.7	MJL	2/29/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	2/27/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	2/24/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	2/23/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	2/29/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	2/29/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1153-06

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1227-01  
Date Received: 3/5/2012  
Date Reported: 4/23/2012

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 3/2/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.78 feet		HMS	3/2/2012
pH	7.62 SU	SM 4500-H+ B	HMS	3/2/2012
Temperature	8.9 deg C	SM 2550 B	HMS	3/2/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	3/12/2012
Alkalinity, Total	310 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	3/12/2012
Chloride	8 mg/L	SM 4500-CL B	MJL	3/12/2012
Iron, Total	0.15 mg/L	EPA 200.7	MJL	3/30/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	3/30/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	3/12/2012
Hardness	190 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	3/30/2012
Manganese, Total	0.041 mg/L	EPA 200.7	MJL	3/30/2012
Manganese, Dissolved	0.022 mg/L	EPA 200.7	MJL	3/30/2012
Sulfate	3 mg/L	D51690,02	CCV	3/7/2012
Solids, Total Dissolved	460 mg/L	SM 2540 C	CCV	3/6/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Aluminum, Total	0.089 mg/L	EPA 200.7	MJL	3/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1227-01

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 3/2/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Boron, Total	0.18 mg/L	EPA 200.7	MJL	3/30/2012
Barium, Total	0.040 mg/L	EPA 200.7	MJL	3/30/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	3/14/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	3/22/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Phenol (ics)	0.066 mg/L	EPA 510 A, B	MLI	3/16/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1227-01

Page 3 of 3

**Sample Identification**

Allerton Mine  
MW-1

Date Sampled: 3/2/2012  
Sampled by: HMS

**Sample Analysis**

Parameter	Result	Method	Analyst	Analysis Date
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012

Reviewed by *Rodger Wilco*



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1227-02  
Date Received: 3/5/2012  
Date Reported: 4/23/2012

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 3/2/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.73 feet		HMS	3/2/2012
pH	7.81 SU	SM 4500-H+ B	HMS	3/2/2012
Temperature	8.8 deg C	SM 2550 B	HMS	3/2/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	3/12/2012
Alkalinity, Total	270 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	3/12/2012
Chloride	10 mg/L	SM 4500-CL B	MJL	3/12/2012
Iron, Total	0.28 mg/L	EPA 200.7	MJL	3/30/2012
Iron, Dissolved	0.16 mg/L	EPA 200.7	MJL	3/30/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	3/12/2012
Hardness	190 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	3/30/2012
Manganese, Total	0.055 mg/L	EPA 200.7	MJL	3/30/2012
Manganese, Dissolved	0.032 mg/L	EPA 200.7	MJL	3/30/2012
Sulfate	42 mg/L	D51690,02	CCV	3/7/2012
Solids, Total Dissolved	560 mg/L	SM 2540 C	CCV	3/6/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Aluminum, Total	0.096 mg/L	EPA 200.7	MJL	3/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1227-02

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 3/2/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Boron, Total	0.18 mg/L	EPA 200.7	MJL	3/30/2012
Barium, Total	0.054 mg/L	EPA 200.7	MJL	3/30/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	3/14/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	3/22/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	3/16/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1227-02

Page 3 of 3

**Sample Identification**

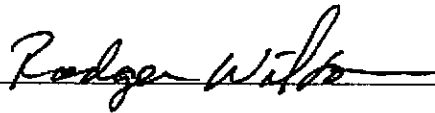
Allerton Mine  
MW-2

Date Sampled: 3/2/2012  
Sampled by: HMS

**Sample Analysis**

Parameter	Result	Method	Analyst	Analysis Date
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012

Reviewed by

  
\_\_\_\_\_



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1227-03  
Date Received: 3/5/2012  
Date Reported: 4/23/2012

### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 3/2/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	4.67 feet		HMS	3/2/2012
pH	6.65 SU	SM 4500-H+ B	HMS	3/2/2012
Temperature	9.7 deg C	SM 2550 B	HMS	3/2/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	3/12/2012
Alkalinity, Total	260 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	3/12/2012
Chloride	10 mg/L	SM 4500-CL B	MJL	3/12/2012
Iron, Total	0.27 mg/L	EPA 200.7	MJL	3/30/2012
Iron, Dissolved	0.15 mg/L	EPA 200.7	MJL	3/30/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	3/12/2012
Hardness	210 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	3/30/2012
Manganese, Total	0.019 mg/L	EPA 200.7	MJL	3/30/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	3/30/2012
Sulfate	65 mg/L	D51690,02	CCV	3/7/2012
Solids, Total Dissolved	440 mg/L	SM 2540 C	CCV	3/6/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Aluminum, Total	0.081 mg/L	EPA 200.7	MJL	3/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1227-03

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 3/2/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Boron, Total	0.25 mg/L	EPA 200.7	MJL	3/30/2012
Barium, Total	0.036 mg/L	EPA 200.7	MJL	3/30/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MJL	3/14/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	3/22/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	3/16/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1227-03

Page 3 of 3

**Sample Identification**

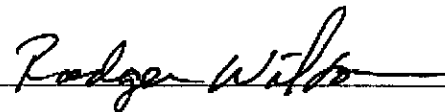
Allerton Mine  
MW-3

Date Sampled: 3/2/2012  
Sampled by: HMS

**Sample Analysis**

Parameter	Result	Method	Analyst	Analysis Date
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012

Reviewed by



---



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1227-04  
Date Received: 3/5/2012  
Date Reported: 4/23/2012

### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 3/2/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.64 feet		HMS	3/2/2012
pH	7.46 SU	SM 4500-H+ B	HMS	3/2/2012
Temperature	9.9 deg C	SM 2550 B	HMS	3/2/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	3/12/2012
Alkalinity, Total	350 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	3/12/2012
Chloride	11 mg/L	SM 4500-CL B	MJL	3/12/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	3/30/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	3/30/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	3/12/2012
Hardness	200 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	3/30/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	3/30/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	3/30/2012
Sulfate	80 mg/L	D51690,02	CCV	3/7/2012
Solids, Total Dissolved	600 mg/L	SM 2540 C	CCV	3/6/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Aluminum, Total	0.069 mg/L	EPA 200.7	MJL	3/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1227-04

