

US EPA ARCHIVE DOCUMENT

SYNERGY ENGINEERING SERVICES, PLLC

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April 25, 2011

Ms. Lynne Brosius
Energy and Environment Cabinet
Surface Water and Permits Branch
Division of Water
200 Fair Oaks Lane
Frankfort, KY 40601

RE: Clintwood Elkhorn Mining Company
KPDES No. KY0092509 Renewal
DSMRE Permit No.: 898-0435, 898-4274, 898-5542,
898-8116, 898-7077 and 898-9107

Dear Ms. Brosius:

On behalf of Clintwood Elkhorn Mining Company, enclosed please find the lab data entry pages of Form C and the results that were collected for analysis of trace metals as required.

If you have any questions or need additional information regarding this application, please feel free to contact me at (606) 433-0336.

Respectfully,



Camille Robinson
Synergy Engineering Services, PLLC

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages. (See instructions)

V. INTAKE AND EFFLUENT CHARACTERISTICS (Continued from page 3 of Form C)										OUTFALL NO. 011		
Part A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.												
1. POLLUTANT	2. EFFLUENT						3. UNITS (specify if blank)		4. INTAKE (optional)			
	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg. Value		b. No of Analyses
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
a. Biochemical Oxygen Demand (BOD)	N/A											
b. Chemical Oxygen Demand (COD)	N/A											
c. Total Organic Carbon (TOC)	N/A											
d. Total Suspended Solids (TSS)	840							1	Mg/L			
e. Ammonia (as N)	N/A											
f. Flow (in units of MGD)	VALUE 0.108		VALUE		VALUE			MGD		VALUE		
g. Temperature (winter)	VALUE N/A		VALUE		VALUE			°C		VALUE		
h. Temperature (summer)	VALUE N/A		VALUE		VALUE			°C		VALUE		
i. pH	MINIMUM	MAXIMUM 8.21	MINIMUM	MAXIMUM			1	STANDARD UNITS				

Part B - In the MARK "X" column, place an "X" in the Believed Present column for each pollutant you know or have reason to believe is present. Place an "X" in the Believed Absent column for each pollutant you believe to be absent. If you mark the Believed Present column for any pollutant, you must provide the results of at least one analysis for that pollutant. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT						4. UNITS		6. INTAKE (optional)			
	a.	b.	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a.	b.	a. Long-Term Avg Value		b. No. of Analyses
	Believed Present	Believed Absent	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass		Concentration	Mass	(1) Concentration	(2) Mass	
a. Bromide (24959-67-9)		X												
b. Chloride		X												
c. Chlorine, Total Residual		X												
d. Color		X												
e. Fecal ☐ Coliform Or E.coli ☐		X												
f. Fluoride (16984-48-8)		X												
g. Hardness (as CaCO ₃)	X	368.34								1	Mg/L			
h. Nitrate – Nitrite (as N)		X												
i. Nitrogen, Total Organic (as N)		X												
j. Oil and Grease		X												
k. Phosphorous (as P), Total 7723-14-0		X												
l. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium Total		X												
(4) Radium, 226, Total		X												
(5) Strontium- 90, Total		X												
(6) Uranium		X												

Part B - Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg. Value		b. No. of Analyses
			(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
m. Sulfate (as SO ₄) (14808-79-8)	X		465.68						1	Mg/L				
n. Sulfide (as S)		X												
o. Sulfite (as SO ₄) (14286-46-3)		X												
p. Surfactants		X												
q. Aluminum, Total (7429-90)		X												
r. Barium, Total (7440-39-3)		X												
s. Boron, Total (7440-42-8)		X												
t. Cobalt, Total (7440-48-4)		X												
u. Iron, Total (7439-89-6)	X		0.058						1	Mg/L				
v. Magnesium Total (7439-96-4)		X												
w. Molybdenum Total (7439-98-7)		X												
x. Manganese, Total (7439-96-6)	X		43						1	ug/l				
y. Tin, Total (7440-31-5)		X												
z. Titanium, Total (7440-32-6)		X												

Part C – If you are a primary industry and this outfall contains process wastewater, refer to Table C-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark “X” in the **Testing Required** column for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark this column (secondary industries, nonprocess wastewater outfalls, and non-required GC/MS fractions), mark “X” in the **Believed Present** column for each pollutant you know or have reason to believe is present. Mark “X” in the **Believed Absent** column for each pollutant you believe to be absent. If you mark either the **Testing Required** or **Believed Present** columns for any pollutant, you must provide the result of at least one analysis for that pollutant. Note that there are seven pages to this part; please review each carefully. Complete one table (all seven pages) for each outfall. See instructions for additional details and requirements.

