Appendix 6-2

Acid-Base Accountability, Report Of Results

REPORT OF RESULTS

OF

ACID-BASE ACCOUNTABILITY

FOR

STANDARD LABORATORIES, INC.

LAB NUMBERS

S-5604 THRU S-5607

STANDARD LABORATORIES, INC.
3322 PENNSYLVANIA AVENUE
CHARLESTON, WEST VIRGINIA 25302

JULY 16, 1981

STANDARD LABORATORIES, INC.
? Pennsylvania Ave., Charleston, W. Va. 25302 304-343-5173

DESCRIPTION OF TEST

THE FOLLOWING TEST PROGRAM WAS PERFORMED FOR STANDARD LABORATORIES, INC., UTAH IN ACCORDANCE WITH THE VERBAL INSTRUCTIONS FROM W. WALLEN TO STEPHEN STEPTO. THE FOUR SOIL SAMPLES DESCRIBED IN THIS REPORT (LAB NUMBERS S-5604 THRU S-5607) WERE DELIVERED TO STANDARD LABORATORIES, INC. CHARLESTON, ON JUNE 23, 1981.

TESTS PERFORMED ON EACH SAMPLE SEPARATELY WERE AS FOLLOWS:

1. A LOG WAS PREPARED DETAILING THE ROCK TYPE AND COLOR OF THE SAMPLE.

2. THE SAMPLE WAS ANALYZED FOR FIZZ, PERCENT SULFUR, PASTE PH AND NEUTRALIZATION POTENTIAL.

3. THE ANALYSES IN ITEM #2 WERE USED TO COMPUTE A COMPLETE ACID-BASE ACCOUNTABILITY.

4. THE SAMPLE WAS ANALYZED FOR % PYRITE.

5. AN ALKALINITY WAS DETERMINED ON THE WATER SHAKE EXTRACT OF THE SAMPLE.

6. % CLAY WAS DETERMINED ON LAB NUMBERS S-5605 AND S-5607.

RESPECTFULLY SUBMITTED,

STANDARD LABORATORIES, INC.

Marvin C Davis Jr.

MARVIN C. DAVIS, JR.
ASSISTANT MANAGER

STANDARD LABORATORIES, INC.
ınnsylvania Ave., Charleston, W. Va. 25302 304-343-5173

CORE LOG

FOR: STANDARD LABORATORIES, INC.
P.O. BOX 1140
HUNTINGTON, UTAH 84528

LAB NO.	SAMPLE ID.	ROCK TYPE	COLOR
S-5604	19305	VERY FINE GRAIN SANDSTONE WITH COAL STREAKS	10YR
		DARK GREY - CALCAREOUS	
S-5605	19306	FINE GRAIN SANDSTONE WITH COAL STREAKS	10YR
		DARK GREY	
S-5606	19307	MUDSTONE WITH FINE GRAIN SANDSTONE AND COAL	10YR
		STREAKS DARK GREY - CALCAREOUS	
·5607	19308	MUDSTONE WITH FINE GRAIN SANDSTONE AND COAL	10YR
		STREAKS DARK GREY	

STANDARD LABORATORIES, INC.
2 Pennsylvania Ave., Charleston, W. Va. 25302 304-343-5173

ACID-BASE ACCOUNTABILITY

FOR: STANDARD LABORATORIES, INC.
P.O. BOX 1140
HUNTINGTON, UTAH 84528

$CaCO_3$ EQUIV. (TONS/1000 TONS OF MATERIAL)

LAB NO.	SAMPLE ID	FIZZ	% SUL.	MAX FROM % SUL.	AMOUNT PRESENT	MAX NEEDED PH 7	EXCESS	PA
S-5604	19305	4	0.050	1.56	109.54	---	107.98	7.
S-5605	19306	0	0.251	7.83	0.09	7.74	---	3.
S-5606	19307	4	0.153	4.79	169.09	---	164.30	7.
S-5607	19308	0	0.376	11.76	-1.31	13.07	---	3
S-5604			*0.03	**0.94	109.54	---	***108.60	
5605			*0.06	**1.87	0.09	**1.78	---	
S-5606			*0.09	**2.81	169.09	---	***166.28	
S-5607			*0.07	**2.19	-1.31	**4.50	---	