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 3/2/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Boron, Total	0.22 mg/L	EPA 200.7	MJL	3/30/2012
Barium, Total	0.043 mg/L	EPA 200.7	MJL	3/30/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	3/14/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	3/22/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	3/16/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1227-04

Page 3 of 3

**Sample Identification**

Allerton Mine  
MW-4

Date Sampled: 3/2/2012  
Sampled by: HMS

**Sample Analysis**

Parameter	Result	Method	Analyst	Analysis Date
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012

Reviewed by *Rodger Wilko*



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1227-05  
Date Received: 3/5/2012  
Date Reported: 4/23/2012

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 3/2/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.12 feet		HMS	3/2/2012
pH	7.68 SU	SM 4500-H+ B	HMS	3/2/2012
Temperature	9.3 deg C	SM 2550 B	HMS	3/2/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	3/12/2012
Alkalinity, Total	270 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	3/12/2012
Chloride	12 mg/L	SM 4500-CL B	MJL	3/12/2012
Iron, Total	0.16 mg/L	EPA 200.7	MJL	3/30/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	3/30/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	3/12/2012
Hardness	220 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	3/30/2012
Manganese, Total	0.027 mg/L	EPA 200.7	MJL	3/30/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	3/30/2012
Sulfate	42 mg/L	D51690,02	CCV	3/7/2012
Solids, Total Dissolved	440 mg/L	SM 2540 C	CCV	3/6/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Aluminum, Total	0.076 mg/L	EPA 200.7	MJL	3/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1227-05

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 3/2/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Boron, Total	0.19 mg/L	EPA 200.7	MJL	3/30/2012
Barium, Total	0.048 mg/L	EPA 200.7	MJL	3/30/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	3/14/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	3/22/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	3/16/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1227-05

Page 3 of 3

**Sample Identification**

Allerton Mine  
MW-5

Date Sampled: 3/2/2012  
Sampled by: HMS

**Sample Analysis**

Parameter	Result	Method	Analyst	Analysis Date
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012

Reviewed by *Rodger Wilko*



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1227-06  
Date Received: 3/5/2012  
Date Reported: 4/23/2012

### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 3/2/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.83 feet		HMS	3/2/2012
pH	6.66 SU	SM 4500-H+ B	HMS	3/2/2012
Temperature	9.6 deg C	SM 2550 B	HMS	3/2/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	3/12/2012
Alkalinity, Total	270 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	3/12/2012
Chloride	14 mg/L	SM 4500-CL B	MJL	3/12/2012
Iron, Total	0.17 mg/L	EPA 200.7	MJL	3/30/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	3/30/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	3/12/2012
Hardness	150 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	3/30/2012
Manganese, Total	0.038 mg/L	EPA 200.7	MJL	3/30/2012
Manganese, Dissolved	0.022 mg/L	EPA 200.7	MJL	3/30/2012
Sulfate	49 mg/L	D51690,02	CCV	3/7/2012
Solids, Total Dissolved	450 mg/L	SM 2540 C	CCV	3/6/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Aluminum, Total	0.067 mg/L	EPA 200.7	MJL	3/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1227-06

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 3/2/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Boron, Total	0.21 mg/L	EPA 200.7	MJL	3/30/2012
Barium, Total	0.042 mg/L	EPA 200.7	MJL	3/30/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	3/14/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	3/22/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	3/16/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	3/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1227-06

Page 3 of 3

**Sample Identification**

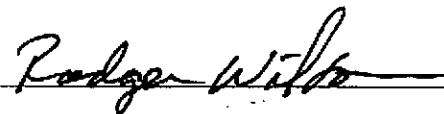
Allerton Mine  
MW-6

Date Sampled: 3/2/2012  
Sampled by: HMS

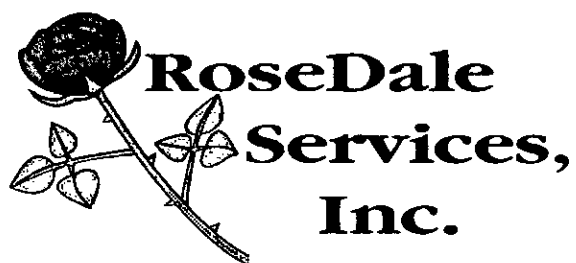
**Sample Analysis**

Parameter	Result	Method	Analyst	Analysis Date
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	3/30/2012

Reviewed by



---



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1397-01  
Date Received: 4/6/2012  
Date Reported: 4/30/2012

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 4/5/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.10 feet		HMS	4/5/2012
pH	7.61 SU	SM 4500-H+ B	HMS	4/5/2012
Temperature	11.1 deg C	SM 2550 B	HMS	4/5/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	4/18/2012
Alkalinity, Total	270 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	4/18/2012
Chloride	10 mg/L	SM 4500-CL B	MJL	4/18/2012
Iron, Total	0.17 mg/L	EPA 200.7	MJL	4/26/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	4/26/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	4/18/2012
Hardness	200 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	4/26/2012
Manganese, Total	0.056 mg/L	EPA 200.7	MJL	4/26/2012
Manganese, Dissolved	0.056 mg/L	EPA 200.7	MJL	4/26/2012
Sulfate	<2 mg/L	D51690,02	CCV	4/9/2012
Solids, Total Dissolved	430 mg/L	SM 2540 C	CCV	4/9/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	4/26/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Boron, Total	0.21 mg/L	EPA 200.7	MJL	4/26/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1397-01