One table (on seven pages) for each output. See instructions for additional details and requirements.															
1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
METALS, CYANIDE AND TOTAL PHENOLS															
1M. Antimony Total (7440-36-0)	X			<1.0						1	ug/l				
2M. Arsenic, Total (7440-38-2)	X			<0.5						1	ug/l				
3M. Beryllium Total (7440-41-7)	X			<0.50						1	ug/l				
4M. Cadmium Total (7440-43-9)	X			<0.80						1	ug/l				
5M. Chromium Total (7440-43-9)	X			<0.5						1	ug/l				
6M. Copper Total (7550-50-8)	X			<1.0						1	ug/l				
7M. Lead Total (7439-92-1)	X			<0.5						1	ug/l				
8M. Mercury Total (7439-97-6)	X			<0.5						1	ug/l				
9M. Nickel, Total (7440-02-0)	X			1.7						1	ug/l				
10M. Selenium, Total (7782-49-2)	X			1.2						1	ug/l				
11M. Silver, Total (7440-28-0)	X			<0.5						1	ug/l				

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT						4. UNITS		5. INTAKE (optional)			
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
METALS, CYANIDE AND TOTAL PHENOLS (Continued)															
12M. Thallium, Total (7440-28-0)	X			<1.0						1	ug/l				
13M. Zinc, Total (7440-66-6)	X			<20						1	ug/l				
14M. Cyanide, Total (57-12-5)	X			<0.01						1	mg/l				
15M. Phenols, Total	X			<0.004						1	mg/l				
DIOXIN															
2,3,7,8 Tetra- chlorodibenzo, P, Dioxin (1784-01-6)			X	DESCRIBE RESULTS:											
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3V. Benzene (71-43-2)			X												
5V. Bromoform (75-25-2)			X												
6V. Carbon Tetrachloride (56-23-5)			X												
7V. Chloro- benzene (108-90-7)			X												
8V. Chlorodibromomethane (124-48-1)			X												

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
9V. Chloroethane (74-00-3)			X												
10V. 2-Chloro- ethylvinyl Ether (110-75-8)			X												
11V. Chloroform (67-66-3)			X												
12V. Dichloro- bromomethane (75-71-8)			X												
14V. 1,1- Dichloroethane (75-34-3)			X												
15V. 1,2- Dichloroethane (107-06-2)			X												
16V. 1,1- Dichlorethylene (75-35-4)			X												
17V. 1,2-Di- chloropropane (78-87-5)			X												
18V. 1,3- Dichloropro- pylene (452-75-6)			X												
19V. Ethyl- benzene (100-41-4)			X												
20V. Methyl Bromide (74-83-9)			X												

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg. Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
21V. Methyl Chloride (74-87-3)			X												
22V. Methylene Chloride (75-00-2)			X												
23V. 1,1,2,2- Tetrachloro- ethane (79-34-5)			X												
24V. Tetrachloro- ethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans- Dichloro- ethylene (156-60-5)			X												
27V. 1,1,1-Tri- chloroethane (71-55-6)			X												
28V. 1,1,2-Tri- chloroethane (79-00-5)			X												
29V. Trichloro- ethylene (79-01-6)			X												
30V. Vinyl Chloride (75-01-4)			X												

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chloro-phenol (95-57-8)			X												
2A. 2,4-Dichlor-Orophenol (120-83-2)			X												
3A. 2,4-Dimeth-ylphenol (105-67-9)			X												
4A. 4,6-Dinitro-o-cresol (534-52-1)			X												
5A. 2,4-Dinitro-phenol (51-28-5)			X												
6A. 2-Nitro-phenol (88-75-5)			X												
7A. 4-Nitro-phenol (100-02-7)			X												
8A. P-chloro-m-cresol (59-50-7)			X												
9A. Pentachloro-phenol (87-88-5)			X												
10A. Phenol (108-05-2)			X												
11A. 2,4,6-Tri-chlorophenol (88-06-2)			X												
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acena-phthene (83-32-9)			X												

