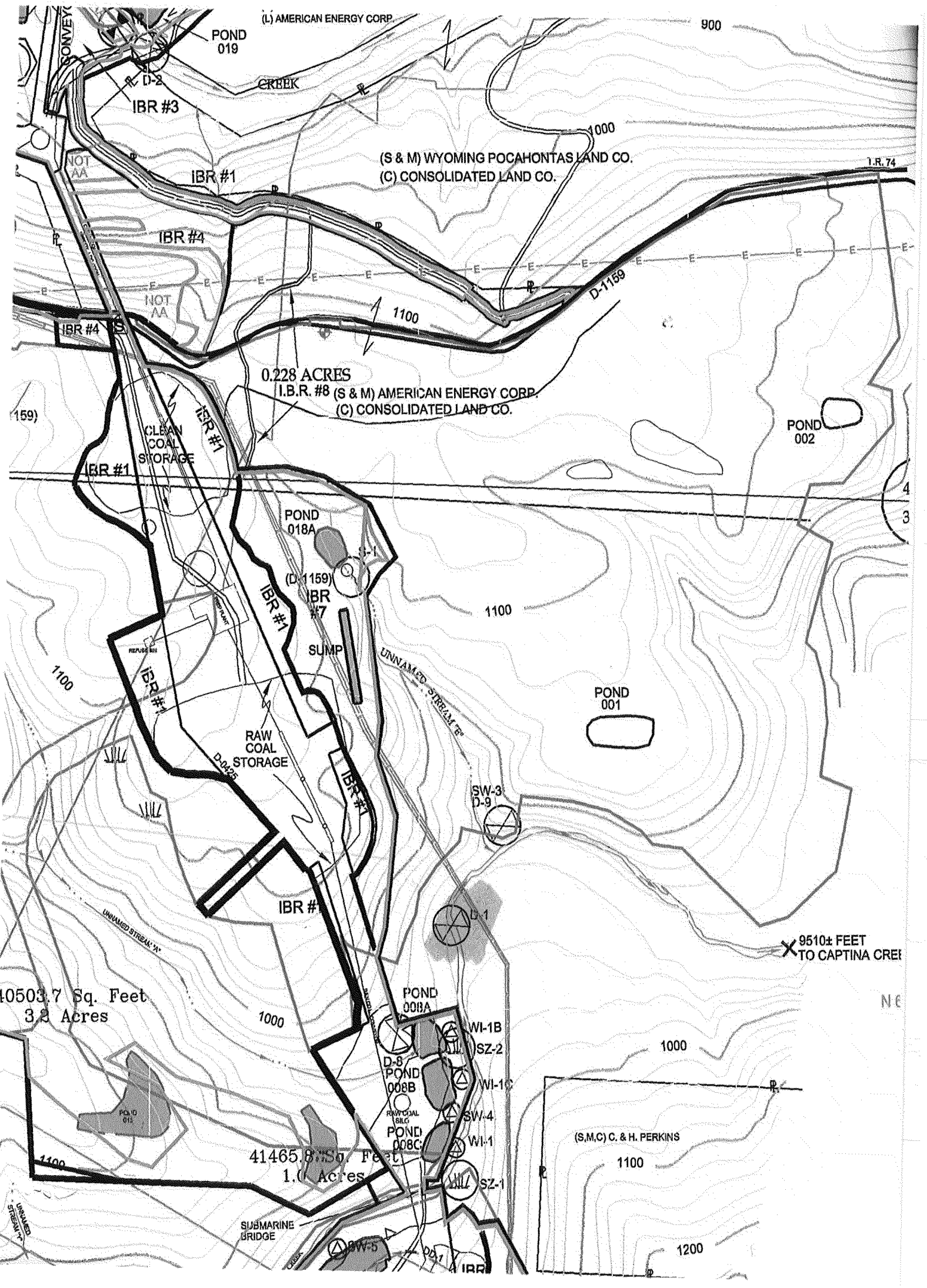
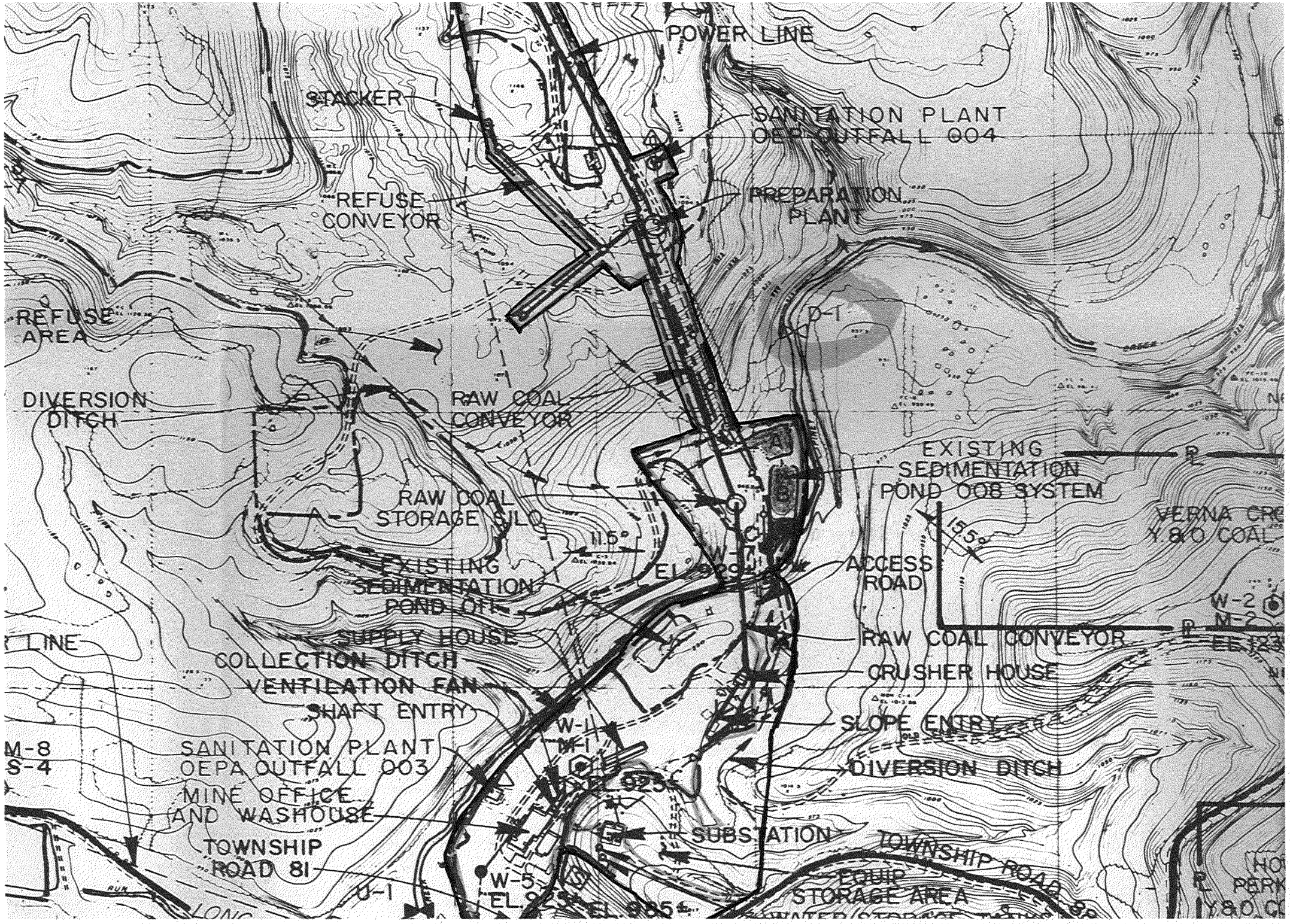