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-1

Date Sampled: 4/5/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.040 mg/L	EPA 200.7	MJL	4/26/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	4/17/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	4/20/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Phenol (ics)	0.052 mg/L	EPA 510 A, B	MLI	4/18/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1397-01

Page 3 of 3

Reviewed by Rodger Wilko



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1397-02  
Date Received: 4/6/2012  
Date Reported: 4/30/2012

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 4/5/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.14 feet		HMS	4/5/2012
pH	7.72 SU	SM 4500-H+ B	HMS	4/5/2012
Temperature	12.6 deg C	SM 2550 B	HMS	4/5/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	4/18/2012
Alkalinity, Total	280 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	4/18/2012
Chloride	21 mg/L	SM 4500-CL B	MJL	4/18/2012
Iron, Total	0.22 mg/L	EPA 200.7	MJL	4/26/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	4/26/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	4/18/2012
Hardness	200 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	4/26/2012
Manganese, Total	0.11 mg/L	EPA 200.7	MJL	4/26/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	4/26/2012
Sulfate	48 mg/L	D51690,02	CCV	4/9/2012
Solids, Total Dissolved	430 mg/L	SM 2540 C	CCV	4/9/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Aluminum, Total	0.072 mg/L	EPA 200.7	MJL	4/26/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Boron, Total	0.16 mg/L	EPA 200.7	MJL	4/26/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1397-02

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-2

Date Sampled: 4/5/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.055 mg/L	EPA 200.7	MJL	4/26/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	4/17/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	4/20/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	4/18/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1397-02

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

**Sunrise Coal, LLC**  
1183 East Canvasback Drive  
Terre Haute, IN 47802

**Lab Number: 2012-1397-03**  
**Date Received: 4/6/2012**  
**Date Reported: 4/30/2012**

### Sample Identification

**Allerton Mine**  
**MW-3**

**Date Sampled: 4/5/2012**  
**Sampled by: HMS**

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.28 feet		HMS	4/5/2012
pH	7.55 SU	SM 4500-H+ B	HMS	4/5/2012
Temperature	12.5 deg C	SM 2550 B	HMS	4/5/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	4/18/2012
Alkalinity, Total	250 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	4/18/2012
Chloride	20 mg/L	SM 4500-CL B	MJL	4/18/2012
Iron, Total	0.25 mg/L	EPA 200.7	MJL	4/26/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	4/26/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	4/18/2012
Hardness	260 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	4/26/2012
Manganese, Total	0.025 mg/L	EPA 200.7	MJL	4/26/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	4/26/2012
Sulfate	70 mg/L	D51690,02	CCV	4/9/2012
Solids, Total Dissolved	420 mg/L	SM 2540 C	CCV	4/9/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Aluminum, Total	0.057 mg/L	EPA 200.7	MJL	4/26/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Boron, Total	0.22 mg/L	EPA 200.7	MJL	4/26/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1397-03

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-3

Date Sampled: 4/5/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.039 mg/L	EPA 200.7	MJL	4/26/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MJL	4/17/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	4/20/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	4/18/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012



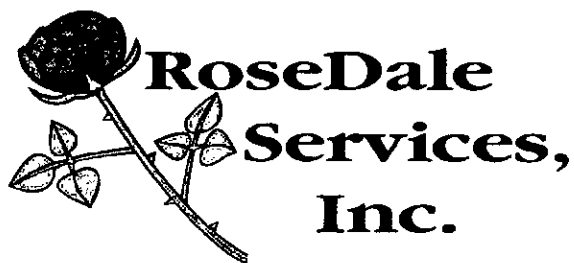
1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1397-03

Page 3 of 3

Reviewed by

*Rodger Wilko*



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1397-04  
Date Received: 4/6/2012  
Date Reported: 4/30/2012

### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 4/5/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.95 feet		HMS	4/5/2012
pH	7.37 SU	SM 4500-H+ B	HMS	4/5/2012
Temperature	10.9 deg C	SM 2550 B	HMS	4/5/2012
Acidity, Total	<10 mg/L as CaCO3	SM 2310 B	MJL	4/18/2012
Alkalinity, Total	340 mg/L as CaCO3	SM 2320 B	MJL	4/18/2012
Chloride	16 mg/L	SM 4500-CL B	MJL	4/18/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	4/26/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	4/26/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	4/18/2012
Hardness	210 mg/L as CaCO3	SM 2340 C	MJL	4/26/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	4/26/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	4/26/2012
Sulfate	69 mg/L	D51690,02	CCV	4/9/2012
Solids, Total Dissolved	650 mg/L	SM 2540 C	CCV	4/11/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	4/26/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Boron, Total	0.26 mg/L	EPA 200.7	MJL	4/26/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1397-04

Page 2 of 3

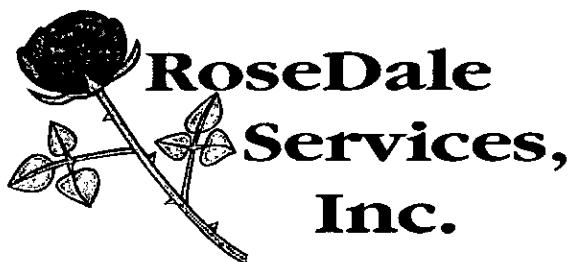
### Sample Identification

Allerton Mine  
MW-4

Date Sampled: 4/5/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.047 mg/L	EPA 200.7	MJL	4/26/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	4/17/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	4/20/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	4/18/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1397-04

Page 3 of 3

Reviewed by Rodger Wilko



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1397-05  
Date Received: 4/6/2012  
Date Reported: 4/30/2012