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1)	(2)	(1)	(2)	(1)	(2)				(1)	(2)	
				Concentration	Mass	Concentration	Mass	Concentration	Mass				Concentration	Mass	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (Continued)															
2B. Acena- phtylene (208-96-8)			X												
3B. Anthra- cene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo(a)- anthracene (56-55-3)			X												
6B. Benzo(a)- pyrene (50-32-8)			X												
7B. 3,4-Benzo- fluoranthene (205-99-2)			X												
8B. Benzo(ghi) perylene (191-24-2)			X												
9B. Benzo(k)- fluoranthene (207-08-9)			X												
10B. Bis(2- chlor- oethoxy)- methane (111-91-1)			X												
11B. Bis (2-chlor- oisopropyl)- Ether			X												
12B. Bis (2-ethyl- hexyl)- phthalate (117-81-7)			X												

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (Continued)															
13B. 4-Bromo-phenyl Phenyl ether (101-55-3)			X												
14B. Butyl-benzyl phthalate (85-68-7)			X												
15B. 2-Chloro-naphthalene (7005-72-3)			X												
16B. 4-Chloro-phenyl phenyl ether (7005-72-3)			X												
17B. Chrysene (218-01-9)			X												
18B. Dibenzo-(a,h) Anthracene (53-70-3)			X												
19B. 1,2-Dichloro-benzene (95-50-1)			X												
20B. 1,3-Dichloro-Benzene (541-73-1)			X												
21B. 1,4-Dichloro-benzene (106-46-7)			X												
22B. 3,3-Dichloro-benzidene (91-94-1)			X												
23B. Diethyl Phthalate (84-66-2)			X												

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg. Value		b. No. of Analyses
				(1)	(2)	(1)	(2)	(1)	(2)				(1)	(2)	
				Concentration	Mass	Concentration	Mass	Concentration	Mass				Concentration	Mass	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (Continued)															
24B. Dimethyl Phthalate (131-11-3)			X												
25B. Di-N- butyl Phthalate (84-74-2)			X												
26B. 2,4-Dinitro- toluene (121-14-2)			X												
27B. 2,6-Dinitro- toluene (606-20-2)			X												
28B. Di-n-octyl Phthalate (117-84-0)			X												
29B. 1,2- diphenyl- hydrazine (as azonbenzene) (122-66-7)			X												
30B. Fluoranthene (208-44-0)			X												
31B. Fluorene (86-73-7)			X												
32B. Hexachloro- benzene (118-71-1)			X												
33B. Hexachloro- butadiene (87-68-3)			X												
34B. Hexachloro- cyclopenta- diene (77-47-4)			X												

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1)	(2)	(1)	(2)	(1)	(2)				(1)	(2)	
				Concentration	Mass	Concentration	Mass	Concentration	Mass				Concentration	Mass	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (Continued)															
35B. Hexachlo- roethane (67-72-1)			X												
36B. Indneo- (1,2,3-oc)- Pyrene (193-39-5)			X												
37B. Isophorone (78-59-1)			X												
38B. Napthalene (91-20-3)			X												
39B. Nitro- benzene (98-95-3)			X												
40B. N-Nitroso- dimethyl- amine (62-75-9)			X												
41B. N-nitrosodi-n- propylamine (621-64-7)			X												
42B. N-nitro- sodiphenyl- amine (86-30-6)			X												
43B. Phenan- threne (85-01-8)			X												
44B. Pyrene (129-00-0)			X												
45B. 1,2,4 Tri- chloro- benzene (120-82-1)			X												

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK “X”			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg. Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-84-6)			X												
3P. β-BHC (58-89-9)			X												
4P. gamma-BHC (58-89-9)			X												
5P. δ-BHC (319-86-8)			X												
6P. Chlordane (57-74-9)			X												
7P. 4,4’-DDT (50-29-3)			X												
8P. 4,4’-DDE (72-55-9)			X												
9P. 4,4’-DDD (72-54-8)			X												
10P. Dieldrin (60-57-1)			X												
11P. α- Endosulfan (115-29-7)			X												
12P. β- Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												

