ENERGY WEST Mining Co.

PACIFICORP

# 2002 ANNUAL REPORT

COTTONWOOD MINE C/015/019

DES-BEE-DOVE MINES C/015/017

DEER CREEK MINE C/015/018

TRAIL MOUNTAIN MINE C/015/009

*To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the **tab** key to move from one field to the next. To select a check box, click in the box or type an x.*

## GENERAL INFORMATION

| | |
|---|---|
| Permitte Name | PacifiCorp |
| Mine Name | Cottonwood Mine |
| Operator Name (If other then permittee) | Energy West Mining Company |
| Permit Expiration Date | July 6, 2004 (Mine currently in cessation) |
| Permit Number | C/015/019 |
| Authorized Representative Title | Chuck Semborski, Geology/Permitting Supervisor |
| Phone Number | (435) 687-9821 |
| Fax Number | |
| E-mail Address | |
| Mailing Address | P.O. Box 310, Huntington, Utah 84528 |
| Resident Agent | Charles Semborski, Geology/Permitting Supervisor |
| Resident Agent Mailing Address | P.O. Box 310, Huntington, Utah 84528 |
| Number of Binders Submitted | 4 |

## IDENTIFICATION OF OTHER PERMITS

*Identify other permits that are required in conjunction with mining and reclamation activities.*

| Permit Type | ID Number | Description | Expiration Date |
|---|---|---|---|
| MSHA Mine ID(s) | 42-01211 | Cottonwood Mine | None |
| | | | |
| MSHA Impoundment(s) | 1211-UT-09-02052-02 | North Sediment Pond | None |
| | 1211-UT-09-02052-03 | South Sediment Pond | None |
| NPDES/UPDES Permit(s) | UT0022896 | Site 001, 003, 004, 005 consisting of | 10/31/07 |
| | | mine discharge and sediment ponds | |
| PSD Permit(s) (Air) | DAQE-694-95 | Issued 8/9/95, Includes Trail Mtn Mine | None |
| | DAQE-835-91 | Issued 12/16/91, WRS | |

**Other**

| | | | |
|---|---|---|---|
| | | | |
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APR - 3 2003
OGM PRICE FIELD OFFICE

## CERTIFIED REPORTS

*List the certified inspection reports as required by the rules and udder the approved plan that must be periodically submitted t the Division. Specify whether the information is included as Appendix A to this report or currently on file with the Division.*

| Certified Reports: | Required | | Included or on file with DOGM | | Comments |
|---|---|---|---|---|---|
| | Yes | No | Included | On File | |
| Excess Spoil Piles | ☐ | ☒ | ☐ | ☐ | |
| Refuse Piles | ☒ | ☐ | ☐ | ☒ | |
| Impoundments | ☒ | ☐ | ☒ | ☐ | no discharge from sediment pond in 2002 |
| **Other** | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |

## REPORTING OF OTHER TECHNICAL DATA

*List other technical data and information as required under the approved plan, which must be periodically submitted to the Division. Specify whether the information is included as Appendix B to this report or currently on file with the Division.*

| Technical Data: | Required | | Included or on file with DOGM | | Comments |
|---|---|---|---|---|---|
| | Yes | No | Included | On file | |
| Climatological | ☐ | ☒ | ☒ | ☐ | Included in separate Hydrologic Report |
| Subsidence Monitoring | ☒ | ☐ | ☒ | ☐ | Included in separate Subsidence Report |
| Vegetation Monitoring | ☒ | ☐ | ☒ | ☐ | Refer to Appendix B |
| Raptor Survey | ☒ | ☐ | ☒ | ☐ | Refer to Appendix B |
| Soils Monitoring | ☐ | ☒ | ☐ | ☐ | |
| Water Monitoring | ☐ | ☐ | ☐ | ☐ | |
| First quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Second quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Third quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Fourth quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Geological / Geophysical | ☐ | ☒ | ☐ | ☐ | |
| Engineering | ☐ | ☒ | ☐ | ☐ | |
| Non Coal Waste / Abandoned Underground Equipment* | ☐ | ☒ | ☐ | ☐ | |
| **Other Data** | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |

*Reminder: If equipment has been abandoned during 2002, an amendment must be submitted that includes a map showing its location, a description of what was abandoned, whether there was any hazardous or toxic materials and any revision to the PHC as necessary.

## LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

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| **Legal / Financial Update** | **Required** | | **Included or on File with DOGM** | | **Comments** |
|---|---|---|---|---|---|
| | Yes | No | Included | On file | |
| Department of Commerce, Annual Report Officers | ☒ | ☐ | ☒ | ☐ | refer to Appendix C |
| **Other** | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |

## MINE MAPS

*Copies of mine maps, current and up-to-date through at least December 31, 2001, are to be provided to the Division as Appendix D to this report in accordance with the requirements of R 645-301-525.270. These map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Upon request, the Division shall keep mine maps confidential.*

| **Map Number(s)** | **Map Title/ Description** | **Confidential** Yes | No |
|---|---|---|---|
| None | See previous Annual Reports (mine is currently in cessation) | ☒ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |

## OTHER INFORMATION

*Please provide any comments of further information to be included as part of the Annual Report. Any other attachments are to be provided as Appendix E to this report. If information is submitted as a group rather then by individual mine, please identify each of the mine's data in the list below.*

**Additional attachment to this report?** **Yes** ☐ **No** ☒

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## GENERAL INFORMATION

| | |
|---|---|
| Permitte Name | PacifiCorp |
| Mine Name | Deer Creek Mine |
| Operator Name (If other then permittee) | Energy West Mining Company |
| Permit Expiration Date | February 7, 2006 |
| Permit Number | C/015/018 |
| Authorized Representative Title | Chuck Semborski, Geology/Permitting Supervisor |
| Phone Number | (435) 687-9821 |
| Fax Number | |
| E-mail Address | |
| Mailing Address | P.O. Box 310, Huntington, Utah 84528 |
| Resident Agent | Charles Semborski, Geology/Permitting Supervisor |
| Resident Agent Mailing Address | P.O. Box 310, Huntington, Utah 84528 |
| Number of Binders Submitted | 4 |

## IDENTIFICATION OF OTHER PERMITS

*Identify other permits that are required in conjunction with mining and reclamation activities.*

| Permit Type | ID Number | Description | Expiration Date |
|---|---|---|---|
| MSHA Mine ID(s) | 42-00121 | Deer Creek Mine | None |
| | | | |
| MSHA Impoundment(s) | N/A | | |
| | | | |
| NPDES/UPDES Permit(s) | UT0023604 | Site 001: Sediment Pond | 11/30/2007 |
| | | Site 002: Mine Discharge | |
| PSD Permit(s) (Air) | DAQE-926-96 | Issued 10/4/96, Mine Tipple | None |
| | DAQE-926-91 | Issued 12/5/91, WRS | |

**Other**

| | | | |
|---|---|---|---|
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| Certified Reports: | Required | | Included or on file with DOGM | | Comments |
|---|---|---|---|---|---|
| | Yes | No | Included | On File | |
| Excess Spoil Piles | ☐ | ☒ | ☐ | ☐ | |
| Refuse Piles | ☒ | ☐ | ☐ | ☒ | |
| Impoundments | ☒ | ☐ | ☒ | ☐ | Sediment Pond: Site 001 |
| **Other** | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |

## REPORTING OF OTHER TECHNICAL DATA

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| Technical Data: | Required | | Included or on file with DOGM | | Comments |
|---|---|---|---|---|---|
| | Yes | No | Included | On file | |
| Climatological | ☐ | ☒ | ☒ | ☐ | Included in separate Hydrologic Report |
| Subsidence Monitoring | ☒ | ☐ | ☒ | ☐ | Included in separate Subsidence Report |
| Vegetation Monitoring | ☒ | ☐ | ☒ | ☐ | Refer to Appendix B |
| Raptor Survey | ☒ | ☐ | ☒ | ☐ | Refer to Appendix B |
| Soils Monitoring | ☐ | ☒ | ☐ | ☐ | |
| Water Monitoring | ☐ | ☐ | ☐ | ☐ | |
| First quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Second quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Third quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Fourth quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Geological / Geophysical | ☐ | ☒ | ☐ | ☐ | |
| Engineering | ☐ | ☒ | ☐ | ☐ | |
| Non Coal Waste / Abandoned Underground Equipment* | ☒ | ☐ | ☐ | ☒ | |
| **Other Data** | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |

*Reminder: If equipment has been abandoned during 2002, an amendment must be submitted that includes a map showing its location, a description of what was abandoned, whether there was any hazardous or toxic materials and any revision to the PHC as necessary.

## LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

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| Legal / Financial Update | Required | | Included or on File with DOGM | | Comments |
|---|---|---|---|---|---|
| | Yes | No | Included | On file | |
| Department of Commerce, Annual Report Officers | ☒ | ☐ | ☒ | ☒ | Included as Appendix C |
| **Other** | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |

## MINE MAPS

*Copies of mine maps, current and up-to-date through at least December 31, 2001, are to be provided to the Division as Appendix D to this report in accordance with the requirements of R 645-301-525.270. These map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Upon request, the Division shall keep mine maps confidential.*

| Map Number(s) | Map Title/ Description | Confidential Yes | Confidential No |
|---|---|---|---|
| None | Deer Creek Mine Production Map (Current as of March, 2003) | ☒ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |

## OTHER INFORMATION

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## GENERAL INFORMATION

| | |
|---|---|
| Permitte Name | PacifiCorp |
| Mine Name | Des Bee Dove Mine |
| Operator Name (If other then permittee) | Energy West Mining Company |
| Permit Expiration Date | 8/30/05 (Mine currently in reclamation) |
| Permit Number | C/015/017 |
| Authorized Representative Title | Chuck Semborski, Geology/Permitting Supervisor |
| Phone Number | (435) 687-9821 |
| Fax Number | |
| E-mail Address | |
| Mailing Address | P.O. Box 310, Huntington, Utah 84528 |
| Resident Agent | Charles Semborski, Geology/Permitting Supervisor |
| Resident Agent Mailing Address | P.O. Box 310, Huntington, Utah 84528 |
| Number of Binders Submitted | 4 |

## IDENTIFICATION OF OTHER PERMITS

*Identify other permits that are required in conjunction with mining and reclamation activities.*

| Permit Type | ID Number | Description | Expiration Date |
|---|---|---|---|
| MSHA Mine ID(s) | None | Records abandond by MSHA March 27, 1987 | |
| | | | |
| MSHA Impoundment(s) | None | | |
| | | | |
| NPDES/UPDES Permit(s) | UTG040022 | Site 001: Sediment Pond | 4/30/03 |
| | | | |
| PSD Permit(s) (Air) | N/A | | |
| | | | |