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 4/5/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.20 feet		HMS	4/5/2012
pH	7.62 SU	SM 4500-H+ B	HMS	4/5/2012
Temperature	11.4 deg C	SM 2550 B	HMS	4/5/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	4/18/2012
Alkalinity, Total	280 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	4/18/2012
Chloride	26 mg/L	SM 4500-CL B	MJL	4/18/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	4/26/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	4/26/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	4/18/2012
Hardness	210 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	4/26/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	4/26/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	4/26/2012
Sulfate	46 mg/L	D51690,02	CCV	4/8/2012
Solids, Total Dissolved	430 mg/L	SM 2540 C	CCV	4/8/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	4/26/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Boron, Total	0.21 mg/L	EPA 200.7	MJL	4/26/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1397-05

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-5

Date Sampled: 4/5/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.047 mg/L	EPA 200.7	MJL	4/26/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	4/17/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	4/20/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	4/18/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1397-05

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

**Sunrise Coal, LLC**  
1183 East Canvasback Drive  
Terre Haute, IN 47802

**Lab Number: 2012-1397-06**  
**Date Received: 4/6/2012**  
**Date Reported: 4/30/2012**

### Sample Identification

**Allerton Mine**  
**MW-6**

**Date Sampled: 4/5/2012**  
**Sampled by: HMS**

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.77 feet		HMS	4/5/2012
pH	7.67 SU	SM 4500-H+ B	HMS	4/5/2012
Temperature	12.2 deg C	SM 2550 B	HMS	4/5/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	4/18/2012
Alkalinity, Total	270 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	4/18/2012
Chloride	27 mg/L	SM 4500-CL B	MJL	4/18/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	4/26/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	4/26/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	4/18/2012
Hardness	190 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	4/26/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	4/26/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	4/26/2012
Sulfate	42 mg/L	D51690,02	CCV	4/8/2012
Solids, Total Dissolved	460 mg/L	SM 2540 C	CCV	4/8/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	4/26/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Boron, Total	0.19 mg/L	EPA 200.7	MJL	4/26/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1397-06

Page 2 of 3

### Sample Identification

Allerton Mine  
MW-6

Date Sampled: 4/5/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.057 mg/L	EPA 200.7	MJL	4/26/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	4/17/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Mercury, Total	<0.0002 mg/L	SM 3112 B	MLI	4/20/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Phenol (ics)	<0.050 mg/L	EPA 510 A, B	MLI	4/18/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	4/26/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	4/26/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1397-06

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1580-01  
Date Received: 5/14/2012  
Date Reported: 6/15/2012

### Sample Identification

Bulldog Mine  
MW-1

Date Sampled: 5/11/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.35 feet		HMS	5/11/2012
pH	7.58 SU	SM 4500-H+ B	HMS	5/11/2012
Temperature	13.6 deg C	SM 2550 B	HMS	5/11/2012
Acidity, Total	<10 mg/L as CaCO3	SM 2310 B	MJL	5/18/2012
Alkalinity, Total	290 mg/L as CaCO3	SM 2320 B	MJL	5/18/2012
Chloride	12 mg/L	SM 4500-CL B	MJL	5/18/2012
Iron, Total	0.23 mg/L	EPA 200.7	MJL	5/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	5/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	5/18/2012
Hardness	200 mg/L as CaCO3	SM 2340 C	MJL	5/31/2012
Manganese, Total	0.088 mg/L	EPA 200.7	MJL	5/31/2012
Manganese, Dissolved	0.061 mg/L	EPA 200.7	MJL	5/31/2012
Sulfate	6 mg/L	D51690,02	CCV	5/17/2012
Solids, Total Dissolved	800 mg/L	SM 2540 C	CCV	5/17/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	5/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Boron, Total	0.28 mg/L	EPA 200.7	MJL	5/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1580-01

Page 2 of 3

### Sample Identification

Bulldog Mine  
MW-1

Date Sampled: 5/11/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.041 mg/L	EPA 200.7	MJL	5/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Cyanide, Total	<0.010 mg/L	SM 4500CNCE	MLI	5/23/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	5/29/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Phenolics, Tot. Recoverable	0.079 mg/L	EPA 420.4	MLI	5/26/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1580-01

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1580-02  
Date Received: 5/14/2012  
Date Reported: 6/15/2012

### Sample Identification

Bulldog Mine  
MW-2

Date Sampled: 5/11/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.18 feet		HMS	5/11/2012
pH	7.79 SU	SM 4500-H+ B	HMS	5/11/2012
Temperature	15.0 deg C	SM 2550 B	HMS	5/11/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	5/18/2012
Alkalinity, Total	260 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	5/18/2012
Chloride	19 mg/L	SM 4500-CL B	MJL	5/18/2012
Iron, Total	0.29 mg/L	EPA 200.7	MJL	5/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	5/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	5/18/2012
Hardness	220 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	5/31/2012
Manganese, Total	0.096 mg/L	EPA 200.7	MJL	5/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	5/31/2012
Sulfate	31 mg/L	D51690,02	CCV	5/17/2012
Solids, Total Dissolved	380 mg/L	SM 2540 C	CCV	5/17/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Aluminum, Total	0.066 mg/L	EPA 200.7	MJL	5/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Boron, Total	0.19 mg/L	EPA 200.7	MJL	5/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1580-02

Page 2 of 3

### Sample Identification

Bulldog Mine  
MW-2

Date Sampled: 5/11/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.048 mg/L	EPA 200.7	MJL	5/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Cyanide, Total	<0.010 mg/L	SM 4500CNCE	MLI	5/23/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	5/29/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Phenolics, Tot. Recoverable	0.084 mg/L	EPA 420.4	MLI	5/26/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1580-02

Page 3 of 3

Reviewed by Rodger Wilson



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1580-03  
Date Received: 5/14/2012  
Date Reported: 6/15/2012