Part C – Continued

1. POLLUTANT And CAS NO. (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. Testing Required	a. Believed Present	b. Believed Absent	a. Maximum Daily Value		b. Maximum 30-Day Value (if available)		c. Long-Term Avg. Value (if available)		d. No. of Analyses	a. Concentration	b. Mass	a. Long-Term Avg Value		b. No. of Analyses
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass	
GC/MS FRACTION – PESTICIDES															
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												
17P. Heptaclor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

Cust # 14998Lab # 2011-01871-4APPALACHIAN STATES ANALYTICAL
CHAIN OF CUSTODY

2011 01887-3/1/11

Client Name: Clintonwood Elk Horn

Address: _____

Contact: _____

Type: _____

KPDES #: _____

PWSID #: _____

Field Data By: TMBSampler: TMBDate: 2-21-11

Sample ID	Time	pH	D.O.	Flow	Temp C	Conductivity chl	Preservative	Analysis
898-0435	10:00	8.21	12.56	.108	9.0°C	1181	11	
898-0435 Dup	10:00	8.21	12.56	.108	9.0°C	1181		
Field Blank	10:00	6.22	10.50		7.5°C	1.47		
898-0435	10:00	8.21		.108	9.0°C			

001
002
01871
003
01889
01894
01895
2-21-11

Released By / Date / Time <u>[Signature]</u> 2-21-11 10:00	Released By / Date / Time
Received By / Date / Time <u>[Signature]</u> 2/21/11 10:00	Received By / Date / Time

Comments:

Mailed 3/23/11 Inv #

CHAIN OF CUSTODY / Low Level Mercury

The Chain of Custody is a LEGAL DOCUMENT All relevant fields must be completed accurately and fully
Tel: 812-273-6699 Fax: 812-273-5788

COC-14

Laboratory Number: 020545

Client Information:

Company Name:	<u>Clinton Wood E/Khara</u>
Contact Name:	<u>Dean Childress</u>
Address:	<u>Clinton Wood E/Khara Mining</u>
City, State, Zip:	<u>33456 St Hwy 194 E</u>
Phone Number:	<u>606-437-4621</u>
Fax Number:	
E-mail Address:	<u>lab@appalachian-state.com</u>

NPDES #

Project Name

2011-01871-001

Billing Information:

Appalachian State Anal.	Quote Number
Ama Bowman	
P.O. Box 520	P.O. Number
	<u>342011</u>
Shelbiana, KY 41562	Sales Manager
606-437-5616	☐ Webb
606-437-0615	☐ Crook
<u>lab@appalachian-state.com</u>	

Matrix Code:

DWW = Drinking Water Well
DWS = Drinking Water Surface
WW = Waste Water
GW = Ground Water
SL = Sludge
SO = Solid/Soil
O = Oil
OT = Other

Regulatory Agency

NPDES	RCRA	Drinking Water ☐ Distribution ☐ Special
UST	Health Dept.	
State	Other	

Turn Around Time

Standard	Rush			
10-15 Days	1 Day	3 Days	5 Days	
The appropriate "Rush" must be circled and will incur a surcharge				

Collection Information

Lab ID	Date	Time	Grab/Comp	Matrix Code
<u>011</u>	<u>2-21-11</u>	<u>10:30</u>	☒ G / ☐ C	<u>OT</u>
<u>011</u>	<u>2-21-11</u>	<u>10:30</u>	☒ G / ☐ C	<u>OT</u>
<u>011</u>	<u>2-21-11</u>	<u>10:30</u>	☒ G / ☐ C	<u>OT</u>

Requested Analysis

Low Level Mercury	W02 427
Low Level Mercury	W02 428
Low Level Mercury	W02 429

Location/Description

Effluent	Sample pH after preservation (checked by lab)
Effluent Duplication	
Trip Blank	

Note: EPA method 1631 requires a field blank be analyzed with effluent sample for validation.