(L) AMERICAN ENERGY CORP.
900
POND 019
CONVEYOR
D-2
CREEK
IBR #3
1000
(S & M) WYOMING POCAHONTAS LAND CO.
(C) CONSOLIDATED LAND CO.
I.R. 74
NOT AA
IBR #1
IBR #4
D-1159
1100
IBR #4
0.228 ACRES
I.B.R. #8 (S & M) AMERICAN ENERGY CORP.
(C) CONSOLIDATED LAND CO.
POND 002
CLEAN COAL STORAGE
IBR #1
POND 018A
S-1
(D-1159)
IBR #7
SUMP
UNNAMED STREAM "B"
POND 001
RAW COAL STORAGE
D-0425
SW-3
D-9
IBR #1
UNNAMED STREAM "A"
D-1
9510± FEET TO CAPTINA CREE
40503.7 Sq. Feet
3.8 Acres
POND 008A
WI-1B
SZ-2
D-8
POND 008B
WI-1C
SW-4
POND 008C
WI-1
SZ-1
41465.8 Sq. Feet
1.0 Acres
(S,M,C) C. & H. PERKINS
1200
SUBMARINE BRIDGE
SW-5
D-1



2014-00657202687

ADDENDUM TO ATTACHMENTS 14A, 14C AND 14E BENNOC, INC.

HYDROLOGY SITE		STATE PLANE COORDINATES X	Y
DS-61		2399449	693047
DS-62		2399096	693991
DS-63		2399455	687920
DS-64		2399262	687298
DS-65		2401757	688681
DS-66		2398900	688956
DS-67		2399234	695651
DS-68		2402776	693319
DS-69		2400745	690840
DS-70		2416671	692793
DS-71		2411906	694957
DS-72		2426905	688918
DS-75		2401500	691329
DS-76		2401141	690899
DS-77		2401481	690470
DS-78		2404329	687161
DS-79		2408115	685837
DS-80		2422774	686528
DS-81		2415397	687924
DS-82		2415654	687713
U-1		2421918	684338
U-1A		2417744	684094
U-2		2411918	684035
D-22		2409219	684099
D-21		2410266	684229
U-2C		2413484	696351
U-31E		2400488	684710
U-4		2399510	697007
D-33		2400685	695733

ORIGINAL

ADDENDUM TO ATTACHMENTS 14A, 14C AND 14E BENNOC, INC.

HYDROLOGY SITE		STATE PLANE COORDINATES X	Y
D-1		2423678	690974
D-2		2415136	695163
D-31		2407230	684026
D-4		2400802	696003
D-32		2402650	696018
D-6		2406412	696016
P-1		2413803	684602
P-2		2410863	688039
P-3		2409478	687710
P-4		2413282	684961
P-5		2413152	684745
P-6		2414367	687299
P-7		2408178	684065
P-8		2415772	689090
P-9		2407202	694604
P-10		2406730	692873
P-11		2408191	693438
P-12		2411185	695978
P-13		2403034	694797
P-14		2401157	690889
P-15		2404468	688196
P-16		2400335	692824
P-17		2399447	693162
P-18		2399255	687568
P-19		2399229	689147
P-20		2414578	692970
P-21		2412710	693221
P-22		2415130	694801
P-25		*2415349*	*688131*

ORIGINAL D-0425-1

ADDENDUM TO ATTACHMENTS 14A, 14C AND 14 BENNOC, INC.