### Sample Identification

Bulldog Mine  
MW-3

Date Sampled: 5/11/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.98 feet		HMS	5/11/2012
pH	7.54 SU	SM 4500-H+ B	HMS	5/11/2012
Temperature	13.7 deg C	SM 2550 B	HMS	5/11/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	5/18/2012
Alkalinity, Total	260 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	5/18/2012
Chloride	22 mg/L	SM 4500-CL B	MJL	5/18/2012
Iron, Total	0.16 mg/L	EPA 200.7	MJL	5/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	5/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	5/18/2012
Hardness	260 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	5/31/2012
Manganese, Total	0.012 mg/L	EPA 200.7	MJL	5/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	5/31/2012
Sulfate	30 mg/L	D51690,02	CCV	5/17/2012
Solids, Total Dissolved	520 mg/L	SM 2540 C	CCV	5/17/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	5/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Boron, Total	0.29 mg/L	EPA 200.7	MJL	5/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1580-03

Page 2 of 3

### Sample Identification

Bulldog Mine  
MW-3

Date Sampled: 5/11/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.034 mg/L	EPA 200.7	MJL	5/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Cyanide, Total	<0.010 mg/L	SM 4500CNCE	MLI	5/23/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	5/29/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Phenolics, Tot. Recoverable	0.16 mg/L	EPA 420.4	MLI	5/26/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1580-03

Page 3 of 3

Reviewed by Rodger Wilho



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1580-04  
Date Received: 5/14/2012  
Date Reported: 6/15/2012

### Sample Identification

Bulldog Mine  
MW-4

Date Sampled: 5/11/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	8.15 feet		HMS	5/11/2012
pH	7.40 SU	SM 4500-H+ B	HMS	5/11/2012
Temperature	13.7 deg C	SM 2550 B	HMS	5/11/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	5/18/2012
Alkalinity, Total	290 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	5/18/2012
Chloride	12 mg/L	SM 4500-CL B	MJL	5/18/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	5/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	5/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	5/18/2012
Hardness	190 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	5/31/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	5/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	5/31/2012
Sulfate	50 mg/L	D51690,02	CCV	5/17/2012
Solids, Total Dissolved	500 mg/L	SM 2540 C	CCV	5/17/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	5/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Boron, Total	0.30 mg/L	EPA 200.7	MJL	5/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1580-04

Page 2 of 3

### Sample Identification

Bulldog Mine  
MW-4

Date Sampled: 5/11/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.041 mg/L	EPA 200.7	MJL	5/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Cyanide, Total	<0.010 mg/L	SM 4500CNCE	MLI	5/23/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	5/29/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	5/26/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1580-04

Page 3 of 3

Reviewed by Rodger Wilson



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1580-05  
Date Received: 5/14/2012  
Date Reported: 6/15/2012

### Sample Identification

Bulldog Mine  
MW-5

Date Sampled: 5/11/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.44 feet		HMS	5/11/2012
pH	7.58 SU	SM 4500-H+ B	HMS	5/11/2012
Temperature	15.8 deg C	SM 2550 B	HMS	5/11/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	5/18/2012
Alkalinity, Total	230 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	5/18/2012
Chloride	25 mg/L	SM 4500-CL B	MJL	5/18/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	5/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	5/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	5/18/2012
Hardness	220 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	5/31/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	5/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	5/31/2012
Sulfate	63 mg/L	D51690,02	CCV	5/17/2012
Solids, Total Dissolved	410 mg/L	SM 2540 C	CCV	5/17/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	5/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Boron, Total	0.22 mg/L	EPA 200.7	MJL	5/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1580-05

Page 2 of 3

### Sample Identification

Bulldog Mine  
MW-5

Date Sampled: 5/11/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.045 mg/L	EPA 200.7	MJL	5/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Cyanide, Total	<0.010 mg/L	SM 4500CNCE	MLI	5/23/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Mercury, Total	0.00021 mg/L	EPA 245.1	MLI	5/29/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Phenolics, Tot. Recoverable	0.15 mg/L	EPA 420.4	MLI	5/26/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1580-05

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1580-06  
Date Received: 5/14/2012  
Date Reported: 6/15/2012

### Sample Identification

Bulldog Mine  
MW-6

Date Sampled: 5/11/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.95 feet		HMS	5/11/2012
pH	7.65 SU	SM 4500-H+ B	HMS	5/11/2012
Temperature	14.1 deg C	SM 2550 B	HMS	5/11/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	5/18/2012
Alkalinity, Total	280 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	5/18/2012
Chloride	29 mg/L	SM 4500-CL B	MJL	5/18/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	5/31/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	5/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	5/18/2012
Hardness	200 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	5/31/2012
Manganese, Total	0.011 mg/L	EPA 200.7	MJL	5/31/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	5/31/2012
Sulfate	64 mg/L	D51690,02	CCV	5/17/2012
Solids, Total Dissolved	510 mg/L	SM 2540 C	CCV	5/17/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	5/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Boron, Total	0.21 mg/L	EPA 200.7	MJL	5/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1580-06

Page 2 of 3

### Sample Identification

**Bulldog Mine  
MW-6**

**Date Sampled: 5/11/2012  
Sampled by: HMS**

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.047 mg/L	EPA 200.7	MJL	5/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Cyanide, Total	<0.010 mg/L	SM 4500CNCE	MLI	5/23/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Mercury, Total	0.00021 mg/L	EPA 245.1	MLI	5/29/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Phenolics, Tot. Recoverable	0.086 mg/L	EPA 420.4	MLI	5/26/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	5/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	5/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1580-06

Page 3 of 3

Reviewed by Rodger Wilco

CHECKED MAY 18 2012 GROUNDWATER

COMPANY NAME: Sunrise Coal MINE ID: Allerton mine DATE: 5/11/12

CALIBRATION: BUFFER 4.00      BUFFER 7.00 7.01 BUFFER 10.0 10.02

RAIN EVENT YES      NO      DATE OF LAST PRECIP   /  /   AMOUNT     

SITE ID	TIME	pH	TEMP C	DEPTH	COMMENTS	LAB #
MW-1	08:59	7.58	13.6	6.35'	see Attachment	1580-01
MW-2	08:47	7.79	15.0	5.18'	" "	-02
MW-3	09:11	7.54	13.7	5.98'	" "	-03
MW-4	09:20	7.40	13.7	8.15'	" "	-04
MW-5	09:45	7.58	15.8	7.44'	" "	-05
MW-6	09:32	7.65	14.1	6.95	" "	-06
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					