Please initial to confirm that you DO NOT request a field blank.

Special Requests

Forward results to IDEM (\$10/report)
Want ELI to composite the samples (\$25/report)

Comments

Sampler Name and Signature

Print Name of Sampler

Signature of Sampler

Relinquished By

Date/Time

Date/Time

Received By

Date/Time

Sample Conditions

Samples Intact

On Ice

Temp. (°C)

☒ Y ☒ N
☒ Y ☒ N
☒ Y ☒ N

3.2°



Alloway
Your Resource for Defensible Data

Project: MP11-11757



112

☐ 1101 North Cole Street, Lima, OH 45805
Phone 419-223-1362 Fax 419-227-3792

☒ 1776 Marion-Waldo Road, Marion, OH 43302
Phone 740-389-5991 Fax 740-389-1481

☐ 508 Blsamen Court, Mansfield, OH 44903
Phone 419-525-1644 Fax 419-524-5575

Report To: Name: Clintwood Elkhorn Mining. Company: Co Appalachian States Analytical Address: PO Box 520 Shelbiana, Ky 41562		Invoice To (If Different): Name: Appalachian States Analytical Company: PO Box 520 Address: Shelbiana, Ky. 41562 PO#: 240311 ✓		Notes/Comments Please Run all metals EPA 200.8				
Phone #: 606-437-5616		Fax #: 606-437-0615						
E-mail: lab@appalachian-states.com								
Project Name: 2011-01871								
Sampler (Print):								
(Signature)								
Customer Sample ID / Sample Location		Sample Date	Sample Time	Comp.	Grab	Matrix	Number of Containers	Matrix Codes: ww - wastewater gw - groundwater dw - drinking water s - solid w - water o - oil sg - sludge o - other
1 O11 898-0435		2-21-11	10:00			0	1	Analysts Required Tot Rec: Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn Total Unanalyzed
2 O11 Dup. 898-0435		2-21-11	10:00			0	1	Tot Rec: Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn Total Unanalyzed
3 Field Blank 898-0435		2-21-11	10:00			0	1	Tot Rec: Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn Total Unanalyzed
4								
5								
6								
7								
8								
Relinquished by:		Received by:		Date		Time		Sample Receiving (For Lab Use Only)
Michelle Belcher to (ups)				3/15/11		Approx 17:00		Ice Present? Y ☐ N ☐ O ☐
								Proper Preservation? Y ☐ N ☐ O ☐
								Container Temperature: 3.6
Method of Sample Delivery: UPS/FedEx ☐ Other ☐		Received for Laboratory by: (Signature) Julie Agford		3/16/11		0900		Priority (For Client Use) Note: Rush Charges May Apply 24 Hrs ☐ 48 Hrs ☐ 3 Working Days ☐ Routine (5-10 Working days) ☐

White - Lab Copy

Yellow - Client Copy

Added HNO₃ to all bottles. Tu



APPALACHIAN STATES ANALYTICAL, L.L.C.

PO Box 520
Shelbiana, KY 41562

Clintwood Elkhorn Mining
23956 State Hwy 194 E
Feds Creek, KY 41524

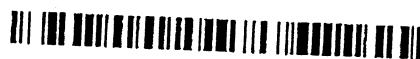
Date Received 2/21/11
Date Reported 3/24/11
Order Number 2011-01871