HYDROLOGY SITE		STATE PLANE COORDINATES X	Y
D-P2		2411834	687424
D-7		2423666	690855
D-8		2422335	687193
D-9		2422384	687956
D-10		2422239	689405
D-11		2421683	685076
D-P12		2411564	693640
D-12		2419321	693038
D-13		2414472	693923
D-14		2414245	693900
D-15		2414403	692250
D-16		2413528	690468
D-17		2413632	689276
D-18		2412773	688555
D-19		2412717	688346
D-20		2411440	686504
D-23		2413915	693038
D-24		2414006	693353
D-25		2410476	693407
D-26		2409120	693185
D-27		2408192	692855
D-28		2404895	690596
D-29		2403180	689990
D-30		2402124	688959
U-7		2426089	689124
U-8		2425214	686712
U-9		2420392	688740
U-10		2418062	692226
U-10A		2416989	691833

ORIGINAL

9/88

O. DEPARTMENT OF NATURAL RES(CES
DIVISION OF RECLAMATION

RECEIVED OCT 3 2000

ATTACHMENT 14A
(HYDROLOGIC MEASUREMENTS AND ANALYSES)

APPLICANT BENNOC, INC. (D-0425-1)

1	Identification No. of Sampling Station from Hydrology Map	D-1	D-1	D-1	D-1	D-1	D-1
2	Identification Number 98-	08079	09284	10121	11247	12192	99-02150
3	High (H)/Low (L) Designation (if applicable)	SIX MONTH SAMPLING					
4	Surface Elevation for Sampling Station (msl)	912	912	912	912	912	912
5	Depth of Well Below Land Surface (feet)	---	---	---	---	---	---
6	Static Water Level of Well Below Land Surface (feet)	---	---	---	---	---	---
7	Flow for Spring and Stream (gpm or cfs)	0.24 CFS	0.10 CFS	0.22 CFS	0.59 CFS	0.71 CFS	4.8 CFS
8	Date Above Measurements Made	8-8-98	9-24-98	10-6-98	11-12-98	12-9-98	1-30-99
9	Aquifer/Zone Identification For Well/Spring	---	---	---	---	---	---
10	pH (Standard Units)	7.34	8.30	8.50	7.80	8.70	8.20
11	Total Acidity (mg/l CaCO3)	5.60	0.00	0.00	11.0	0.00	<1.0
12	Total Alkalinity (mg/l CaCO3)	63.0	160.0	150.0	150.0	150.0	54.0
13	Specific Conductivity (umhos/cm at 25° C)	190.0	400.0	400.0	400.0	420.0	240.0
14	Total Dissolved Solids (mg/l)	---	---	---	---	---	---
15	Total Manganese (mg/l)	0.60	<0.02	0.02	<0.02	<0.02	<0.02
16	Total Sulfates (mg/l)	8.40	62.0	65.0	70.0	70.0	41.0
17	Total Iron (mg/l)	0.87	0.08	0.05	0.11	<0.05	<0.05
18	Total Suspended Solids (mg/l)	9.50	<1.0	2.0	<1.0	<1.0	<1.0
19	Total Hardness (mg/l as CaCO3)	70.0	200.0	190.0	190.0	210.0	90.0
20	Nitrates	0.19	0.11	<0.09	<0.09	<0.09	0.24
21	Date Sampled for Analysis	8-8-98	9-24-98	10-6-98	11-12-98	12-9-98	1-30-99
22	Date Last Precipitation Event Occurred	7-30-98	9-22-98	10-4-98	11-10-98	12-9-98	1-23-99

Laboratory Name TRA-DET, INC.
Address P.O. BOX 2019 City WHEELING
State WEST VIRGINIA Zip 26003-0219

ORIGINAL

NOTE: If information required by items 5, 6, and 9 is unobtainable, submit as an addendum to Attachment 14A a statement giving the reasons why the information is unobtainable.
NOTE: For each sample provide data for either item 13 or 14.

D-0425-1

9/88

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECLAMATION

ATTACHMENT 14A
(HYDROLOGIC MEASUREMENTS AND ANALYSES)

APPLICANT BENNOC, INC. (D-0425-1)

1	Identification No. of Sampling Station from Hydrology Map	D-2	D-2	D-2	D-2	D-2	D-2
2	Identification Number 98-	09030	10062	11026	12020	12362	99-01396
3	High (H)/Low (L) Designation (if applicable)		SIX	MONTH	SAMPLING		
4	Surface Elevation for Sampling Station (msl)	920	920	920	920	920	920
5	Depth of Well Below Land Surface (feet)	---	---	---	---	---	---
6	Static Water Level of Well Below Land Surface (feet)	---	---	---	---	---	---
7	Flow for Spring and Stream (gpm or cfs)	2.9 CFS	1.13 CFS	0.47 CFS	2.3 CFS	1.32 CFS	16.3 CFS
8	Date Above Measurements Made	8-30-98	9-30-98	10-29-98	11-28-98	12-17-98	1-27-99
9	Aquifer/Zone Identification For Well/Spring	---	---	---	---	---	---
10	pH (Standard Units)	7.80	8.00	7.80	8.10	7.80	7.70
11	Total Acidity (mg/l CaCO3)	4.90	4.00	4.20	5.90	12.0	4.40
12	Total Alkalinity (mg/l CaCO3)	120.0	140.0	140.0	120.0	120.0	51.0
13	Specific Conductivity (umhos/cm at 25° C)	350.0	140.0	140.0	400.0	410.0	160.0
14	Total Dissolved Solids (mg/l)	---	---	---	---	---	---
15	Total Manganese (mg/l)	0.31	0.04	0.02	0.04	0.04	0.06
16	Total Sulfates (mg/l)	62.0	74.0	100.0	71.0	85.0	32.0
17	Total Iron (mg/l)	0.60	0.23	0.11	0.22	0.17	0.36
18	Total Suspended Solids (mg/l)	4.0	<1.0	<1.0	<1.0	<1.0	4.0
19	Total Hardness (mg/l as CaCO3)	140.0	170.0	200.0	100.0	170.0	60.0
20	Nitrates	0.12	<0.09	<0.09	<0.09	<0.09	0.46
21	Date Sampled for Analysis	8-30-98	9-30-98	10-29-98	11-28-98	12-17-98	1-27-99
22	Date Last Precipitation Event Occurred	8-26-98	9-29-98	10-29-98	11-25-98	12-17-98	1-23-99

Laboratory Name TRA-DET, INC.
Address P.O. BOX 2019 City WHEELING
State WEST VIRGINIA Zip 26003-0219

ORIGINAL

NOTE: If information required by items 5, 6, and 9 is unobtainable, submit as an addendum to Attachment 14A a statement giving the reasons why the information is unobtainable.
NOTE: For each sample provide data for either item 13 or 14.