**Other**

| | | | |
|---|---|---|---|
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|---|---|---|---|---|---|
| | Yes | No | Included | On File | |
| Excess Spoil Piles | ☐ | ☒ | ☐ | ☐ | |
| Refuse Piles | ☒ | ☐ | ☐ | ☒ | |
| Impoundments | ☒ | ☐ | ☒ | ☐ | Sediment Pond: Site 001 |
| **Other** | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |

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|---|---|---|---|---|---|
| | Yes | No | Included | On file | |
| Climatological | ☐ | ☒ | ☒ | ☐ | Included in separate Hydrologic Report |
| Subsidence Monitoring | ☒ | ☐ | ☒ | ☐ | Included in separate Subsidence Report |
| Vegetation Monitoring | ☒ | ☐ | ☒ | ☐ | Refer to Appendix B |
| Raptor Survey | ☒ | ☐ | ☒ | ☐ | Refer to Appendix B |
| Soils Monitoring | ☐ | ☒ | ☐ | ☐ | |
| Water Monitoring | ☐ | ☐ | ☐ | ☐ | Included in separate Hydrologic Report |
| First quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Second quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Third quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Fourth quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Geological / Geophysical | ☐ | ☒ | ☐ | ☐ | |
| Engineering | ☐ | ☒ | ☐ | ☐ | |
| Non Coal Waste / Abandoned Underground Equipment* | ☐ | ☒ | ☐ | ☐ | |
| **Other Data** | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |

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|---|---|---|---|---|---|
| | Yes | No | Included | On file | |
| Department of Commerce, Annual Report Officers | ☒ | ☐ | ☒ | ☐ | |
| **Other** | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |

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| **Map Number(s)** | **Map Title/ Description** | **Confidential** | |
|---|---|---|---|
| | | Yes | No |
| None | See previous Annual Reports (mine is currently in reclamation) | ☒ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |

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## GENERAL INFORMATION

| | |
|---|---|
| Permitte Name | PacifiCorp |
| Mine Name | Trail Mountain Mine |
| Operator Name (If other then permittee) | Energy West Mining Company |
| Permit Expiration Date | February 21, 2005 (Mine is currently in cessation) |
| Permit Number | C/015/009 |
| Authorized Representative Title | Chuck Semborski, Geology/Permitting Supervisor |
| Phone Number | (435) 687-9821 |
| Fax Number | |
| E-mail Address | |
| Mailing Address | P.O. Box 310, Huntington, Utah 84528 |
| Resident Agent | Charles Semborski, Geology/Permitting Supervisor |
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| Number of Binders Submitted | 4 |

## IDENTIFICATION OF OTHER PERMITS

*Identify other permits that are required in conjunction with mining and reclamation activities.*

| Permit Type | ID Number | Description | Expiration Date |
|---|---|---|---|
| MSHA Mine ID(s) | 42-01211 | Trail Mountain Mine | None |
| | | | |
| MSHA Impoundment(s) | None | | |
| | | | |
| NPDES/UPDES Permit(s) | UT0023728 | Site 001: Sediment Pond | 11/30/02 |
| | | Site 002: Mine Discharge | |
| PSD Permit(s) (Air) | DAQE-694-95 | Issued 8/9/95 | None |
| | | | |

**Other**

| | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

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|---|---|---|---|---|---|
| | Yes | No | Included | On File | |
| Excess Spoil Piles | ☐ | ☒ | ☐ | ☐ | |
| Refuse Piles | ☒ | ☐ | ☐ | ☒ | |
| Impoundments | ☒ | ☐ | ☒ | ☐ | No discharge of sediment pond in 2002 |
| **Other** | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |

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| | Yes | No | Included | On file | |
| Climatological | ☐ | ☒ | ☒ | ☐ | Included in separate Hydrologic Report |
| Subsidence Monitoring | ☒ | ☐ | ☒ | ☐ | Included in separate Subsidence Report |
| Vegetation Monitoring | ☒ | ☐ | ☒ | ☐ | Refer to Appendix B |
| Raptor Survey | ☒ | ☐ | ☒ | ☐ | Refer to Appendix B |
| Soils Monitoring | ☐ | ☒ | ☐ | ☐ | |
| Water Monitoring | ☐ | ☐ | ☐ | ☐ | Included in separate Hydrologic Report |
| First quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Second quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Third quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Fourth quarter | ☒ | ☐ | ☒ | ☒ | Included in separate Hydrologic Report |
| Geological / Geophysical | ☐ | ☒ | ☐ | ☐ | |
| Engineering | ☐ | ☒ | ☐ | ☐ | |
| Non Coal Waste / Abandoned Underground Equipment* | ☐ | ☒ | ☐ | ☐ | |
| **Other Data** | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |

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|---|---|---|---|---|---|
| | Yes | No | Included | On file | |
| Department of Commerce, Annual Report Officers | ☒ | ☐ | ☒ | ☐ | refer to Appendix C |
| **Other** | | | | | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |
| | ☐ | ☐ | ☐ | ☐ | |

## MINE MAPS

*Copies of mine maps, current and up-to-date through at least December 31, 2001, are to be provided to the Division as Appendix D to this report in accordance with the requirements of R 645-301-525.270. These map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Upon request, the Division shall keep mine maps confidential.*

| **Map Number(s)** | **Map Title/ Description** | **Confidential** Yes | No |
|---|---|---|---|
| None | See previous Annual Reports (mine is currently in cessation) | ☒ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |
| | | ☐ | ☐ |

## OTHER INFORMATION

*Please provide any comments of further information to be included as part of the Annual Report. Any other attachments are to be provided as Appendix E to this report. If information is submitted as a group rather then by individual mine, please identify each of the mine's data in the list below.*

**Additional attachment to this report?** **Yes** ☐ **No** ☒

# APPENDIX A

## Certified Reports

Excess Spoil Piles
Refuse Piles
Impoundments

As required under R645-301-514

**CONTENTS**

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| **Permit Number** | ACT/015/019 | **Report Date** | DEC. 31, 2002 |
| **Mine Name** | Cottonwood/Wilberg | | |
| **Company Name** | PacifiCorp | | |
| **Impoundment Name...** | **North Pond** | **South Pond** | **Waste Rock Pond** |
| **Impoundment Number.** | | | |
| **UPDES Permit Number** | | UT 0022896-003A | UT 0022896-005 |
| **MSHA ID NUMBER.....** | 1211-UT-09-01211-01 | 1211-UT-09-01211-02 | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| **Inspection Date** | DEC. 18, 2002 |
| **Inspected By** | Rick Cullum/ John Christensen |
| **Reason for Inspection** (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | 4th Quarter Inspection 2002 |

**1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

**North Pond**: No instabilities or weaknesses observed.

**South Pond**: No instabilities or weaknesses observed.

**Waste Rock Site** Pond: No instabilities observed.

**Required for an impoundment which functions as a SEDIMENTATION POND.**

**Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| **60% Design Storage Capacity** | .34 A.F. at 7351.0 ft. | .19 A.F. at 7322.3 ft. | 1.45 A.F. at 6761.5 ft. |
| **100% Sediment Capacity** | .56 A.F. at 7354.83 ft. | .32 A.F. at 7325.33 ft. | 2.42 A.F. at 6765.3 ft. |

**Principle and emergency spillway elevations.**

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| **Principal Spillway Elevation** | 7354.83 | 7325.33 | 6766.3 |
| **Emergency Spillway Elevation** | 7363.33 | 7334.2 | 6770.0 |

**Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| **Water Elevation** (Ice Elevation) | 7353.57 | 7328.19 | 6761.87 |
| **Discharging** | NO | NO | No |
| **Inlet/Outlet Condition** | Good | Good | Good |
| **Slope conditions** | Good | Good | Good |

*See "Hydrologic Monitoring Data" report submitted to DOGM quarterly for monitoring information.

**Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| **Sediment Volume** | 0.18 AF | 0.05 AF | 1.04 AF |
| **Remaining Sediment Storage Capacity** | 0.38 AF | 0.27 AF | 1.38 AF |
| **Water Impounded** | 0.23 AF | 0.52 AF | 0.36 AF |
| **Changes, Comments,** | Pond is functioning Normally at this time. | Pond is functioning normally. | |

NORTH AND SOUTH PONDS WERE CLEANED IN THE FOURTH QUARTER OF 2000. THE COTTONWOOD MINE WAS IDLED IN 2001, SO THE ONLY WATER THAT REPORTS TO THE PONDS IS RUN-OFF DURING A STORM EVENT. THE PONDS WERE FROZEN AT THE TIME OF THE INSPECTIONS.

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 165651 STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 1/8/03

**Signature:** Richard Cullum **Date:** 1-9-03

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| Permit Number | ACT/015/019 | Report Date | OCT. 7, 2002 |
| Mine Name | Cottonwood/Wilberg | | |
| Company Name | PacifiCorp | | |
| Impoundment Name... | North Pond | South Pond | Waste Rock Pond |
| Impoundment Number. | | | |
| UPDES Permit Number | | UT 0022896-003A | UT 0022896-005 |
| MSHA ID NUMBER..... | 1211-UT-09-01211-01 | 1211-UT-09-01211-02 | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| Inspection Date | SEPT. 26, 2002 |
| Inspected By | Rick Cullum/ John Christensen |
| Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | 3rd Quarter Inspection 2002 |

**1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

**North Pond**: No instabilities or weaknesses observed.

**South Pond**: No instabilities or weaknesses observed.

**Waste Rock Site** Pond: No instabilities observed.

Required for an impoundment which functions as a SEDIMENTATION POND.

**Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| 60% Design Storage Capacity | .34 A.F. at 7351.0 ft. | .19 A.F. at 7322.3 ft. | 1.45 A.F. at 6761.5 ft. |
| 100% Sediment Capacity | .56 A.F. at 7354.83 ft. | .32 A.F. at 7325.33 ft. | 2.42 A.F. at 6765.3 ft. |

**Principle and emergency spillway elevations.**

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| Principal Spillway Elevation | 7354.83 | 7325.33 | 6766.3 |
| Emergency Spillway Elevation | 7363.33 | 7334.2 | 6770.0 |

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | Page 1 of 2 |
|---|---|---|

**Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| **Water Elevation** | 7353.97 | 7328.39 | 6763.07 |
| **Discharging** | NO | NO | No |
| **Inlet/Outlet Condition** | Good | Good | Good |
| **Slope conditions** | Good | Good | Good |

*See "Hydrologic Monitoring Data" report submitted to DOGM quarterly for monitoring information.

**Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| **Sediment Volume** | 0.18 AF | 0.05 AF | 1.04 AF |
| **Remaining Sediment Storage Capacity** | 0.38 AF | 0.27 AF | 1.38 AF |
| **Water Impounded** | 0.25 AF | 0.57 AF | 0.72 AF |
| **Changes, Comments,** | Pond is functioning Normally at this time. | Pond is functioning normally. | |

NORTH AND SOUTH PONDS WERE CLEANED IN THE FOURTH QUARTER OF 2000. THE COTTONWOOD MINE WAS IDLED IN 2001, SO THE ONLY WATER THAT REPORTS TO THE PONDS IS RUN-OFF DURING A STORM EVENT.

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 10/8/02
**Signature:** Richard Cullum **Date:** 10/15/02

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| Permit Number | ACT/015/019 | Report Date | JUNE 14, 2002 |
| Mine Name | Cottonwood/Wilberg | | |
| Company Name | PacifiCorp | | |
| Impoundment Name... | North Pond | South Pond | Waste Rock Pond |
| Impoundment Number. | | | |
| UPDES Permit Number | | UT 0022896-003A | UT 0022896-005 |
| MSHA ID NUMBER..... | 1211-UT-09-01211-01 | 1211-UT-09-01211-02 | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| Inspection Date | JUNE 11, 2002 |
| Inspected By | Rick Cullum/ John Christensen |
| Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | 2nd Quarter Inspection 2002 |

**1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

**North Pond**: No instabilities or weaknesses observed.

**South Pond**: No instabilities or weaknesses observed.

**Waste Rock Site** Pond: No instabilities observed.

Required for an impoundment which functions as a SEDIMENTATION POND.

**Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| 60% Design Storage Capacity | .34 A.F. at 7351.0 ft. | .19 A.F. at 7322.3 ft. | 1.45 A.F. at 6761.5 ft. |
| 100% Sediment Capacity | .56 A.F. at 7354.83 ft. | .32 A.F. at 7325.33 ft. | 2.42 A.F. at 6765.3 ft. |

**Principle and emergency spillway elevations.**

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| Principal Spillway Elevation | 7354.83 | 7325.33 | 6766.3 |
| Emergency Spillway Elevation | 7363.33 | 7334.2 | 6770.0 |

**Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| **Water Elevation** | 7350.87 | 7324.94 | Pond is dry |
| **Discharging** | NO | NO | No |
| **Inlet/Outlet Condition** | Good | Good | Good |
| **Slope conditions** | Good | Good | Good |

*See "Hydrologic Monitoring Data" report submitted to DOGM quarterly for monitoring information.

**Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| **Sediment Volume** | 0.18 AF | 0.05 AF | 1.04 AF |
| **Remaining Sediment Storage Capacity** | 0.38 AF | 0.27 AF | 1.38 AF |
| **Water Impounded** | 0.04 AF | 0.06 AF | 0.00 AF |
| **Changes, Comments,** | Pond is functioning Normally at this time. | Pond is functioning normally. | Pond was dry at time of inspection |

NORTH AND SOUTH PONDS WERE CLEANED IN THE FOURTH QUARTER OF 2000.

**Qualification Statement**

PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 165651 STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 7/9/02

**Signature:** Richard Cullum **Date:** 7-9-02

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| Permit Number | ACT/015/019 | Report Date | June 11, 2002 |
| Mine Name | Cottonwood/Wilberg | | |
| Company Name | PacifiCorp | | |
| Impoundment Identification | Impoundment Name | COTTONWOOD CANYON<br>NORTH BASIN | SOUTH BASIN |
| | Impoundment Number | | |
| | UPDES Permit Number | UT-0022896-002A | |
| | MSHA ID Number | | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| Inspection Date | JUNE 11, 2002 |
| Inspected By | Rick Cullum/ John Christensen |
| Reason for Inspection<br>(Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | Second Quarter 2002 Inspection |

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

No unstable or structural weaknesses found.

Required for an impoundment which functions as a SEDIMENTATION POND.

2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

| | North Basin | South Basin |
|---|---|---|
| 60% Design Storage Capacity | 0.028 A.F. | 0.069 A.F. |
| 100% Sediment Capacity | 0.047 A.F. | 0.115 A.F. |

3. Principle and emergency spillway elevations.

| | North Basin | South Basin |
|---|---|---|
| Principle Spillway Elevation (F.A.S.L.): | 7230.5 | 7223.6 |
| Emergency Spillway Elevation | 7230.5 | 7223.6 |

**4. Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | North Basin | South Basin |
|---|---|---|
| **Water Elevation** | None | None |
| **Discharging** | No | No |
| **Inlet, Outlet Conditions** | Good | Good |
| **Outslope Conditions** | Good | Good |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

**5. Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | North Basin | South Basin |
|---|---|---|
| **Sediment Volume** | 0 A.F. | 0 A.F. |
| **Remaining Sediment Storage Capacity** | 0 A.F. | 0 A.F. |
| **Changes, Comments, etc.** | BOTH BASINS WERE RECLAIMED IN MAY OF 2002. | |

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 165651 STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 7/9/02

**Signature:** Richard Cullum **Date:** 7-9-02

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| Permit Number | ACT/015/019 | Report Date | Mar. 27, 2002 |
| Mine Name | Cottonwood/Wilberg | | |
| Company Name | PacifiCorp | | |
| Impoundment Name... | North Pond | South Pond | Waste Rock Pond |
| Impoundment Number. | | | |
| UPDES Permit Number | | UT 0022896-003A | UT 0022896-005 |
| MSHA ID NUMBER..... | 1211-UT-09-01211-01 | 1211-UT-09-01211-02 | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| Inspection Date | Mar. 13, 2002 |
| Inspected By | Rick Cullum/ John Christensen |
| Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | 1st Quarter Inspection 2002 |

1. **Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

**North Pond:** No instabilities or weaknesses observed.

**South Pond:** No instabilities or weaknesses observed.

**Waste Rock Site** Pond: No instabilities observed.

Required for an impoundment which functions as a SEDIMENTATION POND.

**Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| 60% Design Storage Capacity | .34 A.F. at 7351.0 ft. | .19 A.F. at 7322.3 ft. | 1.45 A.F. at 6761.5 ft. |
| 100% Sediment Capacity | .56 A.F. at 7354.83 ft. | .32 A.F. at 7325.33 ft. | 2.42 A.F. at 6765.3 ft. |

**Principle and emergency spillway elevations.**

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| Principal Spillway Elevation | 7354.83 | 7325.33 | 6766.3 |
| Emergency Spillway Elevation | 7363.33 | 7334.2 | 6770.0 |

**Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| **Water Elevation** | 7352.29 | 7326.79 | 6760.55 |
| **Discharging** | NO | NO | No |
| **Inlet/Outlet Condition** | Good | Good | Good |
| **Slope conditions** | Good | Good | Good |

*See "Hydrologic Monitoring Data" report submitted to DOGM quarterly for monitoring information.

**Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | North Pond | South Pond | Waste Rock Pond |
|---|---|---|---|
| **Sediment Volume** | 0.18 AF | 0.05 AF | 1.04 AF |
| **Remaining Sediment Storage Capacity** | 0.38 AF | 0.27 AF | 1.38 AF |
| **Water Impounded** | 0.12 AF | 0.35 AF | 0.04 AF |
| **Changes, Comments,** | Pond is functioning Normally at this time. Pond frozen. | Pond is functioning normally. Pond frozen. | Pond in functioning normally. |

NORTH AND SOUTH PONDS WERE CLEANED IN THE FOURTH QUARTER OF 2000.

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 165651 STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 4/8/02

**Signature:** Richard Cullum **Date:** 4-8-02

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| Permit Number | ACT/015/019 | Report Date | Mar. 27, 2002 |
| Mine Name | Cottonwood/Wilberg | | |
| Company Name | PacifiCorp | | |
| Impoundment Identification | Impoundment Name | COTTONWOOD CANYON<br>NORTH BASIN SOUTH BASIN | |
| | Impoundment Number | \| | |
| | UPDES Permit Number | UT-0022896-002A \| | |
| | MSHA ID Number | \| | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| Inspection Date | Mar. 13, 2002 |
| Inspected By | Rick Cullum/ John Christensen |
| **Reason for Inspection**<br>(Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | First Quarter 2002 Inspection |

1. **Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

No unstable or structural weaknesses found.

Required for an impoundment which functions as a SEDIMENTATION POND.

2. **Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

| | North Basin | South Basin |
|---|---|---|
| 60% Design Storage Capacity | 0.028 A.F. | 0.069 A.F. |
| 100% Sediment Capacity | 0.047 A.F. | 0.115 A.F. |

3. **Principle and emergency spillway elevations.**

| | North Basin | South Basin |
|---|---|---|
| Principle Spillway Elevation (F.A.S.L.): | 7230.5 | 7223.6 |
| Emergency Spillway Elevation | 7230.5 | 7223.6 |

4. **Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | North Basin | South Basin |
|---|---|---|
| **Water Elevation** | None | None |
| **Discharging** | No | No |
| **Inlet, Outlet Conditions** | Good | Good |
| **Outslope Conditions** | Good | Good |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

5. **Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | North Basin | South Basin |
|---|---|---|
| **Sediment Volume** | 0 A.F. | 0 A.F. |
| **Remaining Sediment Storage Capacity** | 0 A.F. | 0 A.F. |

**Changes, Comments, etc.**

BOTH BASINS WERE CLEANED IN THE THE 4TH QUARTER Of 2000. Both basins were dry at time of inspection.

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 165651 STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 4/8/02

**Signature:** Richard Cullum **Date:** 4-8-02

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| **Permit Number** | ACT/015/018 | **Report Date** | DEC. 30, 2002 |
| **Mine Name** | Deer Creek Mine | | |
| **Company Name** | Energy West Mining | | |
| **Impoundment Identification** | **Impoundment Name** | **Mine Site Pond:** | **Waste Rock Pond:** |
| | **Impoundment Number** | | |
| | **UPDES Permit Number** | UT-0023604-001 | |
| | **MSHA ID Number** | N/A | N/A |

## IMPOUNDMENT INSPECTION

| | | |
|---|---|---|
| **Inspection Date** | **Mine Site:**12/18/02 | **Waste Rock Pond:**12/18/02 |
| **Inspected By** | Rick Cullum / John Christensen | |
| **Reason for Inspection** (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | Fourth Quarter 2002 Inspection | |

**1.** Describe any appearance of any instability, structural weakness, or any other hazardous condition.

| | Mine Site Pond | Waste Rock Pond |
|---|---|---|
| **Conditions, Comments Etc.** | No hazards observed. | No hazards observed. |

Required for an impoundment which functions as a SEDIMENTATION POND.

Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

| | Mine Site Pond: | Waste Rock Pond: |
|---|---|---|
| **60% Design Storage Capacity** | 1.87 A.F. at 7213.1 ft. | .59 A.F. at 6312.7 ft. |
| **100% Sediment Capacity** | 3.12 A.F. at 7216.0 ft. | .98 A.F. at 6313.45 ft. |

Principle and emergency spillway elevations.

| | Mine Site Pond | Waste Rock Pond |
|---|---|---|
| **Principle Spillway Elevation (F.A.S.L.):** | 7218.64 | 6318.0 |
| **Emergency Spillway Elevation** | 7232.03 | 6318.0 |

**Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | Mine Site Pond | Waste Rock Pond |
|---|---|---|
| **Water Elevation** | 7221.84 | None |
| **Discharging** | Yes | Never |
| **Inlet, Outlet, Spillway Conditions** | Good | Good |
| **Out slope Conditions** | No Change | No Change |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

**Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | Mine Site Pond | Waste Rock Pond |
|---|---|---|
| **Sediment Volume** | 0 A.F. | None |
| **Remaining Sediment Storage Capacity** | 3.12 A.F. | 0.98 A.F. |
| **Water impounded** | 6.15 A.F. | NONE |
| **Changes, Comments, etc.** | The pond was cleaned in the fourth quarter of 2002 | No change from last Inspection. |

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 1/8/03

**Signature:** Richard Cullum **Date:** 1/9/03

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| **Permit Number** | ACT/015/018 | **Report Date** | OCT. 7, 2002 |
| **Mine Name** | Deer Creek Mine | | |
| **Company Name** | Energy West Mining | | |
| **Impoundment Identification** | **Impoundment Name** | **Mine Site Pond:** | **Waste Rock Pond:** |
| | **Impoundment Number** | | |
| | **UPDES Permit Number** | UT-0023604-001 | |
| | **MSHA ID Number** | N/A | N/A |

## IMPOUNDMENT INSPECTION

| | | |
|---|---|---|
| **Inspection Date** | **Mine Site:**9/26/02 | **Waste Rock Pond:**9/26/02 |
| **Inspected By** | Rick Cullum / John Christensen | |
| **Reason for Inspection** (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | Third Quarter 2002 Inspection | |

**1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

| | **Mine Site Pond** | **Waste Rock Pond** |
|---|---|---|
| **Conditions, Comments Etc.** | No hazards observed. | No hazards observed. |

**Required for an impoundment which functions as a SEDIMENTATION POND.**

**Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

| | **Mine Site Pond:** | **Waste Rock Pond:** |
|---|---|---|
| **60% Design Storage Capacity** | 1.87 A.F. at 7213.1 ft. | .59 A.F. at 6312.7 ft. |
| **100% Sediment Capacity** | 3.12 A.F. at 7216.0 ft. | .98 A.F. at 6313.45 ft. |

**Principle and emergency spillway elevations.**

| | **Mine Site Pond** | **Waste Rock Pond** |
|---|---|---|
| **Principle Spillway Elevation (F.A.S.L.):** | 7218.64 | 6318.0 |
| **Emergency Spillway Elevation** | 7232.03 | 6318.0 |

# IMPOUNDMENT INSPECTION AND CERTIFIED REPORT

**Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | Mine Site Pond | Waste Rock Pond |
|---|---|---|
| **Water Elevation** | 7218.68 | |
| **Discharging** | Yes | Never |
| **Inlet, Outlet, Spillway Conditions** | Good | Good |
| **Out slope Conditions** | No Change | No Change |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

**Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | Mine Site Pond | Waste Rock Pond |
|---|---|---|
| **Sediment Volume** | 2.71 A.F. | None |
| **Remaining Sediment Storage Capacity** | 0.41 A.F. | 0.98 A.F. |
| **Water impounded** | 1.66 A.F. | NONE |
| **Changes, Comments, etc.** | The pond was being decanted in preparation for cleaning. | No change from last Inspection. |

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 10/8/02

**Signature:** Richard Cullum **Date:** 10/15/02

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| **Permit Number** | ACT/015/018 | **Report Date** | JUNE 27, 2002 |
| **Mine Name** | Deer Creek Mine | | |
| **Company Name** | Energy West Mining | | |
| **Impoundment Identification** | **Impoundment Name** | **Mine Site Pond:** | **Waste Rock Pond:** |
| | **Impoundment Number** | | |
| | **UPDES Permit Number** | UT-0023604-001 | |
| | **MSHA ID Number** | N/A | N/A |

## IMPOUNDMENT INSPECTION

| | | |
|---|---|---|
| **Inspection Date** | **Mine Site:6/14/02** | **Waste Rock Pond:3/12/02** |
| **Inspected By** | Rick Cullum / John Christensen | |
| **Reason for Inspection** (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | Second Quarter 2002 Inspection | |

**1.** **Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

| | **Mine Site Pond** | **Waste Rock Pond** |
|---|---|---|
| **Conditions, Comments Etc.** | No hazards observed. | No hazards observed. |

Required for an impoundment which functions as a SEDIMENTATION POND.

**Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

| | **Mine Site Pond:** | **Waste Rock Pond:** |
|---|---|---|
| **60% Design Storage Capacity** | 1.87 A.F. at 7213.1 ft. | .59 A.F. at 6312.7 ft. |
| **100% Sediment Capacity** | 3.12 A.F. at 7216.0 ft. | .98 A.F. at 6313.45 ft. |

**Principle and emergency spillway elevations.**

| | **Mine Site Pond** | **Waste Rock Pond** |
|---|---|---|
| **Principle Spillway Elevation (F.A.S.L.):** | 7218.64 | 6318.0 |
| **Emergency Spillway Elevation** | 7232.03 | 6318.0 |

# IMPOUNDMENT INSPECTION AND CERTIFIED REPORT

**Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | Mine Site Pond | Waste Rock Pond |
|---|---|---|
| **Water Elevation** | 7224.88 | |
| **Discharging** | Yes | Never |
| **Inlet, Outlet, Spillway Conditions** | Good | Good |
| **Out slope Conditions** | No Change | No Change |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

**Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | Mine Site Pond | Waste Rock Pond |
|---|---|---|
| **Sediment Volume** | 2.71 A.F. | None |
| **Remaining Sediment Storage Capacity** | 0.41 A.F. | 0.98 A.F. |
| **Water impounded** | 2.49 A.F. | NONE |
| **Changes, Comments, etc.** | No changes from last inspection. | No change from last Inspection |

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 7/8/02

**Signature:** Richard Cullum **Date:**

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| Permit Number | ACT/015/018 | Report Date | Mar. 27, 2002 |
| Mine Name | Deer Creek Mine | | |
| Company Name | Energy West Mining | | |
| Impoundment Identification | Impoundment Name | Mine Site Pond: | Waste Rock Pond: |
| | Impoundment Number | | |
| | UPDES Permit Number | UT-0023604-001 | |
| | MSHA ID Number | N/A | N/A |

## IMPOUNDMENT INSPECTION

| | | |
|---|---|---|
| Inspection Date | Mine Site:3/12/02 | Waste Rock Pond:3/12/02 |
| Inspected By | Rick Cullum / John Christensen | |
| Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | First Quarter 2002 Inspection | |

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

| | Mine Site Pond | Waste Rock Pond |
|---|---|---|
| Conditions, Comments Etc. | No hazards observed. | No hazards observed. |

Required for an impoundment which functions as a SEDIMENTATION POND.

Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

| | Mine Site Pond: | Waste Rock Pond: |
|---|---|---|
| 60% Design Storage Capacity | 1.87 A.F. at 7213.1 ft. | .59 A.F. at 6312.7 ft. |
| 100% Sediment Capacity | 3.12 A.F. at 7216.0 ft. | .98 A.F. at 6313.45 ft. |

Principle and emergency spillway elevations.

| | Mine Site Pond | Waste Rock Pond |
|---|---|---|
| Principle Spillway Elevation (F.A.S.L.): | 7218.64 | 6318.0 |
| Emergency Spillway Elevation | 7232.03 | 6318.0 |

**Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | Mine Site Pond | Waste Rock Pond |
|---|---|---|
| **Water Elevation** | 7221.35<br>Top of ice | None |
| **Discharging** | Yes | Never |
| **Inlet, Outlet, Spillway Conditions** | Good | Good |
| **Out slope Conditions** | No Change | No Change |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

**Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | Mine Site Pond | Waste Rock Pond |
|---|---|---|
| **Sediment Volume** | 1.68 A.F. | None |
| **Remaining Sediment Storage Capacity** | 1.44 A.F. | 0.98 A.F. |
| **Water impounded** | 4.07 A.F. | NONE |
| **Changes, Comments, etc.** | No changes from last inspection. | No change from last Inspection |

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 4/8/02

**Signature:** Richard Cullen **Date:** 4-8-02

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| **Permit Number** | ACT/015/017 | **Report Date** | DEC. 18, 2002 |
| **Mine Name** | Des Bee Dove | | |
| **Company Name** | Energy West Mining Company | | |
| **Impoundment Identification** | **Impoundment Name** | **Mine Site Pond** | |
| | **Impoundment Number** | | |
| | **UPDES Permit Number** | UT-0023591 | |
| | **MSHA ID Number** | | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| **Inspection Date** | 12/18/02 |
| **Inspected By** | Rick Cullum/John Christensen |
| **Reason for Inspection** (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | Fourth Quarter 2002 Inspection |

**1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

There are no visible signs of weakness or instability.

| | |
|---|---|
| Required for an impoundment which functions as a SEDIMENTATION POND. | **Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**<br><br>**60% Design Storage Capacity** 1.2 A.F. at 6756<br><br>**100% Sediment Capacity** 2.0 A.F. at 6757 |
| | **Principle and emergency spillway elevations.**<br><br>**Principle Spillway Elevation (F.A.S.L.):** 6757.0<br><br>**Emergency Spillway Elevation:(F.A.S.L.):** 6771.8 |

**Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities

associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | |
|---|---|
| **Water Elevation** | 6759.94 (ice level) |
| **Discharging** | No |
| **Inlet, Outlet Conditions** | Good |
| **Slope conditions** | Good |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

**Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | |
|---|---|
| **Sediment Volume:** | 1.95 |
| **Remaining Sediment Storage Capacity:** | .05 |
| **Water Impoundment:** | 2.85 A.F. |

**Changes or Comments:** The pond was partially cleaned in the 3rd Quarter of 2002.

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 1/8/03

**Signature:** Richard Cullum **Date:** 1-9-03

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| **Permit Number** | ACT/015/017 | **Report Date** | OCT. 7, 2002 |
| **Mine Name** | Des Bee Dove | | |
| **Company Name** | Energy West Mining Company | | |
| **Impoundment Identification** | **Impoundment Name** | **Mine Site Pond** | |
| | **Impoundment Number** | | |
| | **UPDES Permit Number** | UT-0023591 | |
| | **MSHA ID Number** | | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| **Inspection Date** | 9/26/02 |
| **Inspected By** | Rick Cullum/John Christensen |
| **Reason for Inspection** (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | Third Quarter 2002 Inspection |

**1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

There are no visible signs of weakness or instability.

| | |
|---|---|
| **Required for an impoundment which functions as a SEDIMENTATION POND.** | **Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**<br><br>**60% Design Storage Capacity** 1.2 A.F. at 6756<br><br>**100% Sediment Capacity** 2.0 A.F. at 6757 |
| | **Principle and emergency spillway elevations.**<br><br>**Principle Spillway Elevation (F.A.S.L.):** 6757.0<br><br>**Emergency Spillway Elevation:(F.A.S.L.):** 6771.8 |

**Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities

associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | |
|---|---|
| **Water Elevation** | 6759.24 |
| **Discharging** | No |
| **Inlet, Outlet Conditions** | Good |
| **Slope conditions** | Good |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

**Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | |
|---|---|
| **Sediment Volume:** | 1.95 |
| **Remaining Sediment Storage Capacity:** | .05 |
| **Water Impoundment:** | 2.05 A.F. |

**Changes or Comments:** The pond was partially cleaned in the 3rd Quarter of 2002.

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 10/8/02

**Signature:** Richard Cullum **Date:** 10/15/02

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| **Permit Number** | ACT/015/017 | **Report Date** | June 11, 2002 |
| **Mine Name** | Des Bee Dove | | |
| **Company Name** | Energy West Mining Company | | |
| **Impoundment Identification** | **Impoundment Name** | **Mine Site Pond** | |
| | **Impoundment Number** | | |
| | **UPDES Permit Number** | UT-0023591 | |
| | **MSHA ID Number** | | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| **Inspection Date** | 6/11/02 |
| **Inspected By** | Rick Cullum/John Christensen |
| **Reason for Inspection** (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | Second Quarter 2002 Inspection |

**1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

There are no visible signs of weakness or instability.

| | |
|---|---|
| Required for an impoundment which functions as a SEDIMENTATION POND. | **Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**<br><br>**60% Design Storage Capacity** 1.2 A.F. at 6756<br><br>**100% Sediment Capacity** 2.0 A.F. at 6757 |
| | **Principle and emergency spillway elevations.**<br><br>**Principle Spillway Elevation (F.A.S.L.):** 6757.0<br><br>**Emergency Spillway Elevation:(F.A.S.L.):** 6771.8 |

**Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities

associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | |
|---|---|
| **Water Elevation** | 0 |
| **Discharging** | No |
| **Inlet, Outlet Conditions** | Good |
| **Slope conditions** | Good |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

**Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | |
|---|---|
| **Sediment Volume:** | 2.57 |
| **Remaining Sediment Storage Capacity:** | 0 |
| **Water Impoundment:** | (0) A.F. |

**Changes or Comments:** Pond was dry at time of inspection. The pond is scheduled to be cleaned in the 3rd Quarter of 2002.

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 165651 STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 7/9/02

**Signature:** Richard Cullum **Date:** 7-9-02

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| Permit Number | ACT/015/017 | Report Date | Mar. 27, 2002 |
| Mine Name | Des Bee Dove | | |
| Company Name | Energy West Mining Company | | |
| Impoundment Identification | Impoundment Name | Mine Site Pond | |
| | Impoundment Number | | |
| | UPDES Permit Number | UT-0023591 | |
| | MSHA ID Number | | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| Inspection Date | 3/13/02 |
| Inspected By | Rick Cullum/John Christensen |
| Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | First Quarter 2002 Inspection |

1. **Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

There are no visible signs of weakness or instability.

| | |
|---|---|
| Required for an impoundment which functions as a SEDIMENTATION POND. | **Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**<br><br>**60% Design Storage Capacity** 1.2 A.F. at 6756<br><br>**100% Sediment Capacity** 2.0 A.F. at 6757 |
| | **Principle and emergency spillway elevations.**<br><br>**Principle Spillway Elevation (F.A.S.L.):** 6757.0<br><br>**Emergency Spillway Elevation: (F.A.S.L.):** 6771.8 |

**Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities

associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | |
|---|---|
| **Water Elevation** | 6757.09 |
| **Discharging** | No |
| **Inlet, Outlet Conditions** | Good |
| **Slope conditions** | Good |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

**Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | |
|---|---|
| **Sediment Volume:** | 2.57 |
| **Remaining Sediment Storage Capacity:** | 0 |
| **Water Impoundment:** | (0) A.F. |

**Changes or Comments:** Pond was being drained at time of inspection and the remaining water was at south end of pond.

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 4/8/02

**Signature:** Richard Cullum **Date:** 4-8-02

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| **Permit Number** | ACT/015/009 | **Report Date** | DEC. 30, 2002 |
| **Mine Name** | Trail Mountain Mine | | |
| **Company Name** | Energy West Mining Company | | |
| **Impoundment Identification** | **Impoundment Name** | **Trail Mountain Mine Pond:** | |
| | **Impoundment Number** | | |
| | **UPDES Permit Number** | UT-G04003-001 | |
| | **MSHA ID Number** | N/A | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| **Inspection Date** | DEC. 18, 2002 |
| **Inspected By** | John Christensen / Rick Cullum/ |
| **Reason for Inspection** (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | Fourth Quarter 2002 Inspection |

**1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

No unstable or structural weaknesses found.

Required for an impoundment which functions as a SEDIMENTATION POND.

**2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

**60% Design Storage Capacity** 0.282 A.F. at 7182

**100% Sediment Capacity** 0.47 A.F. at 7183.6

**3. Principle and emergency spillway elevations.**

**Principle Spillway Elevation (F.A.S.L.):** 7186.6

**Emergency Spillway Elevation:(F.A.S.L.):** 7194.6

**4. Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | |
|---|---|
| **Water Elevation** | 7182.83 (ice level) |
| **Discharging** | No |
| **Inlet, Outlet Conditions** | Good |
| **Slope conditions** | Good |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

**5. Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | |
|---|---|
| **Sediment Volume** | 0.28 A.F. |
| **Remaining Sediment Storage Capacity** | 0.19 A.F. |
| **Water Impounded** | .04 A.F. |
| **Changes, comments, etc.** | Mining has seized at Trail Mtn. Operations only Storm run off will run into the pond. |

There has been no changes to the pond or dam since the last inspection.

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 1/8/03
**Signature** Richard Cullum **Date:** 1-9-03

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| **Permit Number** | ACT/015/009 | **Report Date** | OCT. 7, 2002 |
| **Mine Name** | Trail Mountain Mine | | |
| **Company Name** | Energy West Mining Company | | |
| **Impoundment Identification** | **Impoundment Name** | **Trail Mountain Mine Pond:** | |
| | **Impoundment Number** | | |
| | **UPDES Permit Number** | UT-G04003-001 | |
| | **MSHA ID Number** | N/A | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| **Inspection Date** | SEPT. 26, 2002 |
| **Inspected By** | John Christensen / Rick Cullum/ |
| **Reason for Inspection** (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | Third Quarter 2002 Inspection |

**1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

No unstable or structural weaknesses found.

Required for an impoundment which functions as a SEDIMENTATION POND.

**2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

**60% Design Storage Capacity** 0.282 A.F. at 7182

**100% Sediment Capacity** 0.47 A.F. at 7183.6

**3. Principle and emergency spillway elevations.**

**Principle Spillway Elevation (F.A.S.L.):** 7186.6

**Emergency Spillway Elevation:(F.A.S.L.):** 7194.6

**4. Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | |
|---|---|
| **Water Elevation** | 7183.83 |
| **Discharging** | No |
| **Inlet, Outlet Conditions** | Good |
| **Slope conditions** | Good |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

**5. Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | |
|---|---|
| **Sediment Volume** | 0.28 A.F. |
| **Remaining Sediment Storage Capacity** | 0.19 A.F. |
| **Water Impounded** | (.14) A.F. |
| **Changes, comments, etc.** | Mining has seized at Trail Mtn. Operations only Storm run off will run into the pond. |

There has been no changes to the pond or dam since the last inspection.

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 10/8/02
**Signature:** Richard Cullum **Date:** 10/15/02

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| **Permit Number** | ACT/015/009 | **Report Date** | June 11, 2002 |
| **Mine Name** | Trail Mountain Mine | | |
| **Company Name** | Energy West Mining Company | | |
| **Impoundment Identification** | **Impoundment Name** | **Trail Mountain Mine Pond:** | |
| | **Impoundment Number** | | |
| | **UPDES Permit Number** | UT-G04003-001 | |
| | **MSHA ID Number** | N/A | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| **Inspection Date** | June 11, 2002 |
| **Inspected By** | John Christensen / Rick Cullum/ |
| **Reason for Inspection** (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | Second Quarter 2002 Inspection |

**1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

No unstable or structural weaknesses found.