ATTN: Dean Childress

TEST DESCRIPTION	RESULT	UNITS	METHOD	MDL	DATE	TECH
Fraction	2011-01871001					
Sample I.D	011					
	898-0435					
Date Sampled	2/21/2011					
Dissolved Oxygen, Field	12.56	mg/l	SM 4500 O-G		2/21/2011	TMB
Temperature	9.0	C	SM 2550 B	0.4	2/21/2011	TMB
pH, Field	8.21	std	SM 4500 H+ -B	0.03	2/21/2011	TMB
Calcium, Total	77.72	mg/l	EPA 200.7	0.03	2/25/2011	AH
Magnesium, Total	42.32	mg/l	EPA 200.7	0.005	2/25/2011	AH
Sodium, Total	98.72	mg/l	EPA 200.7	0.04	2/25/2011	AH
Potassium, Total	7.37	mg/l	EPA 200.7	0.07	2/25/2011	AH
Hardness	368.34	mg/l	SM 2340B	0.03	2/25/2011	AH
Sulfate	465.68	mg/l	EPA 300.0	0.05	2/24/2011	AH
Chloride	4.41	mg/l	EPA 300.0	0.06	2/24/2011	AH
Total Dissolved Solids	840	mg/l	EPA 160.1	3	2/22/2011	JAS
Specific Conductance, Field	1181	umhos/cm	SM 2510 B	1	2/21/2011	TMB
Cyanide, Total	<0.01	mg/l	SM 4500CN-C,E	0.01	2/24/2011	AH
Phenols, Ky KPDES P Renewal	<0.004	mg/l	EPA 420.1	0.004	3/01/2011	AH
Flow	0.108	mgd			2/21/2011	TMB
Iron, Total	0.058	mg/l	EPA 200.7	0.005	2/25/2011	AH

* May not be within monthly permit requirements.

Submitted By:


CERTIFICATE OF ANALYSIS
 Reported by Alloway - Marion

 Appalachian States Analytical, LLC
 Attn: Ama Bentley
 P.O Box 520
 Shelbyana, Ky 41562

 Lab Project # MP11-11757
 Received: 3/16/2011
 Reported: 3/24/2011
 Date/Time Sampled: 02/21/2011 10:00
 Sampled By: Unknown
 Sampled Matrix: Water
 Containers: 1

Project Name: 2011-01871

All metals, with the exception of Manganese, analyzed as Total Recoverable. Manganese analyzed as Total.

Sample ID: 011 898-0435

Lab Sample # MP11-11757-01

Analyte	Results	Units	PQL	Method	Analyst	Extraction Date	Analysis Date/Time
Antimony, Total	<1.0	ug/L	1.0	EPA-200.8	SLB		03/21/2011
Arsenic, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Beryllium, Total	<0.50	ug/L	0.50	EPA-200.8	SLB		03/21/2011
Cadmium, Total	<0.80	ug/L	0.80	EPA-200.8	SLB		03/21/2011
Chromium, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Copper, Total	<1.0	ug/L	1.0	EPA-200.8	SLB		03/21/2011
Lead, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Manganese, Total	43	ug/L	10	EPA-200.8	SLB		03/21/2011
Nickel, Total	1.7	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Selenium, Total	1.2	ug/L	1.0	EPA-200.8	SLB		03/21/2011
Silver, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Thallium, Total	<1.0	ug/L	1.0	EPA-200.8	SLB		03/21/2011
Zinc, Total	<20	ug/L	20	EPA-200.8	SLB		03/21/2011

Analysis Certified By:



 Rhonda C. Morris
 Laboratory Manager

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 The results presented on this Certificate of Analysis only reflect those parameters that were requested by the client on the chain of custody or other documentation received with the sample(s). The analytical results relate only to the items tested. Analytical results are based on dry-weights for solid samples, unless otherwise specified.

Report of Laboratory Analysis



635 Green Road, PO Box 968, Madison, IN 47250
Tel: 812.273.6699 Fax: 812.273.5788

Report To:

Dean Childress
Clintwood Elkhorn
23956 State Hwy 194 E
Feds Creek, KY 41524

Order No.: 2011020545

PO No.: 340211

Date Received: 02/22/2011

Report Date: 03/08/2011

Lab Id	Matrix	Identification	Date Collected	Collected By	Description		
W02-427	Other	EFFLUENT	2/21/2011	TB	011 898-0435		
Test Name		Results	Units	Analyst	Limit	Test Method	Analysis Date
Mercury-Total Rec. Low Level		<0.5	ng/L	JH	0.5	EPA 1631E	3/4/2011
Comments:							
Lab Id	Matrix	Identification	Date Collected	Collected By	Description		
W02-428	Other	EFFLUENT DUPLICATE	2/21/2011	TB	011 898-0435		
Test Name		Results	Units	Analyst	Limit	Test Method	Analysis Date
Mercury-Total Rec. Low Level		<0.5	ng/L	JH	0.5	EPA 1631E	3/4/2011
Comments:							
Lab Id	Matrix	Identification	Date Collected	Collected By	Description		
W02-429	Other	FIELD BLANK	2/21/2011	TB	011 898-0435		
Test Name		Results	Units	Analyst	Limit	Test Method	Analysis Date
Mercury-Total Rec. Low Level		<0.5	ng/L	JH	0.5	EPA 1631E	3/4/2011
Comments:							

Approved by:

Whitney Wu, Lab Manager



APPALACHIAN STATES ANALYTICAL, L.L.C.