D0425-1

OH. DEPARTMENT OF NATURAL RESOU S
DIVISION OF RECLAMATION

ATTACHMENT 14
(HYDROLOGIC MEASUREMENTS AND ANALYSES)

Applicant Y & O Coal Company Allison Mine

Identification No. of Sampling Station from Hydrology Map	D-1	D-2	U-2	U-1		
Surface Elevation for Well/Spring	910	840	845	915		
Depth of Well Below Land Surface	N/A	N/A	N/A	N/A		
Static Water Level of Well Below Land Surface	N/A	N/A	N/A	N/A		
Flow for Spring and Streams	(4)	(4)	(4)	(4)		
Date Above Measurements Made	9/13/83	9/13/83	9/13/83	9/13/83		
Lithology of Aquifer for Well/Spring	N/A	N/A	N/A	N/A		
pH (Standard Units)	7.70	7.70	7.78	7.70		
Total Acidity (mg/l of $CaCO_3$)	<1	<1	<1	(4)		
Total Alkalinity (mg/l of $CaCO_3$)	112	112	113	(4)		
Total Manganese (mg/l)	0.48	0.17	0.10	(4)		
Total Iron (mg/l)	0.3	0.6	0.5	0.6		
Dissolved Iron (1) (mg/l)	<0.1	<0.1	<0.1	<0.1		
Total Suspended Solids (1) (mg/l)	83	9.	59	35		
Total Hardness (2) (mg/l of $CaCO_3$)	NR	NR	NR	NR		
Date Sampled for Analysis	9/13/83	9/13/83	9/13/83	9/13/83		

(1) Not required for ground water sampling
(2) Not required for surface water sampling
(3) Well located at individual residence owner unavailable for comment
(4) Data unavailable or unknown

(5) High suspended solids due to sampling procedure

(HYDROLOGIC MEASUREMENTS AND ANALYSES)

APPLICANT BENNOC, INC. (D-0425-1)

1	Identification No. of Sampling Station from Hydrology Map	D-9	D-9	D-10	D-10	D-11	D-11
2	Identification Number 99-	05-784	---	05-785	08-526	05-786	08-527
3	High (H)/Low (L) Designation (if applicable)	H	L	H	L	H	L
4	Surface Elevation for Sampling Station (msl)	930	930	918	918	955	955
5	Depth of Well Below Land Surface (feet)	---	---	---	---	---	---
6	Static Water Level of Well Below Land Surface (feet)	---	---	---	---	---	---
7	Flow for Spring and Stream (gpm or cfs)	.35 CFS	DRY	.96 CFS	.05 CFS	3.0 CFS	.08 CFS
8	Date Above Measurements Made	5-24-99	8-17-99	5-24-99	8-17-99	5-24-99	8-17-99
9	Aquifer/Zone Identification For Well/Spring	---	---	---	---	---	---
10	pH (Standard Units)	7.97		8.03	7.95	7.89	7.73
11	Total Acidity (mg/l CaCO3)	3.60		4.00	10.40	4.40	10.00
12	Total Alkalinity (mg/l CaCO3)	151.60		138.20	165.60	105.00	130.00
13	Specific Conductivity (umhos/cm at 25° C)	410.0		431.0	496	322.0	400
14	Total Dissolved Solids (mg/l)	---		---	---	---	---
15	Total Manganese (mg/l)	<0.02		0.03	<0.02	0.10	<0.02
16	Total Sulfates (mg/l)	34.0		43.0	55.0	25.0	41.0
17	Total Iron (mg/l)	0.34		0.30	0.04	0.26	0.14
18	Total Suspended Solids (mg/l)	14.0		11.0	2.0	10.0	14.0
19	Total Hardness (mg/l as CaCO3)	180.0		166.0	187.0	134.0	151.0
20	Nitrates	0.35		0.40	0.57	0.36	0.64
21	Date Sampled for Analysis	5-24-99		5-24-99	8-17-99	5-24-99	8-17-9
22	Date Last Precipitation Event Occurred	5-24-99	8-15-99	5-24-99	8-15-99	5-24-99	8-15-9

Laboratory Name TRA-DET, INC.
Address P.O. BOX 2019
State WEST VIRGINIA

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City WHEELING
Zip 26003-0219

NOTE: If information required by items 5, 6, and 9 is unobtainable, submit as an addendum to Attachment 14A a statement giving the reasons why the information is unobtainable.

NOTE: For each sample provide data for either item 13 or 14.