Bottle List	Well	Elevation
6-1/2 H <sub>2</sub> SO <sub>4</sub> Glass Amber	MW-1	673.35
6-1/2 L w/ pres	MW-2	672.62
12-1/2 L HNO <sub>3</sub>	MW-3	677.82
6-1/2 L HNO <sub>3</sub> & filtered	MW-4	672.65
6-1/2 L NaOH	MW-5	679.26
	MW-6	675.45

NUMBER OF BOTTLES (PLASTIC)

1 L UNPRESERVED     

1/2 L UNPRESERVED     

1/4 L HNO<sub>3</sub> PRESERVED     

RELINQUISHED BY: William King

DATE: 5/11/12 TIME: 16:00

RECEIVED BY: C. Ogall

DATE: 5/14/12 TIME: 8:00



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1696-01  
Date Received: 6/12/2012  
Date Reported: 7/13/2012

### Sample Identification

Bulldog Mine  
MW-1

Date Sampled: 6/8/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.78 feet	Field Measure	HMS	6/8/2012
Depth to Water	672.92 feet	Field Measure	HMS	6/8/2012
pH	7.33 SU	SM 4500-H+ B	HMS	6/8/2012
Temperature	17.4 deg C	SM 2550 B	HMS	6/8/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	6/13/2012
Alkalinity, Total	250 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	6/13/2012
Chloride	10 mg/L	SM 4500-CL B	MJL	6/13/2012
Iron, Total	0.18 mg/L	EPA 200.7	MJL	6/30/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	6/30/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	6/13/2012
Hardness	170 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	6/30/2012
Manganese, Total	0.059 mg/L	EPA 200.7	MJL	6/30/2012
Manganese, Dissolved	0.044 mg/L	EPA 200.7	MJL	6/30/2012
Sulfate	<2 mg/L	D51690,02	CCV	6/12/2012
Solids, Total Dissolved	720 mg/L	SM 2540 C	CCV	6/12/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	6/30/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1696-01

Page 2 of 3

### Sample Identification

Bulldog Mine  
MW-1

Date Sampled: 6/8/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.21 mg/L	EPA 200.7	MJL	6/30/2012
Barium, Total	0.035 mg/L	EPA 200.7	MJL	6/30/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Cyanide, Total	<0.010 mg/L	SM 4500CNCE	MLI	6/21/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	6/25/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Phenolics, Tot. Recoverable	0.054 mg/L	EPA 420.4	MLI	6/27/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1696-01

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1696-02  
Date Received: 6/12/2012  
Date Reported: 7/13/2012

### Sample Identification

Bulldog Mine  
MW-2

Date Sampled: 6/8/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	5.52 feet	Field Measure	HMS	6/8/2012
Depth to Water	672.28 feet	Field Measure	HMS	6/8/2012
pH	7.62 SU	SM 4500-H+ B	HMS	6/8/2012
Temperature	19.6 deg C	SM 2550 B	HMS	6/8/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	6/14/2012
Alkalinity, Total	170 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	6/14/2012
Chloride	14 mg/L	SM 4500-CL B	MJL	6/14/2012
Iron, Total	0.21 mg/L	EPA 200.7	MJL	6/30/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	6/30/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	6/14/2012
Hardness	200 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	6/30/2012
Manganese, Total	0.088 mg/L	EPA 200.7	MJL	6/30/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	6/30/2012
Sulfate	42 mg/L	D51690,02	CCV	6/12/2012
Solids, Total Dissolved	200 mg/L	SM 2540 C	CCV	6/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Aluminum, Total	0.058 mg/L	EPA 200.7	MJL	6/30/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1696-02

Page 2 of 3

### Sample Identification

**Bulldog Mine  
MW-2**

**Date Sampled: 6/8/2012  
Sampled by: HMS**

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.21 mg/L	EPA 200.7	MJL	6/30/2012
Barium, Total	0.040 mg/L	EPA 200.7	MJL	6/30/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Cyanide, Total	<0.010 mg/L	SM 4500CNCE	MLI	6/21/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	6/25/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Phenolics, Tot. Recoverable	0.072 mg/L	EPA 420.4	MLI	6/27/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1696-02

Page 3 of 3

Reviewed by Rodger Wilson



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1696-03  
Date Received: 6/12/2012  
Date Reported: 7/13/2012

### Sample Identification

Bulldog Mine  
MW-3

Date Sampled: 6/8/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	6.65 feet	Field Measure	HMS	6/8/2012
Depth to Water	677.15 feet	Field Measure	HMS	6/8/2012
pH	7.34 SU	SM 4500-H+ B	HMS	6/8/2012
Temperature	16.6 deg C	SM 2550 B	HMS	6/8/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	6/14/2012
Alkalinity, Total	220 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	6/14/2012
Chloride	17 mg/L	SM 4500-CL B	MJL	6/14/2012
Iron, Total	0.21 mg/L	EPA 200.7	MJL	6/30/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	6/30/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	6/14/2012
Hardness	210 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	6/30/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	6/30/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	6/30/2012
Sulfate	10 mg/L	D51690,02	CCV	6/12/2012
Solids, Total Dissolved	340 mg/L	SM 2540 C	CCV	6/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	6/30/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1696-03

Page 2 of 3

### Sample Identification

**Bulldog Mine  
MW-3**

**Date Sampled: 6/8/2012  
Sampled by: HMS**

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.21 mg/L	EPA 200.7	MJL	6/30/2012
Barium, Total	0.024 mg/L	EPA 200.7	MJL	6/30/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Cyanide, Total	<0.010 mg/L	SM 4500CNCE	MLI	6/21/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	6/25/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Phenolics, Tot. Recoverable	0.058 mg/L	EPA 420.4	MLI	6/27/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1696-03