**Required for an impoundment which functions as a SEDIMENTATION POND.**

**2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

**60% Design Storage Capacity** 0.282 A.F. at 7182

**100% Sediment Capacity** 0.47 A.F. at 7183.6

**3. Principle and emergency spillway elevations.**

**Principle Spillway Elevation (F.A.S.L.):** 7186.6

**Emergency Spillway Elevation:(F.A.S.L.):** 7194.6

**4. Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | |
|---|---|
| **Water Elevation** | 7181.93 |
| **Discharging** | No |
| **Inlet, Outlet Conditions** | Good |
| **Slope conditions** | Good |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

**5. Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | |
|---|---|
| **Sediment Volume** | 0.28 A.F. |
| **Remaining Sediment Storage Capacity** | 0.19 A.F. |
| **Water Impounded** | (0) A.F. |
| **Changes, comments, etc.** | Mining has seized at Trail Mtn. Operations only Storm run off will run into the pond. |

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 7/9/02
**Signature:** Richard Cullum **Date:** 7-10-02

| IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | | | Page 1 of 2 |
|---|---|---|---|
| **Permit Number** | ACT/015/009 | **Report Date** | Mar. 27, 2002 |
| **Mine Name** | Trail Mountain Mine | | |
| **Company Name** | Energy West Mining Company | | |
| **Impoundment Identification** | **Impoundment Name** | **Trail Mountain Mine Pond:** | |
| | **Impoundment Number** | | |
| | **UPDES Permit Number** | UT-G04003-001 | |
| | **MSHA ID Number** | N/A | |

## IMPOUNDMENT INSPECTION

| | |
|---|---|
| **Inspection Date** | Mar. 13, 2002 |
| **Inspected By** | John Christensen / Rick Cullum/ |
| **Reason for Inspection** (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction) | First Quarter 2002 Inspection |

1. **Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

No unstable or structural weaknesses found.

**Required for an impoundment which functions as a SEDIMENTATION POND.**

2. **Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

**60% Design Storage Capacity** 0.282 A.F. at 7182

**100% Sediment Capacity** 0.47 A.F. at 7183.6

3. **Principle and emergency spillway elevations.**

**Principle Spillway Elevation (F.A.S.L.):** 7186.6

**Emergency Spillway Elevation:(F.A.S.L.):** 7194.6

4. **Field Information.** Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

| | |
|---|---|
| **Water Elevation** | 7183.90 Top of ice |
| **Discharging** | No |
| **Inlet, Outlet Conditions** | Good |
| **Slope conditions** | Good |

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

5. **Field Evaluation.** Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

| | |
|---|---|
| **Sediment Volume** | 0.28 A.F. |
| **Remaining Sediment Storage Capacity** | 0.19 A.F. |
| **Water Impounded** | 0.15 A.F. |
| **Changes, comments, etc.** | Mining has seized at Trail Mtn. Operations only Storm run off will run into the pond. |

**Qualification Statement**

LICENSED PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 165651 STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

**Signature:** John Christensen **Date:** 4/8/02

**Signature:** Richard Cullum **Date:** 4-8-02

# APPENDIX B

## Reporting of Technical Data

Including monitoring data, reports, maps, and other information
As required under the approved plan or as required by the Division

In accordance with the requirement of R645-310-130 and R645-301-140

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# ENERGY WEST MINING COMPANY
# VEGETATION MONITORING
# 2002

VEGETATION MONITORING REPORTS FOR THE
COTTONWOOD MINE, DES-BEE-DOVE, DEER CREEK MINE,
TRAIL MOUNTAIN MINE, COTTONWOOD CANYON & RILDA CANYON

*Prepared by*

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*for*

*ENERGY WEST MINING COMPANY*
P.O. Box 310
Huntington, Utah 84528

March 2003

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# INTRODUCTION

The following document addresses the results of vegetation monitoring of seeded areas for the year 2002. Listed below are the areas monitored and reported within this document.

**Cottonwood Mine Area**

Reference Area
Storage Yard Slope
Parking Lot Slope
Road/Silo Pad Slope
Tipple Area Slopes
Sediment Pond Banks
Ninth East Breakout
Waste Rock (Old) Cell 1
Waste Rock (Old) Cell 2
Waste Rock (Old) Cell 3
Waste Rock (Old) Cell 4
Waste Rock (Old) Cell 5
Waste Rock (Old) Cell 6
Waste Rock (Old) Cell 7
Waste Rock (Old) Berm 1
Waste Rock (Old) Berm 2
Waste Rock (Old) Berm 3
Waste Rock (Old) Berm 4
CTW Reference Area
CTW Soil Pile (A,C)
Waste Rock (New) Road Slopes
Waste Rock (New) Topsoil Stockpiles
Waste Rock (New) Subsoil Stockpiles
Waste Rock (New) Sediment Pond Banks
Refuse Berm 1991
Refuse Berm 1994
Refuse Berm 1996

**Cottonwood Canyon**

Soil Piles
Fan Portal Reclaimed Slope ('81)
Fan Portal Reference Area
Tube Conveyor
Belt Portal 1996
Portal (Diesel) 1996
Reclaimed Slope '98 (Final)

**Des-Bee-Dove Area**

Pumphouse (final)

**Deer Creek Mine**

Reference Area, Mixed Conifer
Reference Area, Riparian
Reference Area, Pinyon-Juniper
C2 Conveyor (IU 132-190) 1993
Riparian Areas
Sediment Pond Dam
Temp. Sediment Basin
Roadside Areas
Gate Areas Slope
Fan Road Slopes
Refuse Pile and Berm
Rock Slide and Berm
Water Plant Slope
Pipeline
Deer Canyon

Waste Rock Site
Reference Area
Access Road Slopes
Phase I Berm
Phase I Diversion

Drain Field Reconst
Field Drains Dec. '97

**Trail Mountain Mine**

Reference Area
Sediment Pond Outslope
Parking Ext. 1996
Soil Pile

**Rilda Canyon**

Pad Area Slopes 1996
Roadway Slopes 1996
Topsoil Pile 1995
(some roadway slopes)

# METHODS

Vegetation monitoring was conducted on revegetated sites for ENERGY WEST MINING COMPANY in the growing season of 2002. Quantitative and/or qualitative data were taken on each site, depending on the monitoring schedule. In other words, quantitative data sampling was not scheduled this year on some sites. Each data sheet will briefly describe the sample parameters specific to that site.

## QUALITATIVE DATA

Qualitative data were recorded on all sites. A qualitative data sheet for each site is included in this report and provides the following information: site name, general area, sample date, observers, slope, exposure, acreage, animal disturbance, erosion damage, cover, dominant plant species observed, and other pertinent notes.

When quantitative data were recorded, results are shown on these data sheets or reference to where the data is located.

### Site Name

The site name that is given correlates with ENERGY WEST'S maps of the area and can be used for future reference and sampling.

### Area

The "Area" on the data sheets is a reference to the general mine or property areas for quick reference and general use.

### Date

Sample dates are also provided. All sample dates are within the 2002 growing season.

### Workers

Lists the names of the individuals who recorded the data.

## Exposure

Exposure was recorded on each site. Often the site had several exposure differences. In those cases, "variable" was written for the exposure on the data sheet.

## Animal Disturbance

Values were given to the relative use by animal species at each site. The values and a brief explanation are given below.

| | |
|---|---|
| None - | (or negligible), no animal use was observed. |
| Slight - | only little animal use was observed by droppings, tracks, or cropped vegetation. |
| Moderate - | a fair degree of use was observed, mostly by the cropped vegetation. Several inches of production still remained available for use by the animals. |
| Severe - | animal use had taken nearly all of the available current year's production. |

## Erosion

Erosion of the area was also assessed by qualitative methods. Actual measurements, descriptive notes or values described below were given to each site.

| | |
|---|---|
| None - | (or negligible) no erosion was observed. |
| Slight - | small erosion rills beginning, usually less than 2:1 (2 inches wide by 1 inches deep). |
| Moderate - | erosional rills and gullies from 2:1 to 4:2. |
| Severe - | erosional rills and gullies over to 4:2 were observed. |

## Cover

Cover differences or notes may be given on the data sheet or references to the quantitative data.

## Dominant Plant Species Observed

Sometimes plant species that were observed, but were not encountered in the quadrats when sampling. Many of these species were recorded here. However, some of the species were also encountered in the quadrats. Therefore, for a list of all species on a given site, one should refer to both quantitative and qualitative data sheets.

## Notes

Site-specific, pertinent notes about each area were also taken i.e. identification of special considerations, areas of differential growth patterns, etc. Notes on specific methodologies on each site were also described here.

## Photographs

Color photographs were taken for each site and are included in this report for documentation.

# QUANTITATIVE DATA

## Cover and Composition

Cover estimates were made using ocular methods with randomly or regularly placed meter square quadrats. Total living cover, litter, rock and bareground were recorded. Cover by species was also recorded. Raw data summations were included in this report. They provide all means and standard deviations. Species composition was also assessed from the quadrats. Sample sizes were often kept consistent each year. Because these data are presented to observe only trends for revegetation success and soil stabilization, no attempt was made to achieve sample adequacy for each individual site.

## Woody Species Density

In some areas woody plant densities estimates were needed. Densities were recorded using the point-quarter distance method (Cottom and Curtis 1956). In the point-quarter method, random points were placed on the sample sites and measured into four quarters. The distances to the nearest woody plant species were then recorded in each quarter. The average point-to-individual distance was equal to the square root of the mean area per individual.

# RESULTS

To be consistent with previous years, data sheets for qualitative and quantitative (including raw data) sampling are included in this report. This gives the reviewer an overall view of the revegetation success of each area. For results of the above parameters, refer to the site-specific data sheets.

# COTTONWOOD MINE AREA

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Reference Area

AREA: Cottonwood Mine

DATE: September 9-14, 2002

WORKERS: P. Collins, D. Oakley

SLOPE: 36 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Minimal

EROSION: Negligible

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Abies concolor*
*Amalanchier utahensis*
*Artemisia spinescens*
*Artemisia tridentata*
*Atriplex confertifolia*
*Chrysothamnus depressus*
*Chrysothamnus nauseosus*
*Ephedra viridis*
*Eriogonum corymbosum*
*Gutierrezia sarothrae*
*Juniperus osteosperma*
*Pinus edulis*
*Pseudotsuga menziesii*
*Rosa woodsii*
*Symphoricarpos oreophilus*

*Hedysarum occidentale var. canone*
*Galium boreale*
*Leptodactylon watsonii*

*Elymus salinus*
*Stipa hymenoides*

NOTES:
1) Sampled for qualitative data in 2002.
2) No major disturbance has disrupted this site.
3) Natural slides occur in area.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Storage Yard Slope

AREA: Cottonwood Mine (1988 Reveg. Area)

DATE:

WORKERS: P. Collins, D. Collins

SLOPE: 30 - 40 deg.

EXPOSURE: S & E

AREA: 1.3 acres

ANIMAL USE/DISTURBANCE:

EROSION: Mostly moderate.

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex confertifolia*
*Chrysothamnus nauseosus*
*Eriogonum corymbosum*

*Aster chilensis*
*Halogeton glomeratus*
*Penstemon palmeri*

*Agropyron cristatum*
*Elymus cinereus*
*Elymus lanceolatus*
*Elymus smithii*

NOTES:

1) Sampled for qualitative data only.