ORIGINAL

D0425-3

COLUMBUS

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECLAMATION

Quarterly Monitoring Report Sheet
(Submit in Quadruplicate)

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DIVISION OF MINERAL RESOURCES
CAMBRIDGE

Permittee: **CENTURY MINE**

Permit Location: **D-425**

___X__1st Qtr. ____2nd Qtr. ____3rd Qtr ____4th Qtr

_____Pre-Mining __X__Mining _____Post-Mining
(X appropriate blank for mine status)

Legend
W = Drilled Well (No Log Available)
WL = Drilled Well (Log Available)
DW = Dug Well
DS = Developed Spring
D = Downstream Sampling Station
U = Upstream Sampling Station
P = Water Impoundment
S = Spring (Undeveloped)

Monitoring Site	Static Water Level	Stream or Spring Discharge (cfs/gpm)	Date Measured	pH, Field Standard Units	pH, Lab[H] Standard Units	Total Acidity mg/l as CaCO3	Total Alkalinity mg/l as CaCO3	Total Iron mg/l	Total Manganese mg/l	Total Suspended Solids mg/l	Total Hardness mg/l	Total Sulfate mg/l	Specific Conductance @ 25° C µmho/cm
CMD-1		110 cfs	03-06-12	8.14	8.11	1.44	119	0.068	0.022	5.0	177	65.2	354
CMD-2		12.1 cfs	03-08-12	7.98	8.14	1.61	154	0.068	0.027	0.00	208	562	1300
CMD-2A		14.1 cfs	03-08-12	7.72	8.11	1.55	128	0.066	0.067	0.00	133	61.0	341
CMD-6		221,730 gpd	03-10-12	8.33	8.04	5.82	287	0.178	0.596	0.00	762	3240	5805
CMU-1		105 cfs	03-06-12	8.17	8.11	1.61	127	0.038	0.039	0.00	160	45.0	320
CMU-2		11.6 cfs	03-08-12	7.60	7.98	2.61	125	0.057	0.029	0.00	121	51.7	323
CMU-2A		13.6 cfs	03-08-12	7.30	7.42	2.76	96.6	0.097	0.060	0.00	107	37.5	258

[H] Holding times for preparation or analysis exceeded
[J] Analyte detected below quantitation limits

2014-00657202687

TRADET LABORATORIES
P.O. Box 2019
Wheeling, WV 26003-0219

Phone: (304) 233-9060
Fax: (304) 233-9063
Shipping Address: 8 Industrial Park Drive
Wheeling, WV 26003

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DIVISION OF MINERAL RESOURCES
CAMBRIDGE

LABORATORY ANALYSES

American Energy Corporation
43521 Mayhugh Hill Road Twp. Hwy. 88
Beallsville, OH 43716
Attn: Mr. Fred Blumling

26-Jan-12
Page 1 of 1

By: William Thompson
William Thompson - Lab Manager

Company:	American Energy Corporation	Sampled By:	CSG (BK)
Project Name:	Slurry Line Construction	Date & Time Sampled:	01-10-12 1305
Permit No:	D-0425-23	Date & Time Received:	01-11-12 1425
Source:	CMD-1		
Analysis Number:	12010359		

PARAMETER	CONCENTRATION		QUALIFIER	DATE & TIME ANALYZED	ANALYST	METHOD	PQL	MDL	
Flow	N/A	CFS		01-10-12 1305	CSG (BK)				
Temperature, Field	1.9	°C		01-10-12 1305	CSG (BK)				
pH, Field	7.52	S.U.		01-10-12 1305	CSG (BK)				
pH, Lab	8.31	S.U.	H	01-18-12 0934	WB	4500HB [2]			
Total Acidity (as CaCO3)	ND	mg/L		01-18-12 0934	WB	2310B [2]	0.5	0.17	mg/L
Total Alkalinity (as CaCO3)	130	mg/L		01-20-12 1019	WB	2320B [2]	0.18	0.06	mg/L
Total Iron	0.070	mg/L		01-20-12 1300	BS	E200.7 [3]	0.020	0.00175	mg/L
Total Manganese	0.021	mg/L		01-20-12 1300	BS	E200.7 [3]	0.004	0.00022	mg/L
Total Aluminum	ND	mg/L		01-20-12 1300	BS	E200.7 [3]	0.020	0.00158	mg/L
Total Suspended Solids	ND	mg/L		01-12-12 1210	LW	2540D [2]	30	9.5	mg/L
Hardness (as CaCO3)	185	mg/L		01-20-12 1300	BS	2340 B [1]	0.100	0.0244	mg/L
Sulfate (as SO4)	74.7	mg/L		01-19-12 1145	KW	D516-02 [4]	3.0	0.9	mg/L
Specific Conductance	372	µmhos/cm		01-21-12 1100	LW	120.1 [3]	5.0	1.0	µmhos/cm

cc: Cody Mozena, Coal Services Group, Inc.

MCL – Maximum Contaminant Level
MDL – Minimum Detection Limit
NA – Not Applicable
ND – Not Detected at PQL or MDL
PQL – Practical Quantitation Limit
B – Analyte detected in associated Method Blank

E – Estimated Value above quantitation limits
D - Duplicate not within control limits
H – Holding times for preparation or analysis exceeded
J – Analyte detected below quantitation limits
Q - Quality Control standard exceeds control limits
S – Spike recovery exceeds laboratory control limits

[1] – Standard Methods, 18th Edition
[2] – Standard Methods, 20th Edition
[3] – US EPA
[4] – ASTM
[5] – EPA SW846

COLUMBUS

ET LABORATORIES
. Box 2019
.Wheeling, WV 26003-0219

Phone: (304) 233-9060
Fax: (304) 233-9063
Shipping Address: 8 Industrial Park Drive
Wheeling, WV 26003

LABORATORY ANALYSES

American Energy Corporation
43521 Mayhugh Hill Road Twp. Hwy. 88
Beallsville, OH 43716
Attn: Mr. Fred Blumling

26-Jan-12
Page 1 of 1

By:_____
William Thompson - Lab Manager

Company:	American Energy Corporation	Sampled By:	CSG (BK)
Project Name:	Slurry Line Construction	Date & Time Sampled:	01-10-12 1420
Permit No:	D-0425-23	Date & Time Received:	01-11-12 1425
Source:	CMU-1		
Analysis Number:	12010363		