* % PYRITE

** CALCULATED USING PYRITIC SULFUR

STANDARD LABORATORIES, INC.
3322 Pennsylvania Ave., Charleston, W. Va. 25302 304-343-5173

FOR: STANDARD LABORATORIES, INC.
P.O. BOX 1140
HUNTINGTON, UTAH 84528

SAMPLED BY: YOURSELVES/W. WALLEN

DATE REC'D: 6/23/81

LAB NO.	SAMPLE ID:	% PYRITE	% CLAY	WATER SHAKE EXTRACT ALKALINITY MG/L
S-5604	19305	0.03	---	63.30
S-5605	19306	0.06	9.5	4.00
S-5606	19307	0.09	---	87.40
S-5607	19308	0.07	10.5	0.00

ACIDITY-TOXICITY
COAL SAMPLE
TOP, MIDDLE, BOTTOM
COMPOSITE

ACZ Inc

FACSIMILE REQUEST FORM 5-30-86

Steamboat Springs, Colorado 80477
(303) 879-6260 - Office
(303) 879-3631 - Facsimile Machine

TO: Andy King
Gemwal

Fax (Telephone) No.: 1-801-532-7840

FROM: Ralph Spalier
ACZ INC. Laboratory Division

Telephone No.:

DATE: 6/9/86

NUMBER OF PAGES (including this cover sheet): 2

CHARGE NO.: LAB

COMMENTS/NOTES:

IF YOU DO NOT RECEIVE LEGIBLE COPIES OF ALL PAGES, PLEASE CALL BACK AS SOON AS POSSIBLE.

ACI INC./LABORATORY DIVISION
COAL ANALYSIS REPORT

Report Date: June 4, 1986
Date Received: May 29, 1986

Client: Genwal Coal Company
816 Castle Heights Avenue
Price, Utah 84501

Attn: Mr. Andy King

LAB NO.	SAMPLE I.D.	SAMPLE DATE	Saturation %	pH 1 (units)	Conductivity mmhos/cm @ 25 C	Calcium meq/l	Magnesium meq/l	Sodium meq/l	SAR	Boron 2 mg/kg	Selenium 2 mg/kg	Combustible Solids %	Neutralization Potential as % CaCO3	Total Sulfur %	Acid Base Potential Tons CaCO3/1000 Tons
B6-6670-Coal	Coal Sample	05/29/86	61	7.4	0.83	4.20	2.97	3.46	1.83	1.30	-0.01	91.0	0.7	0.58	-11

1 Saturated Paste Extraction 2 Hot Water Extraction

Ralph V. Poulsen

Ralph V. Poulsen, Director

Appendix 6-2

Acid-Base Accountability, Report Of Results

TABLE 1

SUMMARY OF ROOF AND FLOOR SAMPLES ANALYTICAL RESULTS
GENWAL COAL COMPANY

Constituent	1st Right XC-38 Roof	1st Right XC-38 Floor	1st North XC-35 Roof	1st North XC-35 Floor	Main West XC-83 Roof	Main West XC-83 Floor
pH (pH units)	8.0	8.1	8.1	8.2	8.0	8.1
Conductivity (mmhos/cm)	1.6	1.53	1.34	1.39	1.55	1.47
Total Available Selenium (mg/kg)	0.10	0.02	0.02	0.04	0.02	0.06
Total Available Boron (mg/kg)	0.33	0.12	0.07	0.19	0.01	0.17
Sodium Adsorption Ratio (SAR)	0.75	1.18	1.04	0.96	1.06	0.9
Non-Sulfate Sulfur Percentage	0.28	0.21	0.21	0.34	0.27	0.44
Maximum Acid Potential (tons $CaCO_3$/1000 tons)	2.81	0.00	0.00	0.00	0.00	0.00
Neutralization Potential (tons $CaCO_3$/1000 tons)	522	510	519	517	514	518
Acid-Base Potential (tons $CaCO_3$/1000 tons)	519	510	519	517	514	518

Note: All samples collected on May 4, 1994.

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • TEL: 708-953-9300 FAX: 708-953-9306

INCE 1908

Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2436

June 7, 1994

GENWAL COAL CO.
P.O. BOX 1201
HUNTINGTON UTAH 84528

Sample identification by
GENWAL COAL CO.