PO Box 520
Shelbiana, KY 41562

Clintwood Elkhorn Mining
23956 State Hwy 194 E
Feds Creek, KY 41524

Date Received 2/21/11
Date Reported 3/24/11
Order Number 2011-01871

ATTN: Dean Childress

TEST DESCRIPTION	RESULT	UNITS	METHOD	MDL	DATE	TECH
Fraction	2011-01871002					
Sample I.D	011 Duplicate					
	898-0435					
Date Sampled	2/21/2011					
Dissolved Oxygen, Field	12.56	mg/l	SM 4500 O-G		2/21/2011	TMB
Temperature	9.0	C	SM 2550 B	0.4	2/21/2011	TMB
pH, Field	8.21	std	SM 4500 H+ -B	0.03	2/21/2011	TMB
Calcium, Total	78.84	mg/l	EPA 200.7	0.03	2/25/2011	AH
Magnesium, Total	44.92	mg/l	EPA 200.7	0.005	2/25/2011	AH
Sodium, Total	98.20	mg/l	EPA 200.7	0.04	2/25/2011	AH
Potassium, Total	7.47	mg/l	EPA 200.7	0.07	2/25/2011	AH
Hardness	381.84	mg/l	SM 2340B	0.03	2/25/2011	AH
Sulfate	472.02	mg/l	EPA 300.0	0.05	2/24/2011	AH
Chloride	4.53	mg/l	EPA 300.0	0.06	2/24/2011	AH
Total Dissolved Solids	820	mg/l	EPA 160.1	3	2/22/2011	JAS
Specific Conductance, Field	1181	umhos/cm	SM 2510 B	1	2/21/2011	TMB
Cyanide, Total	<0.01	mg/l	SM 4500CN-C,E	0.01	2/24/2011	AH
Phenols, Ky KPDES P Renewal	<0.004	mg/l	EPA 420.1	0.004	3/01/2011	AH
Flow	0.108	mgd			2/21/2011	TMB
Iron, Total	0.052	mg/l	EPA 200.7	0.005	2/25/2011	AH

* May not be within monthly permit requirements.

Submitted By:

CERTIFICATE OF ANALYSIS
Reported by Alloway - Marion

 Appalachian States Analytical, LLC
 Attn: Ama Bentley
 P.O Box 520
 Shelbyana, Ky 41562

 Lab Project # MP11-11757
 Received: 3/16/2011
 Reported: 3/24/2011
 Date/Time Sampled: 02/21/2011 10:00
 Sampled By: Unknown
 Sampled Matrix: Water
 Containers: 1

Project Name: 2011-01871

All metals, with the exception of Manganese, analyzed as Total Recoverable. Manganese analyzed as Total.

Sample ID: 011 Dup. 898-0435

Lab Sample # MP11-11757-02

Analyte	Results	Units	PQL	Method	Analyst	Extraction Date	Analysis Date/Time
Antimony, Total	<1.0	ug/L	1.0	EPA-200.8	SLB		03/21/2011
Arsenic, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Beryllium, Total	<0.50	ug/L	0.50	EPA-200.8	SLB		03/21/2011
Cadmium, Total	<0.80	ug/L	0.80	EPA-200.8	SLB		03/21/2011
Chromium, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Copper, Total	3.0	ug/L	1.0	EPA-200.8	SLB		03/21/2011
Lead, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Manganese, Total	35	ug/L	10	EPA-200.8	SLB		03/21/2011
Nickel, Total	1.7	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Selenium, Total	1.2	ug/L	1.0	EPA-200.8	SLB		03/21/2011
Silver, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Thallium, Total	<1.0	ug/L	1.0	EPA-200.8	SLB		03/21/2011
Zinc, Total	<20	ug/L	20	EPA-200.8	SLB		03/21/2011

Analysis Certified By:



 Rhonda C. Morris
 Laboratory Manager

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APPALACHIAN STATES ANALYTICAL, L.L.C.