PARAMETER	CONCENTRATION		QUALIFIER	DATE & TIME ANALYZED	ANALYST	METHOD	PQL	MDL	
Flow	N/A	CFS		01-10-12 1420	CSG (BK)				
Temperature, Field	3.0	°C		01-10-12 1420	CSG (BK)				
pH, Field	7.47	S.U.		01-10-12 1420	CSG (BK)				
pH, Lab	8.29	S.U.	H	01-18-12 0934	WB	4500HB [2]			
Total Acidity (as CaCO3)	0.18	mg/L	J	01-18-12 0934	WB	2310B [2]	0.5	0.17	mg/L
Total Alkalinity (as CaCO3)	126	mg/L		01-20-12 1019	WB	2320B [2]	0.18	0.06	mg/L
Total Iron	0.071	mg/L		01-20-12 1300	BS	E200.7 [3]	0.020	0.00175	mg/L
Total Manganese	0.020	mg/L		01-20-12 1300	BS	E200.7 [3]	0.004	0.00022	mg/L
Total Aluminum	ND	mg/L		01-20-12 1300	BS	E200.7 [3]	0.020	0.00158	mg/L
Total Suspended Solids	ND	mg/L		01-12-12 1210	LW	2540D [2]	15	4.75	mg/L
Hardness (as CaCO3)	182	mg/L		01-20-12 1300	BS	2340 B [1]	0.100	0.0244	mg/L
Sulfate (as SO4)	63.1	mg/L		01-19-12 1145	KW	D516-02 [4]	3.0	0.9	mg/L
Specific Conductance	356	µmhos/cm		01-21-12 1100	LW	120.1 [3]	5.0	1.0	µmhos/cm

cc: Cody Mozena, Coal Services Group, Inc.

MCL – Maximum Contaminant Level
MDL – Minimum Detection Limit
NA – Not Applicable
ND – Not Detected at PQL or MDL
PQL – Practical Quantitation Limit
B – Analyte detected in associated Method Blank

E – Estimated Value above quantitation limits
D - Duplicate not within control limits
H – Holding times for preparation or analysis exceeded
J – Analyte detected below quantitation limits
Q - Quality Control standard exceeds control limits
S – Spike recovery exceeds laboratory control limits

[1] - Standard Methods, 18th Edition
[2] - Standard Methods, 20th Edition
[3] - US EPA
[4] - ASTM
[5] - EPA SW846

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINERAL RESOURCES MANAGEMENT

Quarterly Monitoring Report Sheet
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DIVISION OF MINERAL RESOURCES
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Permittee **American Energy Corp.**, Permit No. **D-0425** **Page 1 of 2**

☐ 1st Quarter, ☒ 2nd Quarter, ☐ 3rd Quarter, ☐ 4th Quarter ("X" appropriate box)

☐ Pre-mining, ☒ Mining, ☐ Postmining ("X" appropriate box for mine status)

Monitoring Site Identification No. (i.e., S-1, W-3)	D-8A	D-10	U-3	U-10	S-23
State Plane X-Y Coordinates	X 2,413,624 Y 695,395	X 2,417,484 Y 696,454	X 2,411,287 Y 693,468	X 2,413,435 Y 691,110	X 2,411,937 Y 696,728
State Whether Site was monitored for Quality, Quantity or Both	BOTH	BOTH	BOTH	BOTH	BOTH
Surface Elevation of Monitoring Site	1080	898	960	942	1125
Depth of Well Below Land Surface (feet)	--	--	--	--	--
Static Water Level of Well Below Land Surface (ft)	--	--	--	--	--
Stream or Spring Discharge (gpm)	4.81 cfs	3.5 cfs	1.2 cfs	2.98 cfs	1.36 gpm
Date Measured	04-20-12	04-20-12	04-20-12	04-20-12	04-20-12
pH (Standard Units)	8.31	8.30	8.16	8.05	8.35
Total Acidity (mg/l $CaCO_3$)	0.00	0.00	2.03	2.82	0.00
Total Alkalinity (mg/l $CaCO_3$)	202.12	204.63	167.45	123.65	584.81
Total Iron (mg/l)	0.10	0.11	0.04	0.06	0.17
Total Manganese (mg/l)	0.05	0.05	0.04	<0.03	0.13
Total Aluminum (mg/l)	0.15	0.13	0.10	0.12	0.15
Total Suspended Solids (mg/l)	<1.0	<1.0	<1.0	<1.0	1.0
Total Hardness (mg/l as $CaCO_3$)	151.0	151.0	135.0	117.0	564
Total Sulfates (mg/l)	237.0	237.0	80.0	33.0	3453.0
Specific Conductance (at 25°C umhos/cm)	1444	1441	431	323	9980
Other: **Lab Id**	12-04-868	12-04-867	12-04-870	12-04-871	12-04-869

JUL 30 2012

Permittee's Signature Ellen M. Greer Date 7-12-12

Laboratory Name **INDUSTRIAL LAB ANALYSIS**

Analyst's Signature B Massim Date 07-07-12

Revised 04/06
DNR-744-9057

ORIGINAL

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINERAL RESOURCES MANAGEMENT

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Permittee **American Energy Corp.**, Permit No. **D-0425** **Page 1 of 2**

☐ 1st Quarter, ☐ 2nd Quarter, ☒ 3rd Quarter, ☐ 4th Quarter ("X" appropriate box)