Kind of sample reported to us: Rock

1st Right XC-38 Floor
1 Bag

Sample taken at: Genwal

Sample taken by: Genwal

Date sampled: May 4, 1994

Date received: May 4, 1994

ANALYSIS RUN AT IML, SHERIDAN, WY

Analysis report no. 59-170083

SOIL ANALYSIS

pH	8.1 units
Conductivity	1.53mmhos/cm
Saturation %	21.4

PARTICLE SIZE ANALYSIS

% Sand	71.2
% Silt	25.6
% Clay	3.2
TEXTURE	Sandy Loam

SOLUBLE CATIONS

Calcium	2.53 meq/l
Magnesium	10.0 meq/l
Sodium	2.98 meq/l

Sodium Adsorption Ratio	1.18
Exchangeable Sodium Percentage	17.4
Non-Sulfate Sulfur Percentage	0.21

Rock Fragments	100. %
Total Nitrogen	0.02 %
Nitrate-nitrogen	1.42 mg/kg
Organic Carbon	1.2 %

Total Available Selenium
0.02 mg/kg

Total Available Boron
0.12 mg/kg

Available Water Capacity
10.5 (1/3)
3.3 (15)

ACID BASE POTENTIAL

Maximum Acid Potential	0.00	tons $CaCO_3$/ 1000 tons
Neutralization Potential	510.	tons $CaCO_3$/ 1000 tons
Acid-Base Potential	510.	tons $CaCO_3$/ 1000 tons

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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TEL: (801) 653-2311
FAX: (801) 653-2436

June 7, 1994

GENWAL COAL CO.
P.O. BOX 1201
HUNTINGTON UTAH 84528

Sample identification by
GENWAL COAL CO.

Kind of sample reported to us: Rock

1st North XC-35 Roof
1 Bag

Sample taken at: Genwal

Sample taken by: Genwal

Date sampled: May 4, 1994

Date received: May 4, 1994

ANALYSIS RUN AT IML, SHERIDAN, WY

Analysis report no. 59-170084

SOIL ANALYSIS

pH	8.1 units
Conductivity	1.34mmhos/cm
Saturation %	21.4

PARTICLE SIZE ANALYSIS

% Sand	69.2
% Silt	25.6
% Clay	5.2
TEXTURE	Sandy Loam

SOLUBLE CATIONS

Calcium	2.90 meq/l
Magnesium	7.85 meq/l
Sodium	2.42 meq/l

Sodium Adsorption Ratio	1.04
Exchangeable Sodium Percentage	23.5
Non-Sulfate Sulfur Percentage	0.21

Rock Fragments	100. %
Total Nitrogen	0.02 %
Nitrate-nitrogen	1.14 mg/kg
Organic Carbon	0.9 %

Total Available Selenium
0.02 mg/kg

Total Available Boron
0.07 mg/kg

Available Water Capacity
12.0 (1/3)
2.2 (15)

ACID BASE POTENTIAL

Maximum Acid Potential	0.00	tons CaCO3/ 1000 tons
Neutralization Potential	519.	tons CaCO3/ 1000 tons
Acid-Base Potential	519.	tons CaCO3/ 1000 tons

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2438

June 7, 1994

GENWAL COAL CO.
P.O. BOX 1201
HUNTINGTON UTAH 84528

Sample identification by
GENWAL COAL CO.

Kind of sample reported to us: Rock

1st North XC-35 Floor
1 Bag

Sample taken at: Genwal

Sample taken by: Genwal

Date sampled: May 4, 1994

Date received: May 4, 1994

ANALYSIS RUN AT IML, SHERIDAN, WY

Analysis report no. 59-170085

SOIL ANALYSIS

pH	8.2 units
Conductivity	1.39mmhos/cm
Saturation %	22.5

PARTICLE SIZE ANALYSIS

% Sand	68.2
% Silt	26.6
% Clay	5.2
TEXTURE	Sandy Loam

SOLUBLE CATIONS

Calcium	3.47 meq/l
Magnesium	8.13 meq/l
Sodium	2.32 meq/l

Sodium Adsorption Ratio	0.96
Exchangeable Sodium Percentage	26.2
Non-Sulfate Sulfur Percentage	0.34