Page 3 of 3

Reviewed by Rodger Wilson



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1696-04  
Date Received: 6/12/2012  
Date Reported: 7/13/2012

### Sample Identification

Bulldog Mine  
MW-4

Date Sampled: 6/8/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	8.28 feet	Field Measure	HMS	6/8/2012
Depth to Water	672.52 feet	Field Measure	HMS	6/8/2012
pH	7.20 SU	SM 4500-H+ B	HMS	6/8/2012
Temperature	16.7 deg C	SM 2550 B	HMS	6/8/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	6/14/2012
Alkalinity, Total	250 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	6/14/2012
Chloride	15 mg/L	SM 4500-CL B	MJL	6/14/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	6/30/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	6/30/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	6/14/2012
Hardness	180 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	6/30/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	6/30/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	6/30/2012
Sulfate	38 mg/L	D51690,02	CCV	6/12/2012
Solids, Total Dissolved	460 mg/L	SM 2540 C	CCV	6/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	6/30/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1696-04

Page 2 of 3

### Sample Identification

Bulldog Mine  
MW-4

Date Sampled: 6/8/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.24 mg/L	EPA 200.7	MJL	6/30/2012
Barium, Total	0.034 mg/L	EPA 200.7	MJL	6/30/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Cyanide, Total	<0.010 mg/L	SM 4500CNCE	MLI	6/21/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	6/25/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Phenolics, Tot. Recoverable	<0.050 mg/L	EPA 420.4	MLI	6/27/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1696-04

Page 3 of 3

Reviewed by Rodger Wilson



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1696-05  
Date Received: 6/12/2012  
Date Reported: 7/13/2012

### Sample Identification

Bulldog Mine  
MW-5

Date Sampled: 6/8/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.65 feet	Field Measure	HMS	6/8/2012
Depth to Water	679.05 feet	Field Measure	HMS	6/8/2012
pH	7.45 SU	SM 4500-H+ B	HMS	6/8/2012
Temperature	17.4 deg C	SM 2550 B	HMS	6/8/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	6/14/2012
Alkalinity, Total	240 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	6/14/2012
Chloride	19 mg/L	SM 4500-CL B	MJL	6/14/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	6/30/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	6/30/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	6/14/2012
Hardness	180 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	6/30/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	6/30/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	6/30/2012
Sulfate	40 mg/L	D51690,02	CCV	6/12/2012
Solids, Total Dissolved	520 mg/L	SM 2540 C	CCV	6/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	6/30/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1696-05

Page 2 of 3

### Sample Identification

Bulldog Mine  
MW-5

Date Sampled: 6/8/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.17 mg/L	EPA 200.7	MJL	6/30/2012
Barium, Total	0.039 mg/L	EPA 200.7	MJL	6/30/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Cyanide, Total	<0.010 mg/L	SM 4500CNCE	MLI	6/21/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	6/25/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Phenolics, Tot. Recoverable	0.085 mg/L	EPA 420.4	MLI	6/27/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1696-05

Page 3 of 3

Reviewed by Rodger Wilson



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1696-06  
Date Received: 6/12/2012  
Date Reported: 7/13/2012

### Sample Identification

Bulldog Mine  
MW-6

Date Sampled: 6/8/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.02 feet	Field Measure	HMS	6/8/2012
Depth to Water	675.38 feet	Field Measure	HMS	6/8/2012
pH	7.47 SU	SM 4500-H+ B	HMS	6/8/2012
Temperature	16.7 deg C	SM 2550 B	HMS	6/8/2012
Acidity, Total	<10 mg/L as CaCO <sub>3</sub>	SM 2310 B	MJL	6/14/2012
Alkalinity, Total	260 mg/L as CaCO <sub>3</sub>	SM 2320 B	MJL	6/14/2012
Chloride	22 mg/L	SM 4500-CL B	MJL	6/14/2012
Iron, Total	<0.1 mg/L	EPA 200.7	MJL	6/30/2012
Iron, Dissolved	<0.1 mg/L	EPA 200.7	MJL	6/30/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	6/14/2012
Hardness	180 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	6/30/2012
Manganese, Total	<0.01 mg/L	EPA 200.7	MJL	6/30/2012
Manganese, Dissolved	<0.01 mg/L	EPA 200.7	MJL	6/30/2012
Sulfate	70 mg/L	D51690,02	CCV	6/12/2012
Solids, Total Dissolved	600 mg/L	SM 2540 C	CCV	6/13/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	6/30/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1696-06

Page 2 of 3

### Sample Identification

**Bulldog Mine  
MW-6**

**Date Sampled: 6/8/2012  
Sampled by: HMS**

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Boron, Total	0.18 mg/L	EPA 200.7	MJL	6/30/2012
Barium, Total	0.040 mg/L	EPA 200.7	MJL	6/30/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Cyanide, Total	<0.010 mg/L	SM 4500CNCE	MLI	6/21/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	6/25/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Phenolics, Tot. Recoverable	0.072 mg/L	EPA 420.4	MLI	6/27/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	6/30/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	6/30/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1696-06

Page 3 of 3

Reviewed by Rodger Wilco

CHECKED JUN 25 2012

## GROUNDWATER

COMPANY NAME: Sunrise Coal MINE ID: Bulldog mine DATE: 6/8/12CALIBRATION: BUFFER 4.00      BUFFER 7.00 2.00 BUFFER 10.0 10.01RAIN EVENT YES      NO      DATE OF LAST PRECIP      /      /      AMOUNT     

SITE ID	TIME	pH	TEMP C	DEPTH	COMMENTS	LAB #
MW-1	09:58	7.23	17.4	6.78'	See Attachment	1696-01
MW-2	09:32	7.62	19.6	5.52'	"	-02
MW-3	08:08	7.34	16.6	6.65'	"	-03
MW-4	09:01	7.20	16.7	8.28'	"	-04
MW-5	08:38	7.45	17.4	7.65'	"	-05
MW-6	08:18	7.47	16.7	7.02'	"	-06
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					
	:					

Bottle list

6-1L H<sub>2</sub>SO<sub>4</sub> Glass Amber  
 6-1/2L unpres.  
 12-1/2L HNO<sub>3</sub>  
 6-1/2L HNO<sub>3</sub> filtered  
 6-1/4L NaOH

Well<sup>#</sup> Elevation

MW-1 672.92  
 MW-2 672.28  
 MW-3 677.15  
 MW-4 672.52  
 MW-5 679.05  
 MW-6 675.38

## NUMBER OF BOTTLES (PLASTIC)

1 L UNPRESERVED     1/2 L UNPRESERVED     1/4 L HNO<sub>3</sub> PRESERVED     RELINQUISHED BY: [Signature]DATE: 6/8/12TIME: 15:10RECEIVED BY: [Signature]DATE: 6/12/12TIME: 9:00



1125 E. Walnut Street  
Boonville, IN 47601

**Sunrise Coal, LLC**  
1183 East Canvasback Drive  
Terre Haute, IN 47802

**Lab Number: 2012-1871-01**  
**Date Received: 7/24/2012**  
**Date Reported: 8/17/2012**

### Sample Identification

**Bulldog Mine**  
**MW-1**

**Date Sampled: 7/20/2012**  
**Sampled by: HMS**

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	10.00 feet	Field Measure	HMS	7/20/2012
pH	7.41 SU	SM 4500-H+ B	HMS	7/20/2012
Temperature	18.2 deg C	SM 2550 B	HMS	7/20/2012
Acidity as CaCO <sub>3</sub>	<10 mg/L	SM 2310 B	MJL	7/26/2012
Alkalinity as CaCO <sub>3</sub>	260 mg/L	SM 2320 B	MJL	7/26/2012
Chloride	13 mg/L	SM 4500-CL B	MJL	7/26/2012
Iron, Total	0.21 mg/L	EPA 200.7	MJL	7/31/2012
Iron, Dissolved	<0.1 mg/L	SM 3500-FE B	MJL	7/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	7/26/2012
Hardness	180 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	7/31/2012
Manganese, Total	0.073 mg/L	EPA 200.7	MJL	7/31/2012
Manganese, Dissolved	0.060 mg/L	SM 3500-MN B	MJL	7/31/2012
Sulfate	2 mg/L	D51690,02	CCV	7/25/2012
Solids, Total Dissolved	800 mg/L	SM 2540 C	CCV	7/25/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Aluminum, Total	<0.05 mg/L	EPA 200.7	MJL	7/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Boron, Total	0.28 mg/L	EPA 200.7	MJL	7/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1871-01

Page 2 of 3

### Sample Identification

**Bulldog Mine  
MW-1**

**Date Sampled: 7/20/2012  
Sampled by: HMS**

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Barium, Total	0.031 mg/L	EPA 200.7	MJL	7/31/2012
Beryllium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Cadmium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Cyanide, Total	<0.010 mg/L	EPA 335.4	MLI	7/31/2012
Cobalt, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Chromium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Copper, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Mercury, Total	<0.0002 mg/L	EPA 245.1	MLI	8/6/2012
Molybdenum, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Nickel, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Lead, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Phenolics, Tot. Recoverable	0.21 mg/L	EPA 420.4	MLI	8/4/2012
Antimony, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Selenium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Thallium, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012
Vanadium, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Zinc, Total	<0.005 mg/L	EPA 200.7	MJL	7/31/2012



1125 E. Walnut Street  
Boonville, IN 47601

Lab Number: 2012-1871-01

Page 3 of 3

Reviewed by Rodger Wilco



1125 E. Walnut Street  
Boonville, IN 47601

Sunrise Coal, LLC  
1183 East Canvasback Drive  
Terre Haute, IN 47802

Lab Number: 2012-1871-02  
Date Received: 7/24/2012  
Date Reported: 8/17/2012

### Sample Identification

Bulldog Mine  
MW-2

Date Sampled: 7/20/2012  
Sampled by: HMS

### Sample Analysis

Parameter	Result	Method	Analyst	Analysis Date
Depth	7.94 feet	Field Measure	HMS	7/20/2012
pH	7.59 SU	SM 4500-H+ B	HMS	7/20/2012
Temperature	19.0 deg C	SM 2550 B	HMS	7/20/2012
Acidity as CaCO <sub>3</sub>	<10 mg/L	SM 2310 B	MJL	7/26/2012
Alkalinity as CaCO <sub>3</sub>	190 mg/L	SM 2320 B	MJL	7/26/2012
Chloride	16 mg/L	SM 4500-CL B	MJL	7/26/2012
Iron, Total	0.17 mg/L	EPA 200.7	MJL	7/31/2012
Iron, Dissolved	<0.1 mg/L	SM 3500-FE B	MJL	7/31/2012
Fluoride	<0.1 mg/L	SM 4500-F D	MJL	7/26/2012
Hardness	190 mg/L as CaCO <sub>3</sub>	SM 2340 C	MJL	7/31/2012
Manganese, Total	0.075 mg/L	EPA 200.7	MJL	7/31/2012
Manganese, Dissolved	0.064 mg/L	EPA 200.7	MJL	7/31/2012
Sulfate	45 mg/L	D51690,02	CCV	7/25/2012
Solids, Total Dissolved	200 mg/L	SM 2540 C	CCV	7/25/2012
Silver, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Aluminum, Total	0.051 mg/L	EPA 200.7	MJL	7/31/2012
Arsenic, Total	<0.002 mg/L	EPA 200.7	MJL	7/31/2012
Boron, Total	0.26 mg/L	EPA 200.7	MJL	7/31/2012