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Monitoring Site Identification No. (i.e., S-1, W-3)	D-8A	D-10	U-3	U-10	S-23
State Plane X-Y Coordinates	X 2,413,624 Y 695,395	X 2,417,484 Y 696,454	X 2,411,287 Y 693,468	X 2,413,435 Y 691,110	X 2,411,937 Y 696,728
State Whether Site was monitored for Quality, Quantity or Both	BOTH	BOTH	BOTH	BOTH	BOTH
Surface Elevation of Monitoring Site	1080	898	960	942	1125
Depth of Well Below Land Surface (feet)	--	--	--	--	--
Static Water Level of Well Below Land Surface (ft)	--	--	--	--	--
Stream or Spring Discharge (gpm)	0.3 cfs	3.24 cfs	0.4 cfs	1.8 cfs	<1 gpm
Date Measured	08-28-12	08-28-12	08-28-12	08-28-12	08-28-12
pH (Standard Units)	8.11	8.20	7.55	7.64	8.27
Total Acidity (mg/l $CaCO_3$)	14.04	3.61	7.47	9.01	11.32
Total Alkalinity (mg/l $CaCO_3$)	547.53	230.76	231.02	172.03	331.77
Total Iron (mg/l)	0.03	0.03	<0.03	0.05	0.08
Total Manganese (mg/l)	0.05	<0.03	<0.03	0.04	<0.03
Total Aluminum (mg/l)	0.03	0.05	0.03	0.04	0.04
Total Suspended Solids (mg/l)	6.0	1.0	<1.0	3.0	1.0
Total Hardness (mg/l as $CaCO_3$)	762.0	447.0	142.0	145.0	821.0
Total Sulfates (mg/l)	3155.0	1599.0	64.0	42.0	2933.0
Specific Conductance (at 25°C umhos/cm)	11560	5100	603	455	9280
Other: **Lab Id**	12-08-888	12-08-887	12-08-890	12-08-891	12-08-889

Permittee's Signature Ellen M. Green Date 9-26-12

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Laboratory Name **INDUSTRIAL LAB ANALYSIS**

Analyst's Signature B Manian Date 09-21-12

Revised 04/06
DNR-744-9057

TRADET LABORATORIES
P.O. Box 2019
Wheeling, WV 26003-0219

Phone: (304) 233-9060
Fax: (304) 233-9063
Shipping Address: 8 Industrial Park Drive
Wheeling, WV 26003

LABORATORY ANALYSES

American Energy Corporation
43521 Mayhugh Hill Road Twp. Hwy. 88
Beallsville, OH 43716
Attn: Mr. Fred Blumling

28-Mar-13
Page 1 of 1

By: _____
TraDet Laboratories

Company:	American Energy Corporation	Sampled By:	CSG (CL)
Project Name:	Slurry Line Construction	Date & Time Sampled:	03-20-13 1240
Permit No:	D-0425-23	Date & Time Received:	03-21-13 0903
Source:	CMD-1		
Analysis Number:	13030462		

PARAMETER	CONCENTRATION		QUALIFIER	DATE & TIME ANALYZED	ANALYST	METHOD	PQL	MDL	
Flow	67.36	CFS		03-20-13 1240	CSG (CL)				
Temperature, Field	5.2	°C		03-20-13 1240	CSG (CL)				
pH, Field	7.58	S.U.		03-20-13 1240	CSG (CL)				
pH, Lab	8.23	S.U.	H	03-25-13 1158	WB	4500HB [2]			
Total Acidity (as CaCO3)	0.40	mg/L	J	03-25-13 1158	WB	2310B [2]	0.69	0.23	mg/L
Total Alkalinity (as CaCO3)	98.8	mg/L		03-22-13 1030	WB	2320B [2]	0.21	0.07	mg/L
Total Iron	0.237	mg/L		03-22-13 1600	BS	E200.7 [3]	0.020	0.00175	mg/L
Total Manganese	0.028	mg/L		03-22-13 1600	BS	E200.7 [3]	0.004	0.00022	mg/L
Total Aluminum	0.140	mg/L		03-22-13 1600	BS	E200.7 [3]	0.020	0.00158	mg/L
Total Suspended Solids	4.0	mg/L	J	03-22-13 1600	KW	2540D [2]	10	2.5	mg/L
Hardness (as CaCO3)	144	mg/L		03-22-13 1600	BS	2340 B [1]	0.100	0.0244	mg/L
Sulfate (as SO4)	430	mg/L		03-21-13 1337	LW	E300.0 [3]	2.0	0.039	mg/L
Specific Conductance	318	µmhos/cm		03-22-13 1050	LW	120.1 [3]	1.2	0.41	µmhos/cm

cc: Mike Kelley, Coal Services Group, Inc.

MCL – Maximum Contaminant Level
MDL – Minimum Detection Limit
NA – Not Applicable
ND – Not Detected at PQL or MDL
PQL – Practical Quantitation Limit
B – Analyte detected in associated Method Blank

E – Estimated Value above quantitation limits
D - Duplicate not within control limits
H – Holding times for preparation or analysis exceeded
J – Analyte detected below quantitation limits
Q - Quality Control standard exceeds control limits
S – Spike recovery exceeds laboratory control limits

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TRADET LABORATORIES
P.O. Box 2019
Wheeling, WV 26003-0219

Phone: (304) 233-9060
Fax: (304) 233-9063
Shipping Address: 8 Industrial Park Drive
Wheeling, WV 26003

LABORATORY ANALYSES

American Energy Corporation
43521 Mayhugh Hill Road Twp. Hwy. 88
Beallsville, OH 43716
Attn: Mr. Fred Blumling

28-Mar-13

By: RPW
TraDet Laboratories

Company:	American Energy Corporation	Sampled By:	CSG (CL)
Project Name:	Slurry Line Construction	Date & Time Sampled:	03-20-13 1215
Permit No:	D-0425-23	Date & Time Received:	03-21-13 0903
Source:	CMU-1		
Analysis Number:	13030463		