Rock Fragments	100. %
Total Nitrogen	0.02 %
Nitrate-nitrogen	1.90 mg/kg
Organic Carbon	1.0 %

Total Available Selenium
0.04 mg/kg

Total Available Boron
0.18 mg/kg

Available Water Capacity
13.6 (1/3)
2.0 (15)

ACID BASE POTENTIAL

Maximum Acid Potential	0.00	tons $CaCO_3$/ 1000 tons
Neutralization Potential	517.	tons $CaCO_3$/ 1000 tons
Acid-Base Potential	517.	tons $CaCO_3$/ 1000 tons

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
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P.O. BOX 1020, HUNTINGTON, UT 84528
TEL: (801) 653-2311
FAX: (801) 653-2438

June 7, 1994

GENWAL COAL CO.
P.O. BOX 1201
HUNTINGTON UTAH 84528

Sample identification by
GENWAL COAL CO.

Kind of sample reported to us: Rock

Main West XC-83 Roof
1 Bag

Sample taken at: Genwal

Sample taken by: Genwal

Date sampled: May 4, 1994

Date received: May 4, 1994

ANALYSIS RUN AT IML, SHERIDAN, WY

Analysis report no. 59-170086

SOIL ANALYSIS

pH	8.0 units
Conductivity	1.55mmhos/cm
Saturation %	23.0

PARTICLE SIZE ANALYSIS

% Sand	72.2
% Silt	23.6
% Clay	4.2
TEXTURE	Sandy Loam

SOLUBLE CATIONS

Calcium	3.49 meq/l
Magnesium	9.47 meq/l
Sodium	2.70 meq/l

Sodium Adsorption Ratio	1.06
Exchangeable Sodium Percentage	6.79
Non-Sulfate Sulfur Percentage	0.27

Rock Fragments	100. %
Total Nitrogen	0.02 %
Nitrate-nitrogen	1.62 mg/kg
Organic Carbon	0.9 %

Total Available Selenium
0.02 mg/kg

Total Available Boron
0.01 mg/kg

Available Water Capacity
12.4 (1/3)
2.2 (15)

ACID BASE POTENTIAL

Maximum Acid Potential	0.00	tons $CaCO_3$/ 1000 tons
Neutralization Potential	514.	tons $CaCO_3$/ 1000 tons
Acid-Base Potential	514.	tons $CaCO_3$/ 1000 tons

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory

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TEL: (801) 653-2311
FAX: (801) 653-2436

June 7, 1994

GENWAL COAL CO.
P.O. BOX 1201
HUNTINGTON UTAH 84528

Sample identification by
GENWAL COAL CO.

Kind of sample reported to us: Rock

Main West XC-83 Floor
1 Bag

Sample taken at: Genwal

Sample taken by: Genwal

Date sampled: May 4, 1994

Date received: May 4, 1994

ANALYSIS RUN AT IML, SHERIDAN, WY

Analysis report no. 59-170087

SOIL ANALYSIS

pH	8.1 units
Conductivity	1.47mmhos/cm
Saturation %	22.4

PARTICLE SIZE ANALYSIS

% Sand	56.2
% Silt	26.6
% Clay	7.2
TEXTURE	Sandy Loam

SOLUBLE CATIONS

Calcium	4.03 meq/l
Magnesium	9.13 meq/l
Sodium	2.31 meq/l

Sodium Adsorption Ratio	0.90
Exchangeable Sodium Percentage	17.3
Non-Sulfate Sulfur Percentage	0.44

Rock Fragments	100. %
Total Nitrogen	0.02 %
Nitrate-nitrogen	1.36 mg/kg
Organic Carbon	1.1 %

Total Available Selenium
0.06 mg/kg

Total Available Boron
0.17 mg/kg

Available Water Capacity
11.0 (1/3)
2.4 (15)

ACID BASE POTENTIAL

Maximum Acid Potential	0.00	tons $CaCO_3$/ 1000 tons
Neutralization Potential	518.	tons $CaCO_3$/ 1000 tons
Acid-Base Potential	518.	tons $CaCO_3$/ 1000 tons

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Huntington Laboratory