

0042

PRICE RIVER COAL COMPANY

P.O. BOX 629 HELPER, UTAH 84526 (801) 472-3411

To Sue

CERTIFIED RECEIPT REQUESTED
Certified No. 562087

RECEIVED

APR 9 1984

DIVISION OF
OIL, GAS & MINING

March 16, 1984

Mr. Jim Smith, Mine Land Coordinator
Division of Oil Gas and Mining
4241 State Office Building
Salt Lake City, UT 84114

JIM
APR 10 1984

Re: Reclamation in Hardscrabble Canyon-
Goose Island Reclamation Project

Dear Jim:

Price River Coal Company is committed to commencing reclamation activities this year on about 6.5 acres of upper Hardscrabble Canyon known as the Goose Island area. The general goal is to establish a self-sustaining, soil stabilizing vegetated area which achieves the post mine land use. The accomplishment of this goal is related to specific needs for this site. Such needs are a combination of regulatory requirements and the continued operational requirements of Price River Coal Company. These are:

1. Re-establishment of the apparent pre-mining drainage pattern.
2. Covering refuse material with a suitable growth medium.
3. Backfilling cuts to the extent possible.
4. Erosion and sediment control during plant establishment.
5. Maintaining access to PRCC's substation for both vehicles and power lines for the life of the mine.
6. Maintaining permanent up-canyon access for the post mining land use; grazing.

So far, this discussion is completely within the framework of our pending reclamation plan. However, the achievement of the stated needs and goals requires some clarifications, modifications, and perhaps, variances.

The first is based upon the requirements of UMC 817.85(d). Four feet of material is mandatory for covering refuse piles unless the refuse is shown to be non-acid and non-toxic and will pose no threat to revegetation success. Chemical tests have been conducted. Copies are attached which seem to indicate that no toxicity problem exists. As a result, PRCC wishes to propose that a variance be granted allowing a reduction of covering material to a depth of 1.5 feet; 6 inches of which would be topsoil. The



material to be used for primary covering is on site and is a sandy waste rock (see attached construction drawing HCE-100, et al) similar to the Crandall Canyon shaft muck. Chemical and physical tests recently performed on this material are also attached.

The second concern is related to acquisition of topsoil. We had originally proposed to haul in needed topsoil. We had overlooked on-site availability. Suitable soil materials exist within reasonable proximity as shown on construction drawings HCE-101. The area designated for topsoil borrow is comprised of two storage pads developed prior to 1977. Removed soils were merely sidecast and remain accessible. Some interpad zones have not been disturbed. The material available is a somewhat weathered toe of slope colluvium. It is fairly rocky but the larger boulders will provide an on-site source for needed riprap. We feel this is the best material available and wish for your concurrence in the form of a minor modification.

The third point to be negotiated relates to the requirement in UMC 817.46(u) for the retention of sediment ponds until after an area has been vegetated and when the runoff meets water quality standards. The problem we have with this, in our situation, is apparent through review of the attached construction plans. The stream channel cannot be re-established unless the pond is eliminated. Should there be any way to retain the pond it would have to be enlarged by a factor of 10+ since proper backfilling would increase its drainage area.

PRCC requests a variance in the nature of a small area exception and proposes the use of alternative methods to minimize erosion and sedimentation. Our primary defense against erosion would be cross-contour mulch crimping. We also will install straw dikes at intervals in channels and use silt fence in critical areas.

It is worthy of noting that, in reference to water quality standards for TSS, natural undisturbed drainages do not often comply and during a storm or snow melt never do! I am concerned that a strict interpretation of UMC817.46(u) will prevent any bond releases in Utah.

The last items to discuss are depicted on HCE-101; a temporary ephemeral stream crossing and on HCE-108; a permanent ephemeral stream crossing. The temporary crossing is to access the site for maintenance and is designed to pass the 10-year, 24-hour storm.

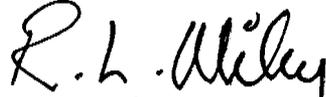
The drainage area to this point is 359.2 acres which would produce about 452 cfs. Each 60" cmp could safely pass about 250 cfs with the 10 feet of head shown on HCE-101, Detail 1. The permanent crossing will be riprapped with 6" minus cobbles.

I would like to meet with you and your staff at your earliest convenience to further discuss and resolve these matters. Please suggest a time for such a meeting.

We must begin reclamation activities by July of this year if we are to meet our permitting commitments.

Very truly yours,

PRICE RIVER COAL COMPANY



Rob L. Wiley
Environmental Engineer

RLW:jp

Enclosures

cc: K. Hutchinson
G. Cook

COMPARISON OF CHEMICAL ANALYSES OF COAL REFUSE AND ROCK WASTE IN HARDSCRABBLE CANYON
AT GOOSE ISLAND

Description of Material

Coal Refuse: Deposited at location during operation of Diamanti coal tippie
(1950 - 1975) - coal fines, rock fines, rock boulders
Rock is from No. 5 Mine - Texture: sand - sandy

Rock Waste: Deposited during 1978 - 1979 by Braztah Corporation from No. 3 Mine
floor for purpose of refuse covering material - Texture: sand

Sample Dates =	MATERIAL: COAL REFUSE					MATERIAL: ROCK WASTE	
	1-25-80	6-2-82	4-25-83		2-29-84	4-25-83	
			#5 Roof	#5 Floor		#3 Mine Floor	2-29-84
AS	0.011	--	0.001	0.001	--	0.001	--
Se	0.002	--	0.003	0.003	--	0.003	--
Hg	0.04	--	0.0002	0.0002	--	0.001	--
Cd	0.004	--	0.005	0.005	--	0.005	--
Pd	0.06	--	0.05	0.05	--	0.05	--
Cr	0.01	--	0.005	0.005	--	0.005	--
Ag	0.01	--	0.004	0.004	--	0.004	--
Ba	0.8	--	0.27	0.25	--	0.16	--
K	--	0.22	--	--	--	--	--
Na	--	0.34	5.5	1.9	--	42	--
Ca	--	37.0	80	7.1	--	22	--
Mg	--	2.18	5.5	1.9	--	9.8	--
B	--	200.4	--	--	--	--	--
CL	--	0.15	--	--	--	--	--
SO ₄	--	1.35	--	--	--	--	--
HCO ₃	--	0.11	--	--	--	--	--
%K	--	0.22	--	--	--	--	--
NO ₃ -N	--	0.85	--	--	--	--	--
P	--	4.1	--	--	--	--	--
Organic Matter %	--	5.4	--	--	--	--	--
pH	--	8.45	--	--	7.7	--	--
EC	--	29.5 29.5	--	--	--	--	--
SAR	--	0.24	0.96	2.4	3.85	1.87	1.67
S-Tot	--	--	0.11	0.07	0.18	0.07	0.31
ALK	--	--	193	35	101	28	55
Salinity	--	--	408 (Mg/L)	510 (Mg/L)	0.05 (%)	281 (Mg/L)	0.20 (%)
Acid	0	--	--	--	0	--	--
Spec.Cond.	--	--	637	--	820	439	3,200

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (312) 953-9300

ROBERT L. TAYLOR, Ph.D.
MANAGER
INSTRUMENTAL ANALYSIS DIVISION



PLEASE ADDRESS ALL CORRESPONDENCE TO:
490 ORCHARD ST., GOLDEN, CO 80401
OFFICE TEL. (303) 278-9621

February 29, 1984

Jack Blair
C T & E
224 South Carbon Avenue
Price, UT 84501

PRICE RIVER COAL CO.

57-15012 #1 Coal refuse, Goose Island

RE: IAD #97-N805-335-02

57-15013 #2 Rock Waste

Sampled 2-4-84

Analytical Report

Two soil samples were received for analysis on February 21, 1984. These samples were assigned our IAD identification #97-N805-335-02.

Textural Analysis was performed in accordance with the procedure of ASTM, Part 19, Method D422. The results of these determinations are presented in Table No. I and are reported in weight percent (Wt %) on an "as received" basis.

Alkalinity, Salinity, Specific Conductance, pH and Sodium Adsorption Ratio (SAR) were determined on the saturated paste extract in accordance with the procedures of Handbook No. 60, USDA, August, 1969. The results of these determinations are presented in Table No. II and are reported on the saturation extract basis in units as indicated in the table.

Table No. I
(Wt. %-As Received)

<u>Parameter</u>	<u>57-15012</u>	<u>57-15013</u>
Gravel (75 to 4.75 mm)	0.0	0.0
Coarse Sand (4.75 to 2.00 mm)	30.6	18.8
Medium Sand (2.00 to 0.425 mm)	0.0	0.0
Fine Sand (0.425 to 0.074 mm)	62.6	71.3
Silt (0.074 to 0.005 mm)	5.2	8.0
Clay (<0.005 mm)	1.5	1.9
Texture	Sand	Sand



Charter Member

Table No. II
(Saturation Extract)

<u>Parameter</u>	<u>57-15012</u>	<u>57-15013</u>
Alkalinity as CaCO ₃ (mg/L)	101	54.6
Salinity (%)	0.05	0.20
Specific Conductance at 25°C (μmhos/cm)	820	3,200
pH (Standard Units)	7.7	7.5
SAR (Ratio)	3.85	1.67
* Total Sulfur	0.18	0.31

If you have any questions concerning these results please call.


Harold A. Connell
Harold A. Connell
Assistant Lab Manager


Robert L. Taylor, Ph.D., Mgr.
Instrumental Analysis Div. *1 Nov 81*

as

Table

SAMPLES BY NATIVE
PLANTS INC. - 6-2-82

	pH	EC	SAR	K*	Na*	Ca*	Mg*	Cl*	SO ₄ *	HCO ₃ *
Topsoil	8.38	0.14	0.47	0.53	0.52	23.0	1.16	<.001	0.04	0.009
New refuse (School House)	7.89	1.76	3.62	0.44	4.26	26.4	1.23	0.31	1.6	0.014
New refuse	9.43	0.73								
Topsoil	8.99	0.11								
Old refuse										
0-15 cm	6.70	0.96								
15-30 cm	5.77	1.55								
#22										
0-15 cm	8.53	0.22	0.26	0.25	0.37	36.4	2.30	0.03	1.3	0.010
15-30 cm	8.38	0.37	0.22	0.19	0.31	37.9	2.06	<.001	1.48	0.012
#23										
0-30 cm	8.05	0.40								

	ppm B	%K	NO ₃ -N	P	% Organic Matter	% Sand	% Silt	% Clay	Texture
Topsoil	58.0	0.62	1.35	4.2	3.4	37	37	26	loam
New refuse (School House)	58.4	0.39				63	16	21	sandy clay loam
New refuse			0.90	2.0	6.3	63	17	20	sandy clay loam
Topsoil						35	32	33	clay loam
Old refuse									
0-15 cm						72	12	16	sandy loam
15-30 cm						70	12	18	sandy loam
#22									
0-15 cm	176.4	0.24	1.0	4.0	6.3	74	12	14	sandy loam
15-30 cm	224.4	0.18	0.7	4.2	4.5	67	19	14	sandy loam
#23									
0-30 cm						75	11	14	sandy loam

*expressed as meq/100g.

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 AREA CODE 312 726-8434

WESTERN DIVISION MANAGER
LOYD W. TAYLOR, JR.



PLEASE ADDRESS ALL CORRESPONDENCE TO:
139 SOUTH MAIN, HELPER, UTAH 84526
OFFICE TEL. (801) 472-3537

PRICE RIVER COAL CO.
P.O. Box 629
Helper, Utah 84526

Jan. 25, 1980

Sample identification
by

Price River Coal Co.
Refuse Pile
1211-UT-9-0027

Kind of sample reported to us Coal
Sample taken at Castle Gate Prep. Plant-Refuse Pile
Sample taken by Price River Coal Co.
Date sampled 1-16-80
Date received 1-16-80

Analysis report no. 57-3329

TOXICITY- Following procedure as outlined in the Federal Register, Part IV, Dec. 18, 1978

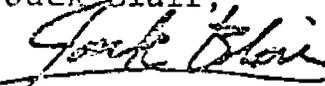
Arsenic- 0.011 mg/l
Selenium- less than or = to 0.002 mg/l
Mercury- less than or = to 0.04 micrograms/l
Cadmium- less than or = to 0.004 mg/l
Lead- less than or = to 0.06 mg/l
Cromium- less than or = to 0.01 mg/l
Silver- less than or = to 0.01 mg/l
Barium- 0.8 mg/l

ACIDITY- Sample prepared 1:1 coal-water extraction, following procedures of the U.S. Dept. of Agriculture-Handbook 60. Acidity determined as directed in Standard Methods 14th Edition.

Acidity- 0

JB/gp

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.
Jack Blair,


Manager, Helper Laboratory



Charter Member

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COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 · AREA CODE 312 726-8434



PLEASE ADDRESS ALL CORRESPONDENCE TO:

DAVE SELDON
MANAGER
SOUTHWEST DIVISION

224 S. CARBON AVE., PRICE, UT 84501
OFFICE TEL. (801) 637-7540

April 25, 1983

PRICE RIVER COAL COMPANY
Robert Wiley
P.O. Box 629
Helper, Utah 84526

Dear Mr. Wiley,

The following is the Analytical Report on the five soil samples we received in our Price Laboratory on March 3, 1983. Also enclosed, please find your analysis.

ANALYTICAL REPORT

Five soil samples were received for analysis on March 3, 1983. These samples were assigned Instrument Analysis Division #97-L493-335-05.

With the exception of the Clay Content results, all analytical data was sent on April 6, 1983.

Clay Content was determined by an external laboratory in accordance with the procedure of the American Society of Agronomy, Monograph 9, Part I, Method 43-5. The results of the determination are presented in Table No. I and are reported in weight percent (WT %) on an "As Received" Basis.

If you have any questions concerning these results, please call.

Sincerely,

COMMERCIAL TESTING & ENGINEERING COMPANY

Jack D. Blair, Assistant Manager
Southwestern Division

JB/dt

Enclosure



Charter Member

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS,
TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (312) 953-9300

DAVE SELDON
MANAGER
SOUTHWEST DIVISIONPLEASE ADDRESS ALL CORRESPONDENCE TO:
224 S. CARBON AVE., PRICE, UT 84501
OFFICE TEL. (801) 637-7540

April 25, 1983

PRICE RIVER COAL CO.
P.O. Box 629
Helper, Utah 84526Sample Identification
by

Price River Coal Co.

Kind of sample
reported to us Soil

Sample taken at Castle Gate Prep Plant

Sample taken by Price River Coal Co.

Date sampled xxxxxx

Date received 3-8-83

#3 Mine Roof - 57-12619
#3 Mine Floor- 57-12618
#5 Mine Roof - 57-12621
#5 Mine Floor- 57-12620
Refuse - 57-12622

Analysis report no. 57-12618 thru 57-12622

TABLE NO. I
CLAY CONTENT ANALYSIS
(WT%-As Received)

<u>Sample ID</u>	<u>Sand</u>	<u>Silt</u>	<u>Clay</u>
57-12618	74	14	12
57-12619	86	8	6
57-12620	77	17	6
57-12621	84	10	6
57-12622	69	21	10

JB/dt

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Price Laboratory



Charter Member

COMMERCIAL TESTING & ENGINEERING CO.

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DAVE SELDON
MANAGER
SOUTHWEST DIVISION



PLEASE ADDRESS ALL CORRESPONDENCE TO:
224 S. CARBON AVE., PRICE, UT 84501
OFFICE TEL. (801) 637-7540

April 14, 1983

PRICE RIVER COAL COMPANY
P.O. Box 629
Helper, Utah 84526

Sample Identification
by
Price River Coal Co.

Kind of sample
reported to us Floor

#5 Floor

Sample taken at Castle Gate Prep Plant

Sample taken by Price River Coal Co.

Date sampled xxxxxx

Date received 3-8-83

Analysis report no. 57-12620

MOISTURE AND SULFUR ANALYSIS

	<u>As Received</u>	<u>Dry Basis</u>
% Moisture	0.65	xxxxxx
% Sulfur	0.07	0.07

SULFUR FORMS

	<u>As Received</u>	<u>Dry Basis</u>
% Pyritic Sulfur	0.01	0.01
% Sulfate Sulfur	0.00	0.00
% Organic Sulfur (Diff)	0.06	0.06
Total	0.07	0.07

JB/dt

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jack Blair
Manager, Price Laboratory



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OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS,
TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (312) 953-9300

DAVE SELDON
MANAGER
SOUTHWEST DIVISIONPLEASE ADDRESS ALL CORRESPONDENCE TO:
224 S. CARBON AVE., PRICE, UT 84501
OFFICE TEL. (801) 637-7540PRICE RIVER COAL COMPANY
P.O. Box 629
Helper, Utah 84526

April 14, 1983

Sample identification
by
Price River Coal Co.Kind of sample
reported to us Roof

#5 Mine Roof

Sample taken at Castle Gate Prep Plant

Sample taken by Price River Coal Co.

Date sampled xxxxxx

Date received 3-8-83

Analysis report no. 57-12621

MOISTURE AND SULFUR ANALYSIS

	<u>As Received</u>	<u>Dry Basis</u>
% Moisture	0.74	xxxxxx
% Sulfur	0.11	0.11

SULFUR FORMS

	<u>As Received</u>	<u>Dry Basis</u>
% Pyritic Sulfur	0.04	0.04
% Sulfate Sulfur	0.00	0.00
% Organic Sulfur (Diff)	0.07	0.07
Total	0.11	0.11

JB/dt

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Price Laboratory



Charter Member

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COMMERCIAL TESTING & ENGINEERING CO.

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DAVE SELDON
MANAGER
SOUTHWEST DIVISION



PLEASE ADDRESS ALL CORRESPONDENCE TO:
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OFFICE TEL. (801) 637-7540

PRICE RIVER COAL COMPANY
P.O. Box 629
Helper, Utah 84526

April 14, 1983

Sample identification
by
Price River Coal Co.

Kind of sample
reported to us Refuse

Refuse

Sample taken at Castle Gate Prep Plant

Sample taken by Price River Coal Co.

Date sampled xxxxxx

Date received 3-8-83

Analysis report no. 57-12622

MOISTURE AND SULFUR ANALYSIS

	<u>As Received</u>	<u>Dry Basis</u>
% Moisture	9.35	xxxxxx
% Sulfur	0.41	0.45

SULFUR FORMS

	<u>As Received</u>	<u>Dry Basis</u>
% Pyritic Sulfur	0.17	0.19
% Sulfate Sulfur	0.07	0.08
% Organic Sulfur (Diff)	0.17	0.18
Total	0.41	0.45

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jack Blain
Manager, Price Laboratory



Charter Member

JB/dt

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DAVE SELDON
MANAGER
SOUTHWEST DIVISIONPLEASE ADDRESS ALL CORRESPONDENCE TO:
224 S. CARBON AVE., PRICE, UT 84501
OFFICE TEL. (801) 637-7540PRICE RIVER COAL COMPANY
P.O. Box 629
Helper, Utah 84526

April 14, 1983

Sample identification
by
Price River Coal Co.

#3 Mine Roof

Kind of sample
reported to us Roof

Sample taken at Castle Gate Prep Plant

Sample taken by Price River Coal Co.

Date sampled ~~xxxxx~~

Date received 3-8-83

Analysis report no. 57-12619

MOISTURE AND SULFUR ANALYSIS

	<u>As Received</u>	<u>Dry Basis</u>
% Moisture	0.51	xxxxx
% Sulfur	0.12	0.12

SULFUR FORMS

	<u>As Received</u>	<u>Dry Basis</u>
% Pyritic Sulfur	0.10	0.10
% Sulfate Sulfur	0.00	0.00
% Organic Sulfur (Diff)	0.02	0.02
Total	0.12	0.12

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, Price Laboratory



Charter Member

JB/dt

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DAVE SELDON
MANAGER
SOUTHWEST DIVISION



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OFFICE TEL. (801) 637-7540

April 14, 1983

PRICE RIVER COAL COMPANY
P.O. Box 629
Helper, Utah 84526

Sample identification
by
Price River Coal Co.

Kind of sample reported to us Floor

#3 Mine Floor

Sample taken at Castle Gate Prep Plant

Sample taken by Price River Coal Co.

Date sampled xxxxxx

Date received 3-8-83

Analysis report no. 57-12618

MOISTURE AND SULFUR ANALYSIS

	<u>As Received</u>	<u>Dry Basis</u>
% Moisture	0.39	xxxxxx
% Sulfur	0.07	0.07

SULFUR FORMS

	<u>As Received</u>	<u>Dry Basis</u>
% Pyritic Sulfur	0.01	0.01
% Sulfate Sulfur	0.00	0.00
% Organic Sulfur (Diff)	0.06	0.06
Total	0.07	0.07

JB/dt

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Jack Blair
Manager, Price Laboratory



Charter Member

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OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN PRINCIPAL COAL MINING AREAS,
TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

COMMERCIAL TESTING & ENGINEERING CO.



Reply to
Instrumental Analysis Division
490 Orchard Street
Golden, CO 80401

Phone: 303-278-9521

April 6, 1983

Mr. Jack Blair
CT & E
224 S. Carbon Ave.
Price, UT 84501

Re: IAD #97-L493-335-05

Analytical Report

Five soil samples were received for analysis on March 16, 1983. These samples were assigned our IAD identification #97-L493-335-05.

Alkalinity, Salinity, Sodium Adsorption Ratio (SAR) and Specific Conductivity were determined in accordance with the procedures of Agriculture Handbook No. 60, U.S. Department of Agriculture, August 1969. The results of these determinations are presented in Table No. I and are reported in milligrams per litre (mg/L) unless otherwise noted.

A representative portion of each sample was forwarded to an external laboratory for the determination of Clay Content. A separate report will be sent upon completion of the Clay Content determinations.

In accordance with 40 CFR 260 (Federal Register/Vol.45, No.98/ Monday, May 19, 1980) a representative portion (100g) of each sample was extracted for 24 hours using 1600 mL of deionized water. The solutions were pH adjusted using 0.5N acetic acid to a pH of 5.0. At the completion of the extraction, each sample was pressure-filtered through a 0.45 micrometer filter. The filtrate of each sample was then diluted to a final volume of 2000 millilitres including the amount of acetic acid used for pH adjustment.



<u>Sample ID</u>	<u>Sample Weight(g)</u>	<u>Final Filtrate Volume(mL)</u>	<u>Initial pH</u>	<u>Final pH</u>	<u>Volume of 0.5N Acetic Acid(mL)</u>
57-12618 <	100.0	2000	7.1	5.1	5.5
57-12619	100.0	2000	9.6	4.9	34
57-12620	100.0	2000	9.5	4.9	11
57-12621	100.0	2000	9.9	5.0	15
57-12622	100.0	2000	6.4	5.2	64.5

A summary of the analytical methodology used in the determination of the EPT Toxic Metals is presented in Table No. II. The results of these determinations are presented in Table No. III and are reported in milligrams per litre (mg/L).

Table No. I
(Concentrations in mg/L)

<u>Parameter</u>	<u>57-12618 <</u>	<u>57-12619</u>	<u>57-12620</u>	<u>57-12621</u>	<u>57-12622</u>
Alkalinity (as CaCO ₃)	28	224	35	193	415
Salinity (Salt Content)	281	318	510	408	894
Specific Conductivity (µmhos/cm)	439	497	797	637	1,397
Calcium	22	100	7.1	80	260
Magnesium	9.8	20	1.9	5.5	28
Sodium	42	40	28	33	20
Sodium Adsorption Ratio (SAR)	1.87	0.96	2.40	0.96	0.31

Table No. II
Summary of Methodology
EP Toxic Extract Determinations

<u>Parameter</u>	<u>Method</u>	<u>Reference</u>
Arsenic	Hydride Generation A. A. Spectrophotometry	EPA*, Method 206.3
Barium	Flame Atomic Absorption Spectrophotometry	EPA*, Method 208.1
Cadmium	Flame Atomic Absorption Spectrophotometry	EPA*, Method 213.1
Chromium	Flame Atomic Absorption Spectrophotometry	EPA*, Method 218.1
Lead	Flame Atomic Absorption Spectrophotometry	EPA*, Method 239.1
Silver	Flame Atomic Absorption Spectrophotometry	EPA*, Method 272.1
Selenium	Hydride Generation A.A. Spectrophotometry	EPA*, Method 270.3
Mercury	Cold Vapor Flameless A.A. Spectrophotometry	EPA*, Method 245.1



Table No. III
 EP Toxic Extraction Filtrates
 (Concentrations in mg/L)

Parameter	57-12618	57-12619	57-12620	57-12621	57-12622	Minimum Concentration for Characteristic of EP Toxicity
Arsenic	≤0.001	≤0.001	≤0.001	≤0.001	≤0.001	5.0 (D004)*
Barium	0.16	0.25	0.25	0.27	0.39	100.0 (D005)*
Cadmium	≤0.005	≤0.005	≤0.005	≤0.005	≤0.005	1.0 (D006)*
Chromium	≤0.005	≤0.005	≤0.005	≤0.005	≤0.005	5.0 (D007)*
Lead	≤0.05	≤0.05	≤0.05	≤0.05	≤0.05	5.0 (D008)*
Mercury	≤0.0002	≤0.0002	≤0.0002	≤0.0002	≤0.0002	0.2 (D009)*
Selenium	≤0.003	≤0.003	≤0.003	≤0.003	≤0.003	1.0 (D010)*
Silver	≤0.004	≤0.004	≤0.004	≤0.004	≤0.004	5.0 (D011)*

*EPA Hazardous Waste Number

If you have any questions concerning these results, please call.

Harold A. Connell

 Harold A. Connell
 Assistant Laboratory Manager

Robert L. Taylor

 Robert L. Taylor, Ph.D. Mgr. 6 Dept 83
 Instrumental Analysis Division

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