PO Box 520
Shelbiana, KY 41562

Clintwood Elkhorn Mining
23956 State Hwy 194 E
Feds Creek, KY 41524

Date Received 2/21/11
Date Reported 3/24/11
Order Number 2011-01871

ATTN: Dean Childress

TEST DESCRIPTION	RESULT	UNITS	METHOD	MDL	DATE	TECH
Fraction	2011-01871003					
Sample I.D	Field Blank (898-0435)					
Date Sampled	2/21/2011					
Dissolved Oxygen, Field	10.50	mg/l	SM 4500 O-G		2/21/2011	TMB
Temperature	7.5	C	SM 2550 B	0.4	2/21/2011	TMB
pH, Field	6.22	std	SM 4500 H+ -B	0.03	2/21/2011	TMB
Calcium, Total	<0.03	mg/l	EPA 200.7	0.03	2/21/2011	TMB
Magnesium, Total	<0.005	mg/l	EPA 200.7	0.005	2/25/2011	AH
Sodium, Total	<0.04	mg/l	EPA 200.7	0.04	2/25/2011	AH
Potassium, Total	<0.07	mg/l	EPA 200.7	0.07	2/25/2011	AH
Hardness	<0.03	mg/l	SM 2340B	0.03	2/25/2011	AH
Sulfate	<0.05	mg/l	EPA 300.0	0.05	2/25/2011	AH
Chloride	<0.06	mg/l	EPA 300.0	0.06	2/24/2011	AH
Total Dissolved Solids	<3	mg/l	EPA 160.1	3	2/24/2011	AH
Specific Conductance, Field	1.47	umhos/cm	SM 2510 B	1	2/22/2011	JAS
Cyanide, Total	<0.01	mg/l	SM 4500CN-C,E	0.01	2/21/2011	TMB
Phenols, Ky KPDES P Renewal	<0.004	mg/l	EPA 420.1	0.004	2/24/2011	AH
Iron, Total	<0.005	mg/l	EPA 200.7	0.004	3/01/2011	AH
				0.005	2/25/2011	AH

* May not be within monthly permit requirements.

Submitted By:



CERTIFICATE OF ANALYSIS Reported by Alloway - Marion

Appalachian States Analytical, LLC
Attn: Ama Bentley
P.O. Box 520
Shelbiana, Ky 41562

Lab Project # MP11-11757
Received: 3/16/2011
Reported: 3/24/2011
Date/Time Sampled: 02/21/2011 10:00
Sampled By: Unknown
Sampled Matrix: Water
Containers: 1

Project Name: 2011-01871

All metals, with the exception of Manganese, analyzed as Total Recoverable. Manganese analyzed as Total.

Sample ID: Field Blank 898-0435

Lab Sample # MP11-11757-03

Analyte	Results	Units	PQL	Method	Analyst	Extraction Date	Analysis Date/Time
Antimony, Total	<1.0	ug/L	1.0	EPA-200.8	SLB		03/21/2011
Arsenic, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Beryllium, Total	<0.50	ug/L	0.50	EPA-200.8	SLB		03/21/2011
Cadmium, Total	<0.80	ug/L	0.80	EPA-200.8	SLB		03/21/2011
Chromium, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Copper, Total	<1.0	ug/L	1.0	EPA-200.8	SLB		03/21/2011
Lead, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Manganese, Total	<10	ug/L	10	EPA-200.8	SLB		03/21/2011
Nickel, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Selenium, Total	<1.0	ug/L	1.0	EPA-200.8	SLB		03/21/2011
Silver, Total	<0.5	ug/L	0.5	EPA-200.8	SLB		03/21/2011
Thallium, Total	<1.0	ug/L	1.0	EPA-200.8	SLB		03/21/2011
Zinc, Total	<20	ug/L	20	EPA-200.8	SLB		03/21/2011

Analysis Certified By:

Rhonda C. Morris

Rhonda C. Morris
Laboratory Manager

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