2) Different exposures supported different species. For example, the east exposures had a lot of Palmer penstemon and the north exposures had none.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Parking Lot Slope

AREA: Cottonwood Mine

DATE: September 9-14, 2002

WORKERS: P. Collins, D. Collins

SLOPE: 26 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE:

EROSION: Slight but controlled by rocks.

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*
*Atriplex confertifolia*

*Eriogonum corymbosum*
*Aster chilensis*

*Agropyron cristatum*
*Elymus cinereus*
*Elymus lanceolatus*
*Elymus hispidus*
*Elymus salinus*
*Elymus spicatus*
*Grindelia squarrosa*
*Stipa hymenoides*

NOTES:

1) Sampled for qualitative data.

2) Mostly weedy species because of erosion control measures (½-inch-plus rock cover) disturbed existing vegetation.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Road/Silo Pad Slope

AREA: Cottonwood Mine (1988 Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 35 deg.

EXPOSURE: SE

ACREAGE: 1.4 acre

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Moderate (see notes)

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex confertifolia*
*Eriogonum corymbosum*

*Aster chilensis*
*Penstemon palmeri*

*Elymus cinereus*
*Elymus smithii*
*Elymus spicatus*

NOTES:

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Tipple Area Slope

AREA: Cottonwood Mine (1988 Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 35 deg.

EXPOSURE: Variable

AREA: .1 acre

ANIMAL USE/DISTURBANCE: None

EROSION: Some moderate erosion on north side of the road.

COVER: (Cover not sampled this year) .

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex confertifolia*
*Chrysothamnus nauseosus*
*Eriogonum corymbosum*

*Aster chilensis*
*Halogeton glomeratus*

*Elymus smithii*
*Elymus junceus*
*Sporobolus airoides*
*Stipa hymenoides*

NOTES:

1) Sampled for qualitative data only this year.

2) Area was still active constantly changing and therefore, unstable for plant growth. It's a difficult place for desirable spp. to become established.(~00).

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Sediment Pond Banks

AREA: Cottonwood Mine (1988 Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 35 deg.

EXPOSURE: Variable

AREA: .9 acre

ANIMAL USE/DISTURBANCE:

EROSION: Slight

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*
*Eriogonum corymbosum*
*Salix exigua*

*Aster chilensis*
*Grindelia squarrosa*
*Halogeton glomeratus*
*Machaeranthera canescens*
*Malcomia africana*
*Penstemon palmeri*
*Salsola pestifer*

*Agropyron cristatum*
*Bromus inermis*
*Elymus cinereus*
*Elymus elymoides*
*Elymus hispidus*
*Elymus lanceolatus*
*Elymus smithii*
*Elymus spicatus*
*Stipa hymenoides*

NOTES:

1) We sampled for qualitative data this year.

2) Patchy vegetation growth patterns with some desirable and some weedy species. This is due to erosion control, regular pond maintenance to clean-out, and fluctuating water levels in the ponds. (~01).

3) The cover looked good on ponds that had not been disturbed.

7) Not near as many weedy species were present.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Ninth East Road Breakout Final 1999

AREA: Cottonwood Mine (1988 Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins, D. Collins

SLOPE: Variable

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE:

EROSION: Negligible, controlled well by plants

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Artemisia tridentata*
*Atriplex canescens*

*Aster chilensis*
*Cirsium sp.*
*Linum lewisii*
*Penstemon palmeri*
*Stipa pinnata*

*Agropyron cristatum*
*Elymus spicatus*
*Elymus lanceolatus*
*Elymus smithii*
*Poa fendleriana*
*Stipa hymenoides*

NOTES:

1) Qualitative sampling only this year.

2) There were lots of young (2 year old) sagebrush plants this year.

3) The site looks very good this year.

4) Good shrub establishment.

5) Good diversity of forbs, shrubs and grasses.

6) Erosion is being controlled by roughed ground techniques.

7) The lower 1/3 of the entire length of the reclaimed road had many more weeds and much fewer desirable species. It appeared that it did not receive seeds when it was seeded. I feel like because the poorer areas were on the "downhill" side of the road, the desirable species will more easily seed these portions of the road naturally.

8) The above was filling in considerably in 2002

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Cell #1

AREA: Cottonwood Mine Old Waste Rock Area (1983 Interim Reveg)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 0-1 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Slight to Moderate

EROSION: Negligible

COVER: (no quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

*Artemisia tridentata*
*Atriplex canescens*
*Chrysothamnus nauseosus*
*Ephedra viridis*
*Gutierrezia sarothrae*

*Agropyron cristatum*
*Elymus lanceolatus*
*Elymus smithii*
*Hilaria jamesii*

NOTES:

1) Sampled for qualitative data this year.

2) At first Dennis Oakley and I thought we would sample for "final" bond release and we planned it that way. Then we looked at the site and, because it was the 4th consecutive year of drought, the plants looked very dry. Furthermore, cover, productivity, and diversity appeared to be low compared to previous years.

3) Based on previous studies and scrutiny of data recorded, it is my opinion that it would be counter-productive to try and get cells and berms released at different times (or based on their respective reclamation dates). I tried separating and lumping the data several different ways to arrive at this conclusion. In other words, I think we should record the data and lump all the cells and berms together when the responsibility period has been completed.

4) Dennis and I then decided in a meeting to sample aggressively last year (2001) as though we may attempt bond release to see what the data reveal. If, in fact, we came up short on sample sizes it will not be too critical. We would then know how many samples to take in years 9 and 10 and whether or not we should receive final bond release.

5) All plots appeared to have more crested wheatgrass. This may be a result of climatic variations (drought).

6) There was some good precipitation a few days ago, but it appears it came too late to help with cover and production this year.

7) All the photographs of the cells were taken from west to east.

8) Grasses were small, dry and difficult to identify.

9) Cover, diversity, and production was low due to drought.

10) Grass species were in bad shape. Even the warm species grasses were dry and may not get green, flower and set seed this year.

11) Broom snakeweed appeared to be dying or severely stressed

12) We did not see all the species that we normally see due to dying out or possible dormancy due to drought conditions..

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Cell #2

AREA: Cottonwood Mine Old Waste Rock Area (1984 Interim Reveg)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 0-1 deg.

EXPOSURE: E

AREA: ~ 1 acre

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (no quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex canescens*
*Atriplex confertifolia*
*Artemisia tridentata*
*Gutierrezia sarothrae*

*Agropyron cristatum*
*Elymus lanceolatus*
*Elymus hispidus*
*Elymus smithii*
*Stipa hymenoides*

NOTES: .

1) Sampled for qualitative data in 2002.

2) See "Notes" in Cell 1.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Cell #3

AREA: Cottonwood Mine Old Waste Rock Area (1985 Interim Reveg)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 0-1 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex canescens*
*Gutierrezia sarothrae*
*Ephedra viridis*

*Agropyron cristatum*
*Elymus lanceolatus*
*Hilaria jamesii*
*Stipa hymenoides*
*Stipa comata*

NOTES:

1) Sampled for qualitative data in 2002.

2) See "Notes" in Cell 1.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Cell #4

AREA: Cottonwood Mine Old Waste Rock Area ('86 Interim Reveg)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 0 - 1 deg

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Moderate deer and rabbit use.

EROSION: negligible

COVER: (no quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*
*Gutierrezia sarothrae*
*Atriplex canescens*
*Cercocarpus montanus*

*Agropyron cristatum*
*Elymus smithii*
*Elymus lanceolatus*
*Hilaria jamesii*
*Stipa comata*
*Stipa hymenoides*

NOTES:

1) Sampled for qualitative data in 2002.

2) See "Notes" in Cell 1.

3) Much fewer shrubs when compared to Cell 1-3.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Cell #5 '89 (Reseeded) 93

AREA: Cottonwood Mine Old Waste Rock Area (Interim Reveg)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 0-1 deg

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Used by deer and rabbits mostly

EROSION: Negligible

COVER: (no quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex canescens*
*Gutierrezia sarothrae*

*Agropyron cristatum*
*Elymus lanceolatus*
*Elymus smithii*
*Hordeum jubatum*
*Stipa comata*

NOTES:

1) Sampled for qualitative data in 2002.

2) See "Notes" in Cell 1.

3) Some of the bare spots mentioned in previous years seemed larger, probably due to drought (~02).

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Cell #6 '89 (Reseeded) '93

AREA: Cottonwood Mine Waste Rock Area (Interim Reveg)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 0-1 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Used extensively by deer and rabbits.

EROSION: Negligible

COVER: (no quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex canescens*
*Atriplex confertifolia*
*Artemisia tridentata*
*Chrysothamnus nauseosus*
*Gutierrezia sarothrae*

*Agropyron cristatum*
*Elymus lanceolatus*
*Elymus cinereus*
*Elymus smithii*
*Stipa comata*
*Stipa hymenoides*

NOTES:

1) Sampled for qualitative data in 2002.

2) See "Notes" in Cell 1.

3) Some of the bare spots mentioned in previous years seemed larger, probably due to drought (~02).

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Cell #7 '92 Partial Cell #7 '93

AREA: Cottonwood Mine Old Waste Rock Area (Interim Reveg)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 0 - 2 deg

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible

COVER: (no quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex canescens*
*Artemisia tridentata*
*Ephedra viridis*
*Gutierrezia sarothrae*

*Agropyron cristatum*
*Elymus lanceolatus*
*Elymus smithii*
*Stipa comata*
*Stipa hymenoides*

NOTES:

1) Sampled for qualitative data in 2002.

2) See "Notes" in Cell 1.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Berm 1

AREA: Cottonwood Mine Old Waste Rock Area (1983 Interim Reveg)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 1-20 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (no quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex canescens*
*Gutierrezia sarothrae*
*Ephedra viridis*

*Malcomia africana*

*Elymus lanceolatus*

NOTES:

1) Sampled for qualitative data in 2002.

2) See "Notes" in Cell 1.

3) Some of the berm has been disturbed by gas companies previously. This disturbed area is comprised mostly of weeds with some woody species. (~00, ~01).

4) The north half of the berm has more weedy species. The south half is better.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Berm 2

AREA: Cottonwood Mine Old Waste Rock Area (1984 Interim Reveg)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 0-20 deg.

EXPOSURE: E & N

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (no quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

*Artemisia tridentata*
*Atriplex confertifolia*
*Atriplex canescens*
*Chrysothamnus nauseosus*

*Agropyron cristatum*
*Elymus lanceolatus*
*Elymus smithii*
*Stipa hymenoides*

NOTES:

1) Sampled for qualitative data in 2002.

