

KAISER COAL COMPANY  
WELLINGTON PREP PLANT  
CARBON COUNTY, UTAH  
ACT/007/012

VOLUME 1  
OPERATION & RECLAMATION PLANS

# MRP Update Register

Mine Name

File Number

Wellington Prep Plant

ACT 1007/012

| Date Rec.       | Page #s                                                  | Plate #s | Approval Date | Insert By | Content/Remarks                                                        |
|-----------------|----------------------------------------------------------|----------|---------------|-----------|------------------------------------------------------------------------|
| 12/30/85        | UMC 782.13-782.21                                        |          | 2/25/86       | SCL       | Application for Permit Transfer                                        |
| 12/30/86        |                                                          | C4-0071  | 1/5/87        | SCL       | Cross sections, spoil pile II                                          |
| <b>COMPILED</b> |                                                          |          |               |           |                                                                        |
| 4/10/87         | ALL TO DATE                                              | -        |               | LCS       | MIDTERM REVIEW 6/16/87                                                 |
| 12/21/87        |                                                          | 3341     | 2/2/88        | SCL       | reclamation of disturbed area -NDU NR7-12-5-1                          |
| 2/22/88         |                                                          | 3339     | 2/22/88       | SCL       | as "completed"                                                         |
| 12/21/87        | following 784-24 Vol. I                                  |          | 2/2/88        | SCL       | "test"                                                                 |
| 11/18/88        | Volume 5                                                 | 05-0163  | 5/12/88       | HGS       | Pipeline Slurry Pond As-built and Cert. letter                         |
| 9/5/89          | Volume 4 and Volume 1 Go to 05 784-26; Rev. 3, 4         | NA       | 9/19/89       | HGS       | Modification of H <sub>2</sub> O. Switch from baseline to operational. |
| 10/19/89        | Volume 1 See Submission Misc. Section.                   | NA       | -             | HGS       | Transfer of Permit Information                                         |
| 10/20/89        | Volume 1. See Submission Misc. Section                   | NA       | -             | HGS       | Carbon County Highway                                                  |
| 10/26/89        | Volume 4 and Volume 1 Go to 05 784-26; Revision 10/20/89 | NA       | 1/3/90        | HGS       | Update water monitoring section.                                       |

placed in Act response volume

# THINGS TO DO TODAY

DATE Mk/TERM

COMPLETED

- 1 Plot Piezometric Surfaces Alluvial <sup>UNCON</sup> AQUIFER  ?
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_
- 4 \_\_\_\_\_
- 5 \_\_\_\_\_
- 6 \_\_\_\_\_
- 7 \_\_\_\_\_
- 8 \_\_\_\_\_
- 9 \_\_\_\_\_
- 10 \_\_\_\_\_
- 11 \_\_\_\_\_
- 12 \_\_\_\_\_







STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

March 31, 1987

Mr. Carl W. Winters  
Senior Mining Engineer  
Kaiser Coal Corporation  
Sunnyside Coal Mine  
P. O. Box 10  
Sunnyside, Utah 84539

*Carl*  
Dear Mr. Winters:

Re: Time Extension-Annual Reports, Sunnyside Mines ACT/007/007,  
Wellington Preparation Plant ACT/007/012, and Horse Canyon  
Mine ACT/007/013, File #2, Carbon County, Utah

We are in receipt of your letter dated March 13, 1987, in which you requested an extension of time for preparation of the vegetation portions of the annual reports required for Kaiser Coal Company's Sunnyside Mines, Wellington Preparation Plant, and the Horse Canyon Mine, all of Carbon County, Utah.

May 18, 1987 is acceptable to the Division, respecting conditions mentioned in your letter, for your 1986 Annual Report to be submitted to this office.

Sincerely,

*Lowell P. Braxton*  
Lowell P. Braxton  
Administrator  
Mineral Resource Development  
and Reclamation Program

djh  
cc: S. Linner  
J. Whitehead  
0799R/14



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

Norman H. Bangerter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

March 10, 1987

Mr. Carl Winters  
Senior Mining Engineer  
Kaiser Coal Company  
P. O. Box 10  
Sunnyside, Utah 84539

*Carl*

Dear Mr. Winters:

Re: Mid-Permit Term Review, Wellington Preparation Plant,  
ACT/007/012, Carbon County, Utah

Please excuse this tardy reply to your February 23, 1987 letter asking for an extension to April 1, 1987 for submission by Kaiser of the updated information for the Wellington Preparation Plant Mid-Permit Term Review. This request for extension is hereby granted.

Sincerely,

L. P. Braxton  
Administrator  
Mineral Resource Development  
and Reclamation Program

jvb  
cc: [REDACTED]  
0218R

**KAISER  
COAL**

KAISER COAL CORPORATION  
Sunnyside Coal Mines  
P.O. Box 10  
Sunnyside, Utah 84539  
Telephone (801) 888-4421

Miner File  
~~S. L. ...~~  
**RECEIVED**  
FEB 25 1987

DIVISION OF  
OIL, GAS & MINING

February 23, 1987

Mr. Lowell P. Braxton, Administrator  
Mineral Resource Development & Reclamation Program  
Utah Division of Oil, Gas & Mining  
355 W. North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: Mid Permit Term Review  
Wellington Prep. Plant  
ACT/007/012

Dear Mr. Braxton:

Kaiser has received a directive from the Division requesting updating of the Wellington Preparation Plant Mining and Reclamation Plan. The updating material was requested to be submitted by March 1, 1987. Given the unknown amount of information to be submitted and the amount of other permitting work Kaiser is currently involved in, Kaiser discussed with Ms. Susan Linner of your office delaying the updating. Ms. Linner seemed receptive to a postponement until approximately April 1.

By means of this letter, Kaiser is requesting an extension until April 1, 1987, of submission of its response to the Division's request for updated information for the Wellington Preparation Plant Mid Permit Term Review. Your approval of this arrangement will be appreciated.

Sincerely,



Carl W. Winters  
Senior Mining Engineer

cc: B. G. Long  
C. W. McGlothlin, Jr.  
B. J. Bourquin



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

*Luc*  
Norman H. Bangertter, Governor  
Dee C. Hansen, Executive Director  
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

December 18, 1986

Mr. Charles McGlothlin  
Kaiser Coal Corporation  
P. O. Box 10  
Sunnyside, Utah 84539

*Charles*  
Dear Mr. McGlothlin:

Re: Mid Permit Term Review, Wellington Preparation Plant,  
ACT/007/012, Folder No. 2, Carbon County, Utah

The Wellington Preparation Plant was granted a five-year permanent program mining permit from the state of Utah on December 10, 1984. In accord with regulation UMC 788.11 a Mid Permit Term Review (MPTR) is now due. Attached is a flow chart outlining the steps and timeframes for the MPTR process.

To initiate the MPTR, the Division requests that Kaiser Coal Company provide the following information, as addendums or replacement pages to the original Mining and Reclamation Plan (MRP), to make the MRP current and complete:

1. The text must be updated to reflect all changes to the approved MRP since permit issuance. This would include discussion of the revised water monitoring plans, as per the Division's guidelines; summaries of water monitoring data collected to date; revised water volumes for the plant water/ sediment pond system; new contemporaneous reclamation seed mixes; the new sediment pond on the east side of the Price River; and Spoil Pile II (near Road Pond).
2. Updated maps and cross-sections must be submitted as applicable to text changes, i.e. surface facilities map and maps of the new sediment pond and spoil pile. In addition, map E9-3341 must be revised to reflect the fact that there are only two existing topsoil stockpiles. The stockpile shown west of the plant is only proposed for future use. This should also be clarified in the text.
3. All permit conditions have been adequately addressed, but the responses and commitments to them must be incorporated appropriately into the MRP.

Page 2  
Mr. Charles McGlothlin  
ACT/007/012  
December 18, 1986

4. Final as built designs of the test plots, including all treatments used must be submitted.
5. The coarse slurry bank, MSHA i.d. number 1211 UT 90011 is not permitted by the Division and must be included in the plan in accord with the appropriate regulations.
6. In addition to updating the operation and reclamation plans as noted in the preceding points, Kaiser must provide a section in the MRP to discuss measures to be taken during the cessation of operations. This must include water monitoring plans; temporary stabilization of the large surface disturbed areas, including dust suppression on the slurry ponds; and water volumes to be pumped through the slurry pipeline during cessation.

In order for the Division to have sufficient time to review these changes, the new material will need to be submitted by March 1, 1987. The Division will arrange with you later to make onsite technical inspections, if necessary. If you would like to meet to discuss the MPTR requirements please contact myself or Susan Linner, Permit Supervisor.

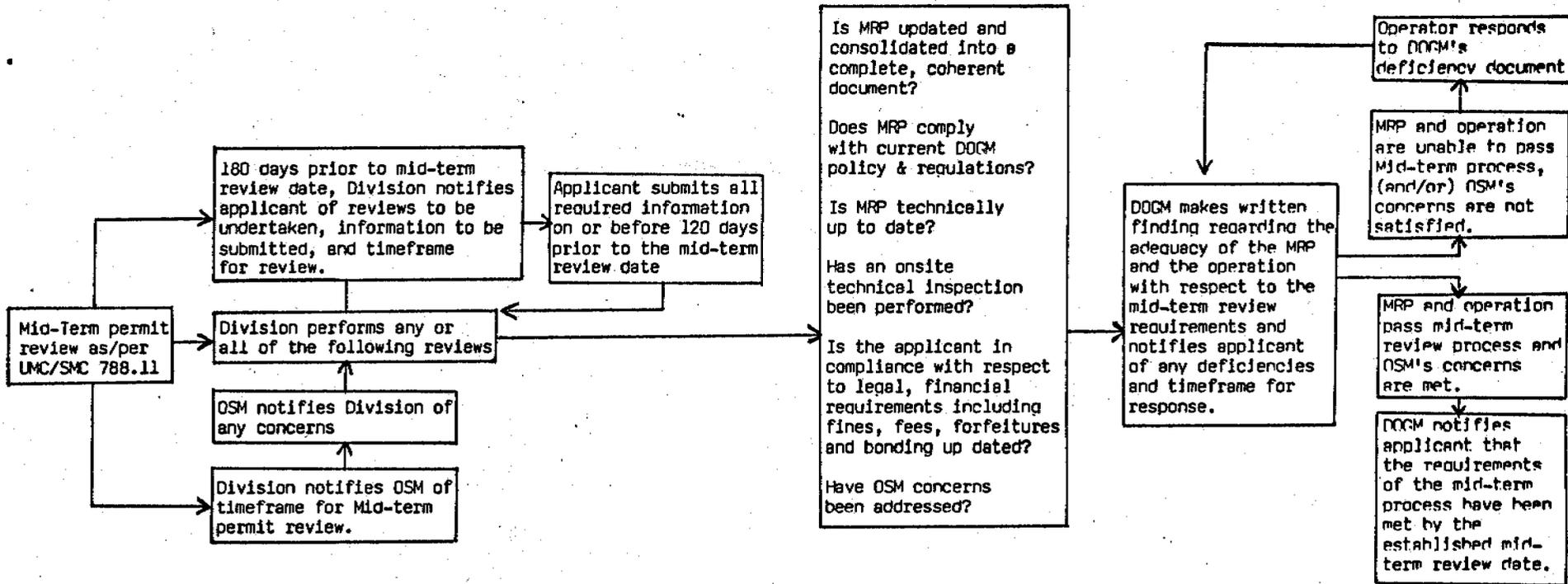
Sincerely,



L. P. Braxton  
Administrator  
Mineral Resource Development  
and Reclamation Program

SCL:jvb  
cc: M. Shilling  
S. Linner  
D. Lof  
0028R-49

MID PERMIT TERM REVIEW PROCESS



(revised July 1986)  
0865R

KAISER COAL CORPORATION  
SUNNYSIDE MINES

SCHEDULE OF ENVIRONMENTAL WORK

February 10, 1987

Modify Coarse Refuse Pile Expansion draft

February 15, 1987

Submit Coarse Refuse Pile Expansion Permit to DOGM  
Submit Coarse Refuse Pile Expansion Permit to MSHA  
Submit diversion ditch modification plan to DOGM  
Prepare West slurry cell impoundment plan

February 27, 1987

Submit final coarse refuse toe pond plans to DOGM  
Submit maps of NPDES discharge points to DOGM

March 1, 1987

Submit West slurry cell impoundment plan to MSHA  
Submit West slurry cell impoundment plan to DOGM  
- Submit Wellington Spoil Pile II soil sample results to DOGM  
Complete surface facilities pond bid documents  
Complete coarse refuse toe pond bid documents  
Review borrow area 1 expansion permit revision  
Remove PCB units from Wellington track hopper  
- Wellington Mid Permit Term Review  
Redesign Class I haul road

March 15, 1987

- Repair Sauerman Drag Scraper  
- Start cleaning East slurry cell (with Sauerman)  
Complete #2 slurry cell clean-out  
Remove #1 slurry cell from service  
Put #2 slurry cell in service  
Solicit bids for surface facilities pond  
Solicit bids for coarse refuse toe pond  
Complete subsidence monitoring data (SS)  
Provide updated sequence map for annual report (SS)  
- Provide permit stipulation status for annual report (SS, WCP)  
- Complete hydrology data for annual report (SS, WCCP, HC)  
- Complete precipitation data for annual report (SS, WCCP, HC)  
- Provide insurance certificate for annual report (SS, WCCP, HC)  
Permanently mark vegetation reference areas  
Submit redesign of Class I haul road to DOGM

March 20, 1987

- Complete vegetation data for annual report (SS, WCCP, HC)  
- Complete DOGM annual report forms (SS, WCCP, HC)

March 31, 1987

- Submit Sunnyside annual report to DOGM
- Submit Wellington annual report to DOGM
- Submit Horse Canyon annual report to DOGM

April 1, 1987

- Riprap Wellington river sedimentation pond inlets
- Clean Grassy Trail Dam spillway tunnel
- Clean Grassy Trail Dam spillway channel
- Evaluate test plots (SS, WCCP)

April 15, 1987

- Receive MSHA approval of West slurry cell impoundment plan
- Receive DOGM approval of West slurry cell impoundment plan
- Begin construction of surface facilities pond
- Begin construction of coarse refuse toe pond

April 23, 1987

- Submit Sunnyside annual impoundment report to MSHA

— April 28, 1987

- Submit Wellington annual impoundment report to MSHA

May 1, 1987

- Complete East slurry cell clean-out
- Remove #2 slurry cell from service
- Put East slurry cell in service
- Put West slurry cell in service
- Examine Wellington lower refuse pond decant
- Check Grassy Trail Dam at least daily during overflow period
- Evaluate Donald Dennis trespass (acreage, timber)

June 1, 1987

- Complete construction of surface facilities pond
- Complete construction of coarse refuse toe pond
- Repair Wellington lower refuse pond decant - if necessary

June 15, 1987

- Complete Coarse Refuse Pile Expansion bid documents

June 30, 1987

- Submit as-built drawings to DOGM of surface facilities pond
- Submit as-built drawings to DOGM of coarse refuse toe pond

July 1, 1987

- Sunnyside NPDES discharge permit renewal date
- Solicit construction bids for Coarse Refuse Pile Expansion

August 1, 1987

- Receive DOGM approval for Coarse Refuse Pile Expansion
- Receive MSHA approval for Coarse Refuse Pile Expansion
- Begin construction of Coarse Refuse Pile Expansion
- Develop plan for 1987 deer hunt

September 1, 1987

- Put Coarse Refuse Pile Expansion in service
- Develop Range Creek management plan (water, grazing)

Unknown date or action

- Receive DOGM approval of diversion ditch modification plan
- Construct diversion ditch modification
- Receive DOGM approval of coarse refuse toe seep modification
- Terminate treatment of coarse refuse toe seep
- Receive DOGM approval of Class I haul road redesign
- Reconstruct Class I haul road
- Move Tipple substation transformer to Horse Canyon (PCB's)
- Remove transformers at #2 Mine hoist (PCB's)
- Determine action on Donald Dennis trespass
- Evaluate haul road dust suppression
- Revise borrow area 1 permit revision - if desired
- Resubmit borrow area 1 permit revision
- Complete replacement of Outcrop substation
- Replace Tipple substation
- Remove transformer at Wellington river pump station ? (PCB)
- Do we pursue Wellington NPDES discharge permit application ?

By Marty Holmes

- Horse Canyon MRP (due 2-27-87)
- #5 Mine permit application deficiencies
- Aerial photography of #5 Mine service facility corridors

REVISED STIPULATIONS DOCUMENT

U. S. Steel Corporation  
Wellington Coal Cleaning Plant  
ACT/007/012, Carbon County, Utah  
November 2, 1984

Stipulation 817.22-(1)-TLP

1. The applicant shall justify, provide methods, reflect on the coal fines, etc., as to why OM is high and EC is so low. Samples shall be obtained and rerun since the validity of data presented in the applicant's response to the Draft TA is still in question. This shall be accomplished within ~~90 days~~ of permit approval.

Stipulation 817.22-(2)-TLP

2. Exhibit IIA must be amended within ~~90 days~~ of permit approval to reflect the revised volume of substitute soil necessary to remedy the soil deficit. This figure is 38,000 cubic yards lower than it should be.

Stipulations 817.24-(1)-TLP

1. Within ~~90 days~~ of permit approval the applicant must fully describe the mixing procedure including techniques and implements necessary to achieve uniform mixing of materials on a scale this large.

Stipulations 817.24-(2)-TLP

2. Within ~~90 days~~ of permit approval the methods proposed to be tested to preclude loss of topsoil through voids in the coarse refuse area (page 4, January 1984 "Revegetation Test Plots") should be expanded upon to describe specific test depths of cover necessary to prevent soil loss into voids.

Stipulation 817.48-(1)-DD

1. The applicant will be required to submit to the regulatory authority a chemical analysis of each individual coal seam that will be processed at the plant. The analysis(es) shall depict all acid- or toxic-forming constituents and be submitted ~~as a separate analysis~~, or at any other time required by the regulatory authority, if there is reason to believe that the quality of coal has degraded sufficiently to cause acidic or toxic effects.

Run of the mine coal from newly mined seams (also new coal mines) shall be sampled and the analyses submitted to the regulatory authority within 30 days of processing of the coal so that any acidic or toxic constituents can be identified.

Stipulations UMC 817.52-(1)-DD

1. The applicant will be required to begin initiation of the proposed monitoring plan immediately upon approval of the mine plan, and have the plan fully implemented within ~~100 days~~ of permit approval.

Stipulation 817.71-.74-(1)-DD

1. The applicant shall commit to submitting new designs for regulatory authority review and approval to satisfy regulations under UMC 817.71-.74 in the event toxic or acidic contamination occurs during future operations. These designs must be submitted within ~~90 days~~ of discovery of contamination.

Stipulation 817.99-(1)-SL

1. Within ~~30 days~~ of receipt of Final Permit Approval from DOGM, the applicant must commit to notifying DOGM within 10 days of the occurrence of a slide which has potential for adverse effect on public property, health, safety or the environment. The applicant must also commit to comply with remedial measures required by the regulatory authority to reduce or eliminate the potential adverse effect of such a slide.

Stipulation 817.103-(1)-TLP

1. The success of test plots shall be evaluated at the time of ~~permit~~ ~~renewal~~. At that time, information from test plots contained in annual monitoring reports, laboratory data, field evaluations and any other measures necessary shall be weighed to determine the adequacy of the twelve (12) inch coarse slurry capillary barrier. At that time, the applicant shall submit a report to the regulatory authority providing interpretations of the available test plot information. This report shall be prepared by a qualified agent of the operator and any conclusions or recommendations shall be subject to the concurrence of the regulatory authority. In the event that the operator feels that the study does not provide adequate basis to maintain the proposed depth of coarse slurry capillary barrier or to require an alternative depth of coarse slurry capillary barrier he may request an extension of the study period. At the time of permit renewal or at the time of completion of the approved extended study bonding for this portion of the reclamation plan shall be adjusted to reflect the costs associated with any necessary changes in the cover depth.

Genwal Coal Co., Inc.

Orig - mine file X40  
CC: DR NIELSEN ✓  
File ACT/007/012 #2

P.O. Box 1201 • Huntington, Utah 84528-1201 • (801) 687-9813

August 4, 1989

RECEIVED  
AUG 09 1989

Dr. Dianne R. Nielsen  
Utah Division of Oil, Gas, and Mining  
III Triad Center, Suite 301  
355 West N. Temple  
Salt Lake City, UT 84180-1203

DIVISION OF  
OIL, GAS & MINING

RE: Wellington Coal Proposition Plant Permit No.  
ACT/007/012

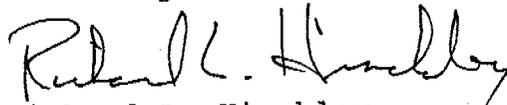
Dear Dr. Nielsen:

Genwal Coal Company hereby requests the transfer of the permit referenced above currently held by Kaiser Coal Corporation.

Enclosed herewith is Kaiser Coal Corporation's request for transfer, information supporting the transfer as required by UMC 782.13-.19, and the completed reclamation agreement.

Genwal Coal Company will continue to conduct the operations involved in full compliance with the terms and conditions of the original permit unless and until it has obtained a new permit under UMC 788.19.

Sincerely,



Richard L. Hinckley  
Vice President/Secretary

RLH/rgp

Enclosures

Supplementary Information

UMC 782.13

- A. 1. Applicant Identification: Genwal Coal Company  
P.O. Box 1201  
Huntington, UT 84528  
(801) 687-9813
2. Genwal is the sole owner of all areas affected by the permit.
6. Genwal's resident agent in the State of Utah is Roger Myers, whose business address is as listed above.
- B. Genwal is a Virginia corporation.
1. It's officers are:  
Charlie F. Vaughn, President  
Robert W. Mower, Vice President  
Richard L. Hinckley, Vice President/Secretary  
John Donnelly, Treasurer/Assistant Secretary
- It's directors are:  
Charles A. Lenzie  
Charles F. Vaughn  
James C. Holcombe
2. The stock of Genwal is held entirely by Nevada Electric Investment Company (NEICO), a Nevada corporation which is licensed also to do business in the state of Utah.
3. NEICO or Genwal have not previously operated mining operations under any other names.

UMC 782.14

Genwal, or any affiliate, has not yet had a federal or state mining permit suspended or revoked at any time, nor forfeited any bond or similar security.

UMC 782.15

- A. Enclosed herewith is the Deed and Assignment dated August 2, 1989, executed by Kaiser Coal Corporation conveying the property in fee to Genwal.

UMC 782.16

- C. There are no occupied dwellings within three hundred (300) feet of operations.

UMC 782.18

Certificate of liability insurance is attached to the Reclamation Agreement.

August 2, 1989

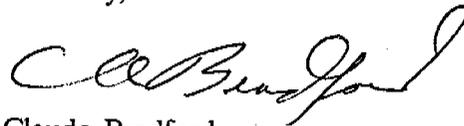
Dr. Dianne R. Nielsen  
Utah Division of Oil,  
Gas & Mining  
III Triad Center, Suite 301  
355 West North Temple  
Salt Lake City, Utah 84180-1203

RE: Wellington Coal Preparation Plant  
Permit No. ACT/007/012

Dear Dr. Nielsen:

Enclosed is the Deed and Assignment dated August 2, 1989, transferring the above-referenced permit and the Wellington Coal Preparation Plant from Kaiser Coal Corporation and its affiliates to Genwal Coal Company. Accordingly, request is hereby made for approval of transfer of the permit to Genwal Coal Company.

Sincerely,



Claude Bradford  
President  
Kaiser Coal Corporation

CB/bte  
enclosure

## DEED AND ASSIGNMENT

THIS DEED AND ASSIGNMENT ("Deed") made and entered into as of the 2nd day of August, 1989 by and between KAISER COAL CORPORATION ("Kaiser"), KAISER COAL CORPORATION OF UTAH, KAISER COAL CORPORATION OF SUNNYSIDE, KAISER FUEL CORPORATION, all Delaware corporations with their principal offices at P.O. Box 1107, Raton, New Mexico 87740 (collectively "Grantor"), and Genwal Coal Co., Inc., a Virginia corporation whose address is P. O. Box 230, Las Vegas, Nevada 89151 ("Grantee").

### RECITALS:

A. Kaiser, with related entities, is debtor in possession in jointly administered bankruptcy proceedings designated as Case Nos. 87B-01552E pending before the United States Bankruptcy Court for the District of Colorado ("Bankruptcy Court").

B. Grantor is the owner of the Wellington Coal Preparation Plant and associated real property, buildings, rights-of-way, water rights, gob, tailings, waste piles, railroad tracks (not owned by The Denver & Rio Grande Western Railroad), together with other properties, assets and rights directly related or appurtenant located in Carbon County, Utah, more particularly described in Exhibit "A" attached hereto and made a part hereof (collectively referred to as the "Wellington Preparation Plant").

C. Grantee desires to purchase all right, title and interest of Grantor in and to the Wellington Preparation Plant. and related assets.

D. By Order dated April 14, 1989, the Bankruptcy Court approved sale of the Wellington Coal Preparation Plant to Grantor.

NOW, THEREFORE, for and in consideration of the sum of TEN DOLLARS (\$10.00), cash in hand paid to Grantor and other good and valuable consideration, the receipt and

sufficiency of which is acknowledged, Grantor hereby grants, sells, assigns, sets over, transfers, quitclaims and conveys to Grantee, its successors and assigns, without warranty, the following:

### PROPERTIES

All of Grantor's interest in the Wellington Preparation Plant and associated real property, buildings, rights of way, water rights, gob, tailings, waste piles, railroad tracks (not owned by The Denver and Rio Grande Western Railroad); together with other properties, assets and rights directly related or appurtenant located in Carbon County and Emery County, Utah, more particularly described in Exhibit "A" attached hereto and made a part hereof.

### PERMITS

Grantor's interest in all governmental permits, licenses, authorizations or filings associated with the Wellington Preparation Plant, as more particularly described in the attached Exhibit "B", subject to approval of the local, state and federal government to transfer if such approval is required.

The officer who signs this Deed hereby certifies that this Deed and the transfer represented thereby was duly authorized under a resolution duly adopted by the board of directors of the Grantor at a lawful meeting duly held and attended by a quorum.

IN WITNESS WHEREOF, the Grantor has caused its corporate name and seal to be affixed by its duly authorized officers this 2<sup>nd</sup> day of AUGUST, 1989.

KAISER COAL CORPORATION

By: C. A. Bradford

Title: President

KAISER COAL CORPORATION  
OF UTAH

By C. A. Bradford  
Title Vice President

KAISER COAL CORPORATION  
OF SUNNYSIDE

By C. A. Bradford  
Title Vice President

KAISER FUEL CORPORATION

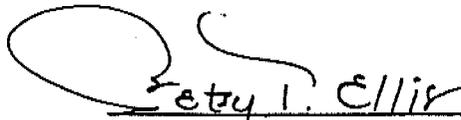
By C. A. Bradford  
Title Vice President

STATE OF Colorado

)  
) SS.  
)

CITY AND COUNTY OF Denver

On this 2nd day of August, 1989, personally appeared before me Claude Bladon whose identity is personally known to or proved to me on the basis of satisfactory evidence, and who, being by me duly sworn, did say that he is the President of KAISER COAL CORPORATION, and that said document was signed by him in behalf of said corporation by authority of its bylaws, and said President acknowledged to me that said corporation executed the same.

  
Notary Public  
Residing at 3000 FIRST OF DENVER PLAZA  
833 SEVENTEENTH STREET  
DENVER, COLORADO 80202

My Commission Expires:

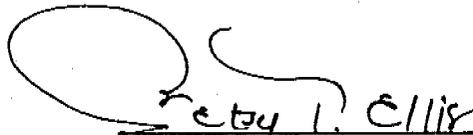
My Commission Expires Oct 12, 1991

STATE OF Colorado

)  
) SS.  
)

CITY AND COUNTY OF Denver

On this 2nd day of August, 1989, personally appeared before me Claude Bladon whose identity is personally known to or proved to me on the basis of satisfactory evidence, and who, being by me duly sworn, did say that he is the Vice President of KAISER COAL CORPORATION OF UTAH, and that said document was signed by him in behalf of said corporation by authority of its bylaws, and said Vice President acknowledged to me that said corporation executed the same.

  
Notary Public  
Residing at 3000 FIRST OF DENVER PLAZA  
833 SEVENTEENTH STREET  
DENVER, COLORADO 80202

My Commission Expires:

My Commission Expires Oct 12, 1991

STATE OF Colorado

CITY AND COUNTY OF Denver

)  
) SS.  
)

On this 2nd day of August, 1989, personally appeared before me Claude Bladford whose identity is personally known to or proved to me on the basis of satisfactory evidence, and who, being by me duly sworn, did say that he is the vice president of KAISER COAL CORPORATION OF SUNNYSIDE, and that said document was signed by him in behalf of said corporation by authority of its bylaws, and said vice president acknowledged to me that said corporation executed the same.

Petry I. Ellis  
Notary Public  
Residing at 3000 FIRST OF DENVER PLAZA  
833 SEVENTEENTH STREET  
DENVER, COLORADO 80202

My Commission Expires:

My Commission Expires Oct. 12, 1991

STATE OF Colorado

CITY AND COUNTY OF Denver

)  
) SS.  
)

On this 2nd day of August, 1989, personally appeared before me Claude Bladford, whose identity is personally known to or proved to me on the basis of satisfactory evidence, and who, being by me duly sworn, did say that he is the vice president of KAISER FUEL CORPORATION, and that said document was signed by him in behalf of said corporation by authority of its bylaws, and said vice president acknowledged to me that said corporation executed the same.

Petry I. Ellis  
Notary Public  
Residing at 3000 FIRST OF DENVER PLAZA  
833 SEVENTEENTH STREET  
DENVER, COLORADO 80202

My Commission Expires:

My Commission Expires Oct. 12, 1991

Exhibit A

Part I: Real Estate

Wellington Preparation Plant

A. Fee Lands.

Township 15 South, Range 11 East, S.L.M.

Section 8: Beginning at the SE corner of Section; thence North 3960 feet; West 1320 feet; South 2250 feet more or less to the Southern Boundary of the D&RG Railroad right of way; thence N 63°31' 11" West 1470 feet more or less; thence South 2360 feet more or less; thence East 2640 feet to the beginning;

LESS all oil, gas and minerals;

LESS the Denver and Rio Grande Western Railroad right-of-way.

Section 9: SE $\frac{1}{4}$ N $\frac{1}{4}$ ; E $\frac{1}{2}$ N $\frac{1}{4}$ ; SW $\frac{1}{4}$ E $\frac{1}{2}$ ;

LESS all oil and gas.

SW $\frac{1}{4}$ N $\frac{1}{4}$ ; W $\frac{1}{2}$ N $\frac{1}{4}$ ; N $\frac{1}{4}$ E $\frac{1}{2}$ ; SE $\frac{1}{4}$ E $\frac{1}{2}$ ;

LESS all oil, gas and minerals;

LESS the Denver and Rio Grande Western Railroad right-of-way.

Beginning 2640 feet South of the NW corner of the NE $\frac{1}{4}$ ; thence East 2640 feet; North 997 feet; West 2640 feet; thence South 997 feet to beginning.

LESS all oil, gas and minerals;

LESS the Denver and Rio Grande Western Railroad right-of-way.

Section 10: SW $\frac{1}{4}$ SW $\frac{1}{4}$ ;

LESS all oil and gas.

NW $\frac{1}{4}$ SW $\frac{1}{4}$ ;

LESS all oil, gas and minerals.

EXCEPTING: A strip of land 16.5 feet wide for a pipeline deed to Carbon Dioxide and Chemical Company by Ernest Y. Milner and Mary E. Milner,

recorded January 1, 1939 in Book 5-D at Page 324, described as follows: Commencing at the SW corner of Sec. 10, T15S, R11E; thence East a distance of 1320 feet; thence North a distance of 1931.17 feet to point of beginning; thence North 81°25' West on a center line through the middle of a strip of land 16.5 feet wide, a distance of 880 feet; thence North 68°30' West on a center line through the middle of a strip of land 16.5 feet wide, a distance of 880 feet; thence North 68°30' West on a center line through the middle of a strip of land 16.5 feet wide a distance of 680 feet.

Section 15: ~~W4N2W4~~;

~~LESS all oil and gas.~~

Section 16: ~~N4N2E4; S4N2E4; N4E2W4; S4E2E4; Lots 3 & 4; S4E2W4;~~

~~LESS coal and other minerals:~~

~~LESS the Denver and Rio Grande Western Railroad right-of-way.~~

~~W4N2W4; S4N2W4, S4N2E4; N4E2E4;~~

~~LESS the Denver and Rio Grande Western Railroad right-of-way;~~

~~LESS all oil, gas and minerals.~~

Section 17: ~~N4E4; E4N2E4;~~

~~LESS all oil and gas.~~

### B. AGREEMENTS.

1. Lease dated August 1, 1960 between The Denver and Rio Grande Western Railroad Company, lessor, and United States Steel Corporation, lessee, covering the following described parcel:

An irregular tract of land 160 feet in length and having an average width of 38 feet, being part of the right-of-way of the Lessor in Township 15 South, Range 11 East, Salt Lake Meridian at East Wellington, Utah, lying on the southerly side of said Lessor's tracks and westerly of a point opposite Mile Post 610 plus 438 feet.

2. Lease dated January 12, 1961 between The Denver and Rio Grande Western Railroad Company, lessor, and United States Steel Corporation, lessee, covering the following described parcel:

An irregular tract of land being part of the right-of-way of the Lessor in the SW/4NW/4 of Section 16, Township 15 South, Range 11 East, Salt Lake Meridian at East Wellington, Utah, lying southwesterly of said Lessor's tracks and northwesterly of a point opposite Mile Post 610 plus 4541-feet, as shown on Map No. E-52, containing about 9,245 square feet.

3. Pipeline Crossing Agreement dated June 5, 1973 from The Denver and Rio Grande Western Railroad Company to United States Steel Corporation described as follows:

A 3-inch diameter water pipe line encroachment on the right-of-way of the Railroad Company from Mile Post 612 + 100 feet to 612 + 1180 feet, Section 8, Township 15 South, Range 11 East, Salt Lake Meridian, at East Wellington, Utah shown on Map No. W-177 and installed with specifications shown thereon.

4. Pipeline Crossing Agreement dated September 23, 1957 from The Denver and Rio Grande Western Railroad Company to United States Steel Corporation described as follows:

A 3-inch diameter cast iron water pipe line and a 24-inch diameter concrete water pipe line extending northeasterly at right angles across the 200 foot wide right-of-way and under the main track and two side tracks of The Denver and Rio Grande Western Railroad Company at Mile Post 610 + 4848 feet, near Wellington, Carbon County, Utah, within the NW/4 of Section 16, Township 15 South, Range 11 East, Salt Lake Meridian; as shown on Drawing No. WR-38; said water pipe lines to be encased in 64 feet of pipe consisting of 40 feet of No. 10 gauge 48-inch diameter corrugated metal pipe and 24 feet of 48-inch diameter No. 10 gauge liner plate laid at a depth of not less than 3.5 feet below the base of the low rail where it crosses under said tracks as shown on Drawing No. WR-38A.

5. Private Way License dated September 13, 1957 from The Denver and Rio Grande Western Railroad Company to United States Steel Corporation described as follows:

A 16-foot wide private road crossing at grade extending southwesterly at right angles over and across the 200-foot wide right-of-way and the main track, passing

track and one lead track of the Licensor at Mile Post 610 + 4717 feet, near Wellington, Carbon County, Utah, within the Southeast quarter of the Northwest quarter of Section 16, Township 15 South, Range 11 East, Salt Lake Base and Meridian, as shown on Map No. W-54.

6. Private Way License dated May 27, 1959 from The Denver and Rio Grande Western Railroad Company to United States Steel Corporation described as follows:

A 16-foot wide private road crossing at grade extending southwesterly at right angles across the 200-foot wide right-of-way and the main track, a passing track and a yard lead track of The Denver and Rio Grande Western Railroad Company at Mile Post 611 + 3434 feet, at East Wellington, Carbon County, Utah, within the southwest quarter of Section 8, Township 15 South, Range 11 East, Salt Lake Base and Meridian, as shown on Map No. E-40.

7. Grant of Easement dated and recorded April 1, 1971, Entry 12158, Book 124 at page 59, from Ira and Crystal Tidwell to United States Steel Corporation to pond water on the following described lands:

Beginning at the Northwest corner of the Northeast quarter of Section 9, Township 15 South, Range 11 East, Salt Lake Meridian; thence South 2640 feet to the center of Section 9; thence East 720 ft.; thence North 16 degrees East, 2910 feet to North line of Section 9; thence West 1500 feet to point of beginning, excluding, however, the following:

Beginning 2640 ft. S. of NW corner of NE 1/4 Section 9, Township 15 S., Range 11 E., said point of beginning being the center of said Section 9; thence East along the South boundary of the NE 1/4 of Section 9, 720 feet thence North 16 degrees East 1037 feet; thence West 1005.5 feet to the West boundary of the NE 1/4 of Section 9; thence South 997 feet along the West boundary of the NE 1/4 of Section 9, to the point of beginning, containing 19.75 acres more or less.

8. Pipeline Crossing Agreement dated July 24, 1952, from the Denver & Rio Grande Western Railroad to United States Steel Corporation for a 3" diameter galvanized steel water pipeline, the steel overhead bridge, two eight-foot diameter steel refuse pipelines, one telephone line, one power line.

9. Deed of Easement from Nick and Ileen Siaperas dated March 24, 1971, recorded April 14, 1971, Book 124 at page 190, to pond water on land located in the NE 1/4, Section 9,

Township 15 South, Range 11 East, Salt Lake Meridian, more particularly described as follows:

Parcel 1

Beginning at a point 1710 feet East and 430 feet South of the Northwest corner of the Northeast quarter of Section 9, Township 15 South, Range 11 East, Salt Lake Meridian, thence South 28 degrees West 580 feet; thence South 64 degrees East 150 feet; thence North 28 degrees East 580 feet; thence North 64 degrees West 150 feet to beginning.

Parcel 2

Beginning at a point 1880 feet East and 100 feet South of the Northwest corner of the Northeast quarter of Section 9, Township 15 South, Range 11 East, Salt Lake Meridian; thence South 28 degrees West 370 feet; thence South 64 degrees East 150 feet; thence North 28 degrees East 440 feet to Highway right-of-way; thence West along right-of-way 165 feet to beginning.

Parcel 3

Beginning 2640 feet South and 720 feet East of the Northwest corner of the Northeast quarter of Section 9, Township 15 South, Range 11 East, Salt Lake Meridian; thence East 1920 feet along the south boundary line of the NE 1/4 of Section 9 to the East quarter corner of said Section 9; thence North 1915 feet; thence West 165 feet; thence North 675 feet to highway right-of-way, thence Westerly along right-of-way 240 feet to the East boundary of the Willis A. Palmer property; thence South 28 degrees West 570 feet along East boundary of said Palmer property; thence North 64 degrees West 150 feet; thence South 28 degrees West 580 feet; thence North 64 degrees West 150 feet; thence South 28 degrees West 720 feet; thence Southwesterly 1150 feet to beginning.

Excluding from said Parcel 3, however, the following tract of land:

Beginning 2640 feet South and 720 feet East of the Northwest corner of the Northeast quarter of Section 9, Township 15 South, Range 11 East, Salt Lake Meridian; thence East 1920 feet along the South boundary line of the said NE 1/4 of the Section 9 to the East quarter corner of said Section; thence North along the East boundary line of the NE 1/4 of Section 9, a distance of 997 feet; thence due West for a distance of 1575.8 feet

to a point on the West Boundary of Grantor's land; thence Southwesterly a distance of 1058 feet to point of beginning, containing 40 acres, more or less.

10. Agreement dated February 5, 1958, as amended March 11, 1963 between Wellington City, Utah and Columbia-Geneva Steel Division of United States Steel Corporation.

11. Water Lease Agreement dated December 17, 1974 between Price River Water Improvement District, Lessor, and United States Steel Corporation, Lessee.

12. Electric Service Agreement dated March 2, 1967 between United States Steel Corporation and Utah Power & Light Company.

13. Main Extension Agreement dated September 13, 1983 between Mountain Fuel Supply Company and U.S. Steel Mining Company, Inc.

C. SUBJECT TO:

1. Taxes for the year 1988 now a lien, not yet due.
2. Taxes are delinquent and due for 1986 and 1987 but are held in abeyance.

Section 8:

1. Excepting the Denver & Rio Grande Railroad Right of Way, which runs on a diagonal direction across Section 8.

2. A reservation of all oil, gas and minerals, ass reserved in a Warranty Deed dated April 20, 1957, recorded May 8, 1957 in Book 46 at page 404, executed by George Milner, Jr. and Clara Milner in favor of United States Steel Corporation.

3. A Pole Line Easement granted by George Milner, Jr. and Clara Milner in favor of Utah Power & Light Co., recorded Oct. 14, 1949 in Book 3-U at page 37, granting a perpetual easement and right of way for a power line plus essential maintenance necessary over the following described centerline:

Beginning on the S r/w fence of the D&RGRR a point which is 2645 feet N and 2518 feet W of the SE corner of Sec. 8, T15S, R11E, thence S 44 deg. 42' E 1702 feet.

4. An Assignment of Overriding royalty interest of U. S. Oil and Gas Lease recorded May 20, 1981 in Book 206 at page 798, wherein Assignors appear to be Lani Jean Wilson and David L. Patterson, and Assignee is Sonja V. McCormick, granting a 12-1/2% of 5% of 100% interest in the S 1/2 SW 1/4 and the SW 1/4 SE 1/4 of Sec. 8 and all of Section 17.

5. An Assignment of Oil and Gas Lease recorded Dec. 8, 1981 in Book 213 at page 81, wherein Assignor appears to be Jean Oakason and Assignee is Hunt Oil Co. Includes the S 1/2 SW 1/4 of Sec. 8 and the SW 1/4 SE 1/4 of Section 8 and all of Section 17.

Section 9.

1. A reservation of all oil, gas and minerals in a Warranty Deed recorded May 8, 1957 in Book 46 at page 404, wherein George Milner, Jr. and Clara Milner appear as Grantors and United States Steel Corporation as Grantee. Applies to the W 1/2 SW 1/4 and the SW 1/4 NW 1/4 of Section 9.

2. A reservation of all oil, gas and minerals in a correction Warranty Deed dated Dec. 21, 1957, recorded in Book 353 at page 522, wherein Grantors appear to be Phil E. Thayn and Lyla Thayn and the Grantee is The United States Steel Corporation. Affects the N 1/2 SE 1/4 and the SE 1/4 E 1/4 of Sec. 9

3. Excepting therefrom the R/W of the D&RGRR in the S 1/2 of Section 9.

4. An exception in the correction Warranty Deed recorded in Book 53 at page 522, Grantors are Phil E. Thayn and Lyla Thayn and Grantee is United States Steel Corp., providing that the Grantee's use of the surface of said premises shall not be deemed to constitute an interference with or deprivation of Grantor's reserved mineral rights.

5. A reservation of the right to drain irrigation waste waters over and across property in Sec. 9, as reserved in a Warranty Deed dated March 24, 1971 recorded April 1, 1971 in Book 124 at page 44, the Grantors are Nick Siaperas and Ileen Siaperas and the Grantee is The United States Steel Corporation.

6. An Oil and Gas Lease dated Jan. 15, 1964 recorded Feb. 26, 1964 in Book 89 at page 109, wherein Grantors are Nick Siaperas and Ileen Siaperas and Grantee is Humble Oil Company, for a period of 10 or more years, or as long thereafter as oil, gas or minerals are produced.

7. A Grant of Easement Agreement dated April 1, 1971 between Ira Tidwell and Crystal Tidwell as Grantors, and United States Steel Corporation as Grantee, wherein Grantors grant, bargain, sell and convey to Grantee a perpetual easement with a right to pond water and coal refuse material on Grantees property located South of the N 1/2 of Sec. 9. Grantee shall have a perpetual right and easement on property South of the N 1/2 of Sec. 9 to cause and affectuate such changes and results on the easement premises as may result from operation.

8. A Deed and Indenture Easement dated March 24, 1971 between Nick Siaperas and Ileen Siaperas as Grantors and United States Steel Corporation as Grantee. Grantors grant, bargain and sell to the Grantee a perpetual easement over part of Sec. 9, with the perpetual use to pond water and coal refuse on Grantee's property located generally South of the N 1/2 of Sec. 9. Grantee shall have a perpetual right and easement on property South of the N 1/2 of Sec. 9 to cause and affectuate such changes and results on the easement premises as may result from said operations.

9. An Oil, gas and Mineral Lease dated Oct. 25, 1984 recorded Jan. 9, 1985 in Book 245 at page 687, wherein Lessor is Phil E. Thayn and Lyla Thayn and Lessee is Meany & Johnson Energy Corporation, for a period of 5 years or as long thereafter as oil, gas and minerals are produced. NOTE: Applies to the N 1/2 SE 1/4 and the SE 1/4 SE 1/4 of Sec. 9.

ASSIGNED to Texaco, Inc. by Assignment of Oil and Gas Lease recorded Jan. 22, 1985 in Book 246 at page 51.

10. An exception for as portion of Sec. 9 which is used as a County Road located in the S 1/2 NE 1/4 as disclosed by the recorded plat thereof.

11. A reservation of the right to drain irrigation waste waters over and across property in Sec. 9 as reserved in a Warranty Deed recorded april 1, 1971 in Book 124 at page 44, executed by Nick Siaperas and Ileen Siaperas in favor of United States Steel Corporation.

#### SECTION 10:

1. A reservation of all oil and gas to the United States in a Patent recorded Oct. 21, 1957 in Book 7 at page 5 in the SW 1/4 SW 1/4 of Section 10.

2. A reservation of all oil, gas and minerals in the NW 1/4 SW 1/4 of Sec. 10 in a correction Warranty Deed recorded in Book 53 at page 522, executed by Phil E. Thayn and Lyla Thayn in favor of United States Steel Corporation.

#### SECTION 15:

1. A reservation of all oil and gas to the United States in a Patent recorded Oct. 21, 1957 in Book 7 at page 5, including the W 1/2 NW 1/4 of Sec. 15.

#### SECTION 16:

Less that portion of the property in the D&RGRR right of way. (Said R/W runs diagonally from the NW 1/4 to the SE 1/4 across Section 16.)

2. A reservation of coal and other minerals to the State of Utah on the following property, all in Section 16:

N 1/2 NE 1/4; SE 1/4 NE 1/4; NE 1/4 NW 1/4; S 1/2 SE 1/4;  
Lots 3 and 4; S-1/2 SW 1/4, recorded March 23, 1957 in  
Book 2B at page 36.

3. Reservation in a Patent from the State of Utah to United States Steel Corporation dated March 1, 1957 recorded March 23, 1957, entry 80693, Book 2-B of Patents at page 36, of rights-of-way for tunnels and telephone and transmission lines constructed by authority of the United States and rights-of-way for easements of the public to use such highways that may have been established according to law on the following described lands:

N 1/2 NE 1/4; SE 1/4 NE 1/4; NE 1/4 NW 1/4; S 1/2 SE 1/4;  
Lots 3 and 4; S 1/2 SW 1/4, less D&RGW right of way.

4. An Oil, Gas and Hydrocarbon Lease dated Nov. 5, 1984 recorded Feb. 11, 1985 in book 246 at page 405, from the State of Utah to Texaco, Inc. as Minerals Lease No. 41875, on Lots 3, 4, and the S 1/2 S 1/2; N 1/2 NE 1/4; NE 1/4 NW 1/4 and the SE 1/4 NE 1/4 of Section 16, for a period of 10 years or as long thereafter as oil, gas or hydrocarbons are produced.

#### SECTION 17:

1. A reservation of all oil and gas to the United States of America in a Patent recorded Oct. 21, 1957 in book 7 at page 5 on the SE 1/4 SE 1/4 of Sec. 17.

2. A reservation of all oil and gas to United States of America in a Patent recorded Dec. 12, 1956 in book 5A at page 366 on Lot 4 and the NE 1/4 of Sec. 17.

3. A reservation of all minerals other than oil and gas in a Warranty Deed executed by George Milner, Jr. and Clara Milner in favor of United States Steel Corporation, recorded May 8, 1957 in Book 46 at page 405.

4. An Assignment of overriding royalty interest in a U. S. Oil and Gas Lease recorded May 20, 1981 in Book 206 at page 798, wherein Assignors appear to be Lani Jean Wilson and David L. Patterson and Assignee is Sonja V. McCormick.

5. An Assignment of Oil and Gas Lease recorded Dec. 8, 1981 in Book 213 at page 81, wherein the Assignor appears to be Jean Oakason and Assignee is Hunt Oil Company.

An Indenture recorded Oct. 4, 1960 in book 69 at page 298-344 from Utah Power & Light Co. to Morgan Guarantee Trust Company of New York. Said Indenture would affect any easement, right of way or property owned by Utah Power & Light Co.

## GENERAL

1. An Oil and Gas Lease dated Nov. 4, 1985 recorded Dec. 9, 1985 in Book 255 at page 419 executed by Arnel Seaton Milner and Joseph Glen Slagowski and Emma Lou M. Slagowski in favor of Exxon Corporation for a period of 10 years or as long thereafter as oil, gas or minerals are produced. Affects a portion of Sec. 8 and a portion of Sec. 9 and a portion of Sec. 16.

2. A Mortgage, Deed of Trust, Security Agreement and Financing Statement:

Dated : December 30, 1985  
Amount : \$9,000,000.00  
Trustor : Kaiser Coal Corporation  
Trustee : Security Title Company  
Beneficiary : United States Steel Corporation and U.S. Steel Mining Co., Inc.  
Recorded : January 2, 1986 in Book 256 at pages 224-256 as Entry No. 010725.

AN AGREEMENT dated December 30, 1985 recorded January 2, 1986 in Book 256 at pages 345-377 as Entry No. 010729 between United States Steel Corporation, and U. S. Steel Mining Co., Inc. as Beneficiaries, and The Chase Manhattan Bank, N.A., providing for specific and additional performance of Beneficiary and the bank in case of default, modification, extension or changes in said Mortgage, Deed of Trust, Security Agreement and Financing Statement.

3. FINANCING STATEMENT recorded January 2, 1986 in Book 256 at pages 257-285, wherein Kaiser Coal Corporation appears as Debtor and United States Steel Corporation, and U. S. Steel Mining Co., Inc. as Secured Parties.

4. A Deed of Trust and Security Agreement:

Dated : December 30, 1985  
Amount : \$60,000,000.00  
Trustor : Kaiser Coal Corporation  
Trustee : Security Title Company  
Beneficiary : The Chase Manhattan Bank, N.A.  
Recorded : January 2, 1986 in Book 256 at pages 286-328 as Entry No. 010727.

5. A UCC Financing Statement recorded January 2, 1986 in Book 256 at pages 329-344 as Entry No. 010728, wherein the Debtor appears as Kaiser Coal Corporation and the Secured Party is The Chase Manhattan Bank, N.A.

6. Self-Bonding and Indemnity Agreement executed by Kaiser Coal Corporation recorded Feb. 4, 1986 in Book 257 at page 268.

7. A UCC Financing Statment recorded March 10, 1986 in Book 258 at page 67, wherein Kaiser Coal Corporation appears as Debtor and Chase Manhattan Bank is Secured Party.

8. A Lease recorded May 27, 1986 in Book 260 at pages 315-321 wherein the Denver & Rio Grande Western Railroad Company appear as Lessor and Kaiser Coal Corporation appears as Lessee for an irregular tract of land lying adjacent to the Southerly right of way opposite milepost 610+4541 feet at Wash, Carbon County, containing .14 acres in Township 15 South, Range 11 East, the SW 1/4 NW 1/4.

\* \* \*

Entry No. 011294  
Indexed VV  
Abstracted /  
Recd. Fee 2.00

QUIT CLAIM DEED

(UTAH) •

S. E. Utah Title

BOOK 13-20-103

PAGE 257

670-673

THIS QUIT CLAIM DEED (this "Deed") dated as of December 30, 1985, is from UNITED STATES STEEL CORPORATION, a Delaware corporation, 600 Grant Street, Pittsburgh, Pennsylvania 15230 ("U.S. Steel"), to KAISER COAL CORPORATION, a Delaware corporation, 102 South Tejon, Suite 800, P.O. Box 2679, Colorado Springs, Colorado 80901-2679 ("Kaiser").

FOR AND IN CONSIDERATION of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, U.S. Steel as successor in interest by merger and consolidation to United States Steel Corporation, a New Jersey corporation, hereby quit claims to Kaiser, without representations or warranty of title whatsoever, all minerals, including but not limited to, coal, oil and gas and all mineral rights ("Mineral Estate") contained in the following described tract of land located in Section 16, Township 15 South, Range 11 East, Carbon County, State of Utah, to wit:

Beginning at the Northwest corner of Section 16, Township 15 South, Range 11 East, SLM; thence South 2640 feet; thence East to the Denver and Rio Grande Western Railroad right-of-way ("Right-of-Way"); thence Northwest along the Right-of-Way to beginning.

TO HAVE AND TO HOLD the Mineral Estate unto Kaiser and its successors and assigns forever.

EXECUTED this 12<sup>th</sup> day of February, 1986, to be effective for all purposes as of the date first above written.

UNITED STATES STEEL CORPORATION

ATTEST:

F. H. Jones  
(Seal) Assistant Secretary

BY E. H. Houlder

STATE OF Pennsylvania )  
 ) ss.  
CITY AND COUNTY OF Pittsburgh/ )  
 Allegheny

On the 12th day of February, 1986, personally  
appeared before me G. Colombari, who, being by me duly  
sworn did say that he is the Sr. Vice President-Steel & Related  
STATES STEEL CORPORATION, and that said instrument was signed in  
behalf of said corporation by authority of its by-laws and said  
G. Colombari acknowledged to me that said corporation  
executed the same.

L. H. Hatt  
Notary Public  
Residing at Pittsburgh, Pa.



My Commission Expires:  
L. H. HATT  
Notary Public  
Allegheny County, Pa.  
My Commission Expires March 15, 1988

Exhibit A

Part II: Exceptions to Real Estate

The policy or policies to be issued will contain exceptions to the following unless the same are disposed of to the satisfaction of the Company.

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of persons in possession thereof.
3. Easements, claims of easement or encumbrances which are not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortages in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by public records.
5. Unpatented mining claims; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
6. Any lien, or right to a lien, for services, labor or material theretofore or hereafter furnished, imposed by law and not shown by the public records.
7. Defects, liens, encumbrances, adverse claims or other matters, if any, ~~existing~~ appearing in the public records or attaching subsequent to the effective date hereof but prior to ~~the date the~~ ~~assumed~~ ~~mailed~~ ~~acquires~~ of record for value the estate or interest or mortgage thereon covered by ~~the commitment~~.

SECTION 8:

1. Excepting the Denver & Rio Grande Railroad Right of Way, which runs on a diagonal direction across Sec. 8.
2. A reservation of all oil, gas and minerals, as reserved in a Warranty Deed dated April 20, 1957, recorded May 8, 1957 in Book 46 at page 404, executed by George Milner, Jr. and Clara Milner in favor of United States Steel Corporation.
3. A Pole Line Easement granted by George Milner, Jr. and Clara Milner in favor of Utah Power & Light Co., recorded Oct. 14, 1949 in Book J-U at page 17, granting a perpetual easement and right of way for a power line plus essential maintenance necessary over the following described centerline:  
Beg. on the S r/w fence of the D&RGRR & point which is 2,645 feet N and 2,518 feet W of the SE Cor. of Sec. 8, T15S, R11E. thence S 44°42' E 1,702 feet.
4. An Assignment of Overriding royalty interest of U. S. Oil and Gas Lease recorded May 20, 1981 in Book 206 at page 798, wherein Assignors appear to be Lani Jean Wilson and David L. Patterson, and Assignee is Sonja V. McCormick, granting a 12-1/2% of 3% of 100% interest in the S 1/2 SW 1/4 and SW 1/2 of the SE 1/4 of Sec. 8 and all of Sec. 17.

5. An Assignment of Oil and Gas Lease recorded Dec. 8, 1981 in Book 211 at page 31, wherein Assignor appears to be Jean Cakason and Assignee is Hunt Oil Co. Includes the S 1/2 of the SW 1/4 of Sec. 8 and the SW 1/4 SE 1/4 of Sec. 9 and all of Sec. 17.

SECTION 9:

1. A reservation of all Oil, Gas and Minerals in a Warranty Deed recorded May 9, 19 in Book 46 at page 404, wherein George Milner, Jr. and Clara Milner appear as Grantors and United States Steel Corporation as Grantee. Applies to the W 1/2 SW 1/4 and the SW 1/4 NW 1/4 of Sec. 9.
2. A reservation of all oil, gas and minerals in a correction Warranty Deed dated Dec. 21, 1957, recorded in Book 153 at page 522, wherein Grantors appear to be Phil E. Thayne and Lyla Thayne and the Grantee is The United States Steel Corporation. Affects the N 1/2 SE 1/4 and the SE 1/4 SE 1/4 of Sec. 9.
3. Excepting therefrom the R/W of the O&GRR in the S 1/2 of Sec. 9.
4. An exception in the correction Warranty Deed recorded in Book 53 at page 522, Grantors are Phil E. Thayne and Lyla Thayne and Grantee is United States Steel Corporation, providing that the Grantor's use of the surface of said premises shall not be deemed to constitute an interference with or deprivation of Grantor reserved mineral rights. (See attached Exhibit No. 9-4)
5. A reservation of the right to drain irrigation waste waters over and across property in Sec. 9, as reserved in a Warranty Deed dated March 24, 1971, recorded April 1, 1971 in Book 124 at page 44, the Grantors are Nick Siaperas and Ileen Siaperas and the Grantee is The United States Steel Corporation. (See attached Exhibit 9-5)
6. An Oil and Gas Lease dated Jan. 15, 1964, recorded Feb. 26, 1964 in Book 89 at page 109, wherein Grantors are Nick Siaperas and Ileen Siaperas and Grantee is Humble Oil Company, for a period of 10 or more years, or as long thereafter as oil, gas or minerals are produced. (Applies to a portion of Sec. 9.)
7. A Grant of Easement Agreement dated April 1, 1971 between Ira Tidwell and Crystal Tidwell as Grantors, and United States Steel Corporation as Grantee, wherein Grantors grant, bargain, sell and convey to Grantee a perpetual easement with a right to pond water and coal refuse material on Grantee's property located South of the N 1/2 of Sec. 9. Grantee shall have a perpetual right and easement on property South of the N 1/2 of Sec. 9 to cause and affectuate such changes and results on the easement premises as may result from operation. (See Exhibit 9-7)
8. A Deed and Indenture Easement dated Mar. 24, 1971 between Nick Siaperas and Ileen Siaperas as Grantors and United States Steel Corporation as Grantee. Grantors grant, bargain and sell to the Grantee a perpetual easement over part of Sec. 9, with the perpetual use to pond water and coal refuse on Grantee's property located generally South of the N 1/2 of Sec. 9. Grantee shall have a perpetual right and easement on property South of the N 1/2 of Sec. 9 to cause and affectuate such changes and results on the easement premises as may result from said operations. (See Exhibit 9-8)

9. An Oil, Gas and Mineral Lease dated Oct. 23, 1984, recorded Jan. 9, 1985 in Book 245 at page 687, wherein Lessor is Phil E. Thayne and Lyla Thayne and Lessee is Meany & Johnson Energy Corporation, for a period of 5 years or as long thereafter as oil, gas and minerals are produced. NOTE: Applies to the N 1/2 SE 1/4 and SE 1/4 SE 1/4 of Sec. 9.

ASSIGNED TO Texaco, Inc. by Assignment of Oil and Gas Lease recorded Jan. 22, 1985 in Book 246 at page 51.

10. An exception for a portion of Sec. 9 which is used as a County Road located in the S 1/2 NE 1/4 as disclosed by the recorded plat thereof.
11. A reservation of the right to drain irrigation waste waters over and across property in Sec. 9 as reserved in a Warranty Deed recorded April 1, 1971 in Book 124 at page 24 executed by Nick Siaperas and Eileen Siaperas in favor of United States Steel Corp. (See Exhibit 9-5)

SECTION 10:

1. A reservation of all oil and gas to the United States in a Patent recorded Oct. 2, 1957 in Book 7 at page 5 in the SW 1/4 SW 1/4 of Sec. 10.
2. A reservation of all oil, gas and minerals in the NW 1/4 SW 1/4 of Sec. 10 in a correction Warranty Deed recorded in Book 53 at page 522, executed by Phil E. Thayne and Lyla Thayne in favor of United States Steel Corporation.

SECTION 15:

1. A reservation of all oil and gas to the United States in a Patent recorded Oct. 2, 1957 in Book 7 at page 5, including the W 1/2 NW 1/4 of Sec. 15.

SECTION 16:

1. Less that portion of the property in the O&GRR right of way. (Said R/W runs diagonally from the NW 1/4 SE 1/4 across Sec. 16.)
2. A reservation of coal and other minerals to the State of Utah on the following property, all in Sec. 16:  
N 1/2 NE 1/4; SE 1/4 NE 1/4; NE 1/4 NW 1/4; S 1/2 SE 1/4; Lots 3 and 4;  
S 1/2 SW 1/4, recorded March 23, 1957 in Book 28 at page 16.
3. An Oil, Gas and Hydrocarbon Lease dated Nov. 5, 1984, recorded Feb. 11, 1985 in Book 246 at page 409, from the State of Utah to Texaco, Inc. as Minerals Lease No. 41875, on Lots 3, 4, the S 1/2 S 1/2; N 1/2 NE 1/4; NE 1/4 NW 1/4 and the SE 1/4 NE 1/4 of Sec. 16, for a period of 10 years or as long thereafter as oil, gas or hydrocarbons are produced.

SECTION 17:

1. A reservation of all oil and gas to the United States of America in a Patent recorded Oct. 21, 1957 in Book 7 at page 9 on the SE 1/4 SE 1/4 of Sec. 17.
2. A reservation of all oil and gas in a Patent recorded Dec. 12, 1956 in Book 6A at page 166 on Lot 4 and the NE 1/4 of Sec. 17.

3. An Assignment of overriding royalty interest in a U. S. Oil and Gas Lease records May 20, 1981 in Book 206 at page 798, wherein Assignors appear to be Lani Jean W. and David L. Patterson and Assignee is Sonja V. McCormick. Affects Sec. 17.
4. An Assignment of Oil and Gas Lease recorded Dec. 8, 1981 in Book 211 at page 81, wherein the Assignor appears to be Jean Oaxson and Assignee is Hunt Oil Company. Affects land in Sec. 17.

An Indenture recorded October 4, 1960 in Book 69 at page 298-344 from Utah Power & Light Co. to Morgan Guarantee Trust Company of New York. Said Indenture would affect any easement, right of way or property owned by Utah Power & Light Company

A judgment search was made in the names of United States Steel Corporation and Kaiser Coal Company and none were found of record.

...

AMENDMENT TO  
COMMITMENT FOR TITLE INSURANCE  
Order # 20,600-C

SECTION 10: Addition to:

3. Excepting a strip of land 16 1/2 feet wide for a pipeline deeded to Carbon Dioxide and Chemical Company By Ernest Y. Milner and Mary E. Milner, recorded January 1, 1939 in Book 5-0 at Page 324, described as follows: Commencing at the Southwest Corner of Section 10, T15S, R11E, thence East a distance of 1320 feet; thence North a distance of 1931.17 feet to point of beginning; thence North 81deg. 25' West on a center line through the middle of a strip of land 15.5 feet wide a distance of 380 feet; Thence North 68deg. 30' West on a center line through the middle of a strip of land 16.5 feet wide a distance of 680 feet.

SECTION 17: Addition to:

3. A reservation of all minerals other than oil and gas in a Warranty Deed executed by George Milner Jr. and Clara Milner in favor of United States Steel Corporation, recorded May 8, 1957 in Book 46 at page 405.

Exhibit A

Part III: Water Rights

Wellington Preparation Plant

- A. Milner Diversion. Certificate of Appropriation of Water, State of Utah, No. 9042, Application No. 27718, a-4661, a-6519 (Water User's Claim No. 91-215), dated February 25, 1972, recorded in Book 130 at page 319 in the office of the Carbon County Recorder, Price, Utah, in the name of United States Steel Corporation, appropriating ten (10.0) c.f.s. of water from the Price River and underground sources for industrial and irrigation uses, from the following points of diversion:

Township 15 South, Range 11 East, SLM

No. 1: North 5 degrees 31' West, 2272 feet from Southeast corner of Section 16; No. 2: South 22 degrees 50' West, 2089 feet from Northeast corner of Section 16; No. 3: North 1410 feet and West, 535 feet from South quarter corner of Section 8; and No. 4: South 22 degrees 31' West, 1880 feet from Northeast corner of Section 16;

- B. Pumphouse Diversion. Certificate of Appropriation of Water, State of Utah, No. 9043, Application No. 27818, a-4662, a-6518 (Water User's Claim No. 91-216), dated February 25, 1972, recorded in Book 130 at page 320 in the office of the Carbon County Recorder, Price, Utah, in the name of United States Steel Corporation, appropriating five (5.0) c.f.s. of water from the Price River and underground well sources for irrigation and industrial uses, and from the following points of diversion:

Township 15 South, Range 11 East, SLM

No. 1: North 5 degrees 31' West, 2272 feet from Southeast corner of Section 16; No. 2: South 22 degrees 50' West, 2089 feet from Northeast corner of Section 16; No. 3: North 1410 feet and West, 535 feet from South quarter corner of Section 8; and No. 4: South 22 degrees 31' West, 1880 feet from Northeast corner of Section 16;

- C. Farnham Diversion. Certificate of Permanent Change of Point of Diversion, Place, Purpose or Period of Use of Water, State of Utah, No. a-713, Change Application No. a-3851, a-4244, a-6520 (Water User's Claim No. 91-371), dated February 25, 1972, recorded in Book 130 at page 518 in the office of the Carbon County Recorder, Price, Utah, in the name of United States Steel Corporation, changing rights to 5.197 c.f.s. of water (limited to 1247 acre feet per year) for irrigation and industrial uses, from the following points of diversion:

Township 15 South, Range 11 East, SLM

No. 1: North 5 degrees 31' West, 2272 feet from Southeast corner of Section 16; No. 2: South 22 degrees 50' West, 2089 feet from Northeast corner of Section 16; No. 3: North 1410 feet and West, 535 feet from South quarter corner of Section 8; and No. 4: South 22 degrees 31' West, 1880 feet from Northeast corner of Section 16;

D. Stockwatering Claims.

1. Water User's Claim No. 91-3882 by United States Steel Corporation to a diligence stockwatering use for 150 cattle from the Price River, from the following point of diversion:

Township 15 South, Range 11 East, SLM

Section 16: Point where stream SE~~X~~NW~~X~~ of Section 16 to point where stream leaves NE~~X~~SE~~X~~ of Section 16.

2. Water User's Claim No. 91-3883 by United States Steel Corporation to a diligence stockwatering use for 150 cattle from the Price River, from the following point of diversion:

Township 15 South, Range 11 East, SLM

Section 8: Point where stream enters NE~~X~~SW~~X~~ of Section 8 to point where stream leaves NE~~X~~SW~~X~~ of Section 8.

3. Water User's Claim No. 91-3759 by United States Steel Corporation to a diligence stockwatering use for 150 cattle from the Price River, from the following point of diversion:

Township 15 South, Range 11 East, SLM

Section 9: Point where stream enters SW $\frac{1}{4}$ NW $\frac{1}{4}$   
of Section 9 to point where stream leaves  
SE $\frac{1}{4}$ SW $\frac{1}{4}$  of Section 9.

- E. Water Agreement. Rights to a maximum of ten (10.0) second feet of water under Application No. 35177 for irrigation and industrial uses pursuant to an Agreement dated December 17, 1974, between Price River Water Improvement District and United States Steel Corporation.

011295  
Index No.             
Indexed   ✓    
Abstracted   ✓    
Recd. Fee   2.20  

DEED OF WATER RIGHTS

(UTAH) •

S. E. Utah Title

1988 ( ) 11 13 14 03  
1974 257  
PAGE 674-676

THIS DEED OF WATER RIGHTS (this "Deed") dated as of December 30, 1985, is from UNITED STATES STEEL CORPORATION, a Delaware corporation, 600 Grant Street, Pittsburgh, Pennsylvania 15230 ("U.S. Steel") to KAISER COAL CORPORATION, a Delaware corporation, 102 South Tejon, Suite 800, P.O. Box 2679, Colorado Springs, Colorado 80901-2679 ("Kaiser").

FOR AND IN CONSIDERATION of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, U.S. Steel, as successor in interest by merger and consolidation to United States Steel Corporation, a New Jersey corporation, hereby grants, bargains, sells and conveys to Kaiser, without representations or warranty of title whatsoever, the water rights described on Schedule I attached hereto (the "Water Rights"); together with any and all water and water rights, ditch and ditch rights, reservoir and reservoir rights and wells and well rights appurtenant to or used upon the real property described in Special Warranty Deed of even date between the parties which rights are conveyed without any warranty of title, either express or implied.

TO HAVE AND TO HOLD the Water Rights unto Kaiser and its successors and assigns forever.

EXECUTED this 12<sup>th</sup> day of February, 1986, to be effective for all purposes as of the date first above written.

UNITED STATES STEEL CORPORATION

ATTEST:

F. J. Jones  
(Seal) Assistant Secretary

By J. Holoubek

STATE OF Pennsylvania )  
 )  
 ) SS.  
CITY AND COUNTY Pittsburgh/  
 )  
 Allegheny )

On the 12th day of February, 1986, personally appeared before me G. Colabari, who, being by me duly sworn did say that he is the Sr. Vice President-Steel & Related Resources of UNITED STATES STEEL CORPORATION, and that said instrument was signed in behalf of said corporation by authority of its by-laws and said G. Colabari acknowledged to me that said corporation executed the same.

*Leslie Hill*  
\_\_\_\_\_  
Notary Public  
Residing at Pittsburgh, Pa.

My Commission Expires:

LES A. WITZ, Notary Public  
Pittsburgh, Allegheny County  
(Commission Expires 10/31/1988)  
My Commission Expires October 31, 1988

SCHEDULE I  
WATER RIGHTS

Statement of Water User's Claim No. 91-254. Certificate of Appropriation Application No. 30076, claiming priority date of July 19, 1958 for industrial use of 0.15 cfs from January 1 to December 31, for the Wellington Preparation Plant at the following point of diversion located in Carbon County, Utah:

Township 15 South, Range 11 East, SLM  
South 28 degrees 23' East, 1321.8 feet  
from the Northwest corner of Section 16;

Statement of Water User's Claim No. 91-255. Certificate of Appropriation Application No. 30080, claiming priority date of July 19, 1958 for industrial use of 0.21 cfs from January 1 to December 31, for the Wellington Preparation Plant at the following point of diversion located in Carbon County, Utah:

Township 15 South, Range 11 East, SLM  
South 22 degrees 42' West, 1919 feet  
from the Northeast corner of Section 16.

ACT/007/012 #2

# Genwal Coal Co., Inc.

P.O. Box 1201 • Huntington, Utah 84528-1201 •

RECEIVED  
AUG 30 1989

August 22, 1989

DIVISION OF  
OIL, GAS & MINING

Mr. Lowell P. Braxton  
Associate Director, Mining  
Utah Division of Oil, Gas & Mining  
355 W. North Temple  
3 Triad Center, Suite 350  
Salt Lake City, UT 84180-1203

SUBJECT: Permit Transfer Request, Wellington Preparation Plant,  
ACT/007/012, Folder #2, Carbon County, Utah

Dear Lowell:

Responding to your letter of August 14, 1989, concerning the request for permit transfer, enclosed is the additional information required by UMC 788.18.

Also, enclosed is a draft of the notice for publication for your review and comment.

If there is anything further required, please feel free to contact me.

Sincerely,

  
Richard L. Hinckley  
Vice President/Secretary

RLH/ab

Enclosures

UMC 782.13

- (b)(1) The business address of each of the officers of Genwal Coal Company is 2835 S. Jones, Las Vegas, Nevada 89102, and the business address of each of the directors is 6226 W. Sahara Avenue, Las Vegas, Nevada 89102.
- b(2) The business address for Nevada Electric investment Company (NEICO) is 2835 S. Jones, Las Vegas, Nevada 89102.
- c) Names and addresses of NEICO's officers and resident agent are provided on Attachment A hereto. NEICO is a wholly-owned subsidiary of Nevada Power Company.
- b(3)  
& (d) Genwal Coal Company holds Mining Permit No. ACT 015/032 issued from the Utah Division of Oil, Gas & Mining.

NEICO/Genwal Coal Company has no ownership interest whatsoever in Big Horn Coal Company. If this information was reported elsewhere, it was in error, and that information will be corrected.

UMC 782.14 Attachment B hereto is a listing of all UDOGM violations for the past three years. The nature of the violation is listed along with the date the violation was abated indicating a satisfactory resolution of the matter.

UMC 782.19 Additional permits required for Wellington are listed below. Each permit is presently in the process of being transferred or issued anew to Genwal Coal Company.

#### Utah Department of Health

Air quality approval order to remove coal fines from settling ponds at Wellington Coal Cleaning Plant (Carbon County) dated December 31, 1981.

Air quality approval order to screen and size coal prior to loading into rail cars (now being applied for).

#### Environmental Protection Agency

Pending application at Wellington Coal Cleaning Plant - Application No. UT-0024376 - Wellington.

Mine Safety and Health Administration

1211-UT-9-0110 Plant Refuse Pile  
1211-UT-9-0012 Clear Water Pond  
1211-UT-9-0013 Lower Refuse Pond Embankment  
1211-UT-9-0014 Upper Refuse Pond Embankment

Attachment C is a listing of water rights pertaining to the Wellington preparation plant.

RLH/ab

## OFFICERS, DIRECTORS, AND RESIDENT AGENT FOR NEICO

Directors

|                   |                                              |
|-------------------|----------------------------------------------|
| Charles A. Lenzie | 6226 W. Sahara Avenue<br>Las Vegas, NV 89102 |
| James C. Holcombe | 6226 W. Sahara Avenue<br>Las Vegas, NV 89102 |
| John W. Arlidge   | 6226 W. Sahara Avenue<br>Las Vegas, NV 89102 |
| Charlie F. Vaughn | 2835 S. Jones Blvd.<br>Las Vegas, NV 89102   |

Officers

Charles A. Lenzie  
Chairman of the Board

Charlie F. Vaughn  
President

John W. Arlidge  
Vice President

|                                    |                                              |
|------------------------------------|----------------------------------------------|
| David G. Barneby<br>Vice President | 6226 W. Sahara Avenue<br>Las Vegas, NV 89102 |
|------------------------------------|----------------------------------------------|

|                                |                                              |
|--------------------------------|----------------------------------------------|
| M. Gene Matteucci<br>Secretary | 6226 W. Sahara Avenue<br>Las Vegas, NV 89102 |
|--------------------------------|----------------------------------------------|

|                            |                                              |
|----------------------------|----------------------------------------------|
| W. E. Littler<br>Treasurer | 6226 W. Sahara Avenue<br>Las Vegas, NV 89102 |
|----------------------------|----------------------------------------------|

|                                      |                                            |
|--------------------------------------|--------------------------------------------|
| John Donnelly<br>Assistant Treasurer | 2835 S. Jones Blvd.<br>Las Vegas, NV 89102 |
|--------------------------------------|--------------------------------------------|

Resident Agent, Nevada

Charlie F. Vaughn

Resident Agent, Utah

|                   |                                             |
|-------------------|---------------------------------------------|
| Patrick H. Fenton | 154 No. Main Street<br>Cedar City, UT 84720 |
|-------------------|---------------------------------------------|

VIOLATIONS WITHIN PREVIOUS 3 YEARS \*\*

| <u>NOV. #</u> | <u>DATE ISSUED</u> | <u>TERM/VAC DATE</u> | <u>DESCRIPTION</u>                |
|---------------|--------------------|----------------------|-----------------------------------|
| N86-4-1-4     | 3/5/86             | 4/24/86              | Hydrology/Maintenance.            |
|               | 3/5/86             | 6/4/86               | Approved plan/hydrology.          |
|               | 3/5/86             | 3/13/86              | Approved plan submittals.         |
|               | 3/5/86             | 3/13/86              | Hydrology.                        |
| N86-4-6-1     | 5/2/86             | 9/29/86              | Approved plan submittals.         |
| C86-4-3-1     | 5/28/86            | 7/14/86              | Approved plan submittals.         |
| N86-4-7-1     | 6/25/86            | 8/26/86              | Water monitoring.                 |
| N87-4-1-1     | 2/4/87             | 5/1/87               | Approved plan.                    |
| N87-16-1-1    | 7/18/87            | 7/23/87              | .817.14.                          |
| N87-16-2-1    | 10/2/87            | 11/3/87              | Approved plan.                    |
|               | 7/5/84             | 2/18/88              | BLM mining outside of lease area. |

| VIOLATION/<br>CESSATION  | ISSUED<br>DATE | ABATEMNT/<br>STATEMNT | LAPSD<br>TIME | MODIFY<br>DATE | TERM/VAC<br>DATE | LAPSED<br>TIME | PERTINENT<br>REGULATIONS                                | PLANS<br>REQUIRED |
|--------------------------|----------------|-----------------------|---------------|----------------|------------------|----------------|---------------------------------------------------------|-------------------|
| N88 16 01 01<br>01 OF 01 | 01/21/88       | 02/10/88<br>02/16/88  | 20<br>26      | 00/00/00       | 02/16/88<br>T    | 26             | UMC817.21                                               | N                 |
| N88 16 02 01<br>01 OF 01 | 02/04/88       | 03/03/88<br>02/05/88  | 28<br>1       | 00/00/00       | 02/04/88<br>T    | 0              | UMC817.22                                               | N                 |
| N88 16 03 01<br>01 OF 01 | 03/25/88       | 03/25/88<br>03/30/88  | 0<br>5        | 00/00/00       | 03/25/88<br>T    | 0              | UMC817.52                                               | N                 |
| N88 17 03 01<br>01 OF 01 | 09/29/88       | 05/01/89<br>09/29/88  | 214<br>0      | 00/00/00       | 09/29/88<br>T    | 0              | UMC771.19<br>AFTER THE FACT VIOLATION. NO ACTN POSSIBLE | Y                 |
| N88 17 04 01<br>01 OF 01 | 10/04/88       | 00/00/00<br>10/17/88  | 0<br>13       | 00/00/00       | 10/04/88<br>T    | 0              | UMC771.19 UMC817.52                                     | Y                 |

DURING THIS PERIOD 0 UNVACATED CO'S WERE ISSUED FOR THIS MINE.  
 DURING THIS PERIOD 5 UNVACATED NOV'S WERE ISSUED FOR THIS MINE.

## DOGDM VIOLATIONS

| NO.       | DATE ISSUED | DATE ABATED | NATURE OF VIOLATION                                                                                                          |
|-----------|-------------|-------------|------------------------------------------------------------------------------------------------------------------------------|
| 89-27-2-1 | 2/22/89     | 3/3/89      | Facility not permitted                                                                                                       |
|           |             | *4/17/89    | Vacated—U.S. Fuel Co. was responsible for mining activities within approved permit area—they were issued citation.           |
| 89-27-4-1 | 3/7/89      | 3/13/89     | Failure to protect topsoil from water erosion.                                                                               |
| 89-16-1-1 | 5/1/89      | 5/4/89      | Failure to submit Annual Report in a timely manner.                                                                          |
| 89-27-7-2 | 5/11/89     | 6/29/89     | Failure to comply with the terms and conditions of the permit.<br>(Failure to drill monitor well MW-3 as per permit)         |
| 89-27-7-2 | 5/11/89     | 5/11/89     | Failure to comply with the terms and conditions of the permit.<br>(Ground & surface water monitoring/error in parameter list |
| 89-27-9-1 | 7/27/89     |             | Failure to comply with the approved plan.                                                                                    |

## Wellington Preparation Plant

- A. Milner Diversion. Certificate of Appropriation of Water, State of Utah, No. 9042, Application No. 27718, a-4661, a-6519 (Water User's Claim No. 91-215), dated February 25, 1972, recorded in Book 130 at page 519 in the office of the Carbon County Recorder, Price, Utah, in the name of United States Steel Corporation, appropriating ten (10.0) c.f.s. of water from the Price River and underground sources for industrial and irrigation uses, from the following points of diversion:

Township 15 South, Range 11 East, SLM

No. 1: North 5 degrees 31' West, 2272 feet from Southeast corner of Section 16; No. 2: South 22 degrees 50' West, 2089 feet from Northeast corner of Section 16; No. 3: North 1410 feet and West, 535 feet from South quarter corner of Section 8; and No. 4: South 22 degrees 31' West, 1880 feet from Northeast corner of Section 16;

- B. Pumphouse Diversion. Certificate of Appropriation of Water, State of Utah, No. 9043, Application No. 27818, a-4662, a-6518 (Water User's Claim No. 91-216), dated February 25, 1972, recorded in Book 130 at page 520 in the office of the Carbon County Recorder, Price, Utah, in the name of United States Steel Corporation, appropriating five (5.0) c.f.s. of water from the Price River and underground well sources for irrigation and industrial uses, and from the following points of diversion:

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- C. Farnham Diversion. Certificate of Permanent Change of Point of Diversion, Place, Purpose or Period of Use of Water, State of Utah, No. a-713, Change Application No. a-3851, a-4244, a-6520 (Water User's Claim No. 91-371), dated February 25, 1972, recorded in Book 130 at page 518 in the office of the Carbon County Recorder, Price, Utah, in the name of United States Steel Corporation, changing rights to 5.197 c.f.s. of water (limited to 1247 acre feet per year) for irrigation and industrial uses, from the following points of diversion:

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- D. Stockwatering Claims.

1. Water User's Claim No. 91-3882 by United States Steel Corporation to a diligence stockwatering use for 150 cattle from the Price River, from the following point of diversion:

Township 15 South, Range 11 East, SLM

Section 16: Point where stream SE $\frac{1}{4}$  of Section 16 to point where stream leaves NE $\frac{1}{4}$  of Section 16.

2. Water User's Claim No. 91-3883 by United States Steel Corporation to a diligence stockwatering use for 150 cattle from the Price River, from the following point of diversion:

Township 15 South, Range 11 East, SLM

Section 8: Point where stream enters NE $\frac{1}{4}$  of Section 8 to point where stream leaves NE $\frac{1}{4}$  of Section 8.

3. Water User's Claim No. 91-3759 by United States Steel Corporation to a diligence stockwatering use for 150 cattle from the Price River, from the following point of diversion:

Township 15 South, Range 11 East, SLM

Section 9: Point where stream enters SW $\frac{1}{4}$ NW $\frac{1}{4}$   
of Section 9 to point where stream leaves  
SE $\frac{1}{4}$ SW $\frac{1}{4}$  of Section 9.

- E. Water Agreement. Rights to a maximum of ten (10.0) second feet of water under Application No. 35177 for irrigation and industrial uses pursuant to an Agreement dated December 17, 1974, between Price River Water Improvement District and United States Steel Corporation.

NOTICE OF APPLICATION  
Wellington Preparation Plant  
Permit (ACT/007/012)

Notice is hereby given that Genwal Coal Company, P. O. Box 1201, Huntington, UT 84528 has submitted an application to the State of Utah, Department of Natural Resources, Division of Oil, Gas & Mining for transfer of a permit applicable to the Wellington Preparation Plant under the provisions of the Utah Coal Mining and Reclamation Act (Utah Code Ann. 40-10-1 et seq.) and the Utah Coal Program Regulation UMC 788.18. The previous permittee of the Wellington Preparation Plant was the Kaiser Coal Corporation, Permit No. ACT/007/012. The permit area is located in Carbon County, Utah as follows:

Township 15 South, Range 11 East, SLB&M  
Sec. 8: SE $\frac{1}{4}$ NE $\frac{1}{4}$  and SE $\frac{1}{4}$   
Sec. 9: S $\frac{1}{2}$ N $\frac{1}{2}$  and S $\frac{1}{2}$   
Sec. 15: W $\frac{1}{2}$ NW $\frac{1}{4}$   
Sec. 16: All  
Sec. 17: E $\frac{1}{2}$ SE $\frac{1}{4}$  and NE $\frac{1}{4}$

Pertinent comments are solicited from anyone affected by this proposal. Such comments should be filed within the next thirty (30) days with:

State of Utah  
Department of Natural Resources  
Division of Oil, Gas & Mining  
355 West North Temple  
III Triad, Suite 350  
Salt Lake City, Utah 84108

Published in the Sun Advocate this \_\_\_\_\_ day of \_\_\_\_\_, 1989.

Mine file - (Wellington Rep)  
cc S. Lippin



**RECEIVED**  
OCT 18 1989

DIVISION OF  
OIL, GAS & MINING

**CARBON COUNTY**  
**PRICE, UTAH 84501**

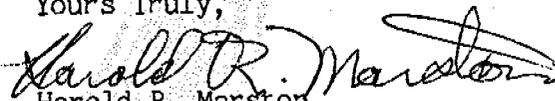
10-11-89

Mr. Lowell Braxton  
Division of Oil Gas Mining  
Triad Center  
Salt Lake City, Utah 84101

Dear Lowell:

Carbon County would like to inform you that it will continue to maintain its County Road from the intersection of the new Ridge Road Project to the property boundary line of the Wellington Washer Plant which is now owned by Gen Wall Coal Company. If you have any questions or if I may be of assistance, please feel free to call me at 637-4700 ext. 264.

Yours Truly,

  
Harold R. Marston  
Carbon County Planner

HRM/jh

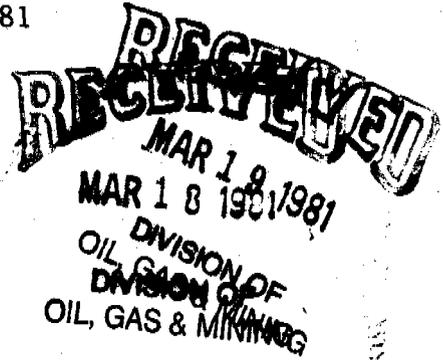
 *United  
States  
Steel  
Corporation*

P. O. BOX 807  
EAST CARBON, UTAH 84520

WESTERN DISTRICT COAL OPERATIONS

March 20, 1981

State of Utah  
Department of Natural Resources  
Division of Oil, Gas, and Mining  
1588 West North Temple  
Salt Lake City, Utah 84116



Re: Permit Application  
Wellington Coal Cleaning Plant  
ACT/007/012  
Carbon County, Utah

Dear Sir:

The United States Steel Corporation submits this permit application for the Wellington Coal Cleaning Plant as required by the final rules of the Utah Board and Division of Oil, Gas, and Mining: Coal Mining and Reclamation Permanent Program.

To the best of my knowledge, all of the information presented in this application is true and correct.

Sincerely,

WESTERN DISTRICT-COAL

*Paul E. Watson*

Paul E. Watson  
General Superintendent

WELLINGTON COAL CLEANING PLANT

PLACEMENT LIST

| <u>Category</u>                                                        | <u>Remove</u>       | <u>Insert</u> | <u>Status</u> | <u>Description</u>                                            |
|------------------------------------------------------------------------|---------------------|---------------|---------------|---------------------------------------------------------------|
| General                                                                | ✓ Table of Contents | i, ii         | Revised       | Table of Contents - Includes this Package                     |
|                                                                        | ✓                   | iii           | No Change     | Page number change - Introduction                             |
|                                                                        | ✓ ii                | iv            | Revised       | Map Index - Includes this Package                             |
| General Requirements for Permits and Permit Application                | ✓ -                 | 771-1         | New Sheet     | Notarized Verification of Application                         |
|                                                                        |                     |               |               |                                                               |
| Requirements for Legal, Financial, Compliance, and Related Information | 782-2-4             | 782-2-4       | Revised       | Identification of Interests-Company Name Change               |
|                                                                        | 782-12              | 782-12        | Revised       | Insurance Information                                         |
|                                                                        | -                   | 782-13        | Revised       | Insurance Certificate                                         |
|                                                                        | 782-13              | 782-14        | Revised       | Identification of Other Licenses and Permits                  |
|                                                                        | -                   | 784-15-20     | New Sheets    | Approval Order-Air Quality; MSHA Approval                     |
|                                                                        | 782-14              | 782-21        | No Change     | Page Number Change-Location of Filing                         |
| Information on Environmental Resources                                 | 782-15              | 782-22        | Revised       | Newspaper Ad-Company Name Change                              |
|                                                                        | -                   | 783-2         | New Sheet     | Preming Environmental Resource Information                    |
|                                                                        | 783-2               | 783-3         | No Change     | Page Number Change-General Environmental Resource Information |
|                                                                        | 783-3               | -             | Revised       | Hydrology and Geology Description                             |
|                                                                        | 783-4               | 783-4         | Revised       | C9-1213 Geology Map                                           |
|                                                                        | -                   | 784-5-7       | Revised       | Hydrology and Geology Description                             |
|                                                                        | 783-5               | 783-8-9       | Revised       | Geology Description                                           |
|                                                                        | 783-6               | 783-10        | Revised       | Groundwater Information                                       |
|                                                                        | 783-7-11            | 783-11-26     | Revised       | Surface Water Information                                     |
|                                                                        | 783-12              | 783-27        | Revised       | Alternative Water Supply Information                          |
|                                                                        | 783-13-15           | 783-28-29     | No Change     | Page Number Change-Climatological Information                 |
|                                                                        | 783-16-17           | 783-30        | Revised       | Vegetation Information                                        |
|                                                                        | 783-18              | 783-31        | Revised       | Fish and Wildlife Resources Information                       |
|                                                                        | 783-19-24           | 783-32-38     | No Change     | Page Number Change-Soils Resource Information                 |
|                                                                        | 783-25-26           | -             | Deleted       | Soils Information-See Maps E9-3339, A9-1431                   |
|                                                                        | 783-27              | 783-39        | No Change     | Land-Use Information                                          |
|                                                                        | 783-28-29           | 783-40-41     | Revised       | Land-Use Information                                          |
|                                                                        | 783-30              | 783-42        | Revised       | Maps - General Requirements                                   |
|                                                                        | 783-31              | 783-43        | Revised       | Cross-Sections - Maps and Plans                               |
|                                                                        | 783-32              | 783-44        | Revised       | Prime Farmland Investigation                                  |
|                                                                        | -                   | 783-45        | New Sheet     | SCS Letter Regarding Prime Farmland                           |

*Revised*  
12-30-83

## WELLINGTON COAL CLEANING PLANT

PLACEMENT LIST

| <u>Category</u>                   | <u>Remove</u>     | <u>Insert</u> | <u>Status</u>                           | <u>Description</u>                                  |
|-----------------------------------|-------------------|---------------|-----------------------------------------|-----------------------------------------------------|
| Reclamation and<br>Operation Plan | 784-2-8           | 784-2-10      | Revised                                 | Operation Plan                                      |
|                                   | -                 | 784-11-14     | New Sheets                              | Photos of Existing Structures                       |
|                                   | 784-9             | 784-15-17     | Revised                                 | Existing Structures                                 |
|                                   | 784-10-12         | -             | <del>Deleted</del>                      | Reclamation Plan                                    |
|                                   | <del>784-13</del> | 784-18        | No Change                               | DO NOT REMOVE THIS DRAWING FROM THE ORP             |
|                                   | 784-14-18         | 784-19-24     | Revised                                 | Reclamation Plan                                    |
|                                   | 784-19-20         | 784-25-28     | Revised                                 | Protection of the Hydrologic Balance                |
|                                   | 784-21-22         | 784-29-30     | Revised                                 | Postmining Land Use                                 |
|                                   | 784-23-24         | 784-31-35     | Revised                                 | Ponds, Impoundments, Banks, Dams and<br>Embankments |
|                                   | 784-25            | 784-36        | No Change                               | Page Number Change-Public Parks, Historic<br>Places |
|                                   | 784-26            | 784-37        | No Change                               | Page Number Change-Public Roads                     |
|                                   | 784-27-28         | 784-38        | Revised                                 | Underground Development Waste; Subsidence           |
|                                   | 784-29            | 784-39-40     | Revised                                 | Fish and Wildlife Plan                              |
|                                   | 784-30            | 784-41        | Revised                                 | Diversions                                          |
|                                   | 784-31-32         | 784-42-43     | Revised                                 | Maps and Plans                                      |
|                                   | 784-33            | 784-44        | Revised                                 | Transportation - Facilities                         |
|                                   | -                 | 784-45-46     | New Sheets                              | C9-1286, A9-1432-Road Cross-Sections                |
|                                   | 784-34            | 784-47        | Revised                                 | Return of Waste to Underground                      |
|                                   | 784-35            | 784-48        | No Change                               | Page Number Change-Pollution Control                |
|                                   | Appendices        | Appendix A    | Appendix A                              | Revised                                             |
| Appendix B                        |                   | -             | Deleted                                 | Insurance Information                               |
| -                                 |                   | Appendix B    | New Sheets                              | Hydrologic Evaluation                               |
| Appendix D                        |                   | Appendix D    | Revised                                 | Cost of Reclamation                                 |
| Appendix E                        |                   | -             | Deleted                                 | Vegetation Survey                                   |
| -                                 |                   | Appendix E    | New Sheets                              | Refuse Disposal                                     |
| -                                 |                   | Appendix F    | New Sheets                              | Fish and Wildlife                                   |
| -                                 | Appendix G        | New Sheets    | Plans Submitted Separately from the ORP |                                                     |

## WELLINGTON COAL CLEANING PLANT

PLACEMENT LIST

| <u>Category</u> | <u>Remove</u>      | <u>Insert</u> | <u>Status</u> | <u>Description</u>                                    |
|-----------------|--------------------|---------------|---------------|-------------------------------------------------------|
| Drawings        | <del>E9-3341</del> | E9-3341       | Revised       | Permit Area and Facilities Map                        |
|                 | <del>E9-3343</del> | E9-3343       | Revised       | Current Land Use Map                                  |
|                 | <del>E9-3342</del> | E9-3342       | Revised       | Restoration of Affected Areas                         |
|                 | E9-3345            | -             | Deleted       | Vegetative Types and Plant Communities                |
|                 | E9-3339            | E9-3339       | Revised       | Soils Map and Disturbed Area                          |
|                 | -                  | E9-3428       | New Drawing   | Drill Hole Correlation                                |
|                 | -                  | E9-3430       | New Drawing   | Structures Within 100 ft. of the Price River          |
|                 | -                  | F9-177        | New Drawing   | Hydrologic Evaluation Map - 2 Sheets                  |
|                 | -                  | E9-3431       | New Drawing   | Cross-Sections for Hydrologic Evaluation              |
|                 | -                  | E9-3429       | New Drawing   | Proposed Road Pond                                    |
|                 | -                  | E9-3433       | New Drawing   | Proposed Pond for Heat Dryer Area                     |
|                 | -                  | E9-3426       | From TR No. 1 | Raise Lower Refuse Dike and Permanent Diversion       |
|                 | -                  | E9-3436       | New Drawing   | Raise Upper Refuse Dike and North Dike<br>(Phase II)  |
|                 | -                  | E9-3437       | New Drawing   | Raise Upper Refuse Dike and North Dike<br>(Phase III) |

U. S. STEEL MINING CO., INC.

Response to the Apparent Completeness Review  
Wellington Coal Cleaning Plant

UMC 771.23 Permit Application: General Requirements for Format and Contents

Additional information regarding methodology, names, dates and references used in data collection and calculations have been included in the ORP text.

All maps show section corners and most include a plane coordinate grid system. All maps are 1:24000 or larger. All permit area maps are 1:6000 or larger.

UMC 771.27 Verification of Application

The ORP is verified on new page 771-1 by a responsible official of U. S. Steel Mining Co., Inc.

UMC 782.13 Identification of Interests

The identification of interests are included in Appendix A of the ORP.

UMC 782.14 Compliance Information

A revised list of violations is included in Appendix A.

UMC 782.17 Permit Term Information

No change.

UMC 782.18 Personal Injury and Property Damage Insurance Information

A copy of the insurance certificate is included on page 782-13 of the ORP.

UMC 782.19 Identification of Other Licenses and Permits

Information is included in the ORP as follows:

1. Air Quality - pages 782-15, 16.
2. Culinary Water Wastewater and Solid Waste Disposal Site Facilities - a copy of the letter sent to the Board of Health was sent to DOGM.
3. Impoundments, Refuse Piles - pages 782-17 thru 20.

UMC 783.11 Premining Environmental Resources Description

Information is included on page 783-2 of the ORP.

UMC 783.13 Description of Hydrology and Geology: General Requirements

- (a) Information from site investigation drill holes regarding water is included on page 783-6 of the ORP.
- (1) A description of the Price River floodplain alluvials is included on page 783-6 of the ORP. New Drawing No. E9-3428 shows drill hole cross-sections in the plant area. A discussion of the Price River watershed is included on page 783-6 of the ORP.
  - (2) Information is included in the ORP as follows:
    1. Discussion of strike and dip in the permit area is included on page 783-6 of the ORP. Outcrop strike and dip readings are included on Drawing No. C9-1213.
    2. Faulting associated with the Farnham anticline is included on Drawing No. C9-1213.
    3. Locations of drill holes in the plant area are included on Drawing No. E9-3343. Collar elevations, lithologic logs and depths to water are shown on E9-3428.
    4. Cross-sections of drill holes are shown on E9-3428 and referenced on E9-3343.
    5. Drawing No. E9-3428 correlates the shale-alluvium contact through the plant area.
    6. The "Upper Unnamed Shale" shown on Map C9-1213 appears to correspond to the Bluegate Shale referred to in the ORP text.

UMC 783.14 Geology Description

Refuse samples have been taken and sent to Ford Chemical for evaluation for average pyrite, marcasite and sulfur values. Results will be forwarded when received by the Operator.

UMC 783.15 Groundwater Information

Additional groundwater information is included on page 783-10 of the ORP.

UMC 783.16 Surface Water Information

- (a) The statement that a portion of Soldier Creek flows under the slurry ponds cannot be substantiated and has therefore been deleted. A complete hydrologic description and evaluation is included in Appendix B. Drawing No. F9-177 indicates pertinent hydrologic features.

Site investigations are described on page 783-12 of the ORP.

- (b) Flow data recorded at the gaging station below Miller Creek on the Price River is included on pages 783-22 thru 25 of the ORP. Additional water monitoring data is included on pages 783-15 thru 17 of the ORP.

UMC 783.17 Alternative Water Supply Information

Further discussion is included on page 783-27 of the ORP.

UMC 783.19 Vegetation Information

The Operator has hired a vegetation consultant to perform a vegetation study at the Wellington Coal Cleaning Plant. The resulting report, when complete, will be furnished to the Division as a separate Appendix to be included in the ORP.

UMC 783.20 Fish and Wildlife Resources Information

Additional fish and wildlife information is included on page 784-39, 40 and in Appendix F.

UMC 783.22 Land-Use Information

Discussion regarding a land-use of wildlife habitat is included on page 783-40 of the ORP. A premining land productivity assessment will be included in the vegetation study.

UMC 783.24 Maps: General Requirements

- (c) Drawing No. E9-3339 has been revised to include that area between the D&RGW tracks and the Price River within the disturbed areas. Drawing No. E9-3341 shows the permit area and location of structures.
- (f) Items pertinent to the vegetation study will be submitted with the study.

Soil sample locations are shown on Drawing No. E9-3425 in Technical Revision No. 1.

- (g) Water supply intakes in and adjacent to the permit area are shown on F9-177.
- (l) Drawing No. E9-3430 shows all structures within 100 feet of the Price River as requested by the Division under item 817.57 of the ACR.

UMC 783.25 Cross-Sections, Maps and Plans

- (b) (g) Drawing No. C9-1212 is replaced by Drawing No. F9-177 which is a scale 1:2400.
  - (f) Drawing No. E9-3428 shows drill hole cross-sections with the location of water encountered for various locations in the permit area. Only two drill holes penetrated the Ferron Sandstone but did not go through. They are shown on E9-3428.
  - (i) The ultimate boundary of the refuse pile is shown on E9-3341. The diversion ditches are shown on E9-3341 and F9-177.
  - (j) The river water collection well is shown on E9-3341.
- There are no oil or gas wells within the permit area.
- (l) All drawings required under this section are certified by a registered professional engineer.

UMC 783.27 Prime Farmland Investigation

The Soil Conservation Service prime farmland determination is shown on page 783-45.

UMC 784.11 Operation Plan: General Requirements

- (b) (1) The North Dike is further discussed on page 784-3 of the ORP.  
  
No dikes have been raised since the Rollins, Brown and Gunnell report was written in March, 1978.  
  
No modifications have been made to the North Dike pursuant to the Rollins, Brown and Gunnell report since the dike is not used to impound water.
- (4) Refer to page 784-41 in the ORP for a discussion on diversions.
- (5) A plan view of the auxiliary pond is shown on Drawing No. C9-1285. No cross-section is shown since this pond receives coal fines which are periodically cleaned out and disposed of by running the fines back through the plant. Design drawings for the proposed road pond are shown on E9-3429 and C9-1284. Pond volumes are discussed on the drawings referenced. Both ponds will be reclaimed with the plant site as discussed on pages 784-22 and 26 of the ORP.

- (6) In the event of a power loss during the coal cleaning process, water which is contained within the circuit in excess of sump and structure capacities (ie. water contained in pipes, gravity feed head tanks and desiltor bowls) will be discharged into the auxiliary pond and proposed road pond. When the plant is not operating, this condition does not exist since the water is only in circulation when the pumps are running. There is no way to predict the frequency of such power stoppages, which are generally due to incoming power interruptions. Water quality data of plant effluent is found on page 783-21 of the ORP.

Long range plans for the slurry ponds east of the Price River are presented in Appendix E. These plans provide adequate storage capacity in the current locations for an excess of 30 years. Since permit terms are for five years, the plan contained in the ORP appears to adequately address the long range refuse disposal facilities for permit approval.

The slurry pipeline is discussed on page 784-9 and 10.

UMC 784.12 Operation Plan: Existing Structures

- (a) (2) Photographs of existing structures are included on pages 784-11 thru 14 of the ORP.
- (4) Additional information is included on pages 784-16 of the ORP.
- (b) Proposed impoundment modifications have been submitted in Technical Revision No. 1.

UMC 784.13 Reclamation Plan: General Requirements

- (b) (1) A detailed reclamation timetable for the area west of the Price River is included on page 784-19 of the ORP.

A detailed reclamation timetable for the area east of the Price River is included on page 784-20 of the ORP.

- (2) A detailed reclamation cost evaluation is included in Appendix D of the ORP.

Salvage values are not a part of reclamation costing.

Concrete will be disposed of as described in the reclamation plan on pages 784-19, 20 and 21 of the ORP.

Equipment to be used in the reclamation process is included in Appendix D of the ORP.

Labor costs are included in the cost of reclamation.

Reclamation of the slurry pond area is included in the reclamation cost estimate.

- (3) Reclaimed surface contours are shown on Drawing No. E9-3342. Premining contours are not required under this section.
- (4) Areas where topsoil will be stripped in future disturbances are shown on E9-3425 in Technical Revision No. 1. A detailed topsoil management plan is included on pages 784-22 thru 24 of the ORP.
- (5) Revegetation aspects of reclamation will be addressed in the vegetation study, to be performed in the Summer, 1983.
- (7) Samples of refuse from the slurry pond area and the coarse refuse pile have been taken and sent to Ford Chemical Laboratory for analyses. At the request of Shannon Storrud of the Division, the following parameters are being tested: %sand %silt %clay, texture class, pH, acid-base potential, SAR, electro-conductivity, saturation percent, total dissolved solids, calcium, magnesium, and sodium. Results will be forwarded when received from the laboratory.
- (8) Information regarding reclamation of the pumphouse and river water collection well is included on page 784-21 of the ORP.
- (9) Reclamation plans for the slurry pond area are included on pages 784-20 and 21 of the ORP. Reclaimed contours are shown on Drawing No. E9-3342.

UMC 784.14 Reclamation Plan: Protection of the Hydrologic Balance

- R - (a) (2) (3) Discussion is provided on page 784-25 of the ORP.
- W - (b) (1) Additional discussion is included on page 784-26 of the ORP. A detailed hydrologic evaluation is included in Appendix B of the ORP.
- (2) The proposed road pond and heat dryer pond provide total containment for all plant and scrubber effluent.
  - (3) Water monitoring locations are shown on Drawing No. F9-177. The Operator will monitor these locations quarterly.

UMC 784.15 Reclamation Plan: Postmining Land-Use

Additional information regarding postmining land-uses is included on pages 784-29 and 30 of the ORP.

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams, and Embankments

- (a) (2) (iii) A plan for operation and maintenance of the structures discussed under UMC 784.11(b)(1) is included on page 784-32 of the ORP.
- (iv) Reclamation plans for the slurry pond area are included on pages 784-20 and 21 of the ORP.
- (b) (1) All impoundments are temporary structures and are covered in the reclamation plan for areas east of the Price River.
- (2) All impounding structures have been approved by MSHA. A copy of the approval letter is included on pages 782-17 thru 20 of the ORP. A copy of the MSHA plan is kept on file at the U.S. Steel Mining Co., Inc., Western District office and is available on request. Plans to modify the Lower Refuse Dike have been submitted to MSHA.

UMC 784.21 Fish and Wildlife Plan

Additional information on fish and wildlife is included on pages 784-39 and 40 and in Appendix F of the ORP.

UMC 784.22 Diversions

Cross-sections of the diversion ditch west of the plant area are shown on E9-3431 and are referenced on F9-177. Hydrologic evaluation of this ditch is contained in Appendix B.

Cross-sections of the diversion ditch adjacent to the North Dike are shown on E9-3427 and referenced on the same drawing. Hydrologic evaluation of this ditch is contained in Appendix C of Technical Revision No. 1.

UMC 784.23 Operation Plan: Maps and Plan

- (b) (6) Drawing No. F9-177 details the flow of surface waters in the permit area.
- (10) The North Dike was shown on Drawing No. E9-3341 of the original submittal.
- (11) Cross-sections of the final reclamation configuration are shown on Drawing No. E9-3342.

*Tech No. 1 approved 1/11/84*

(12) Water monitoring locations are shown on Drawing No. F9-177.

UMC 784.24 Transportation Facilities

Additional information regarding drainage structures is included on page 784-44 of the ORP. Refer to pages 784-5 and 9 thru 12 for discussion and exhibits on the refuse pipeline and support structures.

UMC 786.19 Criteria for Permit Approval or Denial

Revegetation potential will be addressed in the forthcoming vegetation study.

UMC 817.11 Signs and Markers

- (a) (b) Appropriate signs and markers have been placed at various locations in the cleaning plant area.
- (c) Permit identification signs will be placed at the points of access to the permit area.
- (d) Permit area perimeter markers are in place and maintained in good condition.
- (e) River buffer zone signs are placed 100 feet out from the Price River within the permit area.
- (g) Topsoil piles are appropriately identified.

UMC 817.22 Topsoil

817.23

817.24 A revised topsoil handling plan is included on pages 784-22  
817.25 thru 24 of the ORP.

The vegetation study will include a discussion on soil suitability, nutrients, and amendments.

UMC 817.42 Water Quality Standards and Effluent Limitations

- (a) (1) A hydrologic evaluation of the plant area is included in Appendix B of the ORP. Supporting calculations and maps are referenced in Appendix B.
- (b) (7) A discussion of the diversion ditch adjacent to the North Dike is included on page 784-7 of the ORP. Quality data for this ditch is included on page 783-21 of the ORP.

A copy of the submittal made to the Department of Health was sent to DOGM at the time it was sent to the Department of Health.

UMC 817.43 Hydrologic Balance: Diversions and Conveyance of Overland Flow, Shallow Ground Water Flow and Ephemeral Streams

(a)-(f) Diversion ditches are sized in Appendix B of the ORP and in Appendix C of Technical Revision No. 1.

UMC 817.44 Stream Channel Diversions

Diversion ditch drainage areas are shown on Drawings A9-1429 and A9-1431, in Technical Revision No. 1 and the ORP respectively.

UMC 817.45 Sediment Control Measures

Sediment control measures are shown on Drawing F9-177 and discussed in Appendix B of the ORP.

Sediment control during reclamation is addressed on page 784-26 of the ORP.

UMC 817.47 Discharge Structures

The discharge structure for the diversion ditch east of the plant area is shown on E9-3431.

The discharge structure of the diversion ditch adjacent to the North Dike is a natural channel.

UMC 817.49 Hydrologic Balance: Permanent and Temporary Impoundments

All impoundments described in the ORP are temporary:

1. Side slopes are no steeper than 2v to 1h.
- 2,3. The outslope of the Clear Water Dike is vegetated and not subject to sediment contributions.
- 4,5. Routine operation and maintenance plan is included on page 784-32 of the ORP. Weekly inspection reports are kept up to date and are available in the plant office.
6. Each impoundment is certified annually by a registered professional engineer.

UMC 817.52 Surface and Groundwater Monitoring

Wellington Coal Cleaning Plant is a surface operation. The existence of the Bluegate Shale between the surface alluvials and the Ferron Sandstone precludes the intermixing of surface and groundwater. The Operator monitors surface waters at the locations shown on F9-177. Groundwater monitoring is not a part of this plan.

UMC 817.53 Transfer of Wells

The River Water Collection Well is used to support plant operations. It will be plugged and reclaimed as described on page 784-21 at the time the plant area is reclaimed. The Operator does not intend to transfer the well ownership.

UMC 817.54 Water Rights and Replacement

This area is addressed on pages 783-27 and 784-25 of the ORP.

UMC 817.56 Postmining Rehabilitation of Sedimentation Ponds, Diversions, Impoundments and Treatment Facilities

The diversion ditch adjacent to the North Dike is the only permanent structure and is designed as such in Technical Revision No. 1.

UMC 817.57 Stream Buffer Zones

- (a) Drawing No. E9-3430 shows structures within 100 feet of the Price River. These structures have been in place since the plant was built in 1957-58 and as such pre-dated the regulations. All structures were appropriately engineered and maintained in good condition.

River buffer zone signs have been placed 100 feet from the Price River within the permit area.

UMC 817.59 Coal Recovery

Coal cleaning plants are designed to maximize coal recovery. Fine refuse will be marketed to energy consumers as purchasers become available.

UMC 817.83 Water Control Measures

- (a) (2) The slurry pond area was constructed in 1957-58 at which time no underdrainage system was included. The Operator does not intend to alter the pond areas since they were built prior to these regulations.

Refuse samples are being analyzed and will be forwarded when received by the Operator.

UMC 817.89 Disposal of Non-coal Waste

Discussion on non-coal waste handling is included in Appendix G of the ORP. The holding area is shown on Drawing No. E9-3341.

UMC 817.92 Site Preparation

- (b) Hydrologic evaluation based on the 100 year 24 hour storm is included in Technical Revision No. 1 for the diversion ditch adjacent to the North Dike.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

Additional information on fish and wildlife is included on pages 784-39 and 40 and in Appendix F of the ORP.

UMC 817.100 Contemporaneous Reclamation

All areas currently disturbed by the Operator are used to support the plant operation. Should an area no longer be used, plans for its abandonment and reclamation will be submitted to the Division in a timely manner.

UMC 817.103 Backfilling and Grading: Covering Coal and Acid and Toxic-Forming Materials

The Operator has considered potential upward migration of salts in preparing the reclamation plan for the pond area found on page 784-21 of the ORP.

UMC 817.106 Regrading or Stabilizing of Rills and Gullies

A commitment to stabilize rills or gullies which may be observed is found on pages 784-19,20 and 23 of the ORP.

UMC 817.111 Revegetation

817.112

817.113 Revegetation information will be submitted pursuant to the

817.114 vegetation study.

817.116

UMC 817.131 Cessation of Operations

817.132

Should operations at the Wellington Coal Cleaning Plant be suspended, the Division will be notified as required under these regulations and appropriate action taken.

UMC 817.133 Postmining Land-Use

The Operator intends to comply with the current regulations during reclamation activities.

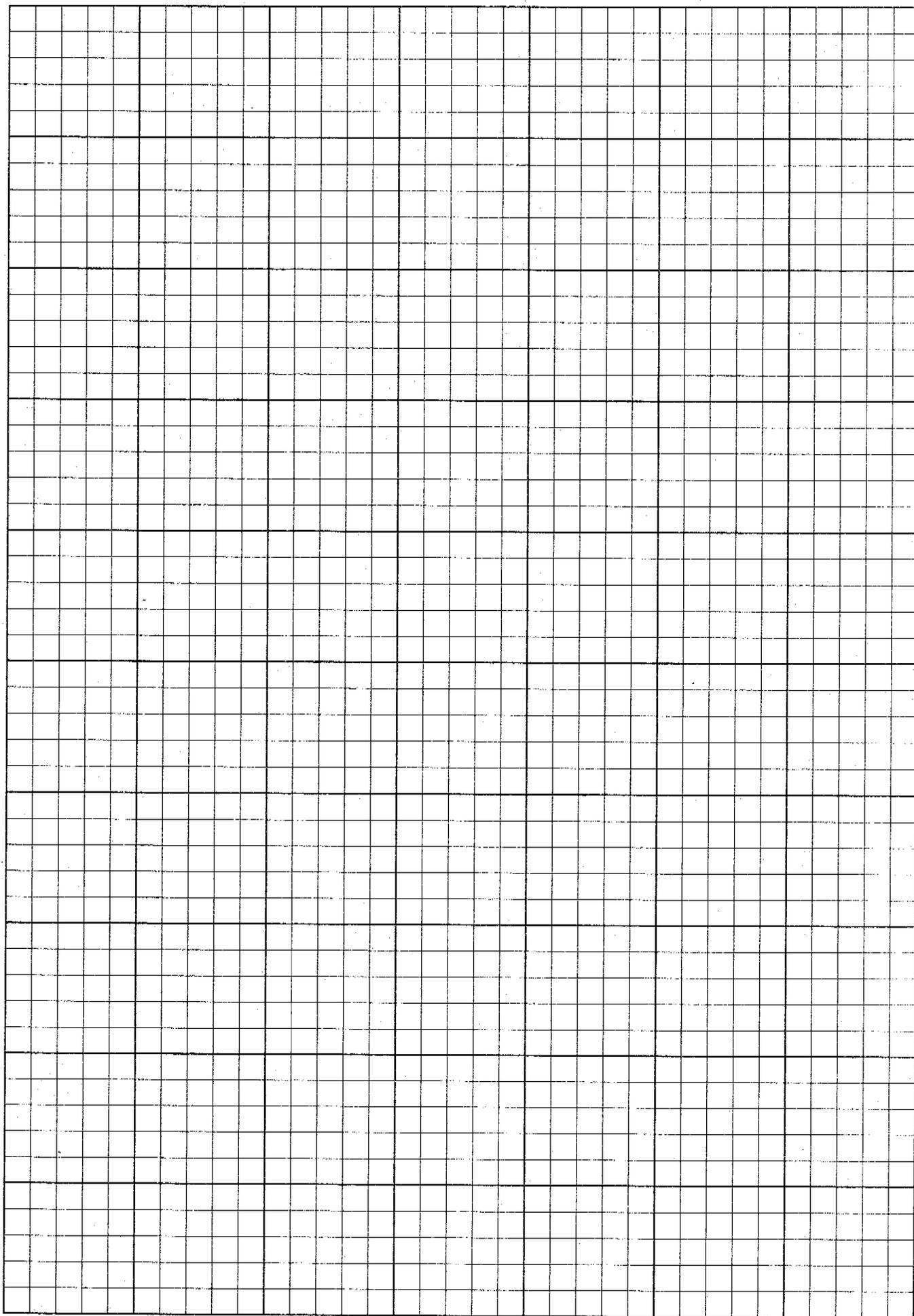
UMC 817.150 Roads

Road cross-sections are shown on Drawing No. C9-1286 and A9-1432 in the ORP and E9-3426 in Technical Revision No. 1. Additional discussion on transportation facilities is included on page 784-44 of the ORP.

42-381 50 SHEETS 5 SQUARE  
42-382 100 SHEETS 5 SQUARE  
42-389 200 SHEETS 5 SQUARE



NATIONAL  
New York, U.S.A.



U. S. STEEL MINING CO., INC.  
WESTERN DISTRICT  
P.O. Box 807  
EAST CARBON, UTAH 84520

WELLINGTON COAL CLEANING PLANT  
OPERATION AND RECLAMATION PLAN  
TECHNICAL REVISION No. 1  
REFUSE POND MODIFICATIONS

*File Copy*

Watts

U. S. Department of Labor

Mine Safety and Health Administration  
P O Box 25367  
Denver, Colorado 80225



Coal Mine Safety & Health  
District 9

August 10, 1983

G. H. Sides  
Chief Engineer  
U.S. Steel Mining Co., Inc.  
P.O. Box 807  
East Carbon, UT 84520

Re: Proposed Modifications,  
Upper Refuse Pond, I.D. #1211-UT-9-0013  
Lower Refuse Pond, I.D. #1211-UT-9-0014  
Wellington Prep Plant, I.D. #42-00099

Dear Mr. Sides:

Your letter, dated August 1, 1983, concerning a quality control program for construction of the proposed modification of the subject sites, has been received and made a part of the approved plan. If Rollins, Brown and Gunnell, Inc., is not retained to do the quality control, please advise this office as to who will do this work. Following completion of the modifications, a certification will be required by a registered professional engineer that the sites were modified in accordance with the approved plan. This certification may be submitted with the annual report, which is required by Section 77.216-4, 30 CFR.

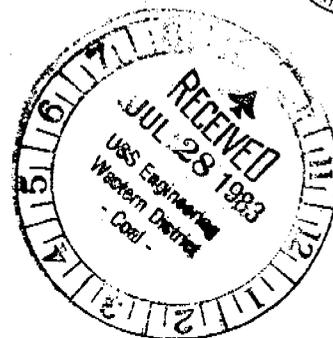
Sincerely,

  
John W. Barton  
District Manager

U. S. Department of Labor

Mine Safety and Health Administration  
P O Box 25367  
Denver, Colorado 80225

Coal Mine Safety & Health  
District 9



July 26, 1983

Mr. Glen Sides  
Chief Engineer  
U.S. Steel Mining Co., Inc.  
P.O. Box 807  
East Carbon, UT 84520

Re: Proposed Modifications to Refuse Dikes,  
Wellington Preparation Plant, I.D. #42-00099

Dear Mr. Sides:

The proposed modifications to the Lower Refuse Dike, I.D. #1211-UT-9-0013 and the Upper Refuse Dike, I.D. #1211-UT-9-0014, which were submitted on May 20, 1983, have been approved with the stipulation that a field quality control testing program be established and followed during the construction of the modifications. This testing program must be submitted in writing and approved by this office. Please contact MSHA engineer Larry Wilson or Dawn Jacoby at 303/234-2358 concerning the details of this program.

Sincerely,

  
John W. Barton  
District Manager

U. S. STEEL MINING CO., INC.  
Western District

WELLINGTON COAL CLEANING PLANT

APPLICATION FOR TECHNICAL REVISION NO. 1

Refuse Pond Modifications

RECEIVED  
JUN 10 1973

DIVISION OF  
OIL GAS & MINING

HMC 771.27 Verification of Application

STATE OF Utah

COUNTY OF Carbon

The U. S. STEEL MINING CO., INC.'S WESTERN DISTRICT SUBMITS THIS TECHNICAL REVISION FOR THE WELLINGTON COAL CLEANING PLANT as required by the final rules of the Utah Board and Division of Oil, Gas and Mining; Coal Mining and Reclamation Permanent Program.

To the best of my knowledge and belief, the information contained in the Application is true and correct.

*R. E. Youvston*

R. E. Youvston  
General Superintendent

SUBSCRIBED AND SWORN TO at East Carbon, Utah,  
this 9th day of June, 1983.

*[Signature]*  
\_\_\_\_\_  
Notary Public

*618 W. 1st East, Park, Utah, 84050*  
\_\_\_\_\_  
Residing at

My Commission Expires

*3-18-87*  
\_\_\_\_\_

*OK  
IN PERMIT  
6/15/87 JES*

U. S. STEEL MINING COMPANY, INC.

Western District

WELLINGTON COAL CLEANING PLANT

Technical Revision No. 1

Refuse Pond Modifications

The Wellington Coal Cleaning Plant and its associated refuse ponds have been operated for approximately 25 years. In order to continue operating the ponds with adequate settling capacity and operating freeboard, it is necessary to increase the height of the Lower Refuse Dike. U. S. Steel Mining Co., Inc. requests approval to modify the refuse impoundments as follows:

1. Raise the Lower Refuse Dike 10.5 feet to a crest elevation of 5385. The maximum water level of the modified pond will be 5382. This will allow a minimum of a three foot freeboard. Storm runoff calculations (attached) for a 100 year 24 hour storm show that 0.64 foot is required to contain and pass the design storm. Therefore, the maximum working level of the pond will be 5381.3 which allows a 3.7 foot freeboard. Refer to Drawing E9-3426, for a plan view and cross section.
2. It is proposed to replace the existing Lower Refuse Pond overflow and discharge structure with that shown in Appendix D, Exhibits 1, 3 and 4.
3. It is proposed to replace the existing Upper Refuse Pond overflow and discharge structure with that shown in Appendix D, Exhibits 1, 2 and 3.
4. Construct a permanent diversion for the ephemeral stream which enters the northeast corner of the Upper Refuse Pond.

Map No. E9-3425 shows the present configuration of the refuse ponds. The areal extent of the Upper and Lower Refuse Ponds is also shown on Map No. E9-3425. Map No. E9-3426 shows the configuration of the refuse ponds with the proposed modifications complete. The approximate areal extent of the Lower Refuse Pond at the maximum water level is shown on Map E9-3426.

Stability and Dam Design

U. S. Steel Mining Co., Inc. contracted with Rollins, Brown, and Gunnell, Inc. to evaluate various proposed modifications to the refuse ponds and the stability of those modifications. A copy of their final report has been included in Appendix E. Rollins, Brown, and Gunnell determined that the resulting safety factor for the proposed modifications to the Lower Refuse Dike is 1.7 (partial pool with steady seepage). The seismic safety factor was 1.2. Cross-sections of the proposed modifications, logs of test borings, and an analysis of the foundation materials is included in Appendix E.

## Hydrograph Calculations

U. S. Steel Mining Co., Inc. developed storm hydrographs for reaches 1, 2, A, and B (refer to Map A9-1429 - Appendix C). These hydrographs were used as a basis for the permanent diversion design and the calculation storm flows through the refuse ponds. The storm hydrographs and complete back-up calculations are included in Appendix C.

## Storm Runoff Calculations

U. S. Steel Mining Co., Inc. developed a computer program to model the refuse pond water levels and discharges during precipitation events. Storm runoff calculations for a 100 year 24 hour design storm are included in Appendix A. The computer printouts show accumulated water volumes, increases in pond depths, discharges, etc. for each time interval on each pond. From these calculations, the maximum increase in pond depth and maximum pond discharge can be determined. The storm runoff values are based on hydrographs developed in Appendix C for reaches 1, 2, A and B.

Three small areas which drain into the Upper and Lower Refuse Ponds were neglected. The first area would add 1.53 acre feet to the Upper Refuse Pond. At worst, this would increase the pond depth 0.03 feet (1.53 divided by pond area). The remaining two areas would add 4.61 acre feet to the Lower Refuse Pond. At worst, with no outflows, this would increase the pond depth 0.08 feet (4.61 divided by the pond area). It should also be pointed out that the pond modeling calculations are based on a 24 hour per day plant operation. The plant actually operates 8 hours per day. During the period of time the plant is not operating an additional 10.3 acre feet of storm runoff could be discharged from the Upper Refuse Pond. Runoff calculations for the three points are included in Appendix C.

Appendix B contains the equations used in the computer program as well as the methods of calculation.

## Construction

### Lower Refuse Dike Modifications

During construction of the Lower Refuse Dike modifications, U. S. Steel Mining Co., Inc. will maintain the existing discharge structure until the final discharge structures can be installed. The present structure will be cut off slightly above the water level to be maintained during construction. This will increase the capacity of the structure sufficiently to prevent an unacceptable rise in the pond level should the design storm occur during construction. Refer to Appendix A for storm calculations.

The proposed discharge structure has a horizontal pipe which will maintain the pond level once installed. Upon installation of the final discharge structure, the present structure will be removed or permanently sealed. The horizontal pipe has sufficient capacity to handle the pond circulation and the design storm should it occur during construction. Refer to Appendix A for storm calculations.

The height of the Lower Refuse Dike will be increased as follows:

1. A pad of refuse material will be placed on top of the present slurry. The refuse will be compacted into the fine slurry until a stable base is formed.
2. Refuse will be placed in lifts and compacted as recommended in the Rollins, Brown and Gunnell report. The final height of the impoundment will be 0.6 feet higher than the design height to allow for settling.
3. Both ends of the impoundment will be keyed into the hillsides as recommended in the Rollins, Brown and Gunnell.
4. The upstream face of the impoundment will be riprapped with coarse refuse material from the refuse pile south of the Coal Cleaning Plant.

#### Upper Refuse and North Dike Modifications

In conjunction with the modifications to the Lower Refuse Dike, it is necessary to replace the discharge structures in the Upper Refuse Dike. Refer to Appendix D for details of the proposed structure. The present discharge structures will be maintained until the proposed structures are installed. The current discharge structure will then be removed.

#### Pond Operation

The Upper Refuse Pond is presently not in service and a drag scraper is being used to remove solids from the pond. It is expected that this pond will remain out of service until either cleaning operations are completed or the Upper Refuse Dike and the North Dike are raised.

It is anticipated that the water levels in the Upper and Lower Refuse Ponds will be increased gradually over a period of years as the elevation of the solids increases. As the solids elevation in the Lower Refuse Pond rise, it will be necessary to raise the Upper Refuse Pond discharge structure.

#### Ownership and Operation

The Wellington Coal Cleaning Plant including the refuse ponds is owned by United States Steel Corporation. The facility is operated by U. S. Steel Mining Co., Inc. a wholly owned subsidiary of United States Steel Corporation. The mailing address is as follows:

U. S. Steel Mining Co., Inc.  
Western District  
P. O. Box 807  
East Carbon, Utah 84520

Refer to the Operation and Reclamation Plan for details.

782. Requirements for Legal, Financial, Compliance and Related Information

Refer to Section 782 of the Operation and Reclamation Plan, Wellington Coal Cleaning Plant.

783. Requirements for Information on Environmental Resources

783.14 Geology

Refer to Sections 783.13 and 783.14 of the Operation and Reclamation Plan.

783.15 Ground Water and Surface Water Information

783.16

Refer to Section 783.15 and 783.16 of the Operation and Reclamation Plan for information relating to surface and ground water.

The proposed modifications to the refuse ponds (refer to Map E9-3426) are not anticipated to have any greater hydrologic impacts than for the existing refuse ponds. The proposed permanent diversion structure (see Map E9-3427) will divert runoff from undisturbed areas around the refuse disposal area. This may reduce any hydrologic impacts from the refuse structures.

783.19 Vegetation Information

U. S. Steel Mining Co. plans to conduct a vegetation study at the Wellington Coal Cleaning Plant during the summer of 1983. The results of this study will be included in the Operation and Reclamation Plan.

783.20 Fish and Wildlife Resources Information

The proposed modifications to the refuse ponds are not anticipated to have any greater impacts on fish and wildlife than those of the existing structures.

784. Requirements for Reclamation and Operation Plan

The Lower Refuse Pond is bounded on all sides by steep cliffs. This will serve to minimize the amount of surface area affected by increasing the height of the empoundment (refer to Map E9-3426). The increase in surface disturbed area will be relatively minor compared with the number of acres presently disturbed in the refuse disposal area. It is not anticipated that this modification will materially affect the proposed reclamation plan for the refuse disposal area or the estimated reclamation costs.

U. S. Steel Mining Co., Inc. is currently preparing a revised reclamation plan for the refuse disposal area in response to the Apparent Completeness Review of the Operation and Reclamation Plan. Any impacts on the proposed reclamation plan of the refuse disposal area will be discussed in the Operation and Reclamation Plan.

No changes to the Cleaning Plant operation are anticipated from the proposed modifications.

817.21 Topsoil  
817.25

The Operator proposes to salvage topsoil from the locations shown on Map E9-3425 and stockpile it at the location shown on Map E9-3426 for use in future reclamation. Topsoil will be salvaged to a depth of 6 inches or the depth of the A horizon whichever is greater. Soil samples will be taken at the locations shown on Map E9-3425. The results of these samples will be forwarded to the Division when received from the laboratory. All topsoil salvaging and storage will be conducted according to the topsoil handling plan in the Operation and Reclamation Plan. The topsoil pile will be seeded with the seed mix approved by the Division for this purpose to reduce wind and water erosion of the stockpile.

The steep slopes on the east and west side of the Lower Refuse Pond will preclude the salvaging of topsoil from these areas which will be flooded.

#### Permanent Diversion

The Operator proposes to construct a permanent diversion to divert runoff from undisturbed areas east of the Upper Refuse Pond, refer to Maps E9-3426 and E9-3427. Runoff from reaches 1 and 2 (refer to Map A9-1429 - Appendix C) will be diverted around the Upper Refuse Pond. Cross sections of the proposed diversion structure are shown on Map E9-3427. The structure is designed to pass the peak flow from both a 100 year 24 hour storm and a 100 year 6 hour storm. Complete design calculations are included in Appendix C.

## Roads

It will be necessary to modify the roads as follows:

1. As the Lower Refuse Dike is raised in height, the roads on the north and south ends of the Clear Water Pond will increase in grade so that access to the crest of the Lower Refuse Dike is maintained. The roads will be regraded using the same refuse material that will be used in the dam construction. Refer to Map E9-3426.
2. The access road to the Clear Water Dike near the northwest end of the Clear Water Pond will be regraded to reduce the maximum grade. Refer to Map E9-3426.
3. There is an existing road between the southwest corner of the Clear Water Pond and the County road, (refer to Map E9-3425). This road is presently used infrequently to inspect the Clear Water Dike and the Lower Refuse Dike. The road presently has a maximum grade of 17%.

The Lower Refuse Dike will be keyed, five feet deep any 16 feet wide into the hillsides at each end. The material removed from the keyways will be used to construct an embankment to reduce the maximum road grade to approximately 10%. Refer to Map E9-3426 for a plan view of the proposed modifications. The road embankment will be adjusted slightly to balance the required fill with the volume of material removed from the dam keyways.

## Balance of Cuts and Fills - Diversion Ditch

Any excess fill material will be disposed of by increasing the height of fill areas. In the event it is necessary to borrow material to construct the fill areas, the ditch dimensions will be increased slightly (increased depth and/or width) to provide the additional volume of fill material required.

## SOIL SAMPLE INFORMATION

Samples Taken June 8, 1983

| <u>Sample No.</u> | <u>Location</u> | <u>Sample Depth Interval</u> |
|-------------------|-----------------|------------------------------|
| 1A                | 1               | 0.0 - 0.5 ft.                |
| 1B                | 1               | 0.5 - 1.0 ft.                |
| 1C                | 1               | 1.0 - 1.5 ft.                |
| 1D                | 1               | 1.5 - 2.0 ft.                |
| 2A                | 2               | 0.0 - 0.5 ft.                |
| 2B                | 2               | 0.5 - 1.0 ft.                |
| 2C                | 2               | 1.0 - 1.5 ft.                |

### NOTES:

1. Location 1 - near permanent diversion
2. Location 2 - near Lower Refuse Dike
3. Refer to Map E9-3425 for soil sample locations
4. Field observations indicated that the A soil horizon was less than 6 inches at both Locations.

SOIL SAMPLE ANALYSES

|                             | <u>1A</u> | <u>1B</u> | <u>1C</u> | <u>1D</u> | <u>2A</u> | <u>2B</u> | <u>2C</u> |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1 - Clay %                  | 5.00      | 4.60      | 5.40      | 1.30      | 2.50      | 4.10      | 3.50      |
| 1 - Gravel %                | <.01      | <.01      | <.01      | <.01      | <.01      | <.01      | <.01      |
| 1 - Sand %                  | 65.00     | 66.87     | 66.90     | 70.20     | 75.00     | 74.10     | 74.20     |
| 1 - Silt %                  | 30.00     | 28.60     | 27.70     | 28.50     | 22.50     | 21.80     | 22.30     |
| Acidity as CaCO3 mg/l       | 120.00    | <.01      | <.01      | <.01      | 50.00     | <.01      | <.01      |
| Alkalinity as CaCO3 ppm     | 640       | 360       | 520       | 520       | 440       | 400       | 480       |
| Calcium as Ca ppm           | 328.00    | 160.00    | 208.00    | 216.00    | 240.00    | 216.00    | 304.00    |
| Conductivity mmhos/cm       | 1,450.00  | 800.00    | 800.00    | 800.00    | 1,100.00  | 1,050.00  | 1,200.00  |
| Magnesium as Mg ppm         | 57.60     | 33.60     | 43.20     | 67.20     | 48.00     | 28.80     | 81.60     |
| Phosphorus as P ppm         | 6.90      | 5.10      | 4.80      | 3.80      | 4.20      | 3.80      | 4.20      |
| Sodium Absorption Ratio     | 5.048     | 9.233     | 6.922     | 5.881     | 5.951     | 7.126     | 5.234     |
| Sodium as Na ppm            | 377       | 492       | 420       | 386       | 386       | 420       | 398       |
| Texture                     | Sandy     |
| Total Kjeldahl Nitrogen ppm | .36       | 1.15      | .65       | .91       | .89       | 1.05      | .80       |
| pH Units (1:1 Ratio) SM424  | 7.40      | 8.30      | 8.40      | 8.30      | 7.80      | 8.20      | 8.40      |

The design storm runoff and hydrograph calculations have been made by myself, or under my supervision, and are in accord with the supporting information, formulas and materials present to substantiate said calculations. The sources of supporting material are from books and publications, by government agencies and others, that are used in the industry. Therefore, these calculations are in accordance with current, prudent engineering practices.



Merlynn O. Anderson  
Registered Professional Engineer  
State of Utah No. 4325  
Dated May 20, 1983

WESTERN DISTRICT



**U. S. Steel  
Mining Co., Inc.**

a Subsidiary of United States Steel Corporation

P. O. BOX 807  
EAST CARBON, UTAH 84520  
801 / 888-4431

*File  
ACT/007/012  
Folder No. 3  
revising folder  
copy to Shannon  
Tam P., Lynn*

**JIM**

**SEP 19 1983**

September 16, 1983

Mr. James W. Smith, Jr.  
Coordinator of Mined Land Development  
State of Utah  
Division of Oil, Gas and Mining  
4241 State Office Building  
Salt Lake City, Utah 84114

Attn: Shannon Storrud  
Reclamation Engineer

Re: Proposed Modification to Refuse  
Dikes - Wellington Coal Prep  
Plant - ACT/007/012

Dear Mr. Smith:

U. S. Steel Mining Co.'s response to the biology and soil  
comments are attached. The state engineer's comments have been  
forwarded to Rollins, Brown and Gunnell for review.

Sincerely,

R. E. Yourston  
General Superintendent

REY:VRW:cs  
Enc.  
cc: V. R. Watts  
EC File

RECEIVED  
SEP 19 1983

DIVISION OF  
OIL, GAS & MINING

U. S. STEEL MINING CO. RESPONSE

Biology and Soil Comments

UMC 517.21 Topsoil: General Requirements

- (a) As noted soils data submitted August 2nd (page 7) the A soil horizon was less than 6 inches thick. In the area of the diversion ditch the upper 6 inches of soil will be salvaged and stored in the topsoil storage pile. Any earth excavated to construct the ditch will be used to construct small embankments adjacent to the ditch. Therefore, the excavated subsoils will be available for reclamation.

In the area south of the Lower Refuse Dam the upper 6 inches of soil will be salvaged and stored in the topsoil pile as described in the application. The Wellington Coal Cleaning Plant reclamation Plan (contained in the Operation and Reclamation Plan) proposes to cover the refuse ponds with 18 inches of soil. Therefore, the Operator proposes to remove an additional 12 inches of subsoil and store it in the topsoil pile.

The soil electroconductivity reported was in error and should have been reported in units of micro mhos/cm. A copy of the soil description for RuB2 is attached.

UMC 817.23 Topsoil: Storage

The Operator proposes to seed the topsoil pile with the seed mix recommended by the vegetation study currently in progress (after approval by the Division). The vegetation consultant (Patrick Collins) retained by U. S. Steel Mining indicated that he does not see a need to mulch the topsoil pile. If inspections by the enforcement staff after seeding indicate a need, mulch will be added to the pile as required.

It is anticipated that the topsoil pile will be seeded in late fall (October-November) or early spring.

UMC 817.100 Contemporaneous Reclamation

Since the Lower Refuse Dike is being constructed out of minus 1½ inch refuse (rock), it would seem to be inappropriate to seed this area. The relatively coarse nature of this material should preclude any erosion problem on the slopes of the dike.

about the same color. Below a depth of 40 inches, the texture ranges from sandy loam to silty clay loam.

**Ravola loam, 1 to 3 percent slopes (R1B).**—In most places the profile of this soil is like the one described as typical of the series. In some places, however, the texture between depths of 10 and 40 inches is silt loam to very fine sandy loam and the texture below 40 inches is sandy loam to silty clay loam. Salinity generally is slight to moderate. Alkalinity ranges from none to moderate. Veins of gypsum are common below a depth of 20 to 30 inches. The frost-free season is 110 to 130 days in 3 out of 4 years.

Included in mapping were areas of Billings silty clay loam, and other areas  $\frac{1}{2}$  acre to 1 acre in extent, of poorly drained, strongly or very strongly saline-alkali soils. Also included were areas of a soil that is brown or light olive in color, and areas of Ravola loam in which the slopes are slightly less than 1 percent.

Drainage is good, and permeability is moderate. Runoff is medium, and the susceptibility to erosion is moderate. Roots penetrate to a depth of 5 feet or more. This soil retains about 10.5 inches of water, but only about 6 inches of water is readily available to plants. Natural fertility is low, but the fertility in many fields is high because fertilizer has been applied. This soil is easy to work and to irrigate. The uniform distribution of irrigation water is needed. Land leveling can be done with little or no damage to the soil.

This soil is used for spring and fall range and for irrigated pasture, alfalfa, small grains, corn, and sugar beets. The growing season is long enough for alfalfa to produce two full cuttings and part of a third. Corn does not mature for grain and is used for ensilage. (Capability units IIe-2, irrigated, and VIIc-D, nonirrigated; Desert Loam Bottom range site)

**Ravola loam, 1 to 3 percent slopes, eroded (R1B2).**—Originally, this soil was similar to Ravola loam, 1 to 3 percent slopes, but erosion has formed V-shaped gullies 4 to 5 feet deep and 100 to 400 feet apart in it. These gullies were caused by runoff from nearly raw shale hills, or in some places by waste water from irrigation. Because of the gullies, some fields are no longer cultivated. The cultivated areas between the gullies are used in the same way as Ravola loam, 1 to 3 percent slopes. Careful use of irrigation water is needed. Areas within 15 to 20 feet of a gully should not be cultivated.

Areas of this soil that are not in cultivation are used for spring and fall range. The cultivated areas are used for irrigated pasture, alfalfa, small grains, and corn. (Capability units IIe-2, irrigated, and VIIe-D, nonirrigated; Desert Loam Bottom range site)

**Ravola loam, 3 to 6 percent slopes, eroded (R1C2).**—This soil is similar to Ravola loam, 1 to 3 percent slopes, except that it has steeper slopes and is eroded. It occupies alluvial fans.

Included in the mapping were similar soils that are moderately deep over shale and some soils that are moderately fine textured.

Runoff is rapid, and the susceptibility to erosion is high. Sheet erosion is active. The surface layer has been washed from the soils in the upper part of most fields and has been deposited on soils in the lower part. In many areas, especially near the steep, nearly bare shale hills, gullies

are 4 to 8 feet deep and 100 to 400 feet apart. Some gullies were started by water escaping through breaks in irrigation canals and laterals.

Many areas are used for spring and fall range. The cultivated areas are used for irrigated pasture, grains, and alfalfa. (Capability units IIIe-2, irrigated, and VIIe-D, nonirrigated; Desert Loam Bottom range site)

**Ravola loam, 1 to 10 percent slopes, channeled (RnD).**—This soil has an uneven surface that has been dissected and channeled by gullies that are now fairly well healed. It is limited in extent.

Runoff is rapid, and the susceptibility to erosion is high. Extensive leveling is needed before this soil can be cultivated. The soil is used for range. (Capability unit VIIe-D, nonirrigated; Desert Loam Bottom range site)

**Ravola loam, extended season, 0 to 1 percent slopes (RsA).**—This soil is similar to Ravola loam, 1 to 3 percent slopes, except that it is nearly level. In addition, it is in an area in which the growing season is 140 to 160 days. It occupies flood plains of the Green River.

Included in mapping were small areas of Billings silty clay loam and Green River loam.

Runoff is slow, and the susceptibility to erosion is slight. The uniform distribution of water is needed. Many fields have been leveled, but leveling is still needed in some places to improve the distribution of water.

This soil is used for irrigated pasture, alfalfa, small grains, corn, melons, and sugar beets. The growing season is long enough for corn to mature and for alfalfa to produce three full cuttings in a year. (Capability unit I-1, irrigated; not rated for other uses)

**Ravola loam, extended season, 1 to 3 percent slopes (RsB).**—This soil is similar to Ravola loam, 1 to 3 percent slopes, except that it is in an area in which the growing season is 140 to 160 days. This soil is near Green River.

Included in mapping were some low spots in which the soil has a surface layer of silty clay loam, and some small areas of similar soils that are brown.

The growing season is long enough for corn to mature and for alfalfa to produce three full cuttings in a year. This soil is used for irrigated pasture, alfalfa, small grains, corn, melons, and sugar beets. (Capability unit IIe-1, irrigated; not rated for other uses)

**Ravola silty clay loam, 1 to 3 percent slopes (R1B).**—This soil has a surface layer of silty clay loam 8 to 15 inches thick, and it is gravelly in a few places. Otherwise, it is similar to Ravola loam, 1 to 3 percent slopes.

The infiltration rate is moderate to slow. This soil is fairly hard to work. A seedbed is more easily prepared if the soil is plowed in fall when barely moist, and is allowed to remain rough over winter, than if it is plowed in spring. This soil compacts if it is trampled or cultivated when wet.

This soil is used for irrigated pasture, alfalfa, small grains, and corn. (Capability units IIe-2, irrigated, and VIIs-D, nonirrigated; Desert Loam Bottom range site)

**Ravola-Bunderson complex, 1 to 3 percent slopes, eroded (RuB2).**—About 80 percent of this mapping unit is Ravola loam, 1 to 3 percent slopes, eroded, and 20 percent is Bunderson loam, 1 to 3 percent slopes, eroded. Typically, the Bunderson soil occupies slickspots that are inter-

- C1g—11 to 17 inches, grayish-brown (2.5Y 5/2) loam, dark grayish brown (2.5Y 4/2) when moist; common, medium, distinct, strong-brown (7.5YR 5/6) and few, fine, faint, gray (N 6/0) mottles; weak, coarse, subangular blocky structure; slightly hard or hard, firm, slightly sticky and plastic; plentiful medium and fine roots; common medium and fine pores; strongly calcareous; strongly alkaline (pH 8.6); clear, wavy boundary.
- C2g—17 to 33 inches, grayish-brown (2.5Y 5/2) silty clay loam, dark grayish brown (2.5Y 4/2) when moist; few, fine, distinct, strong-brown (7.5YR 5/6) mottles and common, medium, distinct, gray (N 6/0) mottles; weak, coarse, prismatic structure breaking to weak, coarse, subangular blocky structure; very hard, very firm, sticky and very plastic; plentiful medium and fine roots; few medium and common fine pores; numerous gypsum mycelia; strongly calcareous; strongly alkaline (pH 8.6); clear, wavy boundary.
- C3g—33 to 43 inches, grayish-brown (2.5Y 5/2) heavy loam, dark grayish brown (2.5Y 4/2) when moist; fine, distinct, strong-brown (7.5YR 5/6) mottles and common, medium, distinct, gray (N 6/0) mottles; massive; hard, firm, slightly sticky and plastic; few medium and fine roots; common fine and few medium pores; moderately calcareous; moderately alkaline (pH 8.3); gradual, wavy boundary.
- C4g—43 to 70 inches, light brownish-gray (2.5Y 6/2) heavy loam, dark grayish brown (2.5Y 4/2) when moist; common, medium, gray (N 6/0) mottles; massive; hard, firm, slightly sticky and plastic; few medium and fine roots; common fine and few medium pores; strongly calcareous; moderately alkaline (pH 8.2).

The content of lime ranges from 10 to 30 percent and is greatest near the surface. In the A1 horizons, hue is 2.5Y to 5Y; value ranges from 5 to 7 when the soils are dry and is 4 or 5 when they are moist; and chroma is 2 or 3. Distinct to prominent mottles are at depths of less than 20 inches. Gley colors are common in some areas at some depth below 36 inches. Thin layers of peaty material are on the surface in some areas. The part of the profile between 10 and 40 inches is silty clay loam to heavy loam, and contains 22 to 38 percent clay and less than 15 percent sand that is coarser than very fine sand. All of the upper 40 inches is about the same color.

**Rafael silty clay loam** (1 to 3 percent slopes) (Rc).—The profile of this soil is the one described as typical of the series. Distinct mottles typically are in the surface layer, but they are at a depth of as much as 20 inches in some places. Below 3 feet gleying increases with depth. The wettest areas commonly have a thin platy layer on the surface. This soil is moderately to strongly affected by salinity and is not affected to strongly affected by alkali.

Included in mapping were areas of Ferron silt loam. Also included were areas where the soil is strongly saline.

Drainage is poor, and permeability is slow. Roots penetrate deeply, but in most places they are concentrated in the surface layer and in the subsoil. Runoff is slow, and the susceptibility to erosion is slight. Fertility is increased by the high content of organic matter in the surface layer.

This soil is used for grazing. Some of the drier areas are used for growing meadow hay. (Capability unit VIIw-28, nonirrigated; Wet Meadow range site)

### Ravola Series

The Ravola series consists of soils that are deep, medium textured, moderately permeable, and well drained. These

soils occupy moderate to large areas on alluvial fans, flood plains, and in narrow alluvial valleys. They have formed in alluvium that washed from shale and sandstone. The vegetation is mainly galletagrass, shadscale and some greasewood. Elevations range from 4,000 to 6,500 feet. The annual rainfall is 6 to 11 inches, and the mean annual soil temperature is 47° to 54° F. The frost-free season is 110 to 160 days.

In a typical profile, the surface layer is light brownish gray, slightly hard, moderately calcareous loam about 9 inches thick. The underlying material is light brownish gray, moderately to strongly calcareous loam that in places is weakly stratified with layers of sandy loam or clay loam.

Nearly all areas have been cleared and are used for irrigated pasture, alfalfa, small grains, and corn. Some areas in the mouths of canyons, where air drainage is good enough to reduce the hazard of frost, are used for apple and peach orchards. Areas not cultivated are used for range.

Representative profile of a Ravola loam in a cultivated field, 2,000 feet west and 600 feet north of the S. corner of section 31, T. 17 S., R. 9 E., in Emery County, Utah:

- Ap1—0 to 6 inches, light brownish-gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) when moist; weak, coarse, subangular blocky structure breaking to weak, fine, subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; plentiful fine and few large roots; common fine and medium continuous pores; moderately calcareous; mildly alkaline (pH 7.8); clear, smooth boundary.
- Ap2—6 to 9 inches, light brownish-gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) when moist; weak, coarse, subangular blocky structure breaking to weak, coarse, granular structure; hard, friable, slightly sticky and slightly plastic; plentiful fine roots; common fine and few medium pores; strongly compacted plowpan layer; moderately calcareous; mildly alkaline (pH 7.7); clear, smooth boundary.
- C1—9 to 18 inches, brownish-gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) when moist; weak, thin platy structure breaking to weak, very thin, platy structure; hard, friable, slightly sticky and slightly plastic; few large and plentiful fine roots; many large and common fine pores; moderately calcareous; mildly alkaline (pH 7.7); gradual, wavy boundary.
- C2—18 to 45 inches, light brownish-gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) when moist; weak, coarse, subangular blocky structure breaking to weak, medium, granular structure; slightly hard, friable, slightly sticky and slightly plastic; few large and plentiful fine roots; common large and many fine pores; strongly calcareous; moderately alkaline (pH 7.9); gradual, irregular boundary.
- C3—45 to 60 inches, light brownish-gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) when moist; massive; soft, very friable, nonsticky and nonplastic; few fine roots; few fine pores; moderately calcareous; moderately alkaline (pH 7.9).

Ravola soils generally are dry when not frozen, unless they are irrigated. The content of calcium carbonate ranges from 5 to 25 percent. Reaction is mildly and moderately alkaline. Salinity ranges from slight to moderate. The clay mineralogy is mixed, but the clay is mainly illite. In the A horizon, the hue is 2.5Y to 5Y; value is 6 or 7 when the soils are dry and is 4 to 5 when they are moist; and chroma ranges from 2 to 4. In some places the A horizon is silt clay loam. The part of the profile between 10 and 40 inches is heavy loam, silt loam, or very fine sandy loam that contains 18 to 27 percent clay and less than 15 percent sand coarser than very fine sand. All of the upper 40 inches is

persed with areas of the Ravola soil (fig. 13). Both soils are on flood plains and alluvial fans.

Included in mapping were small areas of Billings silty clay loam.

Runoff is rapid from the Bunderson soil, and most areas contain gullies 5 to 20 feet deep and 500 to 1,300 feet apart. Head cutting is common, and it is forming shallow gullies. In places windblown hummocks less than 2 feet high occur. Typically, these are on the east and north sides of greasewood and other plants.

The soils in this mapping unit are suited to the production of range forage. Controlling gully erosion and regulating the amount and season of range use are needed. Clearing the brush and reseeding grasses are not feasible, because of the small amount of rainfall. (Both soils are in Capability unit VIIe-D, nonirrigated; Ravola soil is in Desert Loam Bottom range site)

**Riverwash (Rv)** consists of streambeds or riverbeds, including oxbow-loops and other channels. These areas are exposed at low water and subject to shifting during periods of high water because of deposition and erosion. The deposited materials are extremely variable, ranging from boulders in the upper part of streams to silt and clay in the lower, more nearly level areas. Most areas are channeled and have little or no cover of vegetation. (Capability unit VIIIw-4, nonirrigated; not rated for other uses)

**Rock land (Ry)** is a miscellaneous land type having a surface 50 to 70 percent covered by stones, boulders, and outcrops of shale and sandstone. Most of this land type is moderately eroded, but many areas are severely eroded. Soil characteristics are almost obscured by the stones and boulders. The slopes are very steep to perpendicular, but typically they are between 50 and 80 percent.

Included in mapping were gently sloping, deep fine sandy loams. Intermingled with the sandstone outcrops



Figure 13.—An area of Ravola-Bunderson complex, 1 to 3 percent slopes, eroded. The nearly bare, light-colored slickspots are the Bunderson soil.

were inclusions of shallow fine sandy loams. Also included on some of the north-facing slopes in the mountains along the west side of the survey area were small areas of an unidentified soil.

This land type has almost no value for farming, although some areas have a sparse cover of grass, sagebrush, pinon, and juniper. This vegetation grows on all exposures, but it is dominant on north and west exposures. Small areas are accessible to livestock and wildlife, but most of the land type is too steep and rocky for grazing. (Capability unit VIIIs-3, nonirrigated; not rated for other uses)

## Saltair Series

Soils of the Saltair series are deep, poorly drained, very strongly saline, moderately fine textured, and nearly level to gently sloping. They occupy moderate to large areas on alluvial fans, on flood plains, and in narrow alluvial valleys. These soils have formed in alluvium derived from marine shale and sandstone. The vegetation is greasewood, saltgrass, and kochia, but bare surfaces are common. Elevations range from 4,000 to 6,500 feet. The annual rainfall is 6 to 11 inches, and the mean annual soil temperature is 47° to 54° F. The frost-free season is 110 to 160 days.

In a typical profile, the surface layer is light brownish-gray, strongly calcareous, very strongly saline silty clay loam about 7 inches thick. The underlying material is light brownish-gray and light-gray heavy silt loam that is very strongly saline in the upper part. Platy crusts of salt on the surface, underlain by layers of soft, granular material, are common. The content of salt is 2 percent or more within 20 inches of the surface.

This soil is used for range, but the quality of the forage is poor.

Representative profile of Saltair silty clay loam in a pasture, 1,200 feet north and 500 feet west of the SE. corner of section 13, T. 17 S., R. 9 E. in Emery County, Utah:

A11sa—0 to ½ inch, grayish-brown (2.5Y 5/2) silty clay loam, dark grayish brown (2.5Y 4/2) when moist; weak, thin, platy structure breaking to moderate, fine, granular structure; soft, firm, very sticky and plastic; plentiful large roots; many medium and fine vesicular pores; strongly calcareous; strongly alkaline (pH 8.9); thin salt crust; clear, smooth boundary.

A12sa—½ inch to 7 inches, light brownish-gray (2.5Y 6/2) silty clay loam, grayish brown (2.5Y 5/2) when moist; many, fine, distinct, yellowish-brown (10YR 5/6) mottles; weak to moderate, fine, angular blocky structure; very hard, very firm, very sticky and very plastic; plentiful medium and fine roots; common medium and fine pores; strongly calcareous; moderately alkaline (pH 8.3); very strongly saline; efflorescent salt on many ped surfaces and in pores; clear, smooth boundary.

C1gsa—7 to 14 inches, light brownish-gray (2.5Y 6/2) heavy silt loam, grayish brown (2.5Y 5/2) when moist; common, fine, distinct, yellowish-brown (10YR 5/4) mottles and common, fine, faint, gray (N 5/0) mottles; weak, fine, angular blocky structure; very hard, very firm, very sticky and very plastic; few fine roots; common medium pores; strongly calcareous; very strongly saline; efflorescent salt on many ped surfaces and in pores; strongly alkaline (8.5); gradual, wavy boundary.

son soil is the one described as typical for the Bunderson series. Included in mapping were areas of Ravola loam.

The surface layer of the Bunderson soil is platy and is nearly impervious to water. As a result, permeability and infiltration are very slow, especially in the surface layer. At depths of 10 to 20 inches, permeability is moderate. The surface of the Bunderson soil is nearly bare, except for scattered greasewood and pickleweed plants. About 11 inches of water is retained by this soil, but only about 4.5 inches is readily available to plants because of the high salt content in the upper 18 inches of the profile. Tiny crystals of salt are in the surface layer.

Runoff is rapid, and the soils of this complex are highly susceptible to erosion, especially during summer thunderstorms of high intensity. Gullying is variable, but in most areas the gullies are 10 to 20 feet deep and 500 to 1,300 feet apart. In addition, gullies 4 to 8 feet deep are eroding in a branching pattern, and head cutting is common.

The soils are better suited to production of range forage than to other uses. Reseeding of grasses and clearing of brush are not practical, because of the inadequate amount of rain. Proper use of the range and the control of gully erosion are the main management requirements. Plants growing on the Bunderson soil have no forage value. (The Billings soil is in capability unit VIIe-D, nonirrigated: Desert Loam Bottom range site. The Bunderson soil is in capability unit VIII<sub>s</sub>-7, nonirrigated; not rated for other uses)

## Bunderson Series

The Bunderson series consists of well-drained, calcareous, medium-textured soils that are strongly affected by alkali. These soils are on alluvial fans, flood plains, and alluvial plains. They have formed in alluvium that washed from alkaline marine shale and sandstone. The vegetation is a sparse stand of pickleweed and greasewood. Most areas are bare and have a platy, nearly impermeable crust on the surface. Elevations range from 5,000 to 6,500 feet. The annual rainfall ranges from 6 to 11 inches, and the frost-free season ranges from 110 to 130 days. The mean annual soil temperature is between 47° and 54° F.

In a typical profile, the surface layer is light-gray to light brownish-gray, slightly hard loam about 4 inches thick. The underlying material is light brownish-gray silt loam and loam.

The Bunderson soils are used only for wildlife habitat.

Representative profile of Bunderson loam, 1 to 3 percent slopes, eroded, in a range area 1,400 feet east and 900 feet north of the SW. corner of section 25, T. 21 S., R. 6 E., in Emery County, Utah:

A11—0 to 1 inch, light-gray (2.5Y 7/2) loam, grayish brown (2.5Y 5/2) when moist; moderate, medium, platy structure; hard, friable, nonsticky and slightly plastic; no roots; few medium and fine vesicular pores; strongly calcareous; moderately saline; very strongly alkaline (pH 9.3); abrupt, smooth boundary.

A12—1 to 4 inches, light brownish-gray (2.5Y 6/2) loam, grayish brown (2.5Y 5/2) when moist; moderate, thin, platy structure; slightly hard, friable, nonsticky and slightly plastic; few fine roots; few very fine pores; strongly calcareous; strongly saline; very strongly alkaline (pH 10.0); abrupt, smooth boundary.

C1—4 to 11 inches, light brownish-gray (2.5Y 6/2) silt loam, dark grayish brown (2.5Y 4/2) when moist; moderate, medium, subangular blocky structure; hard, friable, slightly sticky and plastic; few fine roots; few very fine pores; strongly calcareous; strongly saline; strongly alkaline (pH 8.7); clear, wavy boundary.

C2—11 to 18 inches, light brownish-gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) when moist; massive; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; few, fine, discontinuous pores; strongly calcareous; strongly saline; moderately alkaline (pH 8.4); gradual, irregular boundary.

C3—18 to 31 inches, light brownish-gray (2.5Y 6/2) loam, dark grayish brown (2.5Y 4/2) when moist; massive; soft, very friable, nonsticky and slightly plastic; few very fine roots; few very fine pores; strongly calcareous; strongly saline; moderately alkaline (pH 8.0); clear, wavy boundary.

C4—31 to 38 inches, gray (2.5Y 6/1) silt loam, dark gray (2.5Y 4/1) when moist; massive; soft, friable, slightly sticky and plastic; few very fine roots; few very fine pores; strongly calcareous; strongly saline; moderately alkaline (pH 7.9); clear, wavy boundary.

C5—38 to 72 inches, light brownish-gray (2.5Y 6/2) loam, grayish brown (2.5Y 5/2) when moist; massive; slightly hard, very friable, nonsticky and slightly plastic; few very fine roots; few fine pores; strongly calcareous; moderately saline; moderately alkaline (pH 7.9).

The content of exchangeable sodium ranges from 30 to 96 percent; it is greatest in the upper part of the profile and decreases with depth. Salinity ranges from moderate to strong. Lime content ranges from 5 to 25 percent. The soils are generally dry when not frozen. The A1 horizons have a hue of 2.5Y to 5Y; value is 6 or 7 when the soils are dry and 4 or 5 when they are moist; and chroma ranges from 2 to 4. The part of the profile between 10 and 40 inches is loam or silt loam, which contains 18 to 27 percent clay and less than 15 percent sand coarser than very fine sand. Color of the upper 40 inches is about the same as that of the A1 horizons.

Bunderson soils occur with the Billings and Ravola soils. In this survey area, they were mapped only with these soils.

## Cache Series

The Cache series consists of deep, fine-textured, poorly drained, very strongly saline, nearly level or gently sloping soils on flood plains and alluvial fans. These soils have formed in alluvium that washed mainly from shale. The present vegetation is a sparse growth of greasewood, saltgrass, and pickleweed. Elevations range from 4,000 to 6,500 feet. The annual rainfall is 6 to 11 inches, the mean annual soil temperature is 47° to 54° F., and the frost-free season is 110 to 160 days.

In a typical profile, the surface layer is light brownish-gray, platy or granular silty clay loam about 3 inches thick. The underlying material is light brownish-gray silty clay that is mottled and gleyed in the lower part. A very strong salt horizon is less than 20 inches below the surface.

The Cache soils have a water table that is 20 to 40 inches below the surface most of the year. These soils are used mainly for wildlife habitat.

Representative profile of Cache silty clay is a range area 2,300 feet north and 1,800 feet east of the SW. corner of section 21, T. 20, S., R. 16 E., in Grand County, Utah:

A11sa—0 to ½ inch, light brownish-gray (2.5Y 6/2) silty clay loam, dark grayish brown (2.5Y 4/2) when moist; weak, medium, platy breaking to moderate,



UNIT NAME: BUNDERSON LOAM  
UNIT MODIFIER: 1 TO 5% SLOPES

RECREATION

|              |                                |                  |                                                                              |
|--------------|--------------------------------|------------------|------------------------------------------------------------------------------|
| CAMP AREAS   | MODERATE - DUSTY, FERCS SLOWLY | PLAYGRND         | 1-2%: MODERATE - FERCS SLOWLY, DUSTY<br>2-3%: MODERATE - SLOPE, FERCS SLOWLY |
|              |                                |                  |                                                                              |
| PICNIC AREAS | MODERATE - DUSTY               | PATHS AND TRAILS | MODERATE - DUSTY                                                             |
|              |                                |                  |                                                                              |

CAPABILITY AND PREDICTED YIELDS - CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

| CLASS- DETERMINING PHASE | CAFABILITY | POTENTIAL PRODUCTIVITY |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |
|--------------------------|------------|------------------------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
|                          |            | NIRR                   | IRR | NIRR | IRR | NIRR | IRR | NIRR | IRR | NIRR | IRR | NIRR | IRR | NIRR | IRR | NIRR | IRR |
| ALL                      | SS         |                        |     |      |     |      |     |      |     |      |     |      |     |      |     |      |     |

WOODLAND SUITABILITY

| CLASS- DETERMINING PHASE | ORD SYM | MANAGEMENT PROBLEMS |              |                 |               |               | POTENTIAL PRODUCTIVITY |            |      | TREES TO PLANT |
|--------------------------|---------|---------------------|--------------|-----------------|---------------|---------------|------------------------|------------|------|----------------|
|                          |         | EROSION HAZARD      | EQUIP. LIMIT | SEEDLING MORTY. | WORTH. HAZARD | PLANT COMPET. | IMPORTANT TREES        | SITE INDEX |      |                |
| WOODS                    |         |                     |              |                 |               |               |                        |            | NONE |                |

WIND BREAKS

| CLASS- DETERMINING PHASE | SPECIES | HT | WIND BREAKS |  | SPECIES | HT | SPECIES | HT | SPECIES | HT |
|--------------------------|---------|----|-------------|--|---------|----|---------|----|---------|----|
|                          |         |    |             |  |         |    |         |    |         |    |
| WIND BK                  | NONE    |    |             |  |         |    |         |    |         |    |

WILDLIFE HABITAT SUITABILITY

| CLASS- DETERMINING PHASE | POTENTIAL FOR HABITAT ELEMENTS |                |            |              |                |        |                |               | POTENTIAL AS HABITAT FOR: |                   |                  |                    |
|--------------------------|--------------------------------|----------------|------------|--------------|----------------|--------|----------------|---------------|---------------------------|-------------------|------------------|--------------------|
|                          | GRAIN & SEED                   | GRASS & LEGUME | WILD HERB. | HARDW. TREES | CONIFER PLANTS | SHRUBS | WETLAND PLANTS | SHALLOW WATER | OPENLAND WILDLIFE         | WOODLAND WILDLIFE | WETLAND WILDLIFE | PANGELAND WILDLIFE |
| ALL                      | V POOR                         | V POOR         | V POOR     | -            | V POOR         | V POOR | V POOR         | V POOR        | V POOR                    | V POOR            | V POOR           | V POOR             |

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

| COMMON PLANT NAME | PLANT SYMBOL (NLSPN) | PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------|----------------------|----------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                   |                      |                                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                   |                      |                                                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

POTENTIAL PRODUCTION (LBS./AC. DRY WT):  
FAVCPABLE YEARS  
NORMAL YEARS  
UNFAVOPABLE YEARS

FOOTNOTES

THE DETERMINATION  
OF COMPLETENESS RESPONSE

WELLINGTON COAL CLEANING PLANT

*File Copy*

U. S. STEEL MINING CO., INC.

DECEMBER 30, 1983

JAN 03 1984

DIVISION OF  
OIL, GAS & MINING

THE DETERMINATION  
OF COMPLETENESS RESPONSE

WELLINGTON COAL CLEANING PLANT

U. S. STEEL MINING CO., INC.  
DECEMBER 30, 1983

1/31/84  
DCC BOP

UMC 771.19 Compliance With Permits

Copies of all correspondence pertaining to the approval in question have been attached. It is important to note the following:

1. The operation of the Sauerman drag scraper has been included in the Operation and Reclamation Plan.
2. Soil data for the SN soil series is included in the Operartion and Reclamation Plan.
3. Topsoil and revegetation practices will be those approved for Operation and Reclamation Plan and not those described in the original plan.
4. A revegetation plan, including success standards, is included in Appendix I for all disturbed areas including those covered by this plan.

UMC 783.13 Description of Hydrology and Geology: General Requirements

- (A) The wells located in T15S R11E are referenced in this revised section of the ORP and are discussed in UMC 783.15 of the ORP.
- (1) The dip of 4 degrees westward and strike of N 15 degrees E was determined by the geologist that conducted preconstruction site investigations in 1957. We have no information as to the bed or beds from which this strike and dip were derived. We do not have information or bed exposure from which to determine additional dip and strike readings, as a result of the weathering of the Blue Gate shale/Unnamed shale member.
  - (2) Although faulting and jointing may be possible, none were identified in the preconstruction site investigation of the permit area.
  - (3) The shale members above the Ferron Sandstone has been variously identified as the Upper Member, Unnamed Member and the Blue Gate Shale Member. It appears that Blue Gate Shale is the most common identity within the area of Wellington. See Monograph Series No. 3, 1972 "Central Utah Coal Fields" Page 251. See also Utah Hydrologic-Data Report No. 32 "Selected Coal-Reported Ground-Water Data" page 5. Map C9-1213 is a portion of the Reconnaissance Geologic Map of the Wellington Quadrangle (USGS Map I-1778) and contains the permit area of the ORP and all information shown

1/3/84  
DOC REP



# U. S. Steel Mining Co., Inc.

a Subsidiary of United States Steel Corporation

P O BOX 807  
EAST CARBON, UTAH 84520  
801 / 888-4431

WESTERN DISTRICT

October 26, 1981

Mr. Ronald W. Daniels  
Division of Oil, Gas and Mining  
1588 West North Temple  
Salt Lake City, Utah 84116

Re: Sauerman Drag Scraper - Upper Refuse Pond  
Wellington Coal Cleaning Plant  
ACT/007/012 - Carbon County, Utah

Dear Mr. Daniels:

U. S. Steel Mining Company is currently operating a Sauerman Drag Scraper in the Upper Refuse Pond at the Wellington Coal Cleaning Plant. The scraper was installed after the Plant Operation and Reclamation Plan was submitted. The proposed additional disturbance from the scraper operation is about 16 acres, shown on attached drawing number E9-3381.

Approximate head and tail tower locations are shown on drawing number E9-3341 of the original submittal. As material is removed from the pond area, both the head and tail locations will be moved northerly along the eastern and western banks. All potential tower locations on the western bank and north dike are on currently disturbed refuse disposal areas. Some tower locations on the eastern bank will be newly disturbed sites.

The following plan is proposed for the disturbance and reclamation of newly affected areas required for scraper operation.

1. Topsoil

- 1.1 The A soil horizon (or a minimum of the upper six inches) will be stripped from newly affected areas.
- 1.2 Topsoil will be stockpiled in the designated locations.
- 1.3 Stockpiles will be seeded to minimize erosion and unnecessary compaction.

Mr. Ronald W. Daniels

October 26, 1981

Page 2

- 1.4 Appropriate markers will be placed on all topsoil stockpiles.
2. Site Preparation
  - 2.1 Additional fill material required for site preparation will be taken from a designated borrow area.
3. Protection of the Hydrologic System
  - 3.1 All runoff from disturbed areas will flow into the Upper Refuse Pond.
4. Air Resources Protection
  - 4.1 Fine refuse is in excess of 25 percent average moisture when removed from the pond. Little or no fugitive dust is generated by the scraper operation.
5. Backfilling and Grading
  - 5.1 Newly disturbed areas will be restored to their approximate original contour when no longer required for scraper operation.
  - 5.2 Available topsoil will be spread over the affected areas.
  - 5.3 No coal, acid or toxic forming materials will be covered under this plan.
6. Revegetation
  - 6.1 All disturbed areas will be revegetated according to the methods described in the permanent plan.
  - 6.2 Success of revegetation will be measured according to the methods described in the permanent plan.

This proposal is submitted as a supplement to the permanent plan.

It is anticipated that the Lower Refuse Pond will be cleaned in a similar manner. Operation and reclamation plans for the Lower Pond will be submitted prior to any disturbance.

Sincerely,

*Paul E. Watson*

Paul E. Watson



STATE OF UTAH  
NATURAL RESOURCES & ENERGY  
Oil, Gas & Mining

Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

December 4, 1981



Mr. Paul E. Watson  
General Superintendent  
U. S. Steel Mining Company, Inc.  
P. O. Box 807  
East Carbon, Utah 84520

RE: Sauerman Drag Scraper  
Wellington Prep Plant  
ACT/007/012  
Carbon County, Utah

Dear Mr. Watson:

This letter is in response to your letter dated October 26, 1981, concerning the operation of the Sauerman Drag Scraper for the purpose of cleaning the upper refuse pond.

After review of the proposed plan for reclamation of the area to be disturbed by operation of the drag scraper, several questions were encountered. Prior to final approval of the modification, the following stipulations must be adequately addressed:

Stipulation 12-1-81:

The exact depth and volume of topsoil to be removed from each of the two soil types must be provided.

Chemical and physical analyses of the soils must be conducted and the lab data submitted to the Division.

The topsoil piles should be consolidated and placed in an area located away from the tower placement and out of the bottom of any drainages in order to minimize possible contamination, compaction, erosion, etc. Specify how this will be accomplished.

Demonstrate how the proposed operations and new surface disturbances will be conducted in accordance with UMC 817.45 utilizing the best practical methods to prevent or minimize, to the extent possible, erosion and any additional contributions of sediment to local water courses.

Mr. Paul E. Watson  
ACT/007/012  
December 1, 1981  
Page 2

Stipulation 12-2-81:

A list of the seed mix to be used for seeding of topsoil stockpiles must be submitted to the Division

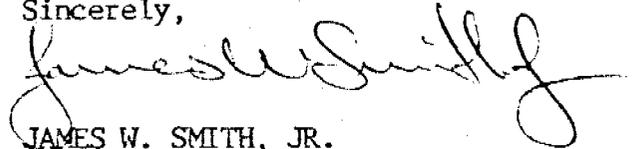
The seed mix for permanent reclamation must be submitted on the basis of Pure Live Seed (PLS).

The vegetative types encountered in the disturbed area must be submitted.

The methods for measuring vegetative success and the standard for measuring success must be addressed (i.e., range site, reference area, baseline data).

If you have any questions pertaining to this review, please call me or Everett Hooper of my staff.

Sincerely,



JAMES W. SMITH, JR.  
COORDINATOR OF MINED  
LAND DEVELOPMENT

cc: Robert Hagen, OSM  
Wayne Hedberg  
Everett Hooper

JWS/EH/btb



**U.S. Steel  
Mining Co., Inc.**

a Subsidiary of United States Steel Corporation

P. O. BOX 807  
EAST CARBON, UTAH 84520  
801 / 883 4431

**PAUL E. WATSON**  
GENERAL SUPERINTENDENT

January 29, 1982

Mr. James W. Smith, Jr.  
Coordinator of Mined Land Development  
Division of Oil, Gas and Mining  
4241 State Office Building  
Salt Lake City, Utah 84114

Re: Sauerman Drag Scraper  
Wellington Coal Cleaning Plant  
ACT/007/012  
Carbon County, Utah

Dear Mr. Smith:

The following is in response to Stipulation 12-1-81 referenced in your December 4, 1981 letter regarding the Sauerman Drag Scraper operation.

Exact depth and volume of topsoil to be stripped from each of the two soil types:

The two soil types within the proposed additional disturbed area are Shaley Colluvial Land (Sn) and Beebe Loamy Fine Sand (BeB). These soil types are described on pages 783-20, 21 and 783-23, 24 respectively in the Permanent Plan. Topsoil is only expected to be removed from the tail tower pad locations, and borrow areas should they become necessary to the operation. All potential tail tower and borrow area locations are within the Sn series. The upper Sn soil layer is a mixture of soil material, cobblestones, and weathered Mancos Shale fragments. There is no identified topsoil layer in the area. The Operator has, and will continue to remove the upper six inches of soil as required by UMC 817.22(c). There is currently some 200 cubic yards of soil stockpiled from tail tower and roadway excavations. Additional access roads that may be required will be Class III roads requiring no topsoil removal according to UMC 817.172(e). Class III roadways spanning the BeB soil series are the only potential disturbance in the series and topsoil is not expected to be removed. Soil removed from the Sn series is not expected to exceed 2000 cubic yards.

Topsoil physical and chemical analyses:

The Operator will sample the accumulated topsoil and have it analyzed for pH, net acidity or alkalinity, phosphorus, potassium, and texture class. Results will be forwarded to the Division when received.

How contamination, compaction, and erosion of topsoil piles are minimized:

Generally, the soil in the area is alkaline and usually forms a crust which minimizes both wind and water erosion. Limited precipitation in the area precludes significant water erosion. Snow cover and/or frozen ground during the winter months also reduces erosion potential. Specifically, topsoil stockpiles are located close to, but not within potential tail tower locations. No stockpile is, or will be located in a drainageway. Side slopes of stockpiles are, and will continue to be gentle in order to minimize runoff velocity and subsequent soil carrying capacity. The tops of larger piles are flattened to further minimize runoff velocities. Trenches and berms are, and will continue to be excavated around the toe of the stockpiles not only to catch any sediment carried from the pile by runoff but also to divert runoff from undisturbed areas away from the stockpiles. Stockpiles are, and will continue to be seeded with the approved quick growing seed mix as soon after consolidation as is practicable to further minimize wind and water erosion.

How the proposed operations and new surface disturbances will be conducted to minimize erosion and additional contributions of sediment to local water courses:

Generally, the soil in the area is alkaline and usually forms a crust which minimizes both wind and water erosion. Limited precipitation in the area precludes significant water erosion. Snow cover and/or frozen ground during the winter months also reduces erosion potential. Specifically, site preparation for the tail tower currently involves, and is expected to continue to involve excavating a relatively flat area by either a minimal cut/fill or merely topsoil removal. Slopes are not significantly increased (in most cases slopes are decreased) or altered to result in additional erosion potential. Should additional access roads (Class III only) be required, ground cover in most cases will not be removed to minimize ditching in the roadway and dust loosened by vehicle tires.

Mr. James W. Smith, Jr.

January 29, 1982

Page 3

All runoff from a newly disturbed area flows into the Upper Refuse Pond. Since this pond, along with the Lower Refuse Pond and Clear Water Pond are a closed circuit water source for the Coal Cleaning Plant, no water is discharged from the permit area. Subsequently, there is no potential sediment contributions from newly disturbed areas to local water courses.

Topsoil stockpile seed mix:

The following seed mixture for topsoil stockpiles at the Cleaning Plant was approved by the Division on December 1, 1981:

| <u>Seed Name</u>    | <u>Pounds PLS/Acre</u> |
|---------------------|------------------------|
| Crested Wheatgrass  | 2.0                    |
| Tall Wheatgrass     | 3.0                    |
| Yellow Sweet Clover | 1.5                    |

This seed mixture has been planted on each of the existing topsoil piles.

Permanent reclamation seed mix:

The Operator does not intend to change the permanent reclamation plan by this proposal. The following seed mix is intended for permanent reclamation and is identical to that mix submitted on page 784-15, 16 of the Permanent Plan:

| <u>Type and Seed Name</u> | <u>Pounds PLS/Acre</u> |
|---------------------------|------------------------|
| Grasses                   |                        |
| Galleta Grass             | 1.0                    |
| Indian Ricegrass          | 1.0                    |
| Forbs                     |                        |
| Desert Trumpet            | 2.0                    |
| Desert Plantain           | 1.0                    |
| Shrubs                    |                        |
| Mat Saltbrush             | 4.0                    |
| Shad Scale                | <u>4.0</u>             |
| <b>TOTAL:</b>             | <b>13.0</b>            |

Mr. James W. Smith, Jr.

January 29, 1982

Page 4

Vegetative types encountered in the disturbed areas:

Vegetative types in the disturbed area are shown on Drawing No. E9-3345 and are described on page E-5 of Appendix E in the Permanent Plan. Dominant species are Shad Scale and Galleta Grass. Other common species include Blue Gramma, Indian Ricegrass, and Cryptantha. Ground cover is only about seven percent.

Methods of measuring success of revegetation:

The potential disturbed area is a long narrow strip. Success of revegetation will be measured by comparing the newly reclaimed area with the adjacent undisturbed area.

This response to Stipulation 12-1-81 is submitted as a supplement to my October 26, 1981 letter and to the Operation and Reclamation Plan, Western District - Coal, Wellington Coal Cleaning Plant, submitted March 20, 1981.

Sincerely,

*Paul E. Watson*

Paul E. Watson

cc: F. Boinsky  
B. L. Kirkwood  
V. R. Watts  
Environmental Contact File



STATE OF UTAH  
NATURAL RESOURCES & ENERGY  
Oil, Gas & Mining

Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

March 16, 1982



REGISTERED RETURN RECEIPT REQUESTED

Mr. Paul E. Watson  
U. S. Steel Corporation  
P. O. Box 807  
East Carbon, Utah 84520

RE: Sauerman Drag Scraper  
Wellington Coal Cleaning Plant  
ACT/007/012  
Carbon County, Utah

Dear Mr. Watson:

The Division has reviewed your response to the stipulations under 12-1-81 concerning the operation of the Sauerman drag scraper.

The staff has formulated further comments that may be advantageous in protection and revegetation of the area effected by the operation.

Topsoil

The chemical and physical analysis of the SN soil series should be forwarded to the Division no later than 45 days from receipt of this letter.

Any construction of a Class III road must include topsoil protection pursuant to 817.172(e).

Revegetation

The operator should increase the seeding rate of Galleta grass and Indian ricegrass from one pound pure live seed (PLS) to two pounds PLS. The addition of one pound of blue grama to the permanent seed mix may be to the operators advantage in meeting the diversity requirements.

The operator must respond to the above-mentioned comment within 45 days after receipt of this letter.

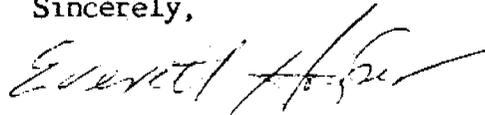
Mr. Paul E. Watson  
ACT/007/012  
March 16, 1982  
Page 2

The adjacent undisturbed area may be suitable for comparison with the revegetated area for evaluating success. Sampling should be done to establish it as a reference area as per the Division's vegetation guidelines. (Reference areas may be approved by the Division in advance by making such a request.)

The operator should be aware that this is not an approval for the reclamation that is part of the permanent permit application. It is only for the area disturbed by the dragline.

Sampling should be conducted as soon as the weather permits and the results forwarded to the Division.

Sincerely,



EVERETT HOOPER  
RECLAMATION SOILS SPECIALIST

cc: Robert Hagen, OSM  
Joe Helfrich, DOGM  
Wayne Hedberg, DOGM

EH/btb



**U. S. Steel  
Mining Co., Inc.**

a Subsidiary of United States Steel Corporation

P. O. BOX 807  
EAST CARBON, UTAH 84520  
801 883 4431

PAUL E. WATSON  
GENERAL SUPERINTENDENT

April 15, 1982

Mr. Ronald W. Daniels  
Division of Oil, Gas and Mining  
4241 State Office Building  
Salt Lake City, Utah 84114

Attn: Everett Hooper

Re: Sauerma Drag Scraper  
Wellington Coal Cleaning Plant  
ACT/007/012

Dear Sir:

The following is in response to your March 16, 1982 letter regarding the Sauerma drag scraper operation plan.

Topsoil

The chemical and physical analysis of the SN series will be forwarded to the Division when received from the laboratory.

The topsoil on Class III road construction will be removed and stockpiled when the operator determines that excavation would require replacement of material and redistribution of topsoil for revegetation. Topsoil that is removed will be stockpiled and protected in accord with the methods described in my October 26, 1981 and January 29, 1982 letters.

Revegetation

The seed mix for revegetation is revised to include the Division recommendations as follows:

Mr. Ronald W. Daniels  
April 15, 1982  
Page 2

| <u>Type and Seed Name</u> | <u>Pounds PLS/Acre</u> |
|---------------------------|------------------------|
| Grasses                   |                        |
| Galleta Grass             | 2.0                    |
| Indian Rice Grass         | 2.0                    |
| Blue Grama                | 1.0                    |
| Forbs                     |                        |
| Desert Trumplt            | 2.0                    |
| Desert Plantain           | 1.0                    |
| Shrubs                    |                        |
| Malt Saltbush             | 4.0                    |
| Shod Scale                | <u>4.0</u>             |
| Total                     | 16.0                   |

Sincerely,



Paul E. Watson

cc: B. L. Kirkwood  
B. Gardner  
F. Boinsky  
Environmental Contact File  
OG&M File

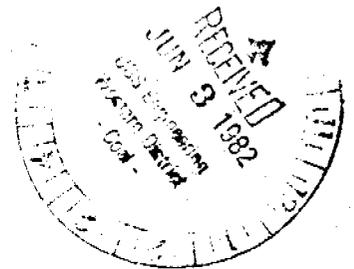


STATE OF UTAH  
NATURAL RESOURCES & ENERGY  
Oil, Gas & Mining

Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

June 1, 1982



Glenn Sides  
U.S. Steel Corporation  
P.O. Box 807  
East Carbon, UT 84520

RE: Sauerman Drag Scraper  
Wellington Prep Plant  
ACT/007/012  
Carbon County, Utah

Dear Mr. Sides:

After the Division's review of the proposed reclamation plan for the Sauerman Drag Scraper, two areas were found to be lacking: 1) The establishment of the reference areas for measuring success of revegetation and 2) submittal of lab data on the SN Soil series.

Both of these areas may be addressed at this time or as part of the permanent permit application.

Final approval of the reclamation plan for the Sauerman Drag Scraper is granted, but upon review of the permanent reclamation plan, final permit approval will be delayed until the two areas in question are fully addressed.

Sincerely,

EVERETT HOOPER  
RECLAMATION SOILS SPECIALIST

cc: Robert Hagen  
Joe Helfrich  
Lynn Kunzler

EV:dc

on the USGS Map within the permit area.

Pages 783-5, 6 and 7 in the ORP have been revised to present the above information.

Appendix III contains a hydrologic evaluation of the permit area. Please refer to this section for additional information on the groundwater resource.

#### UMC 783.14 Geology Description Determination of Completeness

The statement "sufficiently thick to prevent seepage loss to the underlying Ferron Sandstone" has been revised to read "should provide some protection to the underlying Ferron Sandstone". The permeability readings shown on Figure No. 3, Appendix C of the ORP are low.

- (a)(2)(ii) The requirement for pyrite sulfur, organic sulfur and sulfate sulfur is associated with an underground coal seam. It has been agreed with the Division to furnish the pyritic sulfur content for the refuse. Refer to Appendix E of the ORP.

There are no open boreholes within the permit area and the Operator does not have any future plans to install any. Should any boreholes be installed they would be sealed in accordance with Division guidelines at the time of reclamation.

#### UMC 783.15 Groundwater Information

Section 783.15 of the Operation and Reclamation Plan has been revised to address the concerns identified in the completeness review. Refer also to Appendix III of this document.

#### UMC 783.16 Surface Water Information

Page 783-11 has been revised to delete the reference to evaporative losses from the ponds and plant operation. Appendix III of this document provides an assessment of hydrologic impacts from the plant operation. This will include an assessment of water losses.

#### UMC 783.17 Alternate Water Supply Information

Section 783.17 of the Operation and Reclamation Plan has been revised to address the concerns expressed in the completeness review. The Operator has provided a commitment to provide an alternative water supply if necessary.

#### UMC 783.19 Vegetation Information

Refer to Appendix I of this document for a discussion on how revegetation success will be determined and a management plan for the reference area.

Vegetation information on the topsoil borrow area will be provided. Refer to Appendix I for details.

#### UMC 783.22 Land-Use Information

Page 783-40 has been revised to delete the statement that the Operator does not accept the "crucial-critical" habitat ranking by the Utah Division of Wildlife Resources.

The Operator recognizes the value of the area as a wildlife habitat, but disagrees that a major land use was ever wildlife habitat. The uses of the land do not meet the criteria of UMC 700.5 for designation of a land use of Fish or Wildlife Habitat as a land use.

Riparian vegetation may have existed in the area of the refuse ponds prior to plant construction. The construction of the ponds destroyed that habitat and long range operational plans for the refuse area make it impossible to restore the habitat. A permanent diversion has been constructed at the northeast end of the Upper Refuse Pond (refer to Technical Revision No. 1). This loss is an irreversible impact of the operation of the Coal Cleaning Plant.

Approximately 39 acres of riparian vegetation currently exist adjacent to the Price River. The River Pumphouse is the only area which probably disturbed the riparian habitat. This is a relatively small area (refer to E9-3341 for location), therefore, impacts to the riparian habitat should be minor.

The Operator proposes to return the disturbed areas to an "undeveloped-land" land use. The revegetation seed mix has been chosen to provide forage and cover for wildlife. The Operator will not take any actions during reclamation to exclude wildlife from the reclaimed areas.

#### UMC 783.24 Maps: General Requirements

Map E9-3339 has been revised to include all soil sample locations. Copies of the analyses of all soil samples have been consolidated into Appendix II. The referenced typographical error on page 18 of Appendix H (DRP) has been corrected.

#### UMC 783.25 Cross-Sections, Maps and Plans

The Ferron Sandstone is presumed to underlie the entire permit area, since this member is regional in areal extent. Refer



to Exhibit A - Regional Cross-Section included in this Determination of Completeness Response. Map E9-3428 shows the water table to be in the alluvium material overlying the Blue Gate Shale. The Ferron Sandstone underlies the Blue Gate Shale. Refer to 783.13 of the ORP. Refer to Appendix III.

The water level shown on the holes drilled on the property was gaged one to two weeks after the holes were completed and is considered a static water level. See Map E9-3428.

Based on core drilling information available (see Map E9-3428) and the area geology, the alluvial aquifer is estimated to extend through the areas marked Qsw (slopeswash) and Qal (alluvium) on Map C9-1213 in the ORP. Map E9-3428 shows three cross sections of the permit area with the water table elevation alluvium depth marked for several locations in the permit area. Refer also to Appendix III of this document.

The statement regarding the available quality data of water in locations remote to the permit area was not presented to be representative of the water quality in this formation within the permit area but only for purposes of information.

Page E-2 of Appendix E (of the ORP) states that the coarse refuse pile will extend over the undisturbed drainage diversion ditch. The actions which will be taken to protect the diversion ditch are also described.

#### UMC 783.27 Prime Farmland Investigation

Determined complete. No additional information was requested.

#### UMC 784.11 Operation Plan: General Requirements

The Auxiliary Pond provides water storage capacity to support plant operations. Water is maintained in the pond for use in plant operations. Void capacity is maintained to receive plant discharge and runoff volumes.

The proposed Road Pond is designed as an extension or enlargement of the Auxiliary Pond. The railroad tracks to the east and the plant support buildings (shop, warehouse, etc.) to the west preclude the enlargement of the Auxiliary Pond. An existing culvert, shown on Drawing No. E9-3429, will connect the ponds to combine their capacities.

#### Volume Requirements

Volume requirements for the Auxiliary Pond and Road Pond are calculated as one since the pond capacities are connected. There are three main sources of water inflow into the ponds:

1. Clear water from the Clear Water Pond
2. Plant discharge water
3. Runoff from precipitation events

Capacity requirements were developed as follows:

1. Clear Water from Clear Water Pond

The Operator has the capability of filling the Auxiliary Pond with water directly from the incoming fresh water line from the Clear Water Pond. Prior to plant startup, the pond is filled with an adequate volume of water for plant operation. It has been the Operators experience that approximately 85,000 gallons is required to operate one shift. Pond design operating volume is therefore based on running two shifts a day or 170,000 gallons of storage capacity for plant operation.

2. Plant Discharge Water

Inherent to the coal washing process, a given volume of water and slurry are constantly circulated by pumps when coal is being washed. All pumps within the system are electrically driven. In the event of a power loss during the coal washing process, approximately 160,000 gallons of water and slurry will be in the system in excess of sump and structure capacities. This volume is itemized on Exhibit A. *where's this? Typo? should be 22.5?*

3. Runoff from Precipitation Events

The drainage area into the Auxiliary and Road Ponds is shown on F9-177. Revised hydrologic calculations require 175,000 gallons of capacity to contain a 10 year 24 hour precipitation event. Pertinent pages are included separately for inclusion in the Operation and Reclamation Plan.

The total design storage requirement for the Auxiliary Pond and Road Pond is the sum of the three water sources discussed.

#### Pond Capacities

Capacities of the Auxiliary Pond and Road Pond are determined in terms of live storage. The live storage is that portion of the pond capacity which can be pumped from the ponds for use in the plant. The following discussion addresses the storage in the Auxiliary Pond.

The Plant Pumphouse (item 0, page 764-6 of the ORP) is situated

in the Auxiliary Pond (see Exhibit 2, page 784-12 of the ORP). Pond water flows into the pumphouse sump through windows which are 2' 4" below the pond overflow. The pond was surveyed on 5-31-83 and found to have 110,000 gallons per foot of depth (ref. drawing C9-1285 for surface area). Total operating capacity in the Auxiliary Pond is approximately 250,000 gallons (2.33' x 110,000 gal/ft. = 256,300 gallons).

The Operator did not provide cross sections of the Auxiliary Pond. This pond was originally excavated about 5 to 6 feet deep. During the course of plant operations, water is discharged from the plant into the pond and pumped from the pond back into the plant. Coal fines from the plant discharge settle out and accumulate in the pond. When the fines in the pond approach the elevation of the sump inlet window into pumphouse, the Operator cleans out the pond. As such, the pond bottom may vary from 2.3 feet to 6 feet from the overflow, depending on how recently the pond was cleaned out. Because of this variability, the Operator has chosen not to utilize the dead storage volume as part of the design capacity shown in the calculations. The 250,000 gallon capacity in the pond utilizes only the live storage volume in the pond between the bottom of the inlet windows and the pond overflow.

Storage in the Road Pond is established from the elevation of the connecting culvert. The capacity between elevation 5340.0 and 5337.9 is live storage because water will flow into the Auxiliary Pond through the culvert as water is pumped out of the Auxiliary Pond. Pond details are shown on Drawing No.'s E9-3429 and C9-1284.

When the Road Pond is constructed, the overflow structure in the Auxiliary Pond will be plugged. This will allow the maximum water level to be increased 2 inches, which results in a total pond capacity of 275,000 gallons.

Summary

Requirements:

|                            |                 |                       |
|----------------------------|-----------------|-----------------------|
| Operating Volume           | 170,000 gallons | 22,725 <sup>413</sup> |
| Plant Discharge            | 160,000 gallons | 21,388 "              |
| Runoff (10 YR 24 HR event) | 175,000 gallons | 23,394 "              |
| TOTAL REQUIREMENT          | 505,000 gallons | 67,508 "              |

Capacities:

|                             |                 |          |
|-----------------------------|-----------------|----------|
| Auxiliary Pond live storage | 275,000 gallons | 36,762 " |
| Road Pond live storage      | 299,000 gallons | 39,970 " |
| TOTAL CAPACITY              | 574,000 gallons | 76,732 " |

Fond capacity exceeds the requirements.

UMC 784.13 Reclamation Plan: General Requirements

(b) (3) Map E9-3342 has been revised to more clearly show the post mining contours per agreement with the Division. Refer to Appendix B of the ORP (page B-45 - B-47) for a discussion on post mining drainage patterns.

(b) (4) Map E9-3339 has been revised to show all soil sample locations and soil salvage areas associated with the expansion of the Coarse Refuse Pile and the Upper Refuse Pond. A revised soil management plan is included in Appendix II of this document.

Refer to Appendix II for complete discussion on the topsoil borrow area. Map E9-3339 has been revised to show the topsoil borrow area location.

(b) (5) (i-v) A revised Revegetation Plan has been included in Appendix I of this document. The requested information and commitments are included as part of that plan.

(vii) A topsoil and substitute material testing program has been included as part of the soil handling plan included in Appendix II.

The referenced variance request was deleted in the June 30th revision to the application.

When the well at the pumphouse was installed, the material removed from the well was spoiled adjacent to it. The plan proposes to replace this material into the well upon reclamation. Since this material is stream laid alluvium deposited by the Price River, it is extremely unlikely that it could be toxic. The Operator has taken no actions which could have made this material toxic. Per conversation with Tom Portle (DOGM), no chemical analysis of this material is required.

Since material originally removed from the well will be replaced, the well reclamation will not effect the deficit of soil cover for the refuse areas. Refer to Appendix II for an explanation of where all soil cover material will be obtained. Refer also to the discussion under section UMC 817.53.

(b) (7) Per conversation with Tom Portle on December 12, 1983, the following additional parameters have been added to the analyses in Appendix E

of the ORP:

|                |                          |
|----------------|--------------------------|
| Total Iron     | Arsenic                  |
| Dissolved Iron | Molybdenum               |
| %Pyrite        | Boron                    |
| Sulfate        | Total Combustible Solids |
| Selenium       |                          |

Mr. Fortle indicated that these additional parameters would provide the required information.

The lab methods used are included in Appendix IV. Certified lab reports for all samples are on file and may be inspected or furnished to the Division upon request. The Division determined at a meeting on December 8th, that the certified lab reports need not be included in the application.

The analyses included in Appendix E of the ORP now include total combustible solids. This will provide information on combustion potential for the refuse area.

(b) (9)

The Vegetation Study in Appendix H of the ORP recommended a 12 inch cover of refuse over the pond surface as a capillary break. The Revegetation Plan contained in Appendix I of this document has incorporated this recommendation. The discussion in section 784.13 of the Operation and Reclamation Plan has been revised to incorporate this change.

As the refuse material is discharged from the slurry pipelines, the coarser material (minus 1 1/4 - 1 1/2 inch) settles out of suspension immediately. This material is then placed with a bulldozer as required. It is estimated that over the remaining life of the plant the coarser material will completely cover the Upper Refuse Pond. Map E9-3342 shows the estimated final contours. During plant operation the coarse slurry material will be graded to the final contours shown on Map E9-3342. Thus, the Upper Refuse Pond will be completely covered by coarser refuse material as a part of plant operation and it will not be necessary to provide a capillary break at the time of reclamation (i.e. the Lower Refuse Pond).

The discussion in section UMC 784.13 of the ORP has been revised to more clearly describe the intended actions.

Appropriate pages have been added to Appendix B of the ORP which show that the Clear Water Pond is adequately sized for post reclamation sedimentation control.

UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance

(a) (2) (3) The users of surface water on the Price River have been documented in the revised section of UMC 784.14. The ground water users from springs and wells are also documented in this section. Since these wells are located upstream from the permit area (T15S R11E) it is presumed that the Operator activities will not impact the holders of these water rights. The size of T15S R11E is 36 square miles with the permit area near the center of the Township. The source of the record of water right holders was the Division of Water Rights, State Engineer's Office and "Proposed Determination of Water Rights in the Price River and Lower Green River Drainage". A commitment to protect the water rights of legitimate water users has been made under UMC 783.17 Alternative Water Supply Information.

(b) (3) A plan for monitoring, collection and recording of the surface and ground water data is included in Appendix III of this document.

The requirement to demonstrate that drainage entering the treatment facility meets the post-mining State and Federal water quality requirements for the receiving stream is addressed under UMC 817.46.

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams and Embankments

The reclamation timetable has been revised to clearly show that all sedimentation ponds will be removed only after adequate revegetation has been established. The Operator will comply with section UMC 817.46(u) of the performance standards.

UMC 784.22 Diversions

Map E9-3427 is located in Technical Revision No. 1. Cross-Sections of the diversion ditch adjacent to the North Dike are located in Appendix C of Technical Revision No. 1.

A second permanent diversion will be constructed in the Lower Refuse Pond area at reclamation (refer to Map E9-3342). Design information for this diversion has been added to Appendix B

of the DRP.

UMC 784.23      Operation Plan: Maps and Plans

- (11)      The cross sections are provided on E9-3342.
- (12)      Refer to Appendix III for details on the surface and groundwater monitoring plan. Refer to Map 1 in Appendix III for monitoring locations.

UMC 786.19      Criteria for Permit Approval or Denial

The Operator has committed to providing a complete test plot design by January 20, 1984. Refer to Appendix I for details.

## TECHNICAL DEFICIENCIES

### UMC 817.22 Topsoil Removal

A revised topsoil handling plan has been included in Appendix II of this document. The revised plan provides criteria for determining the appropriate removal depth of any topsoil to be salvaged.

Technical Revision No. 1 provides complete plans for the raising of the Lower Refuse Dike including topsoil removal and storage. Appendix E of the Operation and Reclamation Plan provides a general description of future plans for enlarging the Upper Refuse Pond. A relatively undisturbed area exists between the permanent diversion and the present limit of the Upper Refuse Pond. Topsoil from this area will be salvaged according to the criteria described in Appendix II.

Soil sample number 2 was taken from soil series Ry as shown on Map E9-3339 (revised). A description of soil series Ry is found on page 783-36. A description of soil series RuB2 has been added on page 783-36i of ORP. Also general descriptions for the Ravola, Billings, Bunderson and Sanpete soils have been included in the ORP on pages 783-38 - 783-38viii. The soil electroconductivity and texture data were in error and a revised table of data for samples number 1 and 2 have been included in Appendix II of this submittal. Map No. E9-3339 has been revised to show all soil sample locations as well as the soil series. The map is included with this submittal.

The subsoil samples taken as part of the vegetation study were located in a road cut. The only one available in the study area. The Operator has taken additional soil samples located in the topsoil borrow area, coarse refuse pile expansion area and plant and storage areas. This data is included in Appendix II.

Soil sample 10WT is located on top of the shale hills east of the refuse ponds. This area is characterized by a thin veneer of soil over shale. There is not a sufficient depth of soil in this area to allow for its use as a substitute for topsoil.

The topsoil removal criteria for new disturbances presented in Appendix II allow for the removal of subsoil material where the quality is adequate. The Operator will use this material as substitute material for topsoil.

The topsoil handling plan presented in Appendix II presents a plan and criteria for determining the depth of topsoil and/or subsoils which will be salvaged.

Areas where topsoil salvaging operation are to occur will be staked to confine the disturbance to the planned area. Topsoil salvage operations will occur during the operation of the plant (1) when the Upper Refuse Pond is extended and (2) when the coarse refuse pile is extended. These two areas are located on Map E9-3339. The areas are relatively small and based on experience at the plant are expected to have similar soil depths across the entire area. It is not expected to be necessary to stake the salvage areas to delineate different soil depths. Should a situation arise in the future where the soil depths are variable, the salvage area will appropriately staked to delineated the recovery depths.

#### UMC 817.23 Topsoil: Storage

All existing and future (as currently planned) topsoil stockpile locations are shown on Map E9-3341. the text of the Operation and Reclamation Plan refers to Map E9-3341. The page reference of 784-13 is assumed to be in error, since in the application revised on 6-30-83 that page is a photograph.

The volume of soil at each stockpile location has been provided in Appendix II of this document.

The revised soil handling plan included in Appendix II provides information on depth, slopes, and volumes of stockpiles. The dimensions of any individual stockpile will vary as soil is added or removed for use in reclamation. The stockpile locations are all relatively flat and surrounded by unused areas. Therefore, the expansion or contraction of the stockpiles during use is not anticipated to cause any problems.

The recommended seed mix is included in Appendix H of the Operation and Reclamation Plan.

#### UMC 817.24 Topsoil: Redistribution

The revised soil handling plan included in Appendix II provides a more detailed discussion of grading and ripping.

Soils will be redistributed to depths specified in the Revegetation Plan included in Appendix I. The soil depths vary with the conditions on the sites to be reclaimed. Refer to Appendix I for details on the test plot program. A chemical analysis of slurry pond fines is included on page E-3 of the ORP (Appendix E). Samples 2WD and 9WD in Appendix H of the ORP are also from the slurry ponds.

The Operator is aware that the soil moisture at the time of redistribution can have a major impact on compaction. The soils

will not be redistributed if the soil moisture is high. Refer to Appendix II.

A description of mulching methods is included in Appendix I.

The revised topsoil handling plan contained in Appendix II contains an expanded discussion of soil redistribution methods and equipment.

Refer to Appendix I for a discussion on test plots.

UMC 817.25 Topsoil: Nutrients and Amendments

The revised topsoil handling plan contained in Appendix II contains a plan for determining nutrients and amendments to be added to the soils at the time of revegetation.

Refer to the Topsoil Handling Plan in Appendix II and the Revegetation Plan and Test Plot Plan in Appendix I.

The application of nutrients is discussed in the Topsoil Handling Plan in Appendix II.

Refer to the Revegetation Plan (Appendix I) and the Topsoil Handling Plan (Appendix II) for a discussion on maintenance applications of nutrients.

Justification for the fertilizer recommended by the Vegetation Study has been included in Appendix II.

UMC 817.42 Water Quality Standards and Effluent Limitations

- (a)(1) Refer to UMC 817.46 for a discussion of the Division's comments under that section.

The Operator responded to the April 1, 1983 Department of Health letter on April 22nd and July 15, 1983. Copies of these letters are attached.

- (b)(7) There is a small amount of standing water in the diversion ditch at all times. It is presumed that the ditch intercepts the water table. This would have been the source of water sampled on February 9, 1981.

It is possible that there is some seepage from the Upper Refuse Pond area into the diversion. Refer to Appendix III for the ground water monitoring program.

UMC 817.43 Hydrologic Balance: Diversions and Conveyance of Overland Flow, Shallow Ground Water Flow and Ephemeral Streams

WESTERN DISTRICT



**U. S. Steel  
Mining Co., Inc.**

a Subsidiary of United States Steel Corporation

P. O. BOX 807  
EAST CARBON UTAH 84520  
801 288 4431

April 22, 1983

State of Utah  
Department of Health  
Division of Environmental Health  
150 West North Temple  
P. O. Box 2500  
Salt Lake City, Utah 84110-2500

Attn: Steven R. McNeal  
Public Health Engineer  
Bureau of Water Pollution Control

Dear Mr. McNeal:

The following information is submitted in response to your letter of April 1, 1983:

1. Sanitary Waste Water System

The Wellington Coal Cleaning Plant sanitary waste water system consists of the following:

1.1 A 1500 gallon septic tank and drainage field located between the office building and the plant auxiliary pond (refer to drawing E9-1591). A sump and pump is located adjacent to the drainage field. The effluent is discharged into the plant auxiliary pond. This system was installed in 1957 or 1958 and U.S. Steel Mining Co. has not been able to determine whether the Department of Health ever reviewed the system design.

U.S. Steel Mining Co. has not been able to locate any information concerning the design capacity or current loading of this system. Approximately 30 people are currently employed at the Cleaning Plant.

1.2 A second septic tank and drainage field is located near the heat dryer (refer to drawing E9-1953). This system receives the effluent from a single toilet located in the heat dryer. U.S. Steel Mining Co. was unable to locate any design information on the system. The system was installed in 1960 or 1961 and no record of a Department of Health review of this system was located.

Mr. Steven R. McNeal  
April 22, 1983  
Page Two

2. Refuse and Clear Water Ponds

The Wellington Coal Cleaning Plant pumps fine coal and rock waste to the upper refuse pond. The water is clarified in the upper and lower refuse ponds before being discharged into the clear water pond. Water from the clear water pond is returned to the plant through a 24 inch concrete water line.

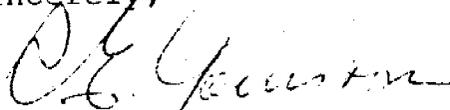
An 18 inch clay or clay loam lining was placed underneath the clear water pond. Refer to Appendix C of the Wellington Coal Cleaning Plant Operation Plan for a complete discussion of the construction details at the impoundments. The following information is included in Appendix C:

- (a) Cross-Sections of the impoundments
- (b) Test boring locations
- (c) Material characteristics and permeability for the impoundments and foundation materials.
- (d) Complete discussion of the impoundment stability and foundation materials.

These impoundments were constructed in 1957 and 1958. U. S. Steel Mining Co. has not been able to locate a record indicating whether or not the Department of Health has reviewed the pond designs.

- 3. The exact pond locations and sizes are not currently available. The Utah Division of Oil, Gas and Mining has requested similar information. Per your conversation with V. R. Watts, this information will be submitted in four to six weeks. This will allow sufficient time to develop the requested information.
- 4. The information requested is attached.

Sincerely,



R. E. Yourston  
General Superintendent

REY:VRW:cs

Enc.

cc: B. L. Kirkwood  
F. J. Boinsky  
S. Todd  
✓ EC File



# U. S. Steel Mining Co., Inc.

■ Subsidiary of United States Steel Corporation

P. O. BOX 807  
EAST CARBON, UTAH 84520  
801 / 888-4431

WESTERN DISTRICT

July 15, 1983

State of Utah  
Department of Health,  
Division of Environmental Health  
150 West North Temple  
P. O. Box 2500  
Salt Lake City, Utah 84110-2500

Attn: Steven R. McNeal

Dear Mr. McNeal:

The following information is submitted in response to Item 3 of your April 1, 1983 letter. A revision to the Wellington Operation and Reclamation Plan, dated July 7, 1983, includes the proposed modifications described herein:

### Description of the Current Operation

Standing water adjacent to the Coal Cleaning Plant between the railroad tracks and the Price River is the result of 1) preparation plant effluent, 2) scrubber effluent, and 3) precipitation events.

The Auxiliary Pond (reference Drawing C9-1285) provides water storage capacity to support plant operations. Some water is maintained in the pond for make-up water during plant operation. Void capacity is maintained to receive plant discharge and runoff volumes. Due to the limited capacity of the pond, the Operator uses a gate, located at the southeast end of the pond, to regulate the water level in the pond. Discharge from the gate flows through a culvert to a ditch where it is combined with the scrubber effluent.

Excess water from the scrubber flows through a concrete lined ditch and discharges directly into the ditch from the Auxiliary Pond. There is no preliminary settling pond. The combined drainage flows through a culvert under the railroad tracks and into the fields.

The fields between the tracks and the river were graded for irrigation at one time. As such, water is contained within the fields rather than discharging into the river. Evaporation appears to equalize the discharge volumes.

The Operator has no design information regarding the pond area. There is no record that the Department of Health has reviewed the system.

State of Utah  
July 15, 1983  
Page 2

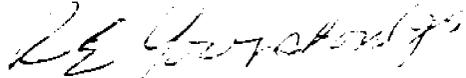
Description of Proposed Modification

The Operator proposes to discontinue use of the fields between the railroad tracks and the Price River for plant effluent water containment. Ponds will be constructed to fully contain all plant effluent and storm runoff.

The Road Pond (reference Drawing C9-1284 and E9-3429) will be incised to provide overflow capacity for the Auxiliary Pond. The Road Pond and Auxiliary Pond capacities are combined by an existing culvert. Design volumes are shown on the drawings. Use of the gate on the southeast end of the Auxiliary Pond will be discontinued.

The Heat Dryer Pond (reference Drawing E9-3433) will be incised to provide runoff and sump overflow capacity. Scrubber effluent will flow through the concrete lined ditch and into the sump. Overflow will enter the pond, but the decant pipe will gravity feed the waters back into the sump. Water in the sump will be pumped back into the plant water circuit. Design volumes are shown on the drawing.

Sincerely,



R. E. Yourston  
General Superintendent

REY:BAF:cs  
Enc.

cc: L. King  
F. Boinsky  
S. Todd  
J. Smith  
EC File  
V. R. Watts

Culvert design calculations have been added to Appendix B of the Operation and Reclamation Plan. The culvert locations are shown on Map F9-177, sheet 1 of 2.

UMC 817.45 Sediment Control Measures

Refer to the discussion under UMC 783.13(b)(3).

UMC 817.46 Hydrologic Balance Sedimentation Ponds

- (a) (1) The proposed Road Pond and Heat Dryer Pond are designed to contain plant discharge water and runoff from precipitation events. The Road Pond will increase the capacity of the Auxiliary Pond (which was built during plant construction in 1957-58). The Heat Dryer Pond is a new structure designed to contain effluent which now is ponded between the D&RGW tracks and the Price River.
- (2) Both ponds are located as close as possible to the source discharge.
- (b) (1) See revised pages B-7, 8 in the ORP.
- (c) The Auxiliary Pond and Road Pond have combined capacities through a culvert. The Operator has the capability of pumping water from the Auxiliary Pond either into the plant refuse sumps or into the slurry ponds east of the Price River. The Auxiliary Pond pump is run on a float switch such that when the water level reaches a certain elevation the pump is activated. The pump will continue to run until the water level is reduced to another given elevation. When the plant is idle, the Auxiliary Pond pump pumps directly into the refuse ponds. The Auxiliary Pond pump discharges approximately 400 gpm when pumping into the refuse sump and 300 gpm when pumping into the slurry ponds (head differences cause the quantity variation).

The Heat Dryer Pond will overflow into a sump which will be equipped with a float activated pump. Pumped water will discharge into the refuse sumps in the plant. During plant operation, water from the refuse pumps is pumped directly out of the slurry pipeline. When the plant is idle, sump overflow is contained in the Auxiliary Pond. The Auxiliary Pond pump will activate when fluid levels reach a certain elevation and pump directly into the slurry ponds east of the Price River. The Heat Dryer Pond pump will have a capacity of approximately 200 gpm.

The Operator does not anticipate any discharge from any of the three ponds, except by pumping. All water pumped from the Auxiliary Pond and Heat Dryer Pond will discharge into the slurry ponds east of the Price River. Design calculations for the slurry pond system, detailed in Technical Revision No. 1, are based on normal plant operation and includes any water pumped from the plant side of the River. No water is discharged from any pond at the Wellington Coal Cleaning Plant into the Price River or its tributaries.

- (d) See UMC 817.46(c)
- (e) Both ponds are incised ponds which minimizes the potential for short circuiting.
- (f) The Operator does not propose to discharge any pond water off site.
- (g) See UMC 817.46(f)
- (h) Ponds will be cleaned when 60 percent of the design sediment volume accumulates. This volume will be appropriately marked in each pond.
- (i) Both ponds are capable of containing the 25 year 24 hour storm. See pages B-7, 8 of the ORP.
- (j) Both ponds will maintain one foot of freeboard under design conditions. See Drawing No.'s E9-3433 and E9-3429.
- (k) This section does not apply to incised ponds.
- (l) This section does not apply to incised ponds.
- (m) Side slopes on ponds will be no less than 2h:1v.
- (n) This section does not apply to incised ponds.
- (o) This section does not apply to incised ponds.
- (p) This section does not apply to incised ponds.
- (q) Neither pond meets MSHA size criteria.
- (r) Pond designs were developed by a registered professional engineer. Each pond will be monitored during construction and certified by a registered professional engineer.
- (s) This section does not apply to incised ponds.

- (t) Each pond will be examined quarterly for structural weakness, erosion or other hazardous conditions. Reports will be forwarded to the Division.
- (u) Sedimentation ponds will not be removed until the disturbed areas are revegetated to the requirements of UMC 817.111-817.117. Refer to the Revegetation Plan (Appendix I) for details on techniques and success standards. Once the disturbed areas have been successfully revegetated as determined by the approved revegetation plan, grab water samples will be taken at the inlets to the sedimentation ponds. The water samples will be analyzed for the appropriate parameters to determine if the incoming water meets the State and Federal water quality requirements for the receiving streams. The parameters for analysis will be determined by the water quality requirements in effect at the time of reclamation. If the water samples show that the drainage into the pond meets the water quality requirements noted above, the sedimentation ponds will be removed and revegetated in accordance with the Reclamation and Revegetation Plans.

In the event that the drainage does not meet the water quality requirements, grab samples will be taken at the pond inlets quarterly until the water quality meets State and Federal requirements. The ponds will then be reclaimed in accordance with the Reclamation and Revegetation Plan.

The Operator intends to maintain the Clear Water Pond for sedimentation control during reclamation. The Auxiliary Pond, Road Pond and Heat Dryer Pond are designed primarily to receive and control plant effluent waters. Surface runoff storage is provided but the volume of sediment predicted to enter the ponds is minimal.

1. An itemized list of the plant dump volume is included in Exhibit B of this document. It should be noted on Drawing No. E9-3429 that 80,000 callons of containment is provided in the Auxiliary Pond and 80,000 gallons is provided in the Road Pond. The Auxiliary Pond and Road Pond capacities are connected by a culvert, which together provide the appropriate 160,000 gallons of capacity should a power failure occur.
2. See discussion on development of pond capacities in section 784.11 of this document.
3. Sediment storage volume calculation are provided on pages B-7, 8 of Appendix B in the ORP.

EXHIBIT B

Water Entering the Auxiliary Pond from a Power Failure

| Description                  | Diameter | Area(ft <sup>2</sup> ) | Height or Length(ft) | Volume(gal)    |
|------------------------------|----------|------------------------|----------------------|----------------|
| Desilter Bowl                | 44"      | 1521                   | 4                    | 45,494         |
| Desilter Bowl                | 44"      | 1521                   | 4                    | 45,494         |
| Fresh Water Head Tank        | 10'      | 78.5                   | 10.5                 | 6,169          |
| Recirculated Water Head Tank | -        | -                      | -                    | 5,000          |
| Bird Effluent Piping         | 8"       | 0.349                  | 114                  | 298            |
| Bird Bypass Piping           | 8"       | 0.349                  | 97                   | 253            |
| Raw Coal Piping              | 10"      | 0.545                  | 82                   | 334            |
| Silt Piping                  | 6"       | 0.196                  | 71                   | 104            |
| Scrubber Piping              | 6"       | 0.196                  | 250                  | 367            |
| Sand Piping                  | 10"      | 0.545                  | 28                   | 212            |
| Refuse Sand Piping           | 8"       | 0.349                  | 38                   | 99             |
| Refuse Sand Piping           | 8"       | 0.349                  | 38                   | 99             |
| Fresh Water Piping           | 16"      | 1.396                  | 118                  | 1,232          |
| Slurry Pipeline              | 10"      | 0.545                  | 2100                 | 8,561          |
| Slurry Pipeline              | 10"      | 0.545                  | 2100                 | 8,561          |
| Slurry Pipeline              | 12"      | 0.785                  | 2900                 | 17,037         |
| Slurry Pipeline              | 12"      | 0.785                  | 2900                 | 17,037         |
|                              |          |                        |                      | <u>156,451</u> |

4. The Road Pond and Heat Dryer Pond both have the capacity to contain a 25 year 24 hour precipitation event.

5. See item 817.46(u) in this section.

UMC 817.47 Discharge Structures

Plans, calculations and appropriate discussion for all discharge structures have been added to Appendix B of the Operation and Reclamation Plan.

UMC 817.49 Hydrologic Balance: Permanent and Temporary Impoundments

The dams that meet or exceed the size or other criteria of 30 CFR 77.216(a) include:

1. Clear Water Dike
2. Lower Refuse Dike
3. Upper Refuse Dike

These dams were certified in 1978 by Rollins, Brown and Gunnell, Inc. See Appendix C of the ORP. The impoundments will be certified annually by a registered professional engineer on the Annual Report form as per the following page. The North Dike is not an impounding dike per the criteria of 30 CFR 77.216(a) at the present time. See Technical Revision No. 1.

The following page is the Water Impounding Structure Annual Report form.

WATER IMPOUNDMENT AND IMPOUNDING STRUCTURAL ANNUAL REPORT

WESTERN DISTRICT - COAL

Wellington Coal Preparation Plant Plant

Address Wellington, Utah

Identification No. \_\_\_\_\_ Plant;  
the Owner and Operator do hereby submit to the District Manager, on  
this day \_\_\_\_\_, 19\_\_\_\_, a report of the following:

Name of impounding structure: \_\_\_\_\_  
Identification number of impounding structure: \_\_\_\_\_  
A description of any changes in the geometry of the impounding structure:  
\_\_\_\_\_  
\_\_\_\_\_

Instrumentation readings or changes: \_\_\_\_\_  
\_\_\_\_\_

Average and maximum depths and elevations of the impounded water,  
sediment or slurry: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Storage capacity of the impounding structure:

Design capacity: \_\_\_\_\_ acre feet or gallons.

Volume of water, sediment or slurry impounded and any fires occurring  
in the construction materials: \_\_\_\_\_  
\_\_\_\_\_

Any of all other aspects of the impounding structures affecting its  
stability which has occurred during such reporting period: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CERTIFICATION:

I, \_\_\_\_\_, a registered engineer in the state  
of \_\_\_\_\_, license number \_\_\_\_\_, do hereby certify  
that all work relative to the construction and use of the above listed  
impoundment and impounding structure was performed in accordance with  
the approved plan.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_

The value for the cover density on the impoundments has not been determined. Field observations indicate that the vegetation density appears to be adequate to control erosion. These impoundments have been in place for many years and there are no erosion gullies.

1. The side slopes do not exceed 2v:1h (refer to Appendix C of the DRP and Technical Revision No. 1).
2. The impoundment slopes will be protected against erosion as described in the contemporaneous reclamation plan (see Appendix I this document).
3. See Appendix I for fertilization, seeding and mulching of embankments.
4. The impoundments will be routinely inspected weekly and the results of the inspection will be recorded weekly in accord with the following pages:
5. The Operator will review the weekly inspection reports and take the appropriate action to correct any reported substandard conditions.

PROCEDURES FOR COMPLYING WITH 77.216-3

77.216-3(e)

(1) Impounding structures located at the Wellington Coal Preparation Plant and listed below will be examined at least once every seven days by a qualified person.

- a) 1211-WI-9-0012, Clear Water Pond
- b) 1211-UT-9-0013, Lower Refuse Pond
- c) 1211-UT-9-0014, Upper Refuse Pond

Examination shall be made by traveling the full length of the impounding structures and observing the upstream and downstream slopes, the entire toe area, and the spillway and pipes. Elevation of water shall be measured and recorded.

(2) No instrumentation installed.

(3) The following conditions shall be evaluated for hazards:

a) Water level shall be measured and recorded with increases or decreases noted.

b) Embankment freeboard shall be measured and recorded.

c) Observe for cracks or scarps on crests.

d) Observe for cracks or scarps on slopes.

e) Observe for sloughing or bulging on slopes.

f) Observe for visible sumps or sinkholes in slurry surface.

g) Observe for major erosion problems.

h) Observe for seepage.

i) Observe for surface movements in valley bottom or on hillside.

j) Observe for any erosion of toe.

k) Observe for cracks, bulging or erosion on upstream face.

l) Observe for any cracking, crushing or clogging of pipes and/or spillways.

m) Observe for water impounded against the toe.

(4) Any hazardous condition shall be eliminated immediately in the following manner:

a) When a hazard is determined immediately start reducing water level in the impoundments.

b) Contact equipment operator in the area and begin repairs to eliminate hazardous condition.

c) Contact plant superintendent or plant foreman to obtain any additional men, material, or equipment necessary to eliminate hazardous condition.

(5) The MESA district manager shall be notified immediately if any of the conditions in paragraph (3) are determined to be potentially hazardous.

(6) No coal miners are in the area that would be affected by a potentially hazardous condition.

WELLINGTON COAL CLEANING PLANT  
 Mine I.D. No. 42-00099  
 IMPOUNDMENTS EXAMINATION

DATE \_\_\_\_\_

QUALIFIED PERSON \_\_\_\_\_

1211-UT-9-0012  
CLEAR WATER POND

1211-UT-9-0013  
LOWER REFUSE POND

1211-UT-9-0014  
UPPER REFUSE POND

|                                                  | 1211-UT-9-0012<br>CLEAR WATER POND |       | 1211-UT-9-0013<br>LOWER REFUSE POND |       | 1211-UT-9-0014<br>UPPER REFUSE POND |       |
|--------------------------------------------------|------------------------------------|-------|-------------------------------------|-------|-------------------------------------|-------|
|                                                  | YES                                | NO    | YES                                 | NO    | YES                                 | NO    |
| 1. Embankment freeboard (feet & inches)          | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 2. Water Levels: Increase (+) or Decrease (-)    | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 3. Burning                                       | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 4. Cracks or scarps on crest                     | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 5. Cracks or scarps on slope                     | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 6. Sloughing or bulging on slopes                | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 7. Major erosions problems                       | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 8. Surface movement in valley bottom or hillside | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 9. Erosion of toe                                | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 10. Water impounded against toe                  | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 11. Seepage: From points on embankment slopes    | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| From natural hillsides                           | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| Over widespread areas                            | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| From downstream foundation areas                 | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| "Boils" on downstream side                       | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 12. Cracks, bulging or erosion on upstream face  | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 13. Visible sumps or sinkholes in slurry surface | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 14. Clogging of decant pipes                     | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 15. Cracking or crushing of pipes: Spillway      | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| Decant system                                    | _____                              | _____ | _____                               | _____ | _____                               | _____ |
| 16. Other: _____                                 | _____                              | _____ | _____                               | _____ | _____                               | _____ |

Use other side to specify above.

The impounding structures that do not meet the (size) or other criteria of 30 CFR 77.216(a) include the following:

1. Auxiliary Pond
2. Road Pond
3. Heat Dryer Pond

The Auxiliary Pond is an incised existing pond that has been in place since 1958. The pond was constructed with near vertical side slopes. The banks are stable with no indication of bank instability. There is not sufficient area to bring these side slopes to a 2v:1h.

The Road Pond and the Heat Dryer Ponds will be constructed with 2v:1h side slopes. These will be incised ponds and will not require the construction of embankments. Since these are incised ponds with no embankments, the slope requirements of 817.46(m) do not apply.

1. The ponds will be certified by a registered professional engineer.
2. The Operator will inspect and record the results of these inspections quarterly and submit a certified statement regarding this condition annually. The inspection will consist of the following:
  - a. Walk around the ponds and inspect for bank instability and record the results of the inspection.
  - b. Determine depth of sediment and record freeboard depth.
  - c. Observe ponds for any other substandard condition and record observations.
3. The plant operator will review the inspection reports and take appropriate corrective action for substandard conditions.

The report form is on the following page:

INSPECTION REPORT FOR PONDS NOT  
MEETING THE REQUIREMENTS OF 30 CFR 77.216(a)

Date of Inspection: \_\_\_\_\_

Banks Stable \_\_\_\_\_ Unstable \_\_\_\_\_

Freeboard: \_\_\_\_\_ (at time of inspection)

Sediment Depth: \_\_\_\_\_

Other Substandard Conditions: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signed \_\_\_\_\_

Inspector

UMC 817.52 Surface and Ground Water Monitoring

Refer to Appendix III for complete details on the surface and ground water monitoring plan proposed.

UMC 817.53 Transfer of Wells

The Operator has reviewed the Utah State Division of Water Rights regulations governing the abandonment of wells. They do not appear to cover the specific type of well constructed by the Operator. The proposed plan was discussed with Jerry Bronicel of the State Engineer's office and he did not indicate any problem with the plan.

The Operator will abandon the well in accordance with applicable guidelines and regulations of the Division of Oil, Gas and Mining or the Division of Water Rights in effect at the time of abandonment.

UMC 817.54 Water Rights and Replacement

This section was addressed under UMC 783.17. Please refer to that discussion for details.

UMC 817.83 Coal Processing Waste Banks: Water Control Measures

- (a)(1) The Operator requests exemption by the Division from the requirements of this paragraph. The accumulation of waste from the coal cleaning process has been continuous since the plant began operating in 1958. It is not planned to modify these piles since they are pre-Act.
- (2) The following is submitted to support the exemption from the requirements of (a)(1):

Coarse Waste File (West of River)

1. The waste pile is constructed such that it will not impound surface water. Therefore an underdrain system is not necessary to insure stability of the pile.
2. Based on previous core drilling and surface observation the ground water level is several feet below the ground surface. Therefore an underdrain is not required to intercept ground water to prevent contact with the refuse or to maintain foundation stability. The Operator has proposed a ground water monitoring program (refer to Appendix III)

to verify that the ground water quality is protected.

3. The chemical analysis of the waste shows it to be non-toxic (refer to Appendix E of the DRP) and therefore any water percolating through the waste pile will not pose a threat to ground water (see Appendix III for the ground water monitoring plan).
4. The side slopes will be 2h:1v or less and therefore are stable. There has never been a slope failure on this pile in 25 years of operation which further supports the appraisal of stability.

(b) Refer to surface runoff control plan in Appendix B.

(c) Refer to surface runoff control plan in Appendix B.

#### Waste Pile East of Price River

1. The construction of the waste pile is such that it does not impound surface water therefore an underdrain system is not necessary to insure pile stability.
2. Based on previous core drilling and surface observation the ground water level is several feet below the ground surface in this area. Therefore, an underdrain is not necessary to intercept ground water to prevent contact with the refuse or to maintain foundation stability. The Operator has proposed a ground water monitoring program to verify that the ground water quality is adequately protected.
3. The chemical analysis of the waste material shows it to be non-toxic and therefore any water percolating through the waste will not pose a threat to ground water (see Appendix III for the ground water monitoring plan).
4. The side slopes will be 2h:1v or less and therefore are stable. There has never been a slope failure on this pile in 25 years of operation which further supports the appraisal of stability.

RECEIVED  
JAN 16 1984

DIVISION OF  
OIL, GAS & MINING

UMC 817.89 Disposal of Non-Coal Waste

Non-coal waste is accumulated in the area EE on Map E9-3341. The accumulation will not exceed 50 cubic yards. Disposal will be at the Carbon County Landfill.

The oil drum storage site designated FF on Map E9-3341 is an earthen pad with a surrounding berm adjacent to the oil house. The maximum accumulation in the storage area is 30 drums. The surrounding berm precludes drainage from the site.

The recovered wood material storage area is designated as DD on Map E9-3341. The Operator has requested an open burning permit to dispose of this material in January 1984. In the event that the request for the burning permit is not approved the wood will be hauled to the County landfill.

All yard storage areas currently in use by the Operator are required for the continued operation of the Cleaning Plant.

UMC 817.97 Protection of Fish, Wildlife, and Related Environmental Values

(a) The Operator shall, to the extent possible, using the best technology currently available, minimize disturbance and adverse impacts of the activities on fish, wildlife and related environmental value through but not limited to the following:

1. Future land clearing operations will be conducted so as to minimize the impacts on wildlife to the extent practical.
2. The employees at the Cleaning Plant will be educated as to the value of wildlife, advised not to harass wildlife during winter months, breeding seasons and early in the rearing process. The DWR film will be used in this instruction.
3. Employees will be instructed when encountering wildlife to not stop vehicles for viewing.
4. Employees will be urged to comply with hunting and other State and Federal wildlife regulations.
5. There are no planned operations that will physically or chemically impact the Price River.
6. The reclamation and revegetation plan will enhance the available food for wildlife.



**U. S. Steel  
Mining Co., Inc.**

a Subsidiary of United States Steel Corporation

P. O. BOX 807  
EAST CARBON, UTAH 84520  
801 868 4431

WESTERN DISTRICT

December 23, 1983

Utah Air Conservation Committee  
Attn: Mr. Brent C. Bradford  
P. O. Box 2500  
Salt Lake City, Utah 84110

Dear Sir:

The Western District of U. S. Steel Mining Company, Inc., requests an "Open Burning Permit" during the month of February, 1984, to burn an accumulation of some 3,000 cubic yards of wood material at our Wellington Coal Cleaning Plant near Wellington, Utah.

The wood material was originally pine mine props and cap pieces used for roof support in our coal mines. The roof support timbers and lumber are splintered and broken in the mining process, loaded with the raw coal, and shipped to the Coal Cleaning Plant. The wood is recovered as a separate waste product and accumulated on the plant property. The waste wood is clean with little or no extraneous material. The wood will be clean burning and will generate sufficient heat to preclude excessive smoke during burning. We will expect to burn this material in four lots on different days.

We will appreciate a favorable consideration of this request.

Sincerely,

Robert E. Yourston  
General Superintendent

REY:th

7. Persistent pesticides will not be used in the permit area.
  8. The Operator will report to UDWR the discovery of any snake dens.
  9. Riparian and wetland areas will not be unnecessarily disturbed particularly between mid March and mid June.
  10. The traffic patterns and speed of vehicles within the permit area reduce the possibility of impacts with wildlife.
  11. The relocation of existing roads or construction of new roads will be conducted so as to minimize the impacts on wildlife to the extent practical.
  12. It is recognized that the requirement for impoundment inspections results in travel near nesting sites for waterfowl on the impounding structures. Experience shows that these birds adapt to the Operators activities.
- (b) The observance of the presence of any critical habitat and/or the presence of any threatened or endangered plant or animal species listed by the Secretary, or any bald or golden eagle shall be promptly reported to the regulatory agency.
- (c) The Coal Cleaning Plant power lines were cleared by the U. S. Fish and Wildlife Service as not presenting a hazard to eagles or other large birds.

#### UMC 817.100 Contemporaneous Reclamation

A plan for the contemporaneous reclamation has been included in Appendix I of this document. Please refer to this plan for details.

Appendix I contains a commitment to provide test plot designs and to install the test plots. Test plots will be included in the equipment and material storage area. Materials will be consolidated as necessary to provide adequate space for the test plots. All additional storage areas are required for plant operation.

#### UMC 817.106 Regrading or Stabilizing of Rills and Gullies

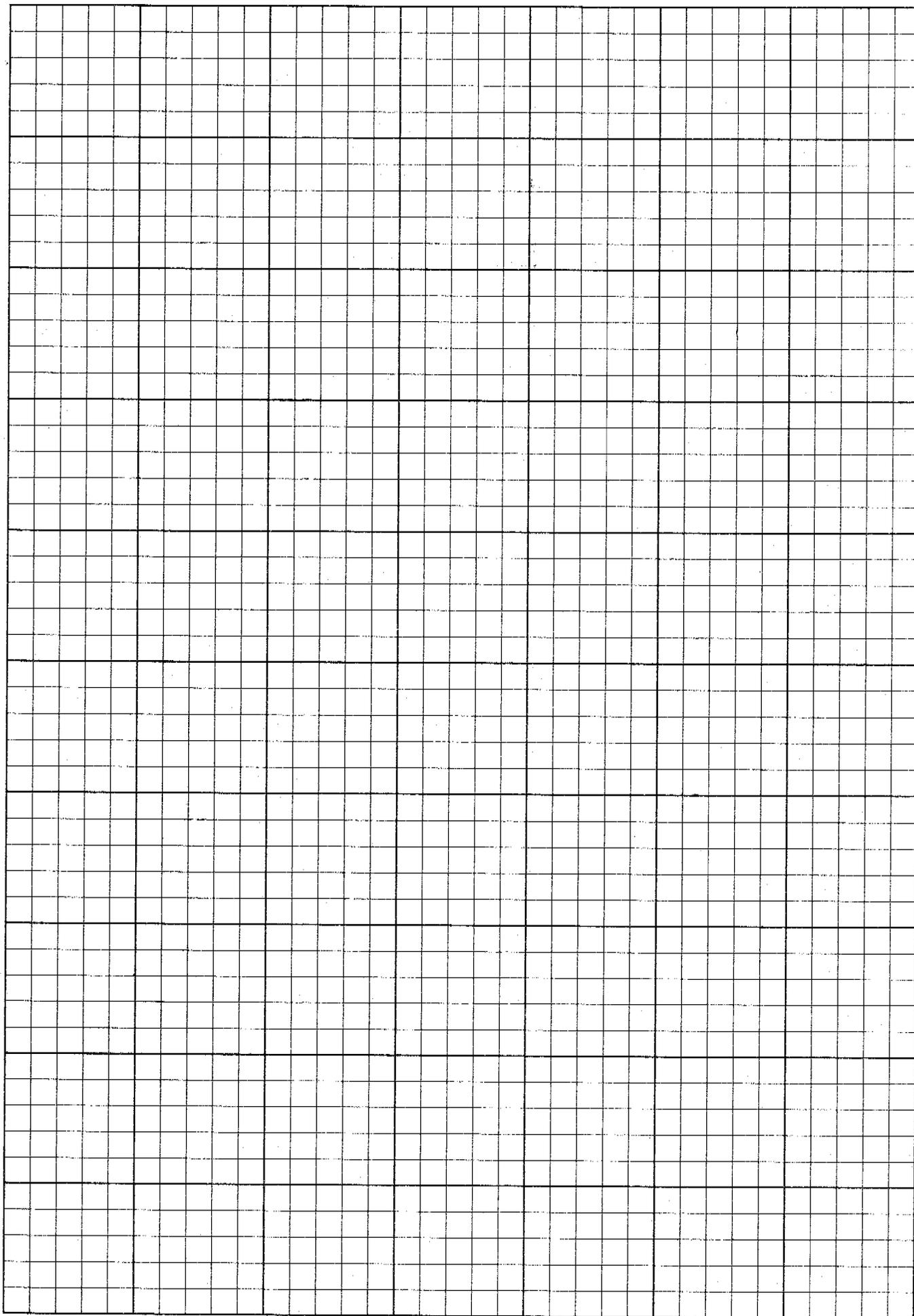
Because of the varied nature of rills and gullies, they will be immediately addressed on a specific basis when and if they occur.

UMC 817.111 - 817.116 Revegetation

Refer to Appendix I of this document for the Revegetation Plan.

43-381 50 SHEETS 3 SQUARE  
43-382 100 SHEETS 3 SQUARE  
43-383 200 SHEETS 3 SQUARE  
MADE IN U.S.A.







# U. S. Steel Mining Co., Inc.

a Subsidiary of United States Steel Corporation

P. O. BOX 807  
EAST CARBON, UTAH 84520  
801 / 888-4431

WESTERN DISTRICT

DIVISION OF  
OIL, GAS & MINING

File ACT/007/012  
Folder No. 2

MRP  
copy to Shannon  
& Tom P.  
JIM

NOV 04 1983

November 2, 1983

Department of Natural Resources  
Division of Oil, Gas and Mining  
4241 State Office Building  
Salt Lake City, Utah 84114

Attn: James W. Smith, Jr.  
Coordinator of Mined  
Land Development

Re: Wellington Coal Cleaning  
Plant - ACT/007/012

Dear Mr. Smith:

Seven copies of the refuse sample analysis are enclosed. These should be inserted as page E-3 in Appendix E of the Operation and Reclamation Plan.

Sincerely,

R. E. Yourston  
General Superintendent

REY:VRW:cs

Enc.

cc: L. King  
B. L. Kirkwood  
V. R. Watts  
EC File

FILE: ACT/007/012  
# 3, 13 w/ maps  
check letter



# U. S. Steel Mining Co., Inc.

a Subsidiary of United States Steel Corporation

WESTERN DISTRICT

P.O. BOX AE  
PAONIA, COLORADO 81428  
303/527-4816

April 19, 1985

RECEIVED

APR 23 1985

State of Utah  
Division of Oil, Gas & Mining  
355 W. North Temple  
3 Triad Center, Suite 350  
Salt Lake City, UT 84180-1203

DIVISION OF OIL  
GAS & MINING

RE: Revision No. 2  
Wellington Coal Cleaning Plant  
ACT/007/012

Dear Mr. Braxton:

Enclosed are 8 copies of the subject revision revised per your request. The following itemizes answers to the questions listed in your letter of March 25, 1985.

1. The operation plan enclosed in this revision supercedes all previous plans and documents. Pages are included for insertion into all copies of the Operation and Reclamation Plan.
2. The statement on page 2 of our plan submitted on February 11, 1985 has been clarified and is included in the package under UMC 784.11
3. A discussion supporting the rationale for decreasing the desiltor bowl volumes is included under UMC 784.11, Plant Discharge Water.
4. The culvert under the D&RGW mainline is plugged and such that the Dryer Pond has no outlet. Pond capacities were based on the pond area west of the sump, disregarding any capacity east of the sump. The Dryer Pond, as well as the Auxiliary Pond, are cleaned out periodically so the pond bottom elevation can vary significantly depending on how recently it was cleaned.
5. The Dryer Pond discharge line runs through the culvert under the railroad tracks and discharges into the Auxiliary Pond. Drawing E9-3433 is replaced by drawing A9-1464.
6. The elevations referred to in the discussions on the Dryer Pond have been identified and are included in this revision.

The following list identifies changes to the ORP.

|                                               | <u>Remove</u>        | <u>Insert</u> | <u>Comments</u> |
|-----------------------------------------------|----------------------|---------------|-----------------|
| Operation &<br>Reclamation Plan               | 784-31 ✓             | 784-31 ✓      | Revised         |
|                                               | E9-3429 ✓            | E9-3453 ✓     | Revised         |
|                                               | C9-1284 (pg. 784-35) | A9-1464 ✓     | Revised         |
|                                               | E9-3433 ✓            |               | Deleted         |
|                                               | C9-1285 (pg. 784-15) | C9-1285 ✓     | Revised         |
|                                               | iv                   | iv            | Revised         |
| Determinations of<br>Completeness<br>Response | Pgs. 4-7             | Pgs. 4-7      | Revised         |
|                                               | Pgs. 14-16           | Pgs. 14-16    | Revised         |
|                                               | Exhibit B            | Exhibit B     | Revised         |
|                                               | Page 17              | Page 17       | Revised         |
|                                               | Page 19              | Page 19       | Revised         |

Sincerely,



G. H. Sides  
General Manager

GHS/kb

Enclosures

cc: L. King  
B. A. Filas (2)  
V. R. Watts (2)

2  
Review  
4/19/85

to Exhibit A - Regional Cross-Section included in this Determination of Completeness Response. Map E9-3428 shows the water table to be in the alluvium material overlying the Blue Gate Shale. The Ferron Sandstone underlies the Blue Gate Shale. Refer to 783.13 of the ORP. Refer to Appendix III.

The water level shown on the holes drilled on the property was gaged one to two weeks after the holes were completed and is considered a static water level. See Map E9-3428.

Based on core drilling information available (see Map E9-3428) and the area geology, the alluvial aquifer is estimated to extend through the areas marked Qsw (slopewash) and Qal (alluvium) on Map C9-1213 in the ORP. Map E9-3428 shows three cross sections of the permit area with the water table elevation alluvium depth marked for several locations in the permit area. Refer also to Appendix III of this document.

The statement regarding the available quality data of water in locations remote to the permit area was not presented to be representative of the water quality in this formation within the permit area but only for purposes of information.

Page E-2 of Appendix E (of the ORP) states that the coarse refuse pile will extend over the undisturbed drainage diversion ditch. The actions which will be taken to protect the diversion ditch are also described.

UMC 783.27 Prime Farmland Investigation

Determined complete. No additional information was requested.

UMC 784.11 Operation Plan: General Requirements

ROAD POND

The Auxiliary Pond provides water storage capacity to support plant operations. Water is maintained in the pond for use in plant operations. Void capacity is maintained to receive plant discharge and runoff volumes.

The Road Pond is an extension or enlargement of the Auxiliary Pond. The culvert, shown on Drawing No. E9-3453, connects the ponds to combine their capacities.

Volume Requirements

Volume requirements for the Auxiliary Pond and Road Pond are calculated as one since the pond capacities are connected. There are three main sources of water inflow into the ponds:

1. Clear water from the Clear Water Pond
2. Plant discharge water
3. Runoff from precipitation events
4. Dryer Pond discharge water

Capacity requirements were developed as follows:

1. Clear Water from Clear Water Pond

The Operator has the capability of filling the Auxiliary Pond with water directly from the incoming fresh water line from the Clear Water Pond. Prior to plant startup, the pond is filled with an adequate volume of water for plant operation. It has been the Operators experience that approximately 11,364 cu. ft. (85,000 gallons) is required to operate one shift. Pond design operating volume is therefore based on running two shifts a day or 22,727 cu. ft. (170,000 gallons) of storage capacity for plant operation.

2. Plant Discharge Water

Inherent to the coal washing process, a given volume of water and slurry are constantly circulated by pumps when coal is being washed. All pumps within the system are electrically driven. In the event of a power loss during the coal washing process, approximately 8792 cu. ft. (65,764 gallons) of water and slurry will be in the system in excess of sump and structure capacities. This volume is itemized on Exhibit B.

During normal plant operations, a drain valve is kept partially open at the bottom of the desilter bowls which discharges approximately 8.5 gal/min (approx. 1" per 15 minute period) into the refuse system. In the event of a power loss, these valves would be closed immediately by the Operator in order to maintain water in the system as well as minimize the time required to start up again when power is reestablished. It is considered a prudent assumption that these valves would be closed within fifteen minutes after a power loss.

3. Runoff from Precipitation Events

The drainage area into the Auxiliary and Road Ponds is shown on drawing number F9-177 in the Operation and Reclamation Plan (ORP). Hydrologic calculations included in

Appendix B of the ORP show that approximately 23,290 cu. ft. (174,209 gallons) of capacity is required to contain a 10 year 24 hour precipitation event.

#### 4. Dryer Pond Discharge Water

The Auxiliary Pond is upstream from the Dryer Pond so no water can be transferred from the Dryer Pond into the Auxiliary Pond by gravity. All water which enters the Dryer Pond is pumped from that pond into the Auxiliary Pond (see drawing number A9-1464). The pump in the Dryer Pond is electrically driven. Design capacity for the Road Pond and Auxiliary Pond is based on the clear water from the Clear Water Pond (item 1), runoff (item 3), and the greater volume requirement of either the plant discharge (item 2) or the Dryer Pond discharge (5,209 cu. ft. - see discussion on Dryer Pond requirements in this document) since these two discharges cannot enter the Auxiliary Pond concurrently (the Dryer Pond pump will not function during a power outage). Since the capacity requirement for the plant discharge resulting from a power failure is greater than the Dryer Pond discharge capacity, the design capacity for the Road Pond and Auxiliary Pond is based on items 1, 2, and 3.

The total design storage requirement for the Auxiliary Pond and Road Pond is 54,809 cu. ft.; the sum of the first three water sources discussed.

#### Pond Capacities

Capacities of the Auxiliary Pond and Road Pond are determined in terms of live storage. The live storage is that portion of the pond capacity which can be pumped from the ponds for use in the plant.

The Plant Pumphouse (item O, page 784-6 of the ORP) is situated in the Auxiliary Pond (see Exhibit 2, page 784-12 of the ORP). Pond water flows into the pumphouse sump through windows which are 2' 4" below the pond overflow (overflow elevation = 5339.8 ft). Water is pumped from the sump either into the plant water system when the plant is operating or into the refuse ponds when the plant is idle. Since water contained in the Road Pond flows through the culvert into the Auxiliary Pond, the water from both ponds is recovered by this system.

The Auxiliary Pond is an incised existing pond that has been in place since 1958. The pond was constructed with near vertical side slopes. The banks are stable with no indication of bank instability. Due to the proximity of the plant support buildings to the west and the railroad tracks to the east, there is not sufficient area to bring these side slopes to a 2h:1v. The pond was surveyed on 5-31-83 and found to have 110,000 gallons

per foot of depth (ref. drawing C9-1285 for surface area). Total operating capacity in the Auxiliary Pond is approximately 34,265 cu. ft. (2.33' x 110,000 gal/ft. / 7.48 gal/cu. ft.).

The Auxiliary Pond was originally excavated about 5 to 6 feet deep. During the course of plant operations, water is discharged from the plant into the pond and pumped from the pond back into the plant. Coal fines from the plant discharge settle out and accumulate in the pond. When the fines in the pond approach the elevation of the sump inlet window into pumphouse, the Operator cleans out the pond. As such, the pond bottom may vary from 2.3 feet to 6 feet from the overflow, depending on how recently the pond was cleaned out. Because of this variability, the Operator has chosen not to utilize the dead storage volume as part of the design capacity shown in the calculations. The 34,265 cu. ft. capacity in the pond utilizes only the live storage volume in the pond between the bottom of the inlet windows and the pond overflow.

Storage in the Road Pond is established from the elevation of the connecting culvert. The capacity between elevation 5339.8 (overflow elevation of Auxiliary Pond) and 5337.9 (elevation of bottom of culvert in Road Pond) is live storage because water will flow into the Auxiliary Pond through the culvert as water is pumped out of the Auxiliary Pond. Pond details are shown on Drawing No.'s E9-3453 and C9-1284.

### Summary

#### Requirements:

|                            |                       |
|----------------------------|-----------------------|
| Operating Volume           | 22,727 cu. ft.        |
| Plant Discharge            | 8,792 cu. ft.         |
| Runoff (10 YR 24 HR event) | <u>23,290 cu. ft.</u> |

TOTAL REQUIREMENT 54,809 cu. ft. Capacities:

|                             |                       |
|-----------------------------|-----------------------|
| Auxiliary Pond live storage | 34,265 cu. ft.        |
| Road Pond live storage      | <u>24,603 cu. ft.</u> |

TOTAL CAPACITY 58,868 cu. ft.

Pond capacity exceeds the requirements.

### DRYER POND

The Heat Dryer Pond provides water storage capacity for dryer effluent and runoff from precipitation events. Refer to drawing number A9-1464.

## Volume Requirements

Capacity requirements were developed as follows:

### 1. Scrubber effluent water

During normal plant operation, water occasionally enters the Dryer Pond when the volume of water entering the scrubber sump exceeds the scrubber return pump capacity. This condition occurs when the plant is in operation and as such the Dryer Pond sump pump is maintained in working order. Therefore, no void capacity is maintained in the Dryer Pond for discharges which may occur during plant operation.

When the plant is idle, water is pumped from a sump inside the Blower Room into the scrubber sump. The Blower Room sump is fed at a maximum rate of 4 gallons per minute (measured on 1/31/85). During normal shutdown, the scrubber sump is pumped down so that there is some available capacity in the sump before it will overflow.

Both the Dryer and Auxiliary Ponds are inspected at least twice a day, including weekends and holidays, to make sure the pumps are functioning. If a pump is not working properly, the inspector takes immediate action to try to correct the problem.

The volume required to contain the discharge from the scrubber is approximately 1,540 cu. ft. (4 gal/min X 60 min/hr X 48 hrs / 7.48 gal/cu. ft.). This volume is considered prudent in that 1) the 4 gallons per minute is a maximum flow rate and is usually somewhat less than that, and 2) the ponds are checked and maintained at least twice a day, so it is unlikely that a pump would remain inoperative for a 48 hour period, and 3) there may be some available capacity in the scrubber sump.

### 2. Runoff from Precipitation Events

The drainage area into the Dryer Pond is shown on drawing number F9-177 in the Operation and Reclamation Plan (ORP). Hydrologic calculations included in Appendix B of the ORP show that approximately 3,669 cu. ft. of capacity is required to contain a 10 year 24 hour precipitation event.

The total design storage requirement for the Dryer Pond is 5,209 cu. ft.; the sum of the two water sources discussed.

## Pond Capacity

The capacity of the Dryer Pond can be broken down into three categories: 1) dead storage, 2) live storage within the float range, and 3) live storage above the float range.

1. Dead storage is provided in the Dryer Pond because scrubber effluent water usually contains coal fines which will settle out and accumulate. The dead storage available from the pond bottom to approximately elevation 5335.0 is 3,886 cu. ft. The pond bottom, and subsequently the dead capacity, will vary depending on how recently the pond was cleaned. When the sediment accumulations approach elevation 5335.0, the Operator clams out the pond and disposes of the sediment at a designated refuse disposal site.
2. The pump in the Dryer Pond sump is equipped with a level sensor. When the water elevation reaches approximately 5336.0 the pump is activated. When the water elevation is reduced to approximately 5335.0, the pump shuts off. The pump has a capacity of some 150 gallons per minute, which is well in excess of all pond inflows. The capacity within the float range is 2,416 cu. ft.
3. The pump in the Dryer Pond is activated when the water level reaches elevation 5336.0, and will pump continuously until the water level is reduced to elevation 5335.0. Under normal circumstances, the water elevation will not exceed 5336.0, but in the event of a power failure, the electrically driven pump will not run. There is adequate capacity, however, in the Dryer Pond to contain the 10 year 24 hour storm in the live storage above the float range. The live capacity above the float range to elevation 5337.2 (this elevation corresponds to two feet of freeboard on the pond) is 3,445 cu. ft.

## Summary

### Requirements:

|                            |                      |
|----------------------------|----------------------|
| Scrubber effluent volume   | 1,540 cu. ft.        |
| Runoff (10 YR 24 HR event) | <u>3,669 cu. ft.</u> |
| <b>TOTAL REQUIREMENT</b>   | <b>5,209 cu. ft.</b> |

### Capacity:

|                                 |                      |
|---------------------------------|----------------------|
| Dead storage                    | 3,886 cu. ft.        |
| Live storage within float range | 2,416 cu. ft.        |
| Live storage above float range  | <u>3,445 cu. ft.</u> |
| <b>TOTAL CAPACITY</b>           | <b>9,747 cu. ft.</b> |

Pond live capacity equals 5,861 cu. ft., which exceeds the requirements.

UMC 784.13 Reclamation Plan: General Requirements

(b)(3) Map E9-3342 has been revised to more clearly show the post mining contours per agreement with the Division. Refer to Appendix B of the ORP (page B-45 - B-47) for a discussion on post mining drainage patterns.

(b)(4) Map E9-3339 has been revised to show all soil sample locations and soil salvage areas associated with the expansion of the Coarse Refuse Pile and the Upper Refuse Pond. A revised soil management plan is included in Appendix II of this document.

Refer to Appendix II for complete discussion on the topsoil borrow area. Map E9-3339 has been revised to show the topsoil borrow area location.

(b)(5)(i-v) A revised Revegetation Plan has been included in Appendix I of this document. The requested information and commitments are included as part of that plan.

(vii) A topsoil and substitute material testing program has been included as part of the soil handling plan included in Appendix II.

The referenced variance request was deleted in the June 30th revision to the application.

When the well at the pumphouse was installed, the material removed from the well was spoiled adjacent to it. The plan proposes to replace this material into the well upon reclamation. Since this material is stream laid alluvium deposited by the Price River, it is extremely unlikely that it could be toxic. The Operator has taken no actions which could have made this material toxic. Per conversation with Tom Portle (DOGM), no chemical analysis of this material is required.

Since material originally removed from the well will be replaced, the well reclamation will not effect the deficit of soil cover for the refuse areas. Refer to Appendix II for an explanation of where all soil cover material will be obtained. Refer also to the discussion under section UMC 817.53.

(b)(7) Per conversation with Tom Portle on December 12, 1983, the following additional parameters have been added to the analyses in Appendix E

Culvert design calculations have been added to Appendix B of the Operation and Reclamation Plan. The culvert locations are shown on Map F9-177, sheet 1 of 2.

UMC 817.45 Sediment Control Measures

Refer to the discussion under UMC 783.13(b)(3).

UMC 817.46 Hydrologic Balance Sedimentation Ponds

- (a)(1) The Road Pond and Heat Dryer Pond are designed to contain plant discharge water and runoff from precipitation events. The Road Pond increases the capacity of the Auxiliary Pond (which was built during plant construction in 1957-58). The Heat Dryer Pond receives effluent water from the scrubber and runoff from precipitation events.
- (2) Both ponds are located as close as possible to the source discharge.
- (b)(1) See revised pages B-7, 8 in the ORP.
- (c) The Auxiliary Pond and Road Pond have combined capacities through a culvert. The Operator has the capability of pumping water from the Auxiliary Pond either into the plant refuse sumps or into the slurry ponds east of the Price River. The Auxiliary Pond pump is run on a float switch such that when the water level reaches a certain elevation the pump is activated. The pump will continue to run until the water level is reduced to another given elevation. When the plant is idle, the Auxiliary Pond pump pumps directly into the refuse ponds. The Auxiliary Pond pump discharges approximately 400 gpm when pumping into the refuse sump and 300 gpm when pumping into the slurry ponds (head differences cause the quantity variation).

The Heat Dryer Pond is equipped with a float activated pump. Pumped water discharges into the Auxiliary Pond. The Auxiliary Pond pump will activate when fluid levels reach a certain elevation and A) Pump directly into the slurry ponds east of the Price River when the plant is idle, or B) Pump into the refuse sumps when the plant is operating. The Heat Dryer Pond pump will have a capacity of approximately 150 gpm.

The Operator does not anticipate any discharge from any of the three ponds, except by pumping. All water pumped from the Auxiliary Pond and Heat Dryer Pond will discharge into the slurry ponds east of the Price River. Design calculations for the slurry pond

system, detailed in Technical Revision No. 1, are based on normal plant operation and includes any water pumped from the plant side of the River. No water is discharged from any pond at the Wellington Coal Cleaning Plant into the Price River or its tributaries.

- (d) See UMC 817.46(c)
- (e) Both ponds are incised ponds which minimizes the potential for short circuiting.
- (f) The Operator does not propose to discharge any pond water off site.
- (g) See UMC 817.46(f)
- (h) Ponds will be cleaned as indicated in the Pond Operation Plan.
- (i) Both ponds are capable of containing and dewatering the 25 year 24 hour storm. See pages B-7, 8 of the ORP.
- (j) Both ponds will maintain one foot of freeboard under design conditions. See Drawing No.'s E9-3453 and A9-1464.
- (k) This section does not apply to incised ponds.
- (l) This section does not apply to incised ponds.
- (m) Side slopes on ponds will be no less than 2h:1v.
- (n) This section does not apply to incised ponds.
- (o) This section does not apply to incised ponds.
- (p) This section does not apply to incised ponds.
- (q) Neither pond meets MSHA size criteria.
- (r) Pond designs were developed by a registered professional engineer. Each pond will be monitored during construction and certified by a registered professional engineer.
- (s) This section does not apply to incised ponds.
- (t) Each pond will be examined quarterly for structural weakness, erosion or other hazardous conditions. Reports will be forwarded to the Division.
- (u) Sedimentation ponds will not be removed until the

disturbed areas are revegetated to the requirements of UMC 817.111-817.117. Refer to the Revegetation Plan (Appendix I) for details on techniques and success standards. Once the disturbed areas have been successfully revegetated as determined by the approved revegetation plan, grab water samples will be taken at the inlets to the sedimentation ponds. The water samples will be analyzed for the appropriate parameters to determine if the incoming water meets the State and Federal water quality requirements for the receiving streams. The parameters for analysis will be determined by the water quality requirements in effect at the time of reclamation. If the water samples show that the drainage into the pond meets the water quality requirements noted above, the sedimentation ponds will be removed and revegetated in accordance with the Reclamation and Revegetation Plans.

In the event that the drainage does not meet the water quality requirements, grab samples will be taken at the pond inlets quarterly until the water quality meets State and Federal requirements. The ponds will then be reclaimed in accordance with the Reclamation and Revegetation Plan.

The Operator intends to maintain the Clear Water Pond for sedimentation control during reclamation. The Auxiliary Pond, Road Pond and Heat Dryer Pond are designed primarily to receive and control plant effluent waters. Surface runoff storage is provided but the volume of sediment predicted to enter the ponds is minimal.

1. An itemized list of the plant dump volume is included in Exhibit B of this document.
2. See discussion on development of pond capacities in section 784.11 of this document.
3. Sediment storage volume calculation are provided on pages B-7, 8 of Appendix B in the ORP.
4. The Road Pond and Heat Dryer Pond both have the capacity to contain and dewater a 25 year 24 hour precipitation event.
5. See item 817.46(u) in this section.

#### UMC 817.47 Discharge Structures

Plans, calculations and appropriate discussion for all discharge structures have been added to Appendix B of the Operation and Reclamation Plan.

## EXHIBIT B

## Water Entering the Auxiliary Pond from a Power Failure

| Description                  | Diameter | Area(ft <sup>2</sup> ) | Height or Length(ft) | Volume(gal)   |
|------------------------------|----------|------------------------|----------------------|---------------|
| Desiltor Bowl                | 44'      | 1521                   | 1/12 *               | 127           |
| Desiltor Bowl                | 44'      | 1521                   | 1/12 *               | 127           |
| Fresh Water Head Tank        | 10'      | 78.5                   | 10.5                 | 6,169         |
| Recirculated Water Head Tank | -        | -                      | -                    | 5,000         |
| Bird Effluent Piping         | 8"       | 0.349                  | 114                  | 298           |
| Bird Bypass Piping           | 8"       | 0.349                  | 97                   | 253           |
| Raw Coal Piping              | 10"      | 0.545                  | 82                   | 334           |
| Silt Piping                  | 6"       | 0.196                  | 71                   | 104           |
| Scrubber Piping              | 6"       | 0.196                  | 250                  | 367           |
| Sand Piping                  | 10"      | 0.545                  | 28                   | 212           |
| Refuse Sand Piping           | 8"       | 0.349                  | 38                   | 99            |
| Refuse Sand Piping           | 8"       | 0.349                  | 38                   | 99            |
| Fresh Water Piping           | 16"      | 1.396                  | 118                  | 1,232         |
| Slurry Pipeline              | 10"      | 0.545                  | 2100                 | 8,561         |
| Slurry Pipeline              | 10"      | 0.545                  | 2100                 | 5,861         |
| Slurry Pipeline              | 12"      | 0.785                  | 2900                 | 17,037        |
| Slurry Pipeline              | 12"      | 0.785                  | 2900                 | 17,037        |
|                              |          |                        |                      | <u>65,764</u> |

\*The Desiltor Bowls are 4 feet in height but the water loss from each due to a power failure is expected to be only one inch or less. This is because during a power outage these valves are closed immediately by the Operator in order to maintain water in the system as well as minimize the time required to start up again when power is reestablished. When the plant is not operating, the valves on the desiltor bowls are closed.

The dams that meet or exceed the size or other criteria of 30 CFR 77.216(a) include:

1. Clear Water Dike
2. Lower Refuse Dike
3. Upper Refuse Dike

These dams were certified in 1978 by Rollins, Brown and Gunnell, Inc. See Appendix C of the ORP. The impoundments will be certified annually by a registered professional engineer on the Annual Report form as per the following page. The North Dike is not an impounding dike per the criteria of 30 CFR 77.216(a) at the present time. See Technical Revision No. 1.

The following page is the Water Impounding Structure Annual Report form.

The impounding structures that do not meet the size or other criteria of 30 CFR 77.216(a) include the following:

1. Auxiliary Pond
2. Road Pond
3. Heat Dryer Pond

The Auxiliary Pond is an incised existing pond that has been in place since 1958. The pond was constructed with near vertical side slopes. The banks are stable with no indication of bank instability. There is not sufficient area to bring these side slopes to a 2v:1h.

The Road Pond and the Heat Dryer Ponds have been constructed with 2h:1v side slopes. These incised ponds did not require the construction of embankments. Since these are incised ponds with no embankments, the slope requirements of 817.46(m) do not apply.

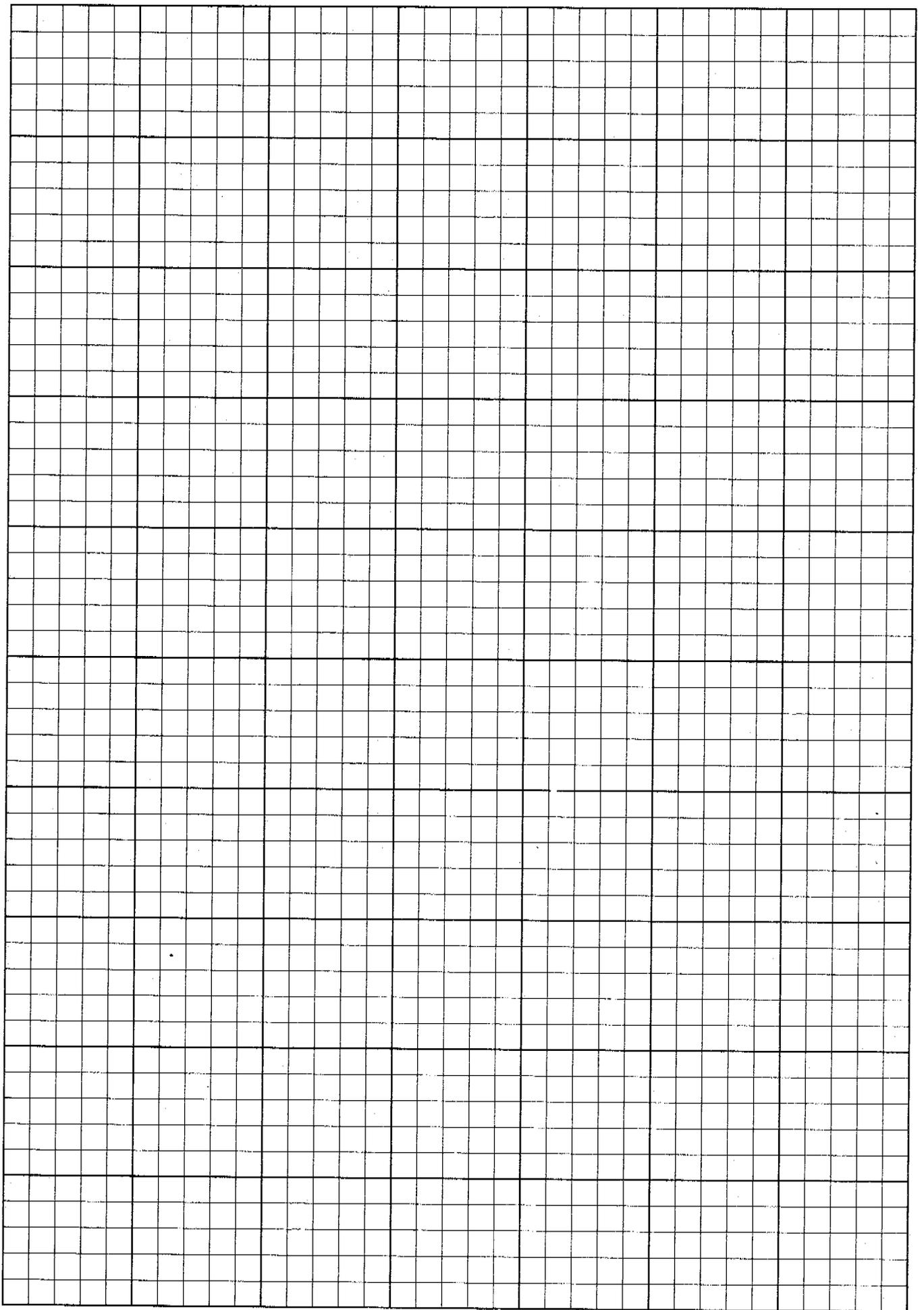
1. The ponds will be certified by a registered professional engineer.
2. The Operator will inspect and record the results of these inspections quarterly and submit a certified statement regarding this condition annually. The inspection will consist of the following:
  - a. Walk around the ponds and inspect for bank instability and record the results of the inspection.
  - b. Determine depth of sediment and record freeboard depth.
  - c. Observe ponds for any other substandard condition and record observations.
3. The plant operator will review the inspection reports and take appropriate corrective action for substandard conditions.

The report form is on the following page:

10 SHEETS 5 SQUARE  
20 SHEETS 10 SQUARE  
30 SHEETS 15 SQUARE  
40 SHEETS 20 SQUARE  
50 SHEETS 25 SQUARE  
60 SHEETS 30 SQUARE  
70 SHEETS 35 SQUARE  
80 SHEETS 40 SQUARE  
90 SHEETS 45 SQUARE  
100 SHEETS 50 SQUARE



MADE IN U.S.A.



**KAISER  
COAL**

KAISER COAL CORPORATION  
Sunnyside Coal Mines  
P.O. Box 10  
Sunnyside, Utah 84539  
Telephone (801) 888-4421

**RECEIVED**  
APR 13 1987

DIVISION OF  
OIL, GAS & MINING

Date: April 10, 1987

Mr. Lowell P. Braxton, Administrator  
Mineral Resource Development & Reclamation Program  
Utah Division of Oil, Gas & Mining  
355 W. North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: ORP Mid Term Review  
Wellington Prep Plant  
ACT/007/012

Dear Mr. Braxton:

This letter transmits 3 copies of the mid term review of the Operation and Reclamation Plan (ORP) for the Wellington Prep Plant. The attached table provides a replacement guide for the revisions. Studies completed after the original ORP application have been incorporated as part of the plan as required.

The available data for the annual report has been included in the mid term review where appropriate. The 1986 vegetation data is currently being assembled and will be completed by May 18, 1987 per correspondence with the Division. The reclamation test plot soil samples and vegetation data will be collected this summer.

Kaiser appreciates the assistance provided by the Division. and look forward to working with you during the remainder of the review process.

Sincerely,

*William P. Balaz*  
William P. Balaz  
Senior Mining Engineer

attach  
encl

cc: B. J. Bourquin  
C. W. Winters

WELLINGTON COAL CLEANING PLANT  
MIDTERM REVIEW  
REPLACEMENT LIST  
4/11/87

| <u>REMOVE</u>      | <u>INSERT</u>      | <u>STATUS</u> |
|--------------------|--------------------|---------------|
| Title              | Title              | Revised ✓     |
| ii                 | ii                 | Revised ✓     |
| iii                | iii                | Revised       |
| iv                 | iv                 | Revised       |
| 782-2              | 782-2              | Revised       |
| 782-3              | 782-3              | Revised       |
| 782-4              | 782-4              | Revised       |
| 782-5              | 782-5              | Revised       |
| 782-8              | 782-8              | Revised ✓     |
| 782-12             | 782-12             | Revised ✓     |
| Insurance Coverage | Insurance Coverage | Revised       |
| -                  | 782-15i            | New Page      |
| -                  | 782-20i            | New Page      |
| -                  | 782-20ii           | New Page      |
| -                  | 782-20iii          | New Page      |
| -                  | 782-20iv           | New Page      |
| -                  | 782-20v            | New Page      |
| -                  | 782-20vi           | New Page      |
| 782-22             | 782-22             | Revised       |
| -                  | 782-22i            | New Page      |
| -                  | 782-22ii           | New Page      |
| -                  | 782-22iii          | New Page      |
| -                  | 782-22iv           | New Page      |
| 783-10i            | 783-10i            | Revised       |
| 783-28             | 783-28             | Revised       |
| -                  | 783-29i            | New Page      |
| 783-30             | 783-30             | Revised       |
| 783-40             | 783-40             | Revised       |
| 784-2              | 784-2              | Revised       |
| 784-3              | 784-3              | Revised       |
| -                  | 784-3i             | New Page      |
| 784-7              | 784-7              | Revised       |
| 784-8              | 784-8              | Revised       |
| 784-9              | 784-9              | Revised       |
| 784-10             | 784-10             | Revised       |
| 784-10i            | 784-10i            | New Page      |
| 784-16             | 784-16             | Revised       |
| 784-17             | 784-17             | Revised       |
| -                  | 784-17i to         |               |
|                    | 784-17vii          | New Pages     |
| 784-23             | 784-23             | Revised       |
| 784-24             | 784-24             | Revised       |
| 784-26             | 784-26             | Revised       |

*Midterm  
4/11/87*

WELLINGTON COAL CLEANING PLANT  
MIDTERM REVIEW  
REPLACEMENT LIST (CONT)  
4/11/87

| <u>REMOVE</u>                 | <u>INSERT</u>               | <u>STATUS</u> |
|-------------------------------|-----------------------------|---------------|
| 784-27                        | 784-27                      | Revised       |
| 784-28i                       | 784-28i                     | Revised       |
| -                             | 784-28ii                    | New Page      |
| 784-28iii                     | 784-28iii                   | Revised       |
| -                             | 784-28iv to                 | New Pages     |
| 784-28ii                      | 784-28xxiii                 | Revised       |
| 784-31                        | 784-28xxix                  | Revised       |
| 784-32                        | 784-31                      | Revised       |
| -                             | 784-32                      | Revised       |
| 784-33                        | 784-32i to                  | New Pages     |
| 784-34                        | 784-32v                     | Revised       |
| 784-41                        | 784-33                      | Revised       |
| 784-44                        | 784-34                      | Revised       |
| Appendix A                    | 784-41                      | Revised       |
| *Technical Revision No. 1     | 784-44                      | Revised       |
| -                             | Appendix A                  | Revised       |
| *Appendix III of ACR Response | Appendix E                  | Revised       |
| Page 4 of Appendix III        | Seam Analysis, Appendix G   | New           |
| Dwg No. E9-3451               | Appendix I                  | Revised       |
| Appendix I of ACR Response    | Page 4 of Appendix I        | Revised       |
| -                             | - E9-3451, Appendix I       | Revised       |
| -                             | - Appendix J                | Revised       |
| Figure 1                      | - D4-0141(1of2), Appendix J | New Map       |
| Appendix II of ACR Response   | - D4-0141(2of2), Appendix J | New Map       |
| -                             | Figure 1, Appendix J        | Revised       |
| C4-0071                       | Appendix K                  | Revised       |
| Dwg No. E9-3341               | Map Cover Sheet             | New           |
| Dwg NO. E9-3450               | ← C4-0071                   | New Map       |
|                               | E9-3341                     | Revised       |
|                               | E9-3450                     | Revised       |

\* Denotes Report being incorporated into ORP Document

OPERATION AND RECLAMATION PLAN  
WELLINGTON COAL CLEANING PLANT

4/11/67

OPERATION AND RECLAMATION PLAN  
WESTERN DISTRICT-COAL  
WELLINGTON COAL CLEANING PLANT

OPERATION AND RECLAMATION PLAN  
WELLINGTON COAL CLEANING PLANT

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## WELLINGTON COAL CLEANING PLANT INTRODUCTION

The Wellington Coal Cleaning Plant is located near Wellington, Utah. Built in 1958, the plant ran continuously until 1985. In December 1985 Kaiser Coal Corporation purchased the cleaning plant from United States Steel. Due to market conditions the plant remains idle. Rail access connects the prep plant with mines and potential customers.

The cleaning plant is located west of the Price River adjacent to the Denver and Rio Grande Western Railroad. The primary reject disposal area is located east of the Price River and is connected to the cleaning plant by a refuse pipeline and a clear water pipeline. The refuse material is pumped from the cleaning plant to the refuse disposal area. The coarse refuse is placed in the refuse waste pile and the fine, high ash coal flows with the carrying water to the upper refuse pond. The fine material begins to drop out in the upper refuse pond. The partially clarified water passes to the lower refuse pond where the balance of the fine coal drops. The clarified water then flows to a holding pond for return to the coal cleaning plant on the west side of the Price River. The makeup water is pumped from a well charged by the Price River. The well water passes from the river through the alluvials to the well which serves as a collection point. The water is pumped from the well to the clear water pond. The coal processing water system is a closed system to conserve and maximize use of the water. Water escapes from the system as water vapor from the heat dryer and through evaporation from the upper refuse, lower refuse and clear water ponds.

OPERATION AND RECLAMATION PLAN  
WELLINGTON COAL CLEANING PLANT

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# WELLINGTON COAL CLEANING PLANT

## INTRODUCTION

The United States Steel Corporation's Wellington Coal Cleaning Plant is located on Corporation owned land near Wellington, Utah. The coal cleaning plant receives raw coal from the Geneva Mine in Utah and the Somerset Mine in Colorado by rail, processes the raw coal to a reject product and a clean coal product. The clean coal product is shipped by rail to the Corporation's Geneva Steel Works in Orem, Utah. The reject product is placed in designated disposal areas in the vicinity of the plant.

The Wellington Coal Cleaning Plant was completed in 1958 and has been in continuous operation since that date. The cleaning plant is located west of the Price River adjacent to the Denver and Rio Grande Western Railroad. The primary reject disposal area is located east of the Price River and is connected to the cleaning plant by a refuse pipeline and a clear water pipeline. The refuse material is pumped from the cleaning plant to the refuse disposal area. The coarse refuse is placed in the refuse waste pile and the fine, high, ash coal flows with the carrying water to the upper refuse pond. The fine material begins to drop out in the upper refuse pond. The partially clarified water passes to the lower refuse pond where the balance of the fine coal drops and clear water passes to the clear water holding pond for return to the coal cleaning plant on the west side of the Price River. The make-up water is pumped from a well. The source of the well water is the Price River. The well water passes from the river through the alluvials to the well which serves as a collection point. The water is pumped from the well to the clear water pond. The coal processing water system is a closed system to conserve and maximize use of the water. Water escapes from the system as water vapor from the heat dryer and through evaporation from the upper refuse, lower refuse and clear water ponds.

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OPERATION AND RECLAMATION PLAN  
WELLINGTON COAL CLEANING PLANT

DIVISION OF OIL  
GAS & MINING

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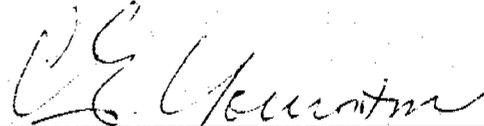
UMC 771.27 Verification of Application

STATE OF UTAH

COUNTY OF CARBON

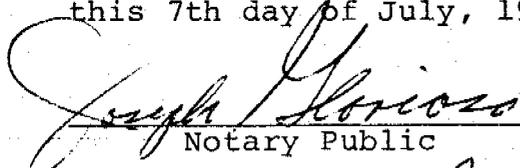
The U. S. STEEL MINING CO., INC.'S WESTERN DISTRICT SUBMITS THIS PERMIT APPLICATION FOR THE WELLINGTON COAL CLEANING PLANT as required by the final rules of the Utah Board and Division of Oil, Gas and Mining; Coal Mining and Reclamation Permanent Program.

To the best of my knowledge and belief, the information contained in the Application is true and correct.



R. E. Yourston  
General Superintendent

SUBSCRIBED AND SWORN TO at East Carbon, Utah,  
this 7th day of July, 1983.



Joseph Florio  
Notary Public

618 No 1st East, Price, Utah  
Residing at

My Commission Expires:

3-18-87

UMC 782 COAL CLEANING PLANT PERMIT APPLICATION

UMC 782.13 Identification of Interests

(a) Names and Addresses

(1) Permit Applicant:

Kaiser Coal Corporation of Utah  
102 So. Tejon  
Colorado Springs, Colorado 80903  
Phone No. 303-578-4300

The office representing the Permit Applicant is:

Kaiser Coal Corporation of Sunnyside  
P.O. Box 10  
Sunnyside, Utah 84539  
Phone No. 801-888-4421

(2) Legal or Equitable Owners of Record:

The legal or equitable owner of the areas to be affected by the surface operators and facilities of the permit applicant is:

Kaiser Coal Corporation  
102 So. Tejon  
Colorado Springs, Colorado 80903  
Phone No. 303-578-4300

(3) There are no holders of record of any leasehold interest in the areas to be affected by surface operations or facilities.

(4) There are no purchasers of record under a real estate contract of the areas affected by surface operations and facilities.

(5) The operator is:

Kaiser Coal Corporation of Sunnyside  
P.O. Box 10  
Sunnyside, Utah 84539  
Phone No. 801-888-4421

(6) The resident agent of the applicant who will accept service of process is:

Mr. Charles W. McGlothlin Jr.  
General Manager  
Kaiser Coal Corporation of Sunnyside  
P.O. Box 10  
Sunnyside, Utah 84539  
Phone No. 801-888-4421

(b) The applicant, Kaiser Coal Corporation of Utah, is incorporated under the laws of the State of Delaware.

(1) Names and addresses of principals, officers and resident agents of Kaiser Coal Corporation of Utah:

|                                |                                                |
|--------------------------------|------------------------------------------------|
| Charles S. McNeil<br>President | 102 So. Tejon<br>Colorado Springs, CO<br>80903 |
|--------------------------------|------------------------------------------------|

|                                                                          |                                                |
|--------------------------------------------------------------------------|------------------------------------------------|
| Claude A. Bradford<br>Vice President<br>Treasurer<br>Assistant Secretary | 102 So. Tejon<br>Colorado Springs, CO<br>80903 |
|--------------------------------------------------------------------------|------------------------------------------------|

|                                  |                                                |
|----------------------------------|------------------------------------------------|
| Virginia A. Coffman<br>Secretary | 102 So. Tejon<br>Colorado Springs, CO<br>80903 |
|----------------------------------|------------------------------------------------|

Directors:

|                                                           |                                                |
|-----------------------------------------------------------|------------------------------------------------|
| Bruce E. Hendry<br>James E. Marvin<br>William R. Dimeling | 102 So. Tejon<br>Colorado Springs, CO<br>80903 |
|-----------------------------------------------------------|------------------------------------------------|

(2) Kaiser Coal Corporation holds 100 percent of all issued and outstanding shares of Kaiser Coal Corporation of Utah. The address of Kaiser Coal Corporation is:

Kaiser Coal Corporation  
102 South Tejon, Suite 800  
Colorado Springs, Colorado 80903

782.13 cont.

- (3) The applicant currently operates coal mines in the United States under the name Kaiser Coal Corporation of Utah. Applicant's affiliate corporations and principal shareholder, do now and have previously operated coal mines in the United States under the names of Kaiser Coal Corporation, Kaiser Coal Corporation of New Mexico, Kaiser Coal Corporation of Sunnyside, Kaiser Coal Corporation of York Canyon, and Perma Mining Corporation.

- (c) Names of principals, officers and resident agents:

See Paragraph B-1

- (d) Statement of current or previous coal mining permits in the United States held by the applicant subsequent to 1970.

See Appendix A.

(3) Owners of record of surface areas contiguous to the permit area.

Kaiser Coal Corporation  
102 So. Tejon  
Colorado Springs, Colorado 80903

State of Utah  
State Lands Division  
231 East 400 South  
Salt Lake City, Utah 84111

United States of America  
Controlled by:  
Bureau of Land Management  
Moab District Office  
P. O. Box 970  
Moab, Utah 84532

Price River Water Improvement District  
61 North 200 East  
Price, Utah 84501

Willard and M. M. Van Wagoner  
Wellington, Utah 84542

Merrill and Ellan Mead  
Wellington, Utah 84542

Beamin L and Myrna J. Mead  
Wellington, Utah 84542

Michael P. and Arlene Kelley  
Wellington, Utah 84542

Matthew L. and Pamela Rauhala  
No Known Address

Max and Ronda Lopan  
Wellington, Utah 84542

Rulon S. and Mary T. Rich  
Wellington, Utah 84542

Brian E. and Toni R. Brewer  
Spring Glenn, Utah 84526

UMC 782.14 Compliance Information

- (a) Kaiser or any subsidiary, affiliate, or persons controlled by or under common control with Kaiser has not had a federal or state mining permit suspended or revoked in the five (5) years previous to the date of this application. Furthermore, Kaiser or any subsidiary, affiliate, or persons controlled by or under common control with Kaiser has not forfeited any mining bond or similar security deposited in lieu of bond.
- (b) Does not apply.
- (c) A listing of the violation notices received by the applicant in connection with underground and surface coal mining activities during the three (3) year period prior to the date of this application for violations of any law, rule, or regulation pertaining to air or water environmental protection appears in Appendix A.

UMC 782.18 Personal Injury and Property Damage Insurance  
Information

Kaiser Coal Corporation has liability insurance. A copy of the certification of insurance is included on the following page. The original is in file in the Sunnyside mine offices.

**PRODUCER**  
  
 MARSH & MCLENNAN, INC.  
 303 WILSHIRE BLVD.  
 LOS ANGELES, CA 90010

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

**COMPANIES AFFORDING COVERAGE**

- COMPANY LETTER **A** NATIONAL UNION FIRE INSURANCE COMPANY
- COMPANY LETTER **B**
- COMPANY LETTER **C**
- COMPANY LETTER **D**
- COMPANY LETTER **E**

**INSURED** KAISER STEEL CORPORATION  
 P.O. BOX 5050  
 FONTANA, CA 92335

**COVERAGES**  
 THIS IS TO CERTIFY THAT POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS, AND CONDITIONS OF SUCH POLICIES.

| CO<br>LTR | TYPE OF INSURANCE                                                                               | POLICY NUMBER  | POLICY EFFECTIVE<br>DATE (MM/DD/YY) | POLICY EXPIRATION<br>DATE (MM/DD/YY) | LIABILITY LIMITS IN THOUSANDS |                         |           |
|-----------|-------------------------------------------------------------------------------------------------|----------------|-------------------------------------|--------------------------------------|-------------------------------|-------------------------|-----------|
|           |                                                                                                 |                |                                     |                                      |                               | EACH<br>OCCURRENCE      | AGGREGATE |
| A         | <b>GENERAL LIABILITY</b>                                                                        | GLA 5010595 RA | 4-1-87                              | 4-1-88                               | BODILY INJURY                 | \$                      | \$        |
|           | <input checked="" type="checkbox"/> COMPREHENSIVE FORM                                          |                |                                     |                                      | PROPERTY DAMAGE               | \$                      | \$        |
|           | <input checked="" type="checkbox"/> PREMISES/OPERATIONS UNDERGROUND EXPLOSION & COLLAPSE HAZARD |                |                                     |                                      | BI & PD COMBINED              | \$ 1,000                | \$ 1,000  |
|           | <input checked="" type="checkbox"/> PRODUCTS/COMPLETED OPERATIONS                               |                |                                     |                                      | PERSONAL INJURY               |                         | \$ 1,000  |
|           | <input checked="" type="checkbox"/> CONTRACTUAL                                                 |                |                                     |                                      |                               |                         |           |
|           | <input checked="" type="checkbox"/> INDEPENDENT CONTRACTORS                                     |                |                                     |                                      |                               |                         |           |
|           | <input checked="" type="checkbox"/> BROAD FORM PROPERTY DAMAGE                                  |                |                                     |                                      |                               |                         |           |
|           | <input checked="" type="checkbox"/> PERSONAL INJURY                                             |                |                                     |                                      |                               |                         |           |
|           | <b>AUTOMOBILE LIABILITY</b>                                                                     |                |                                     |                                      | BODILY INJURY (PER PERSON)    | \$                      |           |
|           | <input type="checkbox"/> ANY AUTO                                                               |                |                                     |                                      | BODILY INJURY (PER ACCIDENT)  | \$                      |           |
|           | <input type="checkbox"/> ALL OWNED AUTOS (PRIV. PASS.)                                          |                |                                     |                                      | PROPERTY DAMAGE               | \$                      |           |
|           | <input type="checkbox"/> ALL OWNED AUTOS (OTHER THAN PRIV. PASS.)                               |                |                                     |                                      | BI & PD COMBINED              | \$                      |           |
|           | <input type="checkbox"/> HIRED AUTOS                                                            |                |                                     |                                      |                               |                         |           |
|           | <input type="checkbox"/> NON-OWNED AUTOS                                                        |                |                                     |                                      |                               |                         |           |
|           | <input type="checkbox"/> GARAGE LIABILITY                                                       |                |                                     |                                      |                               |                         |           |
|           | <b>EXCESS LIABILITY</b>                                                                         |                |                                     |                                      | BI & PD COMBINED              | \$                      | \$        |
|           | <input type="checkbox"/> UMBRELLA FORM                                                          |                |                                     |                                      |                               |                         |           |
|           | <input type="checkbox"/> OTHER THAN UMBRELLA FORM                                               |                |                                     |                                      |                               |                         |           |
|           | <b>WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY</b>                                           |                |                                     |                                      | STATUTORY                     |                         |           |
|           |                                                                                                 |                |                                     |                                      | \$                            | (EACH ACCIDENT)         |           |
|           |                                                                                                 |                |                                     |                                      | \$                            | (DISEASE-POLICY LIMIT)  |           |
|           |                                                                                                 |                |                                     |                                      | \$                            | (DISEASE-EACH EMPLOYEE) |           |
|           | <b>OTHER</b>                                                                                    |                |                                     |                                      |                               |                         |           |

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

**CERTIFICATE HOLDER**  
 STATE OF UTAH  
 UTAH DIVISION OF OIL, GAS & MINING  
 355 W. NORTH TEMPLE  
 3 TRIAD CENTER - SUITE 350  
 SALT LAKE CITY, UT 84180-1203

**CANCELLATION**  
 SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.  
 AUTHORIZED REPRESENTATIVE *Martin S. Frank*

UMC 782.19 Identification of Other Licenses and Permits

Type: Business License  
Issued By: Carbon County Board of Commissioners  
Carbon County Courthouse  
Price, Utah 84501

Due to the Wellington Preparation Plant shutdown, a business license is not required at this time. Kaiser Coal Corporation intends to apply for a business license if market conditions warrant operating the plant. (Personal communication Carbon County recorder's office April 8, 1987)

Type: Air Quality Approval Order  
Issued By: State of Utah, Department of Health  
150 West North Temple  
P. O. Box 2500  
Salt Lake City, Utah 84110

Approval letter included on page 782-15

Notice of change of ownership included on page 782-15i

Type: Impoundment Plans, Refuse Pile  
Issued By: Mine Safety and Health Administration  
P. O. Box 25367, DFC  
Denver, CO 80225

ID Nos: 1211-UT-09-00099-01 PLANT REFUSE PILE  
1211-UT-09-00099-02 CLEAR WATER POND  
1211-UT-09-00099-03 LOWER REFUSE POND  
1211-UT-09-00099-04 UPPER REFUSE POND  
1211-UT-09-00099-05 POND REFUSE PILE

Approval letters included on pages 782-17 thru 782-20.

Letter showing change of ownership application is included on page 782-20vi

Letters showing change of numbering system for Ponds and Refuse Pile are included on Pages 782.20i - 20v

Note: The three foot increases to embankment heights of the Clear Water and Lower Refuse dikes were never built.

COMPLIANCE INFORMATION - COLORADO

Kaiser Steel Corporation  
Chimney Rock Coal Mine  
Archuleta County, Colorado

Regulatory Authority  
State of Colorado  
Department of Natural Resources  
Mined Land Reclamation Division  
Denver, Colorado

NOTICE OF VIOLATION 83-5 (2/83)

Failure to submit the information required by Stipulations 13, 20, and 22 by the required time frames. The information was due February 6 and was submitted February 9.

Assessment conference held 4/14/83.  
\$1,050 penalty assessed.  
Terminated.

NOTICE OF VIOLATION 83-6 (2/83)

Failure to adequately mark the permit boundary. As a result, surface coal mining operations were being conducted outside of the approved permit area. The area was flagged off and equipment kept out. Disturbance was on a rocky area, so as to keep it to a minimum.

Assessment conference held 4/14/83.  
\$1,100 penalty assessed.  
Terminated.

NOTICE OF VIOLATION 83-10 (3/83)

Operator failed to comply with the terms of the approved permit. Specifically, sedimentation pond 004 was constructed closer to the ephemeral drainage channel than approved. The toe of the outslope of the embankment is less than 4 feet from the centerline of drainage. The pond has been reconstructed so that the outside toe of the west embankment is 40 feet from the centerline of ephemeral drainage channel.

\$900 penalty assessed.  
Terminated.

NOTICE OF VIOLATION 83-40 (8/83)

Operator augered coal beyond permit boundary. One hole was approximately 10 feet to 20 feet beyond line.

\$800 penalty assessed.  
Terminated.

APPENDIX A

PERMITS AND VIOLATIONS

This Appendix contains a list of permits and a violation history for applicant, applicant's principal share holder and/or applicant's affiliate corporations.

Applicant, applicant's principal shareholder and/  
or applicants affiliate corporations currently hold  
the following approved coal mining permits.

Sunnyside Mines  
Carbon County Courthouse  
Permit No. ACT/007/007  
State of Utah  
Department of Natural Resources  
Division of Oil, Gas, and Mining

Permit Approved, January 6, 1986

Horse Canyon Mine (inactive)  
Carbon County Utah  
Permit Number ACT/007/013  
State of Utah  
Department of Natural Resources  
Division of Oil, Gas, and Mining

Interim Program Permit Approved,  
May 11, 1978

York Canyon Underground Mine  
Colfax County New Mexico  
Permit No. 11  
State of New Mexico  
Energy and Minerals Department  
Mining and Minerals Division

Interim Program Permit Approved,  
January 8, 1979. A new application  
under the permanent regulations has  
been filed, determined complete, and is  
pending.

West Ridge Mine  
Colfax County New Mexico  
Permit No. 1-A-2  
State of New Mexico  
Energy and Minerals Department  
Mining and Minerals Division

Permit Approved, June 25, 1986

Chimney Rock Mine (inactive)  
Archuleta County Colorado  
Permit No. C-023-81  
State of Colorado  
Department of Natural Resources  
Colorado Mined Land and Reclamation Division

Permit Approved, January 1983

Colorado Coal Mine No. 1 (inactive)  
Huerfano County Colorado  
Permit No. C-024-81  
State of Colorado  
Department of Natural Resources  
Colorado Mines Land and Reclamation Division

Permit Approved, March 1984

Potato Canyon Exploration Mine  
Permit No. E-3  
Colfax County New Mexico  
State of New Mexico  
Energy and Minerals Department  
Mining and Minerals Division

Permit Approved, October 30, 1979

Cimmaron Underground Mine  
Permit No. A23-8P  
Colfax County New Mexico  
State of New Mexico  
Energy and Minerals Department  
Mining and Minerals Division

Permit Approved, September 30, 1985

Ancho Canyon Exploration Mine  
Permit No. 28  
Colfax County New Mexico  
State of New Mexico  
Energy and Minerals Department  
Mining and Minerals Division

Permit Approved, April 14, 1982

Somerset Mine (inactive)  
Permit No. C-022-81  
Delta and Gunnison Counties Colorado  
State of Colorado  
Mined Land Reclamation Division

Permit Approved, October 11, 1983

Wellington Coal Preparation Plant (inactive)  
Permit No. ACT/007/012  
Carbon County Utah  
State of Utah  
Department of Natural Resources  
Division of Oil, Gas, and Mining

Permit Approved, December 30, 1985

COMPLIANCE INFORMATION - COLORADO (continued)

NOTICE OF VIOLATION 83-29 (10/83)

Issued for failure to provide documentation that adequate bonding will be available for the mine site past the expiration date of the existing bond.

No penalty assessed.

Abated 11/9/83.

NOTICE OF VIOLATION C-84-14 (2/16/84)

Act Section(s) 34-33-120(2)(e)

Regulation Section(s) 4.06.1 and 4.06.4(2)(b)

Failure to protect topsoil and failure to follow approved mine plan. Specifically a portion of the southern half of the east pit which has been topsoiled and seeded during the fall of 1983, subsequently had spoil material placed over it which compacted and contaminated the topsoil.

Assessment conference held 4/3/84.

\$1,100 penalty assessed.

Abatement plan submitted to the Division on 3/2/84.

Terminated 5/30/84.

NOTICE OF VIOLATION C-84-21 (2/16/84)

Act Section(s) 120(2)(e)

Regulation Section(s) 4.06.3(2)(b)

Moving a soil stockpile without Division approval. Specifically the stabilized and revegetated stockpile west of Sediment Pond No. 002 was moved to a location on top of the graded fill in the east pit area.

Informal hearing held 4/3/84.

\$2,175 penalty assessed.

Abatement plan submitted to Division on 3/16/84.

Terminated.

NOTICE OF VIOLATION C-84-022 (2/16/84)

Permit Section(s) Sec.2.05 of Permit Revision No. 1

Failure to follow approved mine plan. Specifically fill material was placed to a depth of about 9 feet in an area of approximately 340 by 150 feet by 350 feet by 180 feet. The filled area was located adjacent to and west of Sediment Pond No. 002 in an alluvial valley floor.

Informal hearing held 4/3/84.

\$2,912.50 penalty assessed.

Abatement plan submitted to the Division on 3/16/84.

Terminated 6/7/84.

COMPLIANCE INFORMATION - COLORADO (continued)

NOTICE OF VIOLATION CV-84-024 (3/8/84)

Act Section(s) 120(2)(j)  
Regulation Section(s) 4.05.4

Relocation of the stream channel for Stollsteimer Creek without approval by the Division.

An abatement letter sent to the Division on 3/16/84.  
An informal hearing held on the site on 4/3/84.  
\$2,800 penalty assessed.  
Terminated 6/6/84.

NOTICE OF VIOLATION CV-84-025 (3/8/84)

Act Section(s) 120(2)(e)  
Regulation Section(s) 4.06

Failure to salvage stockpile, and protect topsoil as required.  
An abatement letter was submitted to the Division on 3/16/84.

\$2,225 penalty assessed.  
Terminated 6/6/84.

NOTICE OF VIOLATION CV-84-026 (3/8/84)

Act Section(s) 129(2)(j)(II)  
Regulation Section(s) 4.05.5

Failure to provide an adequate and functional sediment control system.

An abatement plan was submitted to the Division on 3/16/84.  
\$650 penalty assessed.  
Terminated 6/6/84.

NOTICE OF VIOLATION C84-156 (8/23/84)

Regulation Section(s) 4.08.4(2)

Blasting outside times announced in published blasting schedule specifically at 8:20 a.m. on 8/2/84. Schedule called for blasting 1/2 hour from 10 a.m. to 7 p.m.

Assessment conference held 10/2/84.  
\$1,100 penalty assessed.  
Terminated 10/15/84.

COMPLIANCE INFORMATION - COLORADO (continued)

NOTICE OF VIOLATION C-84-171 (11/27/84)

Act Section(s) 34-33-123(2)  
Regulation Section(s) 5.03.2(2)(a)

Failure to follow the approved permit in that subsoil from in place subsoil salvage area F was removed and placed in an unapproved location (the east pit). This material was approved to be placed on the facilities area and on Barren Ridge, but not on the East Pit.

Abatement plan submitted 12/20/84.  
\$1,350 penalty assessed.  
Terminated 12/31/84.

NOTICE OF VIOLATION C-85-087 (12/13/85)

Act Section(s) 33-34-120(2)(x)  
Regulation Section(s) 4.05.18(1)

Surface disturbance within 100 feet of a perennial stream. Pit trenched into the creek alluvium.

NOV was abated prior to 3/13/86 deadline.  
\$1,000 penalty assessed.  
Terminated 1/21/86.

NOTICE OF VIOLATION C-86-055 (07/08/86)

Act Section(s) 34-33-120(2)(j)(II)(A)  
Regulation Section(s) 4.05.2(1)

Failure to pass drainage from the disturbed area through the sediment pond.

NOV was abated prior to 09/08/86 deadline.  
\$200 penalty assessed.  
Terminated 8/25/86.

COMPLIANCE INFORMATION - COLORADO

Kaiser Steel Corporation  
Colorado Coal Mine No. 1  
Huerfano County, Colorado

Regulatory Authority  
State of Colorado  
Department of Natural Resources  
Mined Land Reclamation Division  
Denver, Colorado

NOTICE OF VIOLATION C-83-20 (10/7/83)

Act Section(s) 34-33-123(2)  
Regulation Section(s) 5.02.2(2)(a), 3.02.4(2)(6)

Failure to meet the conditions of permit approval. Specifically, failure to post sufficient bond by 8/25/83 as required by Proposed Decision and Findings of Compliance issued on 6/16/83.

Perma did not meet the deadlines for bonding and was assessed a \$27,000 penalty.

Violation terminated following a hearing with the Mined Land Reclamation Board in 3/84.

NOTICE OF VIOLATION C-84-011 (2/13/84)

Act Section(s) 120(2)(j)(II)  
Regulation Section(s) 4.05.5(1)

Failure to maintain sediment control measures by failure to clean culvert of sediment in the collector ditch.

Culvert was cleaned of sediment.

Assessment conference held 7/6/84.  
\$800 penalty assessed.  
Terminated 7/13/84.

NOTICE OF VIOLATION C-84-012 (2/13/84)

Act Section(s) 120(2)(e)  
Regulation Section(s) 4.07.3(2)(a)(1)

Failure to stabilize and protect stockpile soil materials with an effective vegetative cover.

Operator indicated that the areas had been drilled and seeded in the falls of 1982 and 1983. A fence was installed to protect the revegetation.

Assessment conference held 7/6/84.  
\$1,350 penalty assessed.  
Terminated 7/6/84.

COMPLIANCE INFORMATION - COLORADO (continued)

NOTICE OF VIOLATION C-84-034 (3/8/84)

Act Section(s) 34-33-120(2)(j)  
Regulation Section(s) Rule 4.05.3(3)

Failure to stabilize and maintain diversion ditches.

The diversion ditches were repaired and or reconstructed.

Assessment conference held 7/6/84.  
\$464 penalty assessed.  
Terminated 6/12/84.

NOTICE OF VIOLATION C-84-035 (3/8/84)

Act Section(s) 34-33-123(2)  
Regulation Section(s) 5.03.2(2)(a)

Failure to follow the approved mine plan. Specifically, constructing a diversion ditch which was not approved by the Division.

A technical revision was submitted in order to bring the ditch into compliance.

Assessment conference held 7/6/84  
\$400 penalty assessed.  
Terminated 6/12/85.

NOTICE OF VIOLATION C-84-036 (3/8/84)

Act Section(s) 34-33-120(2)(j)(II)(A)  
Regulation Section(s) 4.05.6(8)(g)

Failure to stabilize the pond embankment with respect to erosion by establishing a vegetative cover.

The problem was mitigated by previous seeding and new fencing. With further information the Division agreed that the material in question was not a pond embankment, but rather an overburden stockpile, and as a result it was not subject to the same requirements for stabilization and vegetative cover.

Vacated 7/9/84.

NOTICE OF VIOLATION C-84-037 (3/8/84)

Act Section(s) 34-33-120(2)(j)(II)(B)  
Regulation Section(s) 4.05.6(t)

COMPLIANCE INFORMATION - COLORADO (continued)

Failure to have sedimentation pond certified by a qualified registered professional engineer following construction and submit such certification to the Division.

Certification was submitted to the Division.

Vacated 7/12/84.

NOTICE OF VIOLATION C-84-038 (3/8/84)

Act Section(s) 34-33-122(2)  
Regulation Section(s) 4.05.13(1)

Failure to monitor ground water.

A monitoring plan was submitted to the Division by Mr. Rob Traylor by Piteau and Associates. Monitoring has been ongoing since.

Assessment conference held 7/6/84.  
\$500 penalty assessed.  
Terminated 6/12/84.

NOTICE OF VIOLATION C-84-069 (4/23/84)

Act Section(s) 34-33-120(2)(j)  
Regulation Section(s) 4.04(3), 4.05(1)

Failure to maintain drainage control structures.  
Specifically, failure to clean the diversion ditch of sediment by the specified compliance deadline.

Ditch was cleaned and reconstructed. Surveys were completed in order to assure proper grades.

Assessment conference held 7/6/84.  
\$900 penalty assessed. See Cessation Order C-84-129.

CESSATION ORDER C-84-125 (6/25/84)

Act Section(s) 34-33-123(3)  
Regulation Section(s) 5.03.2(3)

Failure to properly abate NOV C-84-012.

A letter of explanation was issued to the Division on 7/10/84.

Terminated 7/5/84.

COMPLIANCE INFORMATION -- COLORADO (continued)

CESSATION ORDER C-84-126 (6/25/84)

Act Section(s) 34-33-123(3)  
Regulation Section(s) 5.03.2(3)

Failure to abate NOV C-84-034.

A letter of explanation was issued to the Division on 7/10/84.

Terminated 7/5/84.

CESSATION ORDER C-84-127 (6/25/84)

Act Section(s) 34-33-123(3)  
Regulation Section(s) 5.03.2(3)

Failure to properly abate NOV C-84-035.

A letter of explanation was sent to the Division on 7/10/84.

Terminated 7/5/84.

CESSATION ORDER C-84-128 (6/25/84)

Act Section(s) 34-33-123(3)  
Regulation Section(s) 5.03.2(3)

Failure to properly abate NOV C-84-036.

A letter of explanation was sent to the Division.

Vacated along with NOV C-84-036 on 7/9/84.

CESSATION ORDER C-84-129 (6/25/85)

Act Section(s) 34-33-123(3)  
Regulation Section(s) 5.03.2(3)

Failure to properly abate NOV C-84-069.

Ditch problem was mitigated.

Assessment conference held 9/10/84.  
\$850 penalty assessed.

Terminated 7/5/84.

NOTICE OF VIOLATION C-84-155 (8/15/84)

Act Section(s) 34-33-111(1)(e), 120(2)(e), 120(2)(j)(II)(A)  
Regulation Section(s) 2.05.3(6), 4.06, 4.05.2(1)

COMPLIANCE INFORMATION - COLORADO (continued)

Assessment conference held on 9/10/84.  
\$850 penalty assessed.  
Terminated 12/18/84.

NOTICE OF VIOLATION C-84-161 (9/26/84)

Act Section(s) 34-33-120(2)(j)  
Regulation Section(s) Rule 4.05.3(3)

Failure to maintain diversion culvert.

Culvert was removed and cleaned.

Assessment conference held 12/11/84.  
No penalty assessed, since the county road ditch contributed most of the sediment which clogged the culvert.

A new culvert was to be installed by the county.  
Terminated 11/26/84.

NOTICE OF VIOLATION C-85-017 (3/6/85)

Act Section(s) 34-33-122(2)  
Regulation Section(s) Rule 4.05.12(2)(c)

Failure to maintain surface water monitoring station.

Vandalized station was replaced immediately.  
Informal conference held 5/20/85.  
No penalty assessed.  
Terminated 3/15/85.

NOTICE OF VIOLATION C-86-028 (4/8/86)

Act Section(s) 120 (2)(j)  
Regulation Section(s) 4.07.1(b)(c)

Failure to plug, seal or otherwise maintain exploration holes and wells within the permit area No. (C-81-024).

Holes were either reclaimed or sealed.

Assessment conference held 6/3/86.  
Penalty was reduced from \$500 to \$400.  
Termination pending.

COMPLIANCE INFORMATION - COLORADO (continued)

NOTICE OF VIOLATION C-86-029 (4/8/86)

Act Section(s) 120 (2)(j)  
Regulation Section(s) 4.07.1 (b)(c)

Failure to plug, seal or otherwise maintain holes and wells within  
exploration permit No. (No1-CX127-01)

Holes were backfilled and seeded.

Assessment conference held 6/3/86.  
Penalty was reduced from \$500 to \$400.  
Termination pending.

COMPLIANCE INFORMATION - UTAH

Kaiser Coal Corporation  
Sunnyside Mines  
Carbon County, Utah

Regulatory Authority:  
State of Utah  
Department of Natural Resources  
Division of Oil, Gas and Mining  
Salt Lake City, Utah

NOTICE OF VIOLATION 84-6-4-1 (4/12/84)

Part 1 of 1                    UMC 817.42

Failure to pass disturbed area runoff through sediment or water treatment before entering undisturbed drainage.

Repair berm.

\$220 penalty assessed.  
Terminated 4/12/84.

NOTICE OF VIOLATION 84-6-9-1 (8/10/84)

Part 1 of 1                    UMC 771.19

Failure to mine in accordance with approved plan.  
Cessation of mine water discharge into No. 2 Canyon.

No penalty assessed.  
Terminated 8/10/84.

NOTICE OF VIOLATION 84-4-17-3 (11/19/84)

Part 1 of 3                    UMC 817.23(b)

Failure to protect stockpiled topsoil material.

Complete the ditch and berm and/or use straw bales.

\$220 penalty assessed.  
Terminated 11/19/84.

Part 2 of 3                    UMC 817.42, UMC 817.43, UMC 817.45

Failure to maintain sediment control measures to ensure that disturbed area drainage passes through a sediment pond before leaving the permit area.

Maintain ditch so it is properly sized and has adequate slope to prevent ponding in the diversion.

\$240 penalty assessed.  
Terminated 11/19/84.

COMPLIANCE INFORMATION - UTAH

Part 3 of 3                    UMC 817.42, UMC 817.45

Failure to maintain sediment controls to ensure all disturbed area drainage passes through a sediment pond before leaving the permit area.

Maintain the sediment controls to ensure that the drainage from the substation area goes to the sediment pond.

\$70 penalty assessed.

Terminated 11/29/84.

NOTICE OF VIOLATION 85-4-1-4 (1/7/85)

Part 1 of 4                    UMC 771.19, UCA 40-10-22(i)(c)

Failure to mine in accordance with an approved mine plan (001 mine water pond).

Submit plans to the Division for approval of the as-built mine water pond.

No penalty assessed.

Terminated 1/24/85.

Part 2 of 4                    UMC 771.19, UMC 817.47, UCA 40-10-22(i)(c)

Failure to mine in accordance with an approved mine plan (hoist house and manshaft sediment ponds).

Submit plans to the division for approval of the as-built sediment ponds. Said plans must address all modification to the approved design including construction of adequate discharge structures.

No penalty assessed.

Terminated 1/23/85.

Part 3 of 4                    UMC 817.46, UMC 817.49, UMC 817.93

Failure to conduct weekly sediment pond impoundment inspections.

Conduct inspections and keep records as required.

No penalty assessed.

Terminated 1/12/85.

Part 4 of 4                    UMC 817.82

Failure to conduct inspections of coal processing waste banks.

Conduct inspections in accordance with UMC 817.82.

No penalty assessed.

Terminated 2/12/85.

COMPLIANCE INFORMATION - UTAH

NOTICE OF VIOLATION 85-4-4-2 (2/22/85)

Part 1 of 2                    UMC 817.42, UMC 817.45

Failure to pass all surface drainage from the disturbed area (parking lot and office area) through a sediment pond or treatment facility before leaving the permit area.

Install loose straw filter dikes along the tracks to treat the runoff.

Submit drainage control plans to the Division for this area.

No penalty assessed.

Terminated 3/8/85.

Part 2 of 2                    UMC 817.42, UMC 817.45

Failure to pass all surface drainage from the disturbed area (No. 2 Canyon bridge) through a sediment pond or treatment facility before leaving the permit area.

Maintain the area so that disturbed area runoff bypasses the bridge and goes to the lower #2 Canyon sediment pond as designed.

No penalty assessed.

Terminated 3/8/85.

NOTICE OF VIOLATION 85-4-10-1 (3/22/85)

Part 1 of 1                    UMC 771.19

Failure to mine in accordance with an approved interim permit.

Stop using the dirt road from the coarse refuse haul road to state highway 123. Install sediment controls to ensure that there are no additional contributions of suspended solids to Grassy Trail Creek from the newly disturbed area associated with the stream crossing southwest of the coal stockpile. Submit plans for the Class I road. Submit plans for the permitting of, or reclamation of the dirt road from the coarse refuse haul road to state highway 123 in accordance with UMC 817.150 - .156.

No penalty assessed.

Terminated 4/15/85.

CESSATION ORDER 85-4-2-1 (3/22/85)

Part 1 of 1                    UCA 40-10-22(1)(c)

Failure to abate NOV 85-4-4-2 within the time set for abatement.

Comply with the remedial actions required in the violation, immediately.

Terminated 3/22/85.

COMPLIANCE INFORMATION - UTAH

NOTICE OF VIOLATION 85-4-11-1 (4/4/85)

Part 1 of 1                    UMC 817.42(c)

Failure to maintain water treatment facilities as approved.

Maintain facilities in accordance with approved plan.

No penalty assessed.

Terminated 4/4/85.

NOTICE OF VIOLATION 85-4-17-3 (5/13/85)

Part 1 of 3                    UCA 40-10-22(1)(c), UMC 771.19, UMC 43(a)

Failure to construct and maintain diversion to (manshaft and No. 2 Canyon) divert runoff from a sediment pond, to ensure that they will pass safely the peak runoff from a 10 year, 24 hour precipitation event.  
Failure to mine in accordance with an approved interim mine plan.

Construct and maintain the diversions in accordance with the approved plan.

Penalty pending.

Terminated 5/13/85.

Part 2 of 3                    UCA 40-10-22(1)(c), UMC 771.19, UMC 817.46(e)(1)(m)  
UMC 817.47

Failure to conduct mining activities in accordance with an approved interim permit (coarse refuse toe pond).

Failure to provide an adequate discharge structure.

Reconstruct and maintain the pond to meet approved design specifications. Submit complete and adequate plans to the Division for adequate erosion protection of the emergency spillway outlet.

Penalty pending.

Terminated 9/3/85.

Part 3 of 3                    UMC 817.49(b), UMC 817.46(e)

Failure to construct and maintain a pond (001 mine water pond) to prevent short circuiting to the extent possible.

Cease pumping water into the pond. Submit complete and adequate plans to the Division which show how piping along the spillway will be stopped.

Penalty pending.

Terminated 5/13/85.

COMPLIANCE INFORMATION - UTAH

CESSATION ORDER 85-4-6-1 (6/20/85)

Part 1 of 1            UCA 40-10-22(1)(c)

Failure to abate a violation within the time set for abatement.  
Water was discharged into the pond without approval.

Comply with the remedial actions required in the violation,  
immediately.

Penalty pending.  
Terminated 6/20/85.

NOTICE OF VIOLATION 85-4-19-1 (6/20/85)

Part 1 of 1            UMC 817.45

Failure to prevent, to the extent possible, additional contributions of  
sediment to stream flow or to runoff outside the permit area.

Cease all discharge into and from the clear water pond until otherwise  
notified in writing by the Division.

Submit complete and adequate plans to the Division detailing what  
measures will be taken to repair the damage to the slurry cell system to  
ensure that discharge from the clear water pond will meet all applicable  
state and federal water quality standards.

Implement said plan immediately upon Division approval.

Penalty pending.  
Terminated 11/8/85.

NOTICE OF VIOLATION 85-4-20-2 (6/21/85)

Part 1 of 2            UCA 40-10-22(1)(c), UMC 771.19, UMC 817.42(a)(1)

Failure to mine in accordance with an approved interim mine plan  
(parking lot and office area runoff).

Remedial actions completed.

Penalty pending.  
Terminated 7/25/85.

Part 2 of 2            UMC 817.42(c)

Failure to maintain water treatment facilities (course refuse seep).

Remedial actions completed.

Penalty pending.  
Terminated 6/28/85.



COMPLIANCE INFORMATION - UTAH

Cleaned out and maintained downspout as required.

Terminated 9/30/85.

Part 3 of 3            UCA 40-10-22(1)(c), UMC 771.19

Failure to conduct mining activities in accordance with an approved interim permit.

Submit complete and adequate plans to the Division to modify the approved design and which ensure compliance with UMC 817.46 and UMC 817.49. Plans must be implemented immediately upon approval.

Final approval on plans received 10/29/85.

Penalty pending.

NOTICE OF VIOLATION 85-4-24-3 (9/6/85)

Part 1 of 3            UCA 40-10-18(2)(i)(ii), UMC 771.19, UMC 817.45

Failure to mine in accordance with an approved interim permit.

Failure to install and maintain sediment controls to prevent, to the extent possible, additional contributions of sediment to stream flow or to runoff outside the permit area.

Implement the drainage control plans approved for the site.

NOV abatement deadline 9/23/85. Water canyon drainage controls were implemented.

Penalty pending.

Terminated 9/27/85.

CESSATION ORDER 85-4-8-3 (9/25/85)

Part 2 of 3            UCA 40-10-22(1)(c), UMC 843.11(b)(1)  
UMC 843.12(d)

Failure to abate Notice of Violation within the time set for abatement.

Comply with the remedial actions required in the violation immediately.

Drainage controls were implemented.

Terminated 9/27/85.

Part 2 of 3            UCA 40-10-18(2)(i)(ii), UMC 817.45, UMC 817.150(a)(b)  
UMC 817.153(a)(2)

COMPLIANCE INFORMATION - UTAH

Failure to maintain sediment controls to prevent, to the extent possible, additional contributions of sediment to stream flow or to runoff outside the permit area.

Failure to maintain Class I roads in order to minimize contributions of suspended solids to stream flow or runoff outside the permit area.

Maintain the silt fences at the stream crossing: Clean out sediment collected, dispose of the sediment properly, and reinstall the silt fence as necessary to ensure the runoff does not short circuit it.

Maintain a berm (minimum height 2 feet) along the outside edge of the road where it parallels Grassy Trail Creek and remove the material deposited along the inside of the road which inhibits runoff from the road from entering the slurry ditch.

Abatement deadline 9/17/85.  
Class I drainage controls were maintained.

Penalty pending.  
Terminated 9/27/85.

CESSATION ORDER 85-4-8-3 (9/25/85)

Part 3 of 3                    UCA 40-10-22(1)(e), UMC 893.11(b)(1),  
                                         UMC 843.12(d)

Failure to abate a Notice of Violation within the time set for abatement.

Comply with the remedial actions required in the violation, immediately.

Class I road drainage controls were maintained.

Terminated 9/27/85.

Part 3 of 3                    UCA 40-10-22(1)(e), UMC 771.19, UMC 817.45

Failure to mine in accordance with an approved interim permit.

Failure to maintain sediment control measures to minimize erosion to the extent possible.

Maintain diversion D-3 to design specifications.

Remove all large boulders from the No. 2 Canyon undisturbed drainage which will significantly obstruct flow.

Abatement deadline 9/23/85.  
No. 2 Canyon undisturbed drainages maintained.

Penalty pending.  
Terminated 9/25/85.

COMPLIANCE INFORMATION - NEW MEXICO

Kaiser Coal Corporation  
York Canyon Mines  
Colfax County, New Mexico

Regulatory Authority:  
State of New Mexico  
Energy and Minerals Department  
Mining & Minerals Division  
Santa Fe, New Mexico

NOTICE OF VIOLATION 011 (08/31/83)

Part 1 of 1                    Rule 80-1, Chapter K Section 22

Underground leakage of diesel fuel from buried diesel line polluting undetermined portion of York Canyon alluvial aquifer.

Diesel leak was abated within 90 days.

No penalty assessed.  
Terminated 11/28/83.

NOTICE OF VIOLATION 144 (4/18/84)

Part 1 of 1                    Rule 79-1, Section 21, Topsoil Handling

Failure of the operator to stockpile topsoil in a stable area.

Constructed ditch/berm adjacent to stockpile.

Informal conference held 6/15/84.  
No penalty assessed.  
.5 History Points.  
Terminated 5/21/84.

NOTICE OF VIOLATION 145 (4/18/84)

Part 1 of 1                    Rule 79-1, Section 21 Topsoil Handling

Failure to segregate topsoil material from mine out overburden material.

Constructed ditch/berm around topsoil stockpile.

Informal conference held 6/15/84.  
No penalty assessed.  
.5 History Points.  
Terminated 5/21/84.

NOTICE OF VIOLATION 146 (4/18/84)

Part 1 of 1                    Rule 79-1, Section 19, Backfilling and Grading

Failure to stabilize rills and gullies over nine inches deep.

COMPLIANCE INFORMATION - NEW MEXICO (continued)

Filled rills and gullies with topsoil or rock material.

Informal conference held 6/15/84.

No penalty assessed.

.5 History Points.

Terminated 5/21/84.

NOTICE OF VIOLATION 147 (4/18/84)

Part 1 of 1                    Rule 79-1, Sections 23(E)(8) and 15(b) and NMSA  
Section 69-25A-19(B)(10)(C)

Failure to be certified by a qualified professional engineer registered in New Mexico for all structures which act as the final impoundment of runoff from the permit area.

Informal conference held 6/15/84.

Vacated 7/2/84.

NOTICE OF VIOLATION 150 (5/28/84)

Part 1 of 1                    Rule 79-1, Section 19, Backfilling and Grading  
(715.14)(i)

Failure to stabilize rills and gullies over nine inches deep.

Informal conference held 7/20/84.

No penalty assessed.

.5 History Points

Terminated 7/3/84.

NOTICE OF VIOLATION 155 (6/12/84)

Part 1 of 1                    Rule 79-1, Section 21, Topsoil Handling

Failure of operator to remove contamination from the topsoil stockpile and to prevent water erosion of topsoil stockpile.

Constructed berm around topsoil stockpile.

Informal hearing held 7/20/84.

\$1,000 penalty assessed.

1 History Point

Terminated 7/3/84.

NOTICE OF VIOLATION 156 (7/6/84)

Part 1 of 2                    Rule 79-1, Section 23(e)(vi)(5)

Failure of the operator to have a properly installed (constructed) spillway system for a sediment pond.

COMPLIANCE INFORMATION - NEW MEXICO (continued)

Informal conference held 8/2/84.  
Vacated 9/7/84.

Part 2 of 2                    Rule 79-1, Section 23(1)(2)(iii)

Failure of the operator to construct culverts to avoid erosion at inlets and outlets.

Informal conference held 8/2/84.  
Vacated 9/7/84.

NOTICE OF VIOLATION 157 (7/6/84)

Part 1 of 1                    Rule 79-1, Section 23(vi)(f)

Failure of the operator to control discharges from sedimentation ponds and diversions to reduce erosion and prevent deepening or enlargement of stream channels and to minimize disturbances to the hydrologic balance.

Rip Rap material placed in discharges of diversion and spillway.

Informal conference held 8/2/84.  
No penalty assessed.  
.5 History Points  
Terminated 8/24/84.

NOTICE OF VIOLATION 158 (7/6/84)

Part 1 of 1                    Rule 79-1, Section 19(i)

Failure of the operator to regrade or stabilize rills and gullies deeper than nine inches that have formed in areas that have been regraded and the topsoil replaced but vegetation has not yet been established.

Rip rap material placed in rills.

Informal conference held 8/2/84.  
No penalty assessed.  
.5 History Points  
Terminated 8/24/84.

NOTICE OF VIOLATION 159 (7/6/84)

Part 1 of 1                    Rule 79-1, Section 23(e)(vi)(5)

Failure of the operator to have a properly installed (constructed) spillway system for sedimentation pond.

Informal conference held 8/2/84.  
Vacated 9/7/84.

NOTICE OF VIOLATION 160 (7/6/84)

Part 1 of 1                    Rule 79-1, Section 69-25A-19(B)(10)(C) NM-CSMS  
Section 25(E)(8)

Failure of the operator to have all sedimentation structures (ponds) which present suspended solids to stream flow or runoff outside of the permit area, to be certified after construction by a qualified professional engineer registered in New Mexico.

Informal conference held 8/2/84.

No penalty assessed.

.5 History Points.

Terminated 10/9/84.

NOTICE OF VIOLATION 161 (7/10/84)

Part 1 of 1                    Rule 79-1, NMSA Section 69-25A-19(B)(10)(C) NM CSMS  
Section 23(E)(8)

Failure of the operator to have all sedimentation structures (ponds) which present suspended solids to stream flow or runoff outside of the permit area, to be certified after construction by a qualified professional engineer registered in New Mexico.

Informal conference held 8/2/84.

No penalty assessed.

.5 History Points.

Terminated 10/9/84.

NOTICE OF VIOLATION 165 (8/14/84)

Part 1 of 1                    Rule 79-1 NMSA Section 21(B)(iii) NM CSMS Section  
19(i)

Failure of operator to protect topsoil from wind and water erosion.

Failure of operator to regrade or stabilize rills or gullies deeper than nine inches.

Informal conference held 10/15/84.

No penalty assessed.

.5 History Points.

Terminated 9/14/84.

NOTICE OF VIOLATION 191 (10/18/84)

Part 1 of 2                    Findings of fact 6(d) Permit No. 1-A-2 Surface  
Conclusions of law 3 Permit No. 1-A-2 (Surface)

Failure of the operator to fulfill the conditions of their permit.  
(Findings of fact, conclusions of law.) The operator graded, toppedressed

COMPLIANCE INFORMATION - NEW MEXICO (continued)

and seeded an area (slope) in excess of 15 degrees and in excess of that which occurred before mining. The slope was measured in two areas with a clinometer. Measured slopes were 37% (20° 18') and 42% (22° 47').

Informal hearing held 1/14/85.

No penalty assessed.

.5 History Points.

Terminated 1/16/85.

Part 2 of 2                    Rule 79-1, Section 19(i)

Failure of the operator to regrade or stabilize rills and gullies deeper than nine inches that have formed in areas that have been regraded and topsoil replaced but vegetation has not yet been established.

Informal hearing held 1/14/85.

Vacated 1/14/85; NOV was improperly written.

Order to Show Cause (12/7/84)

NMSA Section 69-15A-25(c) (1978 Comp.)

Stipulated agreement signed between MMD and Kaiser

Public hearing held 1/18/85.

No revocation of permit.

NOTICE OF VIOLATION 192 (12/28/84)

Part 1 of 1                    Rule 79-1, Section 69-25A-19(B)(14) CSMC Section 23(e)(2)(i)

Failure of the operator to ensure that all debris are treated or buried and compacted or otherwise disposed of in a manner designed to prevent contamination of ground or surface waters.

Failure of the operator to provide 24-hours theoretical detention time for the inflow or runoff entering a pond from a 10 year 24 hour precipitation event. The operator discharged water from a pond containing some contaminants into the York Canyon stream in the absence of a 10 year 24 hour precipitation event (surface oil).

Informal hearing held 2/18/85.

No penalty assessed.

Vacated 3/8/85.

COMPLIANCE INFORMATION - NEW MEXICO (continued)

NOTICE OF VIOLATION 193 (12/28/84)

Part 1 of 1                    Rule 79-1, Section 69-25A-19(B)(17) CSMC Section 23(L)(2)(1)

Failure of the operator to maintain roads in a manner that decreases erosion. Runoff from an active access road had been discharged onto an undisturbed area in a manner that created rills and gullies deeper than nine inches.

Informal hearing held 2/18/85.  
No penalty assessed.  
.5 History Points.  
Terminated 1/8/85.

NOTICE OF VIOLATION 200 (2/21/85)

Part 1 of 3                    Rule 80-1, Section 19-15(j)

Failure of the operator to restrict their surface facilities and areas to be disturbed to those areas described under Items # 1, 3, and 4 of the exploration plan section of permit application.

Failure of the operator to provide sediment control measures.

Failure of operator to notify MMD by letter of any deviations from the exploration plan.

Failure of the operator to protect off-site areas from damage by locating any part of the operations outside the permit area.

Informal hearing held 4/4/85.  
\$1,200 assessed.  
Terminated 4/29/85.

Part 2 of 3                    NMSA Section 69-25A-19(B)(17)

Failure of the operator to maintain a primary road so as to control or prevent erosion and siltation. A discharge(s) from the primary access road caused erosion in excess of nine inches. The road berm had apparently been intentionally breached to allow discharge of water which had collected on the road surface.

Informal hearing held 4/4/85.  
\$1,100 penalty assessed.  
Terminated 4/29/85.

Part 3 of 3                    Permit E-18 Coal Exploration Stipulation #7

Failure of the operator to notify the Mining and Minerals Division by letter of any deviations from the exploration plan section of the exploration mine permit application for the upper left fork seam in the

COMPLIANCE INFORMATION - NEW MEXICO (continued)

Upper York Canyon Exploration Permit #E-16. The operator drilled a well within the permit area that was not included in the exploration plan.

Informal hearing held 4/4/85.  
No penalty assessed.  
Terminated 4/29/85.

NOTICE OF VIOLATION 207 (9/25/85)

Part 1 of 1                      NM 79-1, 23(a)

Description:    Failure to pass surface drainage from the disturbed area through a sedimentation pond or a series of sedimentation ponds before leaving the permit area.

Abatement Action Taken:    Berm constructed along creek channel.

Proceedings:    Informal hearing held 11/25/85; NOV upheld; \$380 penalty assessed.

Status:        Pending construction of pond. State has approved designs.

NOTICE OF VIOLATION 208 (11/5/85)

Part 1 of 1                      NM 69-25A-25(B)

Description:    Failure to comply with the mine plan as required in the permit.

Abatement Action Taken:    Ceased pumping from tailings dam #3.

Proceedings:    Informal hearing held 12/5/85, results pending.

Status:        Violation pending.

NOTICE OF VIOLATION 225 (6/19/85)

Part 1 of 1                      NM 79-1, 20-23(b)

Description:    Failure of the operator to selectively place topdressing on a stable area in a manner where it will not be disturbed or subject to wind and water erosion, unnecessary compaction of contaminants. The operators excavated topdressing but did not place material in a stockpile or other stable protected area.

Abatement Action Taken:    Topsoil was redistributed, seeded and mulched.

Proceedings:    No penalty assessed.

Status:        Terminated 7/6/85.

COMPLIANCE INFORMATION - NEW MEXICO (continued)

NOTICE OF VIOLATION 263 (11/5/85)

Part 1 of 1                    NMCMC Rule 79-1, Section 25(e)(1)(v) NMCCNC Rule 79-1, Section 17(c)

Description:    Failure of operator to conspicuously display signs reading "Blasting Area" at the edge of blasting areas along access and haul roads within the mine property.

Abatement Action Taken:    Blasting sign displayed in pattern area.

Proceedings:    Informal hearing held 12/5/85.

Status:    Vacated 12/27/85.

NOTICE OF VIOLATION 276 (06/25/86)

Part 1 of 3                    NM CSMC Rule 80-1, Section 20-83(b)

Failure to divert surface drainage from the area above a coal processing waste bank and from the crest and face of the waste disposal area in accordance with Section 20-72(d).

Informal hearing held 07/11/86.

No penalty assessed.

Terminated 07/25/86.

Part 2 of 3                    NM CSMC Rule 80-1, Section 20-85(c)(1)

Failure to spread coal processing waste in layers no more than 24 inches in thickness.

Informal hearing held 07/11/86.

No penalty assessed.

Terminated 07/25/86.

Part 3 of 3                    NM CSMC Rule 80-1, Section 20-92(b)

Failure of the operator to divert surface drainage that may cause erosion to the embankment area or embankment features away from the embankment by diversion ditches that comply with the requirements of Section 20-43.

Informal hearing held 07/11/86.

No penalty assessed.

Terminated 07/25/86.

NOTICE OF VIOLATION 277 (06/25/86)

Part 1 of 2 NM CSMC Rule 80-1, Section 20-42(a)(6)

Failure to construct required sedimentation ponds in appropriate locations before beginning any surface coal mining operations in the drainage to be affected.

Informal hearing held 07/11/86.  
No penalty assessed.  
Terminated 07/25/86.

Part 2 of 2 NM CSMC Rule 80-1

Failure to comply with the terms and conditions of the approved permit:  
Failure to construct the diversion in two phases that would not disturb the stream channel until actual tie-in occurs.

Informal hearing held 07/11/86.  
\$2,000 penalty assessed.  
Terminated 07/25/86.

NOTICE OF VIOLATION 278 (07/11/86)

NM CSMC Rule 80-1, Section 20-82(a)(1-4)

Failure to conduct site inspections of coal processing waste bank.

Informal hearing held 08/29/86.  
No penalty assessed, 1/2 history point.  
Terminated 09/05/86.

CESSATION ORDER NO. C-80-86-01 (07/11/86)

NM CSMC Rule 80-1, Section 20-82(a)(1-4)

Failure to conduct site inspections of a coal processing waste bank.

Informal hearing held 08/29/86.  
Vacated 09/05/86.

NOTICE OF VIOLATION 228 (07/21/86)

NMSA Section 19-b-4

Failure to stabilize and protect all surface areas affected by the surface coal mining and reclamation operation to effectively control erosion, resulting in a gully in excess of two feet deep on area reclaimed prior to S.M.C.R.A.

No penalty assessed.  
Abatement to be completed by revegetation in 1987.

NOTICE OF VIOLATION 205 (08/19/86)

NM CSMC Rule 80-1, Section 20-46, Section 20-47

Failure of the operator to provide detention time for the inflow entering a sediment pond from a 10-year, 24-hour precipitation event.  
Failure to control discharge from a sediment pond so as to control erosion.

No penalty assessed.

Terminated 09/22/86.

ACT/007/012

**KAISER  
COAL**

KAISER COAL CORPORATION  
Sunnyside Coal Mines  
P.O. Box 10  
Sunnyside, Utah 84539  
Telephone (801) 888-4421

**RECEIVED**  
APR 19 1987

DIVISION OF  
OIL, GAS & MINING

Date: April 10, 1987

Mr. Lowell P. Braxton, Administrator  
Mineral Resource Development & Reclamation Program  
Utah Division of Oil, Gas & Mining  
355 W. North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Re: ORP Mid Term Review  
Wellington Prep Plant  
ACT/007/012

Dear Mr. Braxton:

This letter transmits 3 copies of the mid term review of the Operation and Reclamation Plan (ORP) for the Wellington Prep Plant. The attached table provides a replacement guide for the revisions. Studies completed after the original ORP application have been incorporated as part of the plan as required.

The available data for the annual report has been included in the mid term review where appropriate. The 1986 vegetation data is currently being assembled and will be completed by May 18, 1987 per correspondence with the Division. The reclamation test plot soil samples and vegetation data will be collected this summer.

Kaiser appreciates the assistance provided by the Division. and look forward to working with you during the remainder of the review process.

Sincerely,

*William P. Balaz*

William P. Balaz  
Senior Mining Engineer

attach  
encl

cc: B. J. Bourquin  
C. W. Winters

WELLINGTON COAL CLEANING PLANT  
MIDTERM REVIEW  
REPLACEMENT LIST  
4/11/87

| <u>REMOVE</u>      | <u>INSERT</u>      | <u>STATUS</u> |
|--------------------|--------------------|---------------|
| Title              | Title              | Revised       |
| ii                 | ii                 | Revised       |
| iii                | iii                | Revised       |
| iv                 | iv                 | Revised       |
| 782-2              | 782-2              | Revised       |
| 782-3              | 782-3              | Revised       |
| 782-4              | 782-4              | Revised       |
| 782-5              | 782-5              | Revised       |
| 782-8              | 782-8              | Revised       |
| 782-12             | 782-12             | Revised       |
| Insurance Coverage | Insurance Coverage | Revised       |
| -                  | 782-15i            | New Page      |
| -                  | 782-20i            | New Page      |
| -                  | 782-20ii           | New Page      |
| -                  | 782-20iii          | New Page      |
| -                  | 782-20iv           | New Page      |
| -                  | 782-20v            | New Page      |
| -                  | 782-20vi           | New Page      |
| 782-22             | 782-22             | Revised       |
| -                  | 782-22i            | New Page      |
| -                  | 782-22ii           | New Page      |
| -                  | 782-22iii          | New Page      |
| -                  | 782-22iv           | New Page      |
| 783-10i            | 783-10i            | Revised       |
| 783-28             | 783-28             | Revised       |
| -                  | 783-29i            | New Page      |
| 783-30             | 783-30             | Revised       |
| 783-40             | 783-40             | Revised       |
| 784-2              | 784-2              | Revised       |
| 784-3              | 784-3              | Revised       |
| -                  | 784-3i             | New Page      |
| 784-7              | 784-7              | Revised       |
| 784-8              | 784-8              | Revised       |
| 784-9              | 784-9              | Revised       |
| 784-10             | 784-10             | Revised       |
| 784-10i            | 784-10i            | New Page      |
| 784-16             | 784-16             | Revised       |
| 784-17             | 784-17             | Revised       |
| -                  | 784-17i to         |               |
|                    | 784-17vii          | New Pages     |
| 784-23             | 784-23             | Revised       |
| 784-24             | 784-24             | Revised       |
| 784-26             | 784-26             | Revised       |

WELLINGTON COAL CLEANING PLANT  
MIDTERM REVIEW  
REPLACEMENT LIST (CONT)  
4/11/87

| <u>REMOVE</u>                 | <u>INSERT</u>             | <u>STATUS</u> |
|-------------------------------|---------------------------|---------------|
| 784-27                        | 784-27                    | Revised       |
| 784-28i                       | 784-28i                   | Revised       |
| -                             | 784-28ii                  | New Page      |
| 784-28iii                     | 784-28iii                 | Revised       |
| -                             | 784-28iv to               | New Pages     |
| 784-28ii                      | 784-28xxiii               | Revised       |
| 784-31                        | 784-28xxix                | Revised       |
| 784-32                        | 784-31                    | Revised       |
| -                             | 784-32                    | Revised       |
| 784-33                        | 784-32i to                | New Pages     |
| 784-34                        | 784-32v                   | Revised       |
| 784-41                        | 784-33                    | Revised       |
| 784-44                        | 784-34                    | Revised       |
| Appendix A                    | 784-41                    | Revised       |
| *Technical Revision No. 1     | 784-44                    | Revised       |
| -                             | Appendix A                | Revised       |
| *Appendix III of ACR Response | Appendix E                | Revised       |
| Page 4 of Appendix III        | Seam Analysis, Appendix G | New           |
| Dwg No. E9-3451               | Appendix I                | Revised       |
| Appendix I of ACR Response    | Page 4 of Appendix I      | Revised       |
| -                             | E9-3451, Appendix I       | Revised       |
| -                             | Appendix J                | Revised       |
| Figure 1                      | D4-0141(1of2), Appendix J | New Map       |
| Appendix II of ACR Response   | D4-0141(2of2), Appendix J | New Map       |
| -                             | Figure 1, Appendix J      | Revised       |
| C4-0071                       | Appendix K                | Revised       |
| Dwg No. E9-3341               | Map Cover Sheet           | New           |
| Dwg NO. E9-3450               | C4-0071                   | New Map       |
|                               | E9-3341                   | Revised       |
|                               | E9-3450                   | Revised       |

\* Denotes Report being incorporated into ORP Document

MID PERMIT TERM REVIEW

Kaiser Coal Corporation  
Wellington Preparation Plant  
ACT/007/012  
Carbon County, Utah

October 8, 1987

UMC 771.23 Permit Applications - General Requirements for Format and  
Contents - LS, JSK, LK

The operator has provided a new map index, however in reviewing past submittals and the current submittals there are more maps in the MRP than the operator shows. Some in the appendices should be included in the listing. Some of the maps the operator should review for relevance follow: E9-3425, E9-3434, E9-3435, E9-3445, E9-3455, and E9-3456. The map index should be revised to show all pertinent maps.

**The above-mentioned maps have been checked, and the map index has been revised. A copy of the new index is enclosed.**

The roadside spoil pile II stabilization plans and data have not been incorporated into the MRP. The applicant has submitted plate C4-0071 depicting the cross-sections and sampling locations. The soil data and stabilization plans outlined in the September 10, 1986, letter from Susan Hasenjager and the February 24, 1987, letter from Carl Winters must be incorporated into the plan.

**The soil data and stabilization plan outlined in the November 10, 1986, letter from Susan Hasenjager and the February 24, 1987, letter from Carl Winters established the means to stabilize the Roadside Spoil Pile II. This has been referenced on Page II-7., and copies of the letters will be incorporated into the MRP.**

Test plots were installed at the Wellington Prep. Plant during the 1984-85 field seasons. The Division requested that 'as-built' designs be provided since there were several minor changes made during implementation of the approved design. The original test plot design included shrub transplants to be planted on a portion of the coarse refuse and the coarse and fine slurry plots. These plantings did not occur. This needs to be documented on Page I-5, Appendix J where the other 'as-built' plans are discussed.

In the attached report, Revegetation Test Plots and Reclamation Techniques of the Wellington Coal Cleaning Plant, Utah, recommendations were made to plant several species of shrubs in portions of the test plots. This recommendation was deleted.

(This statement is documented on Page I-5, Appendix J -- Test Plots placed before "The as built" sentence in the first paragraph.)

UMC 782.19 Other Licenses and Permits - LS

The application must include updated information on water rights showing that these have been transferred to Kaiser.

**Enclosed are copies of water rights and supporting documents pertinent to the above request. These documents will be incorporated in the ORP, Page 782-14i.**

UMC 817.15 Casing and Sealing of Underground Openings:  
Permanent - LS, JRH

The operator must commit in the MRP to either abandon the well as required by this regulation or transfer it in accordance with UMC 817.53 upon final reclamation.

**The operator will commit to Regulation UMC 817.15 and shall incorporate this in its MRP.**

**Corresponding text will be inserted as Page 817-1.**

UMC 817.52 Hydrologic Balance: Surface and Groundwater  
Monitoring - SCL

The updated MRP references proposed changes to the groundwater monitoring program. In a March 3, 1987, letter to Kaiser, DOGM indicated that these changes would not be approved until Kaiser supplied additional information and justification. At this time, Kaiser should either supply the additional information or revise the MRP to show the monitoring program as approved.

In reference to the March 2, 1987, letter sent to Kaiser requesting the following additional information:

1. Sample results for GW-4, 11-22-86 and GW-5, 8-28-86.
2. Temperature data for the sample period 11-29-85 through 11-22-85 for all wells except GW-1, 2-18-85 and 8-30-85.
3. Data and background information on all monitoring wells. This information should include well depth, perforated zones, drillers or lithologic logs, intended sample zone, etc.

RESPONSE

1. Sample results for GW-4, 11/22/86, and GW-5, 8/28/86, for reasons unknown, were not taken. Possibly, the wells were dry at that time. GW-5 has a past history of being dry from time to time.
2. Temperature data for this time period was not being taken as reflected in the 1985 Annual Water Monitoring for Wellington Prep. Plant.
3. Regarding data background information on all monitoring wells at Wellington Prep. Plant, the Drawing E9-3428, Drill Hole Correlation, which is within the ORP for the Wellington Plant, has all pertinent information with one exception — the perforated zones are not illustrated on the drawing. A copy of Drawing E9-3451 is enclosed.

UMC 817.81 Coal Processing Waste Banks: General Requirements - LS, JHR

The operator must provide the specific location, maximum amounts, and temporary stability measures to be taken for storage of the high ash coal fines. Contingency plans for final reclamation should the fines not be marketable should be made a part of the reclamation plan. The plans and cross-sections available in the Sunnyside Mine Office should be included in the MRP.

UMC 817-85 Coal Processing Waste Banks: Construction Requirements - LS, JRH

- (a) The operator shall either remove the discussion of Phase III construction of the refuse dikes and map E9-3437 from the MRP or submit stability calculations to support the elevations shown. The MRP includes maps for Phase III of the increase in the height of the dikes but the operator's stability analysis only shows stability results to phase II.

The operator should submit a plan to comply with the consultant's recommendations (Appendix E pg. 19) for construction of an 18-inch rip rap liner on the clear water side of the lower refuse dike and a certified as-built drawing.

- (b) The operator must also describe construction methods used for the lower refuse dike, reconstruction of the northern dike as per Appendix C, page 17 and those proposed for future modification to the upper refuse dike and the northern dike as per Appendix E.

The operator shall certify map E9-3460, and provide certified plans (if changed from phase 1 or 2 maps) and cross-sections for the "as-built" configuration of the clear water, upper refuse, and the north dikes.

The operator must also provide certification of the construction showing that the dikes have been built or will be built in accordance with recommendations of the consultant per Appendix E, page 17.

- (b) The operator shall identify noncoal wastes to be generated during reclamation and demolition, the quantities of materials, and discuss temporary and final disposition of wastes to meet the performance standards.

Kaiser Coal Corporation would like to address the above deficiencies with the following response. Being subjected to the current dilemma (Chaper 13), Kaiser's present and future aspirations are greatly impeded. It is not possible to allocate funds at this time to accomplish necessary results for accurate long-term commitments. In the near future, the status of Kaiser will be resolved; and the above deficiencies will be remedied.

OPERATION AND RECLAMATION PLAN  
WELLINGTON COAL CLEANING PLANT

OPERATION AND RECLAMATION PLAN  
WELLINGTON COAL CLEANING PLANT

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DIVISION OF  
OIL, GAS & MINING

Map Index

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| A9-1432        | Road Cross-Section Roads Located East of the Price River |                      |                 | 784-46          |
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| C9-1217        | Coarse Refuse Pile                                       |                      |                 | 784-18          |
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| E9-3425        | Current Refuse Disposal Area Topsoil Salvages and Storage Areas         | Technical Revision 1 | D               | Pocket          |
| E9-3426        | Raise Lower Refuse Dike and Permanent Diversion (Phase I)               | II                   |                 | Pocket          |
| E9-3427        | Refuse Ponds Modifications Permanent Diversion Ditch                    |                      |                 |                 |
| E9-3428        | Drill Hole Correlation                                                  | II                   |                 | Pocket          |
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| E9-3430        | Structures Within 100 Ft. of the Price River                            | II                   |                 | Pocket          |
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| E9-3436        | Raise Upper Refuse Dike and North Dike (Phase II)                       | II                   |                 | Pocket          |
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| E9-3443        | Vegetation Study Map -- C                                               |                      | H               | Pocket          |
| E9-3450        | Proposed Slurry Discharge Containment Basin Plan View and Cross-Section |                      | D               | Pocket          |
| E9-3451        | Hydrologic Monitoring Map, Wellington Prep. Plant                       | Mid-Term Review      | I               | Pocket          |
| E9-3453        | Road Pond as Constructed and Cross-Section, Dryer Pond Cross-Section    | II                   |                 | Pocket          |
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| E9-3458        | Wellington Coal Cleaning Plant Existing Contours             |                 | D               | Pocket          |
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WELLINGTON COAL CLEANING PLANT  
INTRODUCTION

The Wellington Coal Cleaning Plant is located near Wellington, Utah. Built in 1958, the plant ran continuously until 1985. In December 1985 Kaiser Coal Corporation purchased the cleaning plant from United States Steel. Due to market conditions the plant remains idle. Rail access connects the prep plant with mines and potential customers.

The cleaning plant is located west of the Price River adjacent to the Denver and Rio Grande Western Railroad. The primary reject disposal area is located east of the Price River and is connected to the cleaning plant by a refuse pipeline and a clear water pipeline. The refuse material is pumped from the cleaning plant to the refuse disposal area. The coarse refuse is placed in the refuse waste pile and the fine, high ash coal flows with the carrying water to the upper refuse pond. The fine material begins to drop out in the upper refuse pond. The partially clarified water passes to the lower refuse pond where the balance of the fine coal drops. The clarified water then flows to a holding pond for return to the coal cleaning plant on the west side of the Price River. The makeup water is pumped from a well charged by the Price River. The well water passes from the river through the alluvials to the well which serves as a collection point. The water is pumped from the well to the clear water pond. The coal processing water system is a closed system to conserve and maximize use of the water. Water escapes from the system as water vapor from the heat dryer and through evaporation from the upper refuse, lower refuse and clear water ponds.

OPERATION AND RECLAMATION PLAN  
WELLINGTON COAL CLEANING PLANT

Map Index

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| E9-3339        | Soils Map and Disturbed Area                                 |                 |
| E9-3428        | Drill Hole Correlation                                       |                 |
| E9-3430        | Structures Within 100 ft. of the Price River                 | P               |
| F9-177         | Hydrologic Evaluation Map (2 Sheets)                         | O               |
| E9-3431        | Cross-Sections for Hydrologic Evaluation                     | C               |
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| E9-3426        | Raise Lower Refuse Dike and Permanent<br>Diversion (Phase I) | E<br>T          |
| E9-3436        | Raise Upper Refuse Dike and North Dike<br>(Phase II)         | S               |
| E9-3437        | Raise Upper Refuse Dike and North Dike<br>(Phase III)        |                 |
| E9-3450        | Slurry Discharge Containment Basin                           |                 |
| C4-0071        | Spoil Pile II                                                |                 |

OPERATION AND RECLAMATION PLAN  
WELLINGTON COAL CLEANING PLANT

Map Index

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| E9-3343        | Current Land-Use Map                                         | A               |
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| E9-3430        | Structures Within 100 ft. of the Price River                 | P               |
| F9-177         | Hydrologic Evaluation Map (2 Sheets)                         | O               |
| E9-3431        | Cross-Sections for Hydrologic Evaluation                     | C               |
| E9-3453        | Road Pond                                                    | K               |
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| E9-3436        | Raise Upper Refuse Dike and North Dike<br>(Phase II)         | S               |
| E9-3437        | Raise Upper Refuse Dike and North Dike<br>(Phase III)        |                 |
| E9-3450        | Slurry Discharge Containment Basin                           |                 |
| C4-0071        | Spoil Pile II                                                |                 |

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JUL 02 1990

DIVISION OF  
OIL, GAS & MINING  
REVEGETATION TEST PLOTS  
WELLINGTON PREPARATION PLANT-UTAH

ANALYSIS OF EXISTING PLOTS  
DESIGN OF NEW PLOTS AND FUTURE MONITORING  
IRRIGATION DESIGN

to

Mr. Daron Haddock, Permit Supervisor  
UTAH DIVISION OF OIL, GAS, & MINING

By

COAL SYSTEMS, Inc.  
Salt Lake City, Utah

For

CASTLE VALLEY RESOURCES, INC.  
Wellington, Utah

June 29, 1990



# COAL SYSTEMS, Inc.

CONSULTANTS/ENGINEERS

L. G. MANWARING, P.E.  
President

P.O. BOX 17117  
SALT LAKE CITY, UTAH 84117

Area Code 801  
261-4500

June 29, 1990

Mr. Daron Haddock, Permit Supervisor  
Utah Division of Oil, Gas, and Mining  
3 Triad Center, Suite #350  
Salt Lake City, Utah 84180-1203

Re: Revegetation Test Plot Designs  
Slurry and Refuse Sample Analyses  
Wellington Preparation Plant  
ACT/007/012  
Carbon County, Utah

Dear Mr. Haddock:

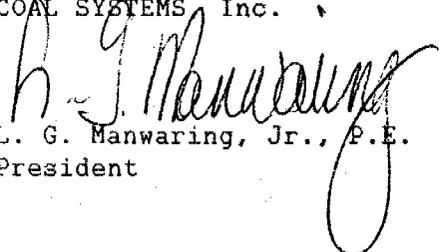
Enclosed please find the REVEGETATION TEST PLOT: WELLINGTON PREPARATION PLANT - UTAH report which has been prepared for Castle Valley Resources, Inc. by Messrs. Burns Sabey and Sheldon Nelson. Also enclosed are the results from the recent sampling analyses conducted on the coarse refuse and slurry test plots.

The revegetation test plot report details the new test plot designs for implementation during the fall of 1990 and is submitted to the Division in response to Stipulation UMC 788.14-(1)-SCL of the Permit Renewal, issued December 10, 1989.

Should any questions arise during your review of these materials, please contact us at your earliest possible convenience.

Sincerely,

COAL SYSTEMS, Inc.

  
L. G. Manwaring, Jr., P.E.  
President

LGM/lc

Enclosure

cc: D. Schwehr  
J. Passic  
B. Sabey



CURSORY ANALYSIS OF DATA OF SOIL SAMPLES  
OLD SLURRY & OLD REFUSE PLOTS - WELLINGTON SITE  
Spring 1990

By

Burns R. Sabey

Soil samples were obtained in the Spring of 1990 from the Old Slurry Plots and the Old Refuse Plots established at the Wellington, Utah Site in 1985 for the purpose of running chemical analyses. The objectives of chemically analyzing the soil samples were to attempt to evaluate the affects of (1) the addition of organic matter amendments (only at the slurry plots), (2) irrigation versus non-irrigation, and (3) the coarse slurry barrier used for prohibiting salts from migrating to the surface.

Although these data have not been statistically analyzed, a few conclusions may be drawn with a reasonable degree of assurance. With numbers of replication and with the other unknowns related to establishment and subsequent management, it is questionable how valuable a statistical analysis would be.

SLURRY PLOTS - See Tables 1, 2, and 3

Table 1, pH Data - By comparing the pH of the samples taken from the plots treated with an organic amendment with those with no organic matter added (bottom of the table), it was concluded that there were no meaningful differences in pH caused by the organic matter addition. Some samples from the organic treated plots had a higher pH and others had a lower pH. There were no consistent patterns that could be seen. There may have been some

differences during the early years of the study as the organic matter was decomposing, but those differences, if they ever existed, did not persist.

The pH of the irrigated, 6" topsoil over fine slurry was not greatly different from that of the non-irrigated, being within plus or minus 0.3 pH units, however, the pH of the 12" topsoil irrigated plots were slightly higher in pH near the surface than the non-irrigated plots.

The pH of the irrigated 6" and 12" topsoil over coarse slurry over fine slurry was slightly higher than the non-irrigated comparable plots.

Irrigation may have caused some slight increases in pH compared to the non-irrigated plots, but the differences are probably not of any practical concern.

Additionally, the comparable 6" and 12" topsoil plots over fine slurry have slightly higher pH than the plots with the coarse slurry barrier. This could mean higher salts, but as seen in the ECe Table that follows, that is not the case.

Table 2 - ECe Data - A comparison of the mean ECe values of the Non-irrigated 6" topsoil over coarse slurry over fine slurry (bottom two categories on the left side of the table) with and without organic matter shows that the organic matter amended plots had slightly lower values than the non-organic, whereas the 12" topsoil organically treated plots had ECe values higher than the non-organic plots. It would have taken a high rate of organic matter addition to bring about these differences. We do not know how much organic matter was added to the plots. Since the ECe values on the 6"

topsoil treated with organic matter were reversed compared to the 12" topsoil plots, you may question the validity of the data. It is not consistent.

An evaluation of the ECe of samples from the irrigation versus non-irrigation plots on the 6" topsoil over fine slurry indicates lower ECe values for the irrigation plots than the non-irrigated plots. Again, the data are opposite for the comparable 12" topsoil plots.

Samples from the 6" irrigated topsoil over coarse slurry over fine slurry have a higher ECe than the samples from the similar non-irrigated plots. Ece values of samples from the comparable 12" topsoil plots show further inconsistency when attempting to evaluate the effect of irrigation versus non-irrigation.

Generally, comparing ECe values of the samples from the plots with coarse slurry as a capillary barrier versus no coarse slurry barrier, it appears that the barrier has not had a beneficial influence on salt content of the plots. A couple of bits of data on Table 2 may indicate some exceptions to the above generalization.

Table 3 - SAR Data - The samples from plots treated with organic matter having 6" of topsoil over coarse slurry over fine slurry have a lower SAR below 0-3" than samples from the non-organic treated plots. Again the opposite is true of the samples from the comparable 12" topsoil plots. These data have a similar pattern to the ECe values. See the bottom two categories in Table 3. An explanation of why the ECe and SAR values of these samples from the 6" and 12" topsoil plots are reversed is not readily apparent at the present time.

The SAR values of samples from non-irrigated plots were lower than from the irrigated plots with a couple of exceptions including the values of the samples from the irrigated 6" topsoil over fine slurry plots. In these latter mentioned samples, only those from the 6-9" depths were appreciably lower in SAR.

The SAR values of the samples taken from the irrigated plots with 6" topsoil over fine slurry were lower than the irrigated plots with 6" topsoil over coarse slurry over fine slurry, as were the SAR values of the non-irrigated 12" topsoil over fine slurry compared to the 12" topsoil over coarse slurry over fine slurry. However, the SAR values for the irrigated 12" topsoil over fine slurry samples were higher than the SAR values from samples of the irrigated 12" topsoil over coarse slurry over fine slurry. Similarly, the SAR's from the non-irrigated 6" topsoil over fine slurry were higher than samples of equivalent topsoil over coarse slurry over fine slurry.

It appears to be a mixed bag with no definitive and predictable trends.

If an attempt is made to correlate the pH, ECe and SAR values, some seem to fit the expected patterns, but many do not. It is difficult if not impossible to make meaningful deductions from the Slurry Plot Data. Either the management of the plots has introduced too many uncontrolled variables or the sampling intensity was not great enough to detect subtle and/or real differences that show meaningful trends.

TABLE 1

## SLURRY PLOTS

- Spring 1990 pH Data/Soil samples -

A. TOPSOIL OVER FINE SLURRYIRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |     |     |      |
|--------------------|-------------------|-----|-----|------|--------------------|-----|-----|------|
|                    | 30                | 38  | 46  | Mean | 32                 | 47  | 48  | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |     |     |      |
| 0-3                | 7.4               | 8.1 | 7.9 | 7.9  | 8.0                | 7.9 | 8.1 | 8.0  |
| 3-6                | 7.9               | 8.1 | 7.8 | 7.9  |                    |     |     |      |
| 6-9                | 8.0               | 8.0 | 7.8 | 7.9  |                    |     |     |      |
| 9-12               |                   |     |     |      | 8.6                | 8.5 | 8.6 | 8.6  |
| 12-15              |                   |     |     |      | 8.1                | 8.3 | 8.3 | 8.2  |

NON-IRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |     |     |      |
|--------------------|-------------------|-----|-----|------|--------------------|-----|-----|------|
|                    | 26                | 33  | 42  | Mean | 28                 | 36  | 44  | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |     |     |      |
| 0-3                | 7.8               | 8.0 | 7.7 | 7.8  | 7.1                | 7.1 | 7.7 | 7.3  |
| 3-6                | 8.1               | 8.3 | 8.3 | 8.2  |                    | 7.7 | 8.3 | 8.0  |
| 6-9                | 7.9               | 8.3 | 8.1 | 8.1  |                    | 7.8 | 8.6 | 8.2  |
| 9-12               |                   |     |     |      | 7.6                | 8.1 | 8.3 | 8.3  |
| 12-15              |                   |     |     |      | 7.8                | 7.9 | 8.2 | 8.2  |

Continued

Table 1 (Con't.)  
Slurry Plots - pH Data

B. TOPSOIL OVER COARSE SLURRY OVER FINE SLURRY

IRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |     |     |      |
|--------------------|-------------------|-----|-----|------|--------------------|-----|-----|------|
|                    | 13                | 21  | 22  | Mean | 15                 | 23  | 24  | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |     |     |      |
| 0-3                | 7.5               | 7.8 | 7.8 | 7.7  | 7.4                | 7.6 | 8.2 | 7.7  |
| 3-6                | 8.1               | 8.2 | 8.0 | 8.1  |                    |     | 8.4 | 8.4  |
| 6-9                | 8.0               | 7.9 | 7.3 | 7.7  |                    |     | 8.3 | 8.3  |
| 9-12               |                   |     |     |      | 8.2                | 8.1 | 7.9 | 8.1  |
| 12-15              |                   |     |     |      | 7.4                | 7.5 | 7.6 | 7.5  |

NON-IRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |     |     |      |
|--------------------|-------------------|-----|-----|------|--------------------|-----|-----|------|
|                    | 2                 | 10  | 18  | Mean | 4                  | 19  | 20  | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |     |     |      |
| 0-3                | 7.0               | 7.8 | 7.6 | 7.5  | 7.3                | 7.4 | 7.5 | 7.4  |
| 3-6                | 7.5               | 7.9 | 8.2 | 7.9  |                    |     |     |      |
| 6-9                | 7.2               | 7.2 | 7.9 | 7.4  |                    |     |     |      |
| 9-12               |                   |     |     |      | 7.8                | 8.0 | 7.8 | 7.9  |
| 12-15              |                   |     |     |      | 7.7                | 7.8 | 7.7 | 7.7  |

NON-IRRIGATED - ORGANIC MATTER ADDED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |     |     |      |
|--------------------|-------------------|-----|-----|------|--------------------|-----|-----|------|
|                    | 1                 | 9   | 17  | Mean | 3                  | 11  | 12  | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |     |     |      |
| 0-3                | 7.5               | 7.3 | 7.7 | 7.6  | 7.1                | 7.3 | 7.0 | 7.2  |
| 3-6                | 7.6               | 7.7 | 8.0 | 7.8  |                    |     |     |      |
| 6-9                | 6.8               | 7.3 | 7.8 | 7.3  |                    |     |     |      |
| 9-12               |                   |     |     |      | 7.9                | 8.1 | 7.8 | 8.0  |
| 12-15              |                   |     |     |      | 7.8                | 7.9 | 7.7 | 7.8  |

TABLE 2  
SLURRY PLOTS

- Spring 1990 ECe Data/Soil samples -

A. TOPSOIL OVER FINE SLURRY

IRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |     |      |      |
|--------------------|-------------------|-----|-----|------|--------------------|-----|------|------|
|                    | 30                | 38  | 46  | Mean | 32                 | 47  | 48   | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |     |      |      |
| 0-3                | 4.0               | 3.9 | 3.7 | 3.9  | 4.2                | 4.8 | 4.8  | 4.6  |
| 3-6                | 4.7               | 4.1 | 4.1 | 4.3  |                    |     |      |      |
| 6-9                | FS 6.1            | 6.3 | 4.7 | 5.7  |                    |     |      |      |
| 9-12               |                   |     |     |      | 13.1               | 9.5 | 10.6 | 11.1 |
| 12-15              |                   |     |     |      | FS 7.7             | 7.6 | 10.7 | 8.7  |

NON-IRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |     |      |      |
|--------------------|-------------------|-----|-----|------|--------------------|-----|------|------|
|                    | 26                | 33  | 42  | Mean | 28                 | 36  | 44   | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |     |      |      |
| 0-3                | 3.9               | 4.3 | 4.0 | 4.1  | 4.2                | 4.6 | 4.6  | 4.5  |
| 3-6                | 3.8               | 6.6 | 4.6 | 5.0  |                    | 5.4 | 6.4  | 5.7  |
| 6-9                | FS 5.2            | 8.0 | 6.5 | 6.6  |                    | 6.8 | 11.0 | 8.9  |
| 9-12               |                   |     |     |      | 4.9                | 7.2 | 9.1  | 7.1  |
| 12-15              |                   |     |     |      | FS 6.5             | 6.8 | 7.7  | 7.0  |

Continued

Table 2 (Con't.)  
Slurry Plots - ECe Data

B. TOPSOIL OVER COARSE SLURRY OVER FINE SLURRY

IRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |     |      |      |
|--------------------|-------------------|-----|-----|------|--------------------|-----|------|------|
|                    | 13                | 21  | 22  | Mean | 15                 | 23  | 24   | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |     |      |      |
| 0-3                | 4.3               | 4.5 | 4.0 | 4.3  | 4.9                | 4.1 | 5.0  | 4.7  |
| 3-6                | 6.4               | 6.6 | 4.7 | 5.9  |                    |     | 6.2  | 6.2  |
| 6-9                | 8.5               | 8.3 | 6.0 | 7.6  |                    |     | 7.0  | 7.0  |
| 9-12               |                   |     |     |      | 8.4                | 5.9 | 7.25 | 7.2  |
| 12-15              |                   |     |     |      | 6.2                | 5.8 | 6.1  | 6.0  |

NON-IRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |      |     |      |
|--------------------|-------------------|-----|-----|------|--------------------|------|-----|------|
|                    | 2                 | 10  | 18  | Mean | 4                  | 19   | 20  | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |      |     |      |
| 0-3                | 4.0               | 4.2 | 4.2 | 4.1  | 4.8                | 5.9  | 4.2 | 5.0  |
| 3-6                | 4.1               | 6.0 | 5.3 | 5.1  |                    |      |     |      |
| 6-9                | 5.0               | 7.6 | 7.6 | 6.7  |                    |      |     |      |
| 9-12               |                   |     |     |      | 6.8                | 10.5 | 5.6 | 5.6  |
| 12-15              |                   |     |     |      | 8.4                | 8.9  | 7.9 | 8.4  |

NON-IRRIGATED - ORGANIC MATTER ADDED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |      |     |      |
|--------------------|-------------------|-----|-----|------|--------------------|------|-----|------|
|                    | 1                 | 9   | 17  | Mean | 3                  | 11   | 12  | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |      |     |      |
| 0-3                | 4.4               | 3.8 | 3.7 | 4.0  | 5.5                | 5.7  | 4.8 | 5.3  |
| 3-6                | 4.7               | 4.1 | 4.0 | 4.3  |                    |      | 5.5 | 5.5  |
| 6-9                | 7.2               | 5.2 | 6.2 | 6.2  |                    |      | 6.5 | 6.5  |
| 9-12               |                   |     |     |      | 12.3               | 12.8 | 7.7 | 9.9  |
| 12-15              |                   |     |     |      | 9.6                | 11.0 | 6.4 | 9.0  |

TABLE 3

## SLURRY PLOTS

- Spring 1990 SAR Data/Soil samples -

A. TOPSOIL OVER FINE SLURRYIRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |     |      |      |
|--------------------|-------------------|-----|-----|------|--------------------|-----|------|------|
|                    | 30                | 38  | 46  | Mean | 32                 | 47  | 48   | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |     |      |      |
| 0-3                | 0.9               | 1.4 | 0.9 | 1.1  | 1.6                | 2.4 | 3.1  | 2.4  |
| 3-6                | 2.2               | 2.1 | 1.9 | 2.1  |                    |     |      |      |
| 6-9                | FS 4.0            | 4.8 | 3.0 | 3.9  |                    |     |      |      |
| 9-12               |                   |     |     |      | 11.0               | 8.2 | 11.1 | 10.1 |
| 12-15              |                   |     |     |      | FS 5.9             | 5.3 | 9.3  | 6.8  |

NON-IRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |     |     |      |
|--------------------|-------------------|-----|-----|------|--------------------|-----|-----|------|
|                    | 26                | 33  | 42  | Mean | 28                 | 36  | 44  | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |     |     |      |
| 0-3                | 0.4               | 2.0 | 0.8 | 1.1  | 0.6                | 0.8 | 1.8 | 1.1  |
| 3-6                | 0.9               | 6.0 | 2.1 | 3.0  |                    | 2.7 | 5.4 | 4.0  |
| 6-9                | FS 2.96           | 7.2 | 5.7 | 5.3  |                    | 4.5 | 9.7 | 7.1  |
| 9-12               |                   |     |     |      | 1.9                | 4.9 | 9.2 | 5.3  |
| 12-15              |                   |     |     |      | FS 4.3             | 2.6 | 8.0 | 5.0  |

Continued

Table 3 (Con't.)  
Slurry Plots - SAR Data

B. TOPSOIL OVER COARSE SLURRY OVER FINE SLURRY

IRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |     |     |      |
|--------------------|-------------------|-----|-----|------|--------------------|-----|-----|------|
|                    | 13                | 21  | 22  | Mean | 15                 | 23  | 24  | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |     |     |      |
| 0-3                | 1.3               | 2.5 | 1.1 | 1.6  | 1.9                | 1.2 | 2.5 | 1.9  |
| 3-6                | 4.4               | 5.7 | 2.7 | 4.3  |                    |     | 5.1 | 5.1  |
| 6-9                | 6.7               | 6.6 | 4.2 | 5.8  |                    |     | 6.7 | 6.7  |
| 9-12               |                   |     |     |      | 6.8                | 4.8 | 6.5 | 6.0  |
| 12-15              |                   |     |     |      | 2.7                | 3.4 | 2.6 | 2.9  |

NON-IRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |     |     |      |
|--------------------|-------------------|-----|-----|------|--------------------|-----|-----|------|
|                    | 2                 | 10  | 18  | Mean | 4                  | 19  | 20  | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |     |     |      |
| 0-3                | 0.7               | 1.0 | 0.6 | 0.8  | 1.3                | 1.8 | 0.9 | 1.3  |
| 3-6                | 1.4               | 3.7 | 3.0 | 2.7  |                    |     |     |      |
| 6-9                | 1.1               | 2.2 | 5.0 | 2.8  |                    |     |     |      |
| 9-12               |                   |     |     |      | 4.5                | 9.6 | 2.8 | 5.6  |
| 12-15              |                   |     |     |      | 7.7                | 6.6 | 4.5 | 6.3  |

NON-IRRIGATED - ORGANIC MATTER ADDED

| Sample #           | <u>6" Topsoil</u> |     |     |      | <u>12" Topsoil</u> |      |     |      |
|--------------------|-------------------|-----|-----|------|--------------------|------|-----|------|
|                    | 1                 | 9   | 17  | Mean | 3                  | 11   | 12  | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |                    |      |     |      |
| 0-3                | 1.2               | 0.5 | 0.6 | 0.8  | 2.4                | 2.8  | 1.0 | 2.1  |
| 3-6                | 2.1               | 1.2 | 1.5 | 1.6  |                    |      | 2.9 | 2.9  |
| 6-9                | 1.3               | 0.8 | 3.4 | 1.8  |                    |      | 4.4 | 4.4  |
| 9-12               |                   |     |     |      | 12.1               | 11.1 | 5.7 | 9.6  |
| 12-15              |                   |     |     |      | 9.2                | 8.8  | 4.6 | 7.5  |

REFUSE PLOTS - See Tables 4, 5, and 6

Refuse Plots - General - No plots that had been amended with organic matter were sampled so the variables of concern were irrigation versus non-irrigation and coarse slurry capillary barrier versus no capillary barrier. Also, the plot design did not include equal replications of each treatment, therefore, the comparisons will be less valid than they might have been with equal replications.

The data comparing irrigated plots versus non-irrigated plots showed the pH of the non-irrigated samples higher than the irrigated samples from the 6" topsoil over coarse refuse samples showed little difference between non-irrigation and irrigation. The same was true of the samples from the 12" topsoil over coarse slurry over coarse refuse. The pH values of the soil samples from non-irrigated 6" topsoil over coarse slurry over coarse refuse were higher than the irrigated samples. Note, however, that there was no replication of the soil samples from the irrigated 6" topsoil plots.

Soil pH values of the irrigated 6" and 12" topsoil over coarse refuse were generally higher than the 6" and 12" topsoil over coarse slurry over coarse refuse with the exception of the 0-3" depth of the 12" topsoil over coarse refuse samples. The non-irrigated samples with and without the coarse slurry barrier had some variability but showed little meaningful difference in pH due to growth medium.

Table 5 - ECe Data - It appears from the values in the table that plots which were irrigated had appreciably lower ECe values than the non-irrigated plots with 2 exceptions in the 12" topsoil over coarse refuse at the 0-3" and 9-12" depths. Irrigation may have leached the salts below the 9" and 15" depths. The comparison between the effects of the two plant growth mediums does not indicate that the coarse slurry barrier consistently prohibited the salts from rising since the ECe values for the topsoil over coarse refuse (without the barrier) were often as low as the samples from the plots with the barrier.

Table 6 - SAR Data - A study of the SAR data showed that the irrigated 6" plots with both plant growth mediums had lower SAR's than the non-irrigated plots, however, note that there were no replications for sample 34. The irrigated 12" plots showed mixed SAR results, some being higher and some lower than the non-irrigated plots. The influence of the two plant growth mediums was not consistent. Sometimes the medium with the capillary barrier (coarse slurry included) had a higher SAR than the medium without the barrier. At other times, the opposite was true.

TABLE 4

## REFUSE PLOTS

- Spring 1990 pH Data/Soil samples -

A. TOPSOIL OVER COARSE REFUSEIRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |     |     | Mean | <u>12" Topsoil</u> |     |      |
|--------------------|-------------------|-----|-----|-----|-----|------|--------------------|-----|------|
|                    | 22                | 23  | 24  | 47  | 48  |      | 19                 | 45  | Mean |
| <u>Depth (in.)</u> |                   |     |     |     |     |      |                    |     |      |
| 0-3                | 8.0               | 7.7 | 7.9 | 7.9 | 8.0 | 7.9  | 8.2                | 7.4 | 7.8  |
| 3-6                | 8.4               | 8.0 | 7.9 | 8.0 | 7.8 | 8.0  |                    |     |      |
| 6-9                | 8.2               | 8.0 | 7.8 | 8.0 | 7.8 | 8.0  |                    |     |      |
| 9-12               |                   |     |     |     |     |      | 8.3                | 8.3 | 8.3  |
| 12-15              |                   |     |     |     |     |      | 7.9                | 8.2 |      |

NON-IRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |      | Mean | <u>12" Topsoil</u> |     |     |      |
|--------------------|-------------------|-----|-----|------|------|--------------------|-----|-----|------|
|                    | 37                | 38  | 39  | Mean |      | 17                 | 18  | 40  | Mean |
| <u>Depth (in.)</u> |                   |     |     |      |      |                    |     |     |      |
| 0-3                | 8.3               | 8.4 | 8.1 | 8.3  |      | 7.8                | 7.9 | 7.8 | 7.8  |
| 3-6                | 8.3               | 8.7 | 8.3 | 8.4  |      |                    |     |     |      |
| 6-9                | 7.5               | 8.1 | 7.8 | 7.8  |      |                    |     |     |      |
| 9-12               |                   |     |     |      |      | 8.1                | 8.4 | 8.0 | 8.2  |
| 12-15              |                   |     |     |      |      | 8.2                | 8.1 | 7.8 | 8.0  |

Table 4 (Con't.)  
 Refuse Plots - pH Data

B. TOPSOIL OVER COARSE SLURRY OVER COARSE REFUSE

IRRIGATED

| Sample #           | 6" Topsoil |      | 12" Topsoil |     |     |     | Mean |
|--------------------|------------|------|-------------|-----|-----|-----|------|
|                    | 34         | Mean | 9           | 31  | 32  | 33  |      |
| <u>Depth (in.)</u> |            |      |             |     |     |     |      |
| 0-3                | 7.5        | 7.5  | 7.8         | 8.2 | 7.9 | 7.9 | 8.0  |
| 3-6                | 7.7        | 7.7  |             |     |     |     |      |
| 6-9                | 7.2        | 7.2  |             |     |     |     |      |
| 9-12               |            |      | 8.2         | 8.2 | 8.2 | 8.3 | 8.2  |
| 12-15              |            |      | 7.9         | 7.8 | 7.8 | 8.1 | 7.9  |

NON-IRRIGATED

| Sample #           | 6" Topsoil |     |     |      | 12" Topsoil |     |     |      |
|--------------------|------------|-----|-----|------|-------------|-----|-----|------|
|                    | 2          | 25  | 27  | Mean | 5           | 28  | 29  | Mean |
| <u>Depth (in.)</u> |            |     |     |      |             |     |     |      |
| 0-3                | 8.1        | 8.1 | 7.6 | 7.9  | 8.1         | 7.6 | 8.1 | 7.9  |
| 3-6                | 8.6        | 8.3 | 7.8 | 8.2  |             |     |     |      |
| 6-9                | 7.9        | 8.1 | 7.8 | 7.9  |             |     |     |      |
| 9-12               |            |     |     |      | 8.6         | 8.1 | 8.4 | 8.4  |
| 12-15              |            |     |     |      | 8.1         | 8.0 | 8.2 | 8.1  |

TABLE 5

REFUSE PLOTS

- Spring 1990 ECe Data/Soil samples -

A. TOPSOIL OVER COARSE REFUSE

IRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |     |     |     | Mean | <u>12" Topsoil</u> |      |      |
|--------------------|-------------------|-----|-----|-----|-----|------|--------------------|------|------|
|                    | 22                | 23  | 24  | 47  | 48  |      | 19                 | 45   | Mean |
| <u>Depth (in.)</u> |                   |     |     |     |     |      |                    |      |      |
| 0-3                | 4.2               | 3.7 | 4.7 | 3.5 | 3.4 | 3.8  | 5.4                | 4.6  | 5.0  |
| 3-6                | 10.8              | 5.6 | 4.3 | 4.5 | 3.9 | 4.6  |                    |      |      |
| 6-9                | 11.0              | 7.7 | 8.9 | 7.0 | 4.6 | 7.1  |                    |      |      |
| 9-12               |                   |     |     |     |     |      | 9.6                | 10.9 | 10.2 |
| 12-15              |                   |     |     |     |     |      | 13.0               | 7.7  | 10.4 |

NON-IRRIGATED

| Sample #           | <u>6" Topsoil</u> |      |     |      | Mean | <u>12" Topsoil</u> |     |      |      |
|--------------------|-------------------|------|-----|------|------|--------------------|-----|------|------|
|                    | 37                | 38   | 39  | Mean |      | 17                 | 18  | 40   | Mean |
| <u>Depth (in.)</u> |                   |      |     |      |      |                    |     |      |      |
| 0-3                | 5.4               | 8.3  | 4.5 | 6.1  | 4.3  | 5.2                | 4.2 | 4.6  |      |
| 3-6                | 7.0               | 13.4 | 6.8 | 9.1  |      |                    |     |      |      |
| 6-9                | 8.7               | 8.4  | 5.4 | 7.5  |      |                    |     |      |      |
| 9-12               |                   |      |     |      | 7.9  | 9.3                | 4.9 | 7.4  |      |
| 12-15              |                   |      |     |      | 12.4 | 15.0               | 9.4 | 12.3 |      |

Continued

273  
336

(242)

Table 5 (Con't.)  
 Refuse Plots - ECe Data

B. TOPSOIL OVER COARSE SLURRY OVER COARSE REFUSE

IRRIGATED

| Sample #           | 6" Topsoil |      | 12" Topsoil |     |      |      |      |
|--------------------|------------|------|-------------|-----|------|------|------|
|                    | 34         | Mean | 9           | 31  | 32   | 33   | Mean |
| <u>Depth (in.)</u> |            |      |             |     |      |      |      |
| 0-3                | 3.3        | 3.3  | 6.0         | 8.0 | 3.8  | 3.9  | 4.2  |
| 3-6                | 4.7        | 4.7  |             |     |      |      |      |
| 6-9                | 6.6        | 6.6  |             |     |      |      |      |
| 9-12               |            |      | 15.5        | 7.5 | 7.7  | 9.3  | 8.3  |
| 12-15              |            |      | 16.0        | 9.7 | 10.2 | 11.6 | 11.8 |

NON-IRRIGATED

| Sample #           | 6" Topsoil |      |      |      | 12" Topsoil |      |      |      |
|--------------------|------------|------|------|------|-------------|------|------|------|
|                    | 2          | 25   | 27   | Mean | 5           | 28   | 29   | Mean |
| <u>Depth (in.)</u> |            |      |      |      |             |      |      |      |
| 0-3                | 5.0        | 5.2  | 4.5  | 4.9  | 5.6         | 3.8  | 6.2  | 5.2  |
| 3-6                | 9.4        | 6.9  | 5.6  | 7.3  |             |      |      |      |
| 6-9                | 10.0       | 18.0 | 12.5 | 13.5 |             |      |      |      |
| 9-12               |            |      |      |      | 12.8        | 6.2  | 8.9  | 9.3  |
| 12-15              |            |      |      |      | 15.5        | 12.0 | 14.2 | 13.9 |

TABLE 6

## REFUSE PLOTS

- Spring 1990 SAR Data/Soil samples -

A. TOPSOIL OVER COARSE REFUSEIRRIGATED

| Sample #           | <u>6" Topsoil</u> |     |      |     |     | Mean | <u>12" Topsoil</u> |      |      |
|--------------------|-------------------|-----|------|-----|-----|------|--------------------|------|------|
|                    | 22                | 23  | 24   | 47  | 48  |      | 19                 | 45   | Mean |
| <u>Depth (in.)</u> |                   |     |      |     |     |      |                    |      |      |
| 0-3                | 2.2               | 1.6 | 3.2  | 1.4 | 1.3 | 1.9  | 4.3                | 2.7  | 3.5  |
| 3-6                | 13.0              | 5.1 | 2.4  | 3.2 | 2.2 | 3.2  |                    |      |      |
| 6-9                | 17.0              | 7.7 | 10.1 | 7.4 | 3.5 | 7.2  |                    |      |      |
| 9-12               |                   |     |      |     |     |      | 12.0               | 16.2 | 14.1 |
| 12-15              |                   |     |      |     |     |      | 14.8               | 9.3  | 12.1 |

NON-IRRIGATED

| Sample #           | <u>6" Topsoil</u> |      |     |      | Mean | <u>12" Topsoil</u> |      |      |      |
|--------------------|-------------------|------|-----|------|------|--------------------|------|------|------|
|                    | 37                | 38   | 39  | Mean |      | 17                 | 18   | 40   | Mean |
| <u>Depth (in.)</u> |                   |      |     |      |      |                    |      |      |      |
| 0-3                | 5.5               | 9.2  | 2.2 | 5.6  | 1.7  | 3.4                | 2.1  | 2.4  |      |
| 3-6                | 7.3               | 13.1 | 6.5 | 9.0  |      |                    |      |      |      |
| 6-9                | 7.8               | 17.7 | 3.3 | 9.6  |      |                    |      |      |      |
| 9-12               |                   |      |     |      | 9.9  | 12.5               | 3.4  | 8.6  |      |
| 12-15              |                   |      |     |      | 20.9 | 24.4               | 13.2 | 19.5 |      |

Continued

Table 6 (Con't.)  
 Refuse Plots - SAR Data

B. TOPSOIL OVER COARSE SLURRY OVER COARSE REFUSE

IRRIGATED

| Sample #           | 6" Topsoil |      | 12" Topsoil |      |      |      | Mean |
|--------------------|------------|------|-------------|------|------|------|------|
|                    | 34         | Mean | 9           | 31   | 32   | 33   |      |
| <u>Depth (in.)</u> |            |      |             |      |      |      |      |
| 0-3                | 1.1        | 1.1  | 14.7        | 11.2 | 1.9  | 1.7  | 7.4  |
| 3-6                | 3.2        | 3.2  |             |      |      |      |      |
| 6-9                | 3.8        | 3.8  |             |      |      |      |      |
| 9-12               |            |      | 17.9        | 9.2  | 9.2  | 11.0 | 11.8 |
| 12-15              |            |      | 14.5        | 11.2 | 10.9 | 12.2 | 12.2 |

NON-IRRIGATED

| Sample #           | 6" Topsoil |     |      |      | 12" Topsoil |      |      |      |
|--------------------|------------|-----|------|------|-------------|------|------|------|
|                    | 2          | 25  | 27   | Mean | 5           | 28   | 29   | Mean |
| <u>Depth (in.)</u> |            |     |      |      |             |      |      |      |
| 0-3                | 3.2        | 3.6 | 2.3  | 3.0  | 4.8         | 1.1  | 5.2  | 3.7  |
| 3-6                | 10.5       | 6.5 | 5.0  | 7.3  |             |      |      |      |
| 6-9                | 11.3       | 9.5 | 12.8 | 11.2 |             |      |      |      |
| 9-12               |            |     |      |      | 22.6        | 6.4  | 10.8 | 13.3 |
| 12-15              |            |     |      |      | 4.6         | 13.4 | 18.9 | 12.3 |

### SUMMARY

The data indicates that the organic matter amendment on the plots sampled did not adversely affect the pH, ECe, or the SAR. Irrigation may have leached some of the salts below the depths sampled and it appears that the coarse capillary barriers used in these two plots have not clearly prohibited the movement of salts back up to the surface since the ECe and the SAR values for samples from the barrier and non-barrier plots are very mixed - some being higher in the barrier plots and some in the non-barrier plots. It is obvious that some of the ECe and SAR values are very high, thus, presenting a challenge to grow plants on these materials. Hopefully, the planned new plots will show more consistent data and the effect of increasing topsoil depth up to 2 feet on the refuse material.

REVEGETATION TEST PLOTS:  
WELLINGTON PREPARATION PLANT-UTAH

RECOMMENDATIONS FOR MONITORING EXISTING  
TEST PLOTS AND CREATING NEW TEST PLOTS

to

COAL SYSTEMS, Inc.  
P.O. Box 17117  
Salt Lake City, UT. 84117

who is retained by

CASTLE VALLEY RESOURCES, INC.  
a subsidiary of  
Nevada Electric Investment Corporation

by

Burns R. Sabey and Sheldon D. Nelson

June 29, 1990

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## INTRODUCTION

Revegetation test plots were established in 1984 at three (3) locations on the Coal Cleaning Plant Property near Wellington, Utah, owned at that time by U.S. Steel Mining Co. Inc. These plots were designed by Dr. Patrick Collins of Mt. Nebo Scientific Research and Consulting from Springville, Utah. They were designed to produce data that could be used to guide in developing viable reclamation and revegetation at some future date.

The property was sold to Kaiser Coal Corporation who subsequently filed for bankruptcy. Nevada Power Co. purchased the property and are now required by the Utah Division of Oil, Gas and Mining to develop guidance for future reclamation.

It appears to us that the plots as originally designed could have resulted in useful data for giving guidance and direction for future revegetation practices. Unfortunately the plots were not established as per design (according to Lynn Kunzler of DOGM). There were serious problems with the irrigation systems prohibiting irrigation applications as designed. Additionally shrub tubling plantings in the East Facing Refuge Plots were omitted. There is no record which we can find specifying the organic matter application rate. Other problems of which there is no documentation may have also existed that could confound the analysis of the scarce data that are available presently.

Available data or lack thereof may indicate that sampling of both plants and soil materials was not adequate to draw firm conclusions as guidelines for revegetation of the site. Lack of consistent sampling and management of the plots have rendered them less useful than might have been with consistent and careful management.

Based on the above and after visiting the test plots at the Wellington Coal Plant

location the following conclusions were agreed upon by Lynn Kunzler, Henry Sauer, Candido Manzanares, Sheldon Nelson and Burns Sabey.

A. Species Plots (near the coal plant on disturbed soil surface)

1. Sampling of the plants for the final time in 1990, then abandonment of the few remaining plots.
2. Establishment of a species nursery garden with 33 species planted in rows to evaluate germination, seedling development, subsequent growth, and persistence (survival). This will be done in a site near the coal plant that has been disturbed by plant operation but the soil profile is essentially in place.

B. Refuse Pile Plots (East side of the refuse pile)

1. Leave the present plots in place and plan to do minimal soil and plant sampling to determine if the course slurry has had significant effects on controlling capillary rise and salt movement into the soil cover from the refuse pile. Also soil samples could be obtained to determine what effect irrigation has had on salt accumulations.
2. Establish a new set of plots on the south side of the refuse pile and on top of the refuse pile with two (2) variables each in organic matter addition, irrigation application, slope, aspect, and 3 soil depths. Plant and soil samples will be taken on a yearly basis, at a time when identification of species and

measurement of plant growth are near optimum. Plant sampling will be done by and/or under the close supervision of a qualified practicing range scientist. Soil samples will be obtained by and/or under the direction of, a qualified and practicing soil scientist. The soil samples will be analyzed by an established and reliable testing laboratory.

C. Slurry Plots (North of the Price River)

1. Existing plots will be monitored this summer for plant cover and density by life form and species. Plant diversity will be evaluated. Soil samples would be obtained during the Spring 1990 to evaluate any salt movement differences due to irrigation (and capillary barrier) treatments.
2. A new shrub tubling garden will be established on the slurry plot area with and without soil added on the surface. The garden will contain 14 native shrub species transplanted and irrigated during the Spring and Summer of 1991. Survival counts will be made in the late Summer or Fall 1991 and again in the Summer 1992 and annually in the future.

### DETAILED PLANS

A. Species Garden (Near the coal plant)

1. Existing Plots (Near the coal plant)

The existing plots have some remaining dimensions of the original design and some data have been collected from this area. Assessment of the surviving species will be made in Spring and Summer 1990 by a qualified range scientist. After this period, there may not be a necessity to maintain the integrity of these plots.

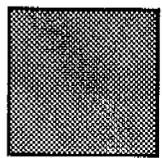
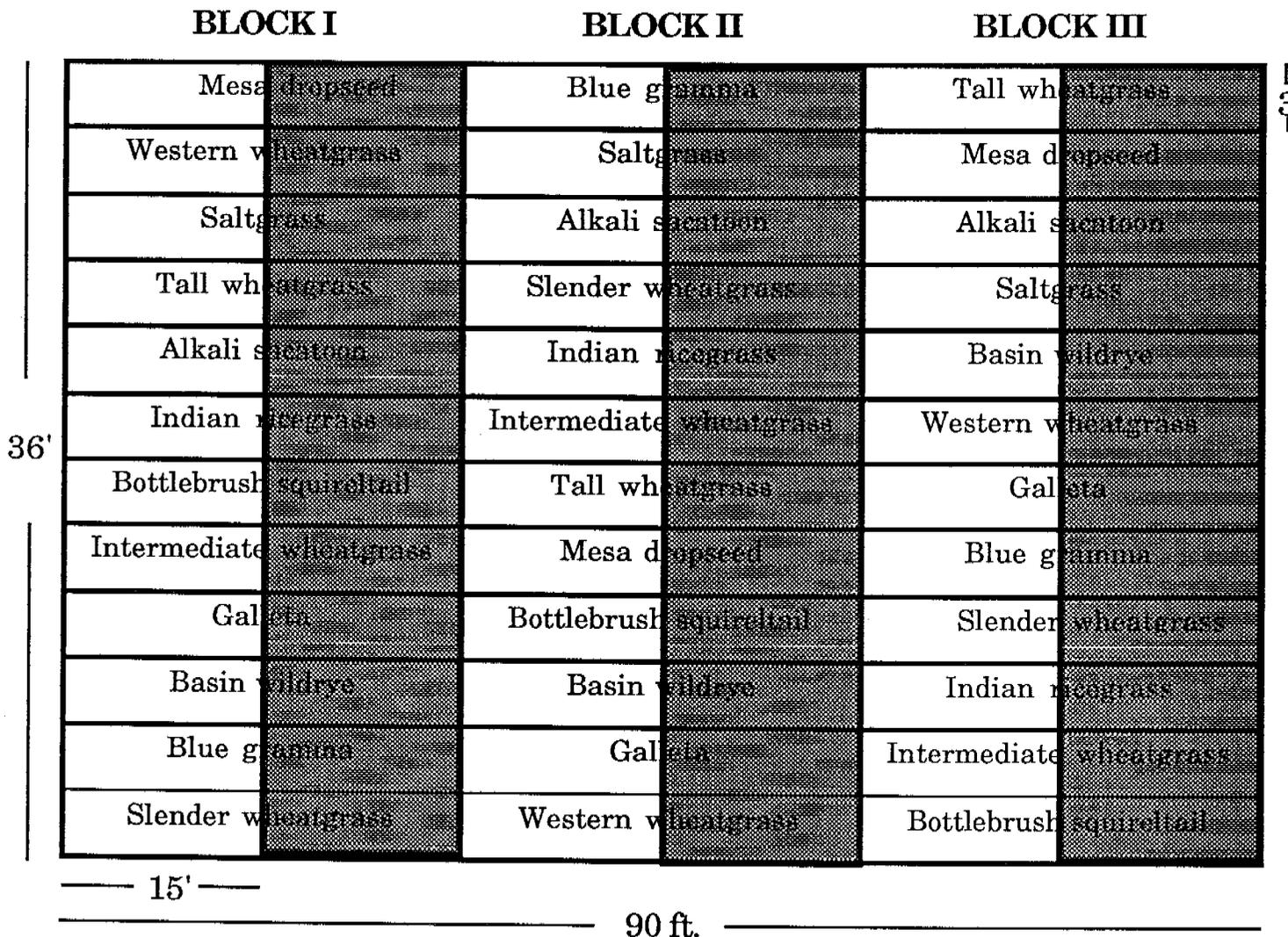
2. Establishment of a Species Plot on disturbed soils near the coal plant. A species nursery garden will be established on plots which have the similar soil characteristics as the disturbed surfaces near the existing buildings and roads near the coal storage piles. The plots will consist of grasses, forbs and shrubs in three distinct but proximate areas. Individual plot sizes will be as follows: Grasses - 3' x 15'; Forbs - 3' x 15', and Shrubs - 5' x 20'.

The equivalent of 50 tons of sewage sludge or other suitable organic matter amendment will be placed on the surface of the designated plots. The plots will be prepared by discing the soil surface to remove any existing vegetation and incorporating the organic matter into the top 6" of soil. The Grass plot will contain 12 grasses, the Forbs plot will contain 10 forbs and the Shrub plot will have 11 shrubs. (See Table 1) Seeds will be drilled or hand planted in rows in a randomized block split-plot design containing 3 replications. (See Fig. 1, 2, 3) in Fall 1990.

Soil moisture conditions will most likely be inadequate for seed

# Fig. 1 GRASS SPECIES PLOT

Randomized Block Split-Plot Design



50 TONS / ACRE INCORPORATED SEWAGE SLUDGE

3 ft. X 15 ft. sub-plots with 3 replications