PARAMETER	CONCENTRATION		QUALIFIER	DATE & TIME ANALYZED	ANALYST	METHOD	PQL	MDL	
Flow	77.21	CFS		03-20-13 1215	CSG (CL)				
Temperature, Field	4.5	°C		03-20-13 1215	CSG (CL)				
pH, Field	7.92	S.U.		03-20-13 1215	CSG (CL)				
pH, Lab	8.20	S.U.	H	03-25-13 1158	WB	4500HB [2]			
Total Acidity (as CaCO3)	0.48	mg/L	J	03-25-13 1158	WB	2310B [2]	0.69	0.23	mg/L
Total Alkalinity (as CaCO3)	100	mg/L		03-22-13 1030	WB	2320B [2]	0.21	0.07	mg/L
Total Iron	0.210	mg/L		03-22-13 1600	BS	E200.7 [3]	0.020	0.00175	mg/L
Total Manganese	0.029	mg/L		03-22-13 1600	BS	E200.7 [3]	0.004	0.00022	mg/L
Total Aluminum	0.171	mg/L		03-22-13 1600	BS	E200.7 [3]	0.020	0.00158	mg/L
Total Suspended Solids	4.0	mg/L	J	03-22-13 1600	KW	2540D [2]	10	2.5	mg/L
Hardness (as CaCO3)	143	mg/L		03-22-13 1600	BS	2340 B [1]	0.100	0.0244	mg/L
Sulfate (as SO4)	40.9	mg/L		03-21-13 1351	LW	E300.0 [3]	2.0	0.039	mg/L
Specific Conductance	312	µmhos/cm		03-22-13 1050	LW	120.1 [3]	1.2	0.41	µmhos/cm

c: Mike Kelley, Coal Services Group, Inc.

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NA – Not Applicable
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PQL – Practical Quantitation Limit
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DIVISION OF MINES AND RECLAMATION

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Quarterly Monitoring Report Sheet
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Permittee: American Energy Corporation Permit Number: D-0425

X 1st Qtr., ____ 2nd Qtr., ____ 3rd Qtr., ____ 4th Qtr., (X appropriate blank)

____ Premining X Mining ____ Postmining (X appropriate blank for mine status)

Monitoring Site ID No. (e.g. S-1, W-3)	D-8A	D-10	U-3	U-10	S-23	
Surface Elevation of Monitoring Site	1080	898	960	942	1125	
Depth of Well Below Land Surface (Feet)	----	----	----	----		
Static Water Level of Well Below Land Surface (feet)	----	----	----	----		
Stream or Spring Discharge (cfs or gpm)	1.87 gpm	4.44 cfs	4.80 cfs	0.50 cfs	<0.01 cfs	
Date Measured	02/26/13	02/26/13	02/26/13	02/26/13	02/26/13	
pH (Standard Units)	6.20[H]	8.13[H]	7.90[H]	8.11[H]	8.01[H]	
Total Acidity (mg/L $CaCO_3$)	93.8	1.45	2.14	1.75	22.61	
Total Alkalinity (mg/L $CaCO_3$)	53.9	125	91.7	129	803	
Total Iron (mg/L)	81.3	0.092	0.188	0.139	4.84	
Total Manganese (mg/L)	4.65	0.049	0.057	0.008	1.70	
Total Suspended Solids (mg/L)	28.0	3.0[J]	4.0[J]	8.0[J]	35.0	
Total Hardness (mg/L $CaCO_3$)	1800	180	104	220	1170	
Total Sulfates (mg/L)	2300	264	41.2	90.2	5770	
Specific Conductance (at 25°C in µmhos/cm)	10,900	911	296	450	13,500	

[H] Holding times for preparation or analysis exceeded
[J] Analyte detected below quantitation limits
Minimum Detection Limit for Flow = 0.01 GPM
Minimum Detection Limit for Flow = 0.01 CFS

Permittee's Signature: Michael Kelley Date: 4-15-13

Laboratory Name: TraDet Laboratories

Analyst's Signature: [illegible] Date: April 1, 2013

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COLUMBUS

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECLAMATION

Quarterly Monitoring Report Sheet
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Permittee: **CENTURY MINE** Permit Location: **D-425**

___X__1st Qtr. ____2nd Qtr. ____3rd Qtr ____4th Qtr

_____Pre-Mining __X__Mining _____Post-Mining
(X appropriate blank for mine status)

Legend
W = Drilled Well (No Log Available)
WL = Drilled Well (Log Available)
DW = Dug Well
DS = Developed Spring
D = Downstream Sampling Station
U = Upstream Sampling Station
P = Water Impoundment
S = Spring (Undeveloped)

Monitoring Site	Static Water Level	Stream or Spring Discharge (cfs/gpm)	Date Measured	pH, Field Standard Units	pH, Lab[H] Standard Units	Total Acidity mg/l as CaCO3	Total Alkalinity mg/l as CaCO3	Total Iron mg/l	Total Manganese mg/l	Total Suspended Solids mg/l	Total Hardness mg/l	Total Sulfate mg/l	Specific Conductance @ 25° C µmho/cm
D-8A		1.87 gpm	02-26-13	6.26	6.20	93.8	53.9	81.3	4.65	28.0	1800	2300	10,900
D-10		4.44 cfs	02-26-13	6.41	8.13	1.45	125	0.092	0.049	3.0	180	264	911
U-3		4.80 cfs	02-26-13	6.89	7.90	2.14	91.7	0.188	0.057	4.0	104	41.2	296
U-10		0.50 cfs	02-26-13	6.96	8.11	1.75	129	0.139	0.008	8.0	220	90.2	450
S-23		<0.01 cfs	02-26-13	6.53	8.01	22.61	803	4.84	1.70	35.0	1170	5770	13,500
W-2	54'		02-26-13	7.16	8.04	4.27	207	0.138	0.013	3.0	274	75.2	570
W-7		Demolished	02-26-13	-	-	-	-	-	-	-	-	-	-

Permitee Signature: Michael Kelley Date: 4-15-13

Laboratory Name: TraDet Laboratories Inc.

Analyst's Signature: See Attached Analysis Date: April 1, 2013

H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
Minimum Detection Limit for Flow = 0.01 GPM
Minimum Detection Limit for Flow = 0.01 CFS

2014-00657202687