2) See "Notes" in Cell 1.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Berm 3

AREA: Cottonwood Mine Old Waste Rock Area (1985 Interim Reveg)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 0-20 deg.

EXPOSURE: NE & SW

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (no quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

*Artemisia tridentata*
*Atriplex canescens*
*Cercocarpus montanus*
*Chrysothamnus nauseosus*
*Gutierrezia sarothrae*

*Machaeranthera canescens*

*Agropyron cristatum*
*Elymus smithii*
*Elymus lanceolatus*
*Stipa comata*
*Stipa hymenoides*

NOTES:

1) Sampled for qualitative data in 2002.

2) See "Notes" in Cell 1.

3) Lots of mature shrubs, less grass species.

4) Much more shrubs when compared to the Cells.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Berm 4

AREA: Cottonwood Mine Old Waste Rock Area ('86 Interim Reveg)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 28 deg.

EXPOSURE: N, E

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (no quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex canescens*
*Chrysothamnus nauseosus*
*Gutierrezia sarothrae*
*Ephedra viridis*

*Agropyron cristatum*
*Elymus lanceolatus*
*Elymus smithii*
*Elymus spicatus*
*Stipa hymenoides*

NOTES:

1) Sampled for qualitative data in 2002.

2) See "Notes" in Cell 1.

3) Lots of mature shrubs, less grass species.

4) Much more shrubs when compared to the Cells.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: CTW Reference Area

AREA: Cottonwood Mine Old Waste Rock Area

DATE: September 9-14, 2002

WORKERS: P. Collins, D. Collins

SLOPE: 1 - 5 deg

EXPOSURE: E

ANIMAL USE/DISTURBANCE:

EROSION: Slight, normal

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Cercocarpus montanus*
*Ephedra viridis*
*Juniperus osteosperma*
*Opuntia polyacantha*
*Pinus edulis*
*Yucca harrimaniae*

NOTES:

1) Qualitative data taken in 2002

2) Forbs (or all understory) virtually not seen. Drought had a big impact.

3) See raw data sheet notes (2001) for ideas about bond release and sample design.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: CTW Soil Pile (A,C) '94

AREA: Cottonwood Mine

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: 25 deg.

EXPOSURE: South

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

Soil Pile A (South Pile, west of Cells 1 & 2)
*Atriplex canescens*
*Chrysothamnus nauseosus*
*Gutierrezia sarothrae*

*Halogeton glomeratus*
*Machaeranthera canescens*

*Agropyron cristatum*
*Elymus junceus*
*Elymus lanceolatus*
*Elymus smithii*
*Elymus cinereus*
*Stipa hymenoides*

Soil Pile B (mostly removed)

Soil Pile C (North Pile, east of Reference Area)
*Artemisia tridentata*
*Atriplex canescens*
*Atriplex gardneri*
*Chrysothamnus nauseosus*
*Gutierrezia sarothrae*

*Halogeton glomeratus*
*Penstemon palmeri*

*Agropyron cristatum*
*Elymus smithii*
*Elymus lanceolatus*
*Sporobolus airoides*

NOTES:

1) Only qualitative data taken this year.

2) Very dry plants probably due to the 4th year of drought conditions.

3) Pile A: Cover, density and diversity were in fair to good shape. Weeds were present but not common.

4) Pile C: Cover, density and diversity were in fair to good shape.

5) Although cover was fair, it consisted mostly of shrubs and grasses with only a few forbs.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Road Slopes

AREA: Cottonwood Mine New Waste Rock Area (1990 Interim)

DATE: September 2-6, 2002

WORKERS: P. Collins

SLOPE: Variable

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Artemisia tridentata*
*Atriplex confertifolia*
*Ceratoides lanata*

*Penstemon palmeri*

*Elymus lanceolatus*
*Elymus cinereus*
*Elymus spicatus*
*Sporobolus airoides*
*Stipa hymenoides*

NOTES:
1) Qualitative data only. Most of the plant species were desirable ones.
2) Good species diversity.
3) Site looked dry this year.
7) Some species were missing from sampling previous years.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Topsoil Stockpiles

AREA: Cottonwood Mine New Waste Rock Area (1990 Interim)

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: Variable

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:
*Artemisia tridentata*
*Atriplex canescens*
*Atriplex confertifolia*
*Ceratoides lanata*
*Juniperus osteosperma*

*Malcomia africana*
*Penstemon palmeri*
*Penstemon sp.*

*Bromus carinatus*
*Bromus tectorum*
*Elymus cinereus*
*Elymus lanceolatus*
*Elymus salina*
*Elymus smithii*
*Elymus spicatus*
*Sporobolus airoides*
*Stipa hymenoides*

NOTES:
1) Sampled qualitatively only this year.
2) Site was in very dry condition, probably due to drought year.
3) Some species may not have shown well this year.
4) Majority of site looked very good.
5) Species diversity still looked good.
6) All 3 piles looked good.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Subsoil Stockpiles

AREA: Cottonwood Mine New Waste Rock Area (1990 Interim)

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: Variable

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE:

EROSION: Slight to moderate (see notes below)

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex confertifolia (c,s)*
*Atriplex gardneri*(n)*
*Eriogonum corymbosum (s)*
*Ceratoides lanata (s)*

*Halogeton glomeratus (n,c,s)*
*Malcomia africana* (n,c)*
*Penstemon palmeri (s)*

*Elymus cinereus (s)*
*Elymus junceus (c,s)*
*Elymus lanceolatus (n,c,s)*
*Elymus smithii (n)*

Section of pile observed: n=north; c=central; s=south

NOTES:

1) Qualitative data taken his year.

2) Not much cover on the bottom of all slopes.

3) Moderate erosion on all sections of slopes. They were dominated by weedy species e.g. halogeton and other species like Gardner saltbush.(~00, ~01, ~02)).

4) The south end of the pile had more grasses and shrubs and much less erosion.

5) If we listed by total desirable cover, it would be north (worse) to south (best).

6) *Malcomia africana* is growing in the rills and helping curtail erosion.

7) Although some erosion, it did not appear that they were at risk of failure (~01).

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Sediment Pond Banks

AREA: Cottonwood Mine New Waste Rock Area (1990 Interim)

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: Variable

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:
*Artemisia nova*
*Artemisia tridentata*
*Atriplex canescens*
*Atriplex confertifolia*
*Ceratoides lanata*
*Gutierrezia sarothrae*

*Penstemon palmeri*

*Elymus lanceolatus*
*Elymus cinereus*
*Elymus smithii*
*Stipa hymenoides*

NOTES:

1) Site looked good.

2) Sampled qualitatively this year.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Refuse Berm '91 (Final) - New Waste Rock Site

AREA: Cottonwood Mine

DATE: September 2-6, 2002

WORKERS: P. Collins

SLOPE: 28 deg.

EXPOSURE: S.

ANIMAL USE/DISTURBANCE: Slight

EROSION: Mostly "Slight", but moderate in a couple of areas.

COVER: (no quantitative data this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex canescens*
*Atriplex confertifolia*
*Ceratoides lanata**

*Malcomia africana*
*Penstemon palmeri*

*Elymus cinereus*
*Elymus junceus*
*Elymus lanceolatus*
*Stipa hymenoides*

NOTES:

1) Like last two years, even though Berm '96 is the most recent revegetation accomplished, the shrubs appear more mature and the cover is greater than the '91 and '94 Berms.
2) Site looks good.
3) There were some grasses, but mostly shrubs present.
4) Species diversity was low.
5) Dominate shrub species was winterfat by far. Plants were small and had low productivity.
6) Berm 91 and 94 looked similar to each other.
7) Sampled qualitatively only this year.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Refuse Berm '94 (Final) - New Waste Rock Site

AREA: Cottonwood Mine

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: 25 deg.

EXPOSURE: South

ANIMAL USE/DISTURBANCE: None

EROSION: Slight erosion, on west side.

COVER: (see quantitative data sheets)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex confertifolia*
*Atriplex canescens*
*Atriplex gardneri*
*Ceratoides lanata*

*Elymus lanceolatus*
*Hilaria jamesii*
*Sporobolus airoides*

WOODY SPECIES DENSITY:

**Woody Species Density**

| REFUSE BERM 94 | *No/Ac* |
|---|---|
| *Atriplex confertifolia* | 383.26 |
| *Atriplex canescens* | 2299.57 |
| *Atriplex gardneri* | 3066.09 |
| *Ceratoides lanata* | 9198.26 |
| *Eriogonum corymbosum* | 383.26 |
| Total | 15330.44 |

NOTES:

1) Qualitative and quantitative data were recorded this year.

2) Site seemed more diverse in shrub species this year.

ENERGY WEST
Refuse Berm ' 94 (Final) New Waste Rock
Cottonwood Mine
Slope: 25 deg
Exposure: South

| Sample Date: 2- 6 Sept 02 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 |
|---|---|---|---|---|---|---|---|
| SHRUBS | | | | | | | |
| *Atriplex canescens* | 5.00 | 5.00 | 10.00 | 2.00 | 5.00 | 10.00 | 0.00 |
| *Atriplex confertifolia* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Atriplex gardneri* | 0.00 | 0.00 | 5.00 | 3.00 | 10.00 | 10.00 | 0.00 |
| *Celatoides lanata* | 5.00 | 7.00 | 5.00 | 10.00 | 5.00 | 5.00 | 5.00 |
| *Eriogonum corymbosum* | 5.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| FORBS | | | | | | | |
| GRASSES | | | | | | | |
| *Elymus cinereus* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Elymus lanceolatus* | 10.00 | 18.00 | 15.00 | 10.00 | 5.00 | 10.00 | 15.00 |
| *Stipa hymenoides* | 5.00 | 0.00 | 0.00 | 5.00 | 0.00 | 0.00 | 5.00 |
| COVER | | | | | | | |
| Total Living Cover | 30.00 | 30.00 | 35.00 | 30.00 | 25.00 | 35.00 | 25.00 |
| Litter | 10.00 | 5.00 | 10.00 | 5.00 | 10.00 | 10.00 | 15.00 |
| Bareground | 35.00 | 40.00 | 30.00 | 40.00 | 50.00 | 40.00 | 45.00 |
| Rock | 25.00 | 25.00 | 25.00 | 25.00 | 15.00 | 15.00 | 15.00 |
| % COMPOSITION | | | | | | | |
| Shrubs | 50.00 | 40.00 | 57.14 | 50.00 | 80.00 | 71.43 | 20.00 |
| Forbs | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Grasses | 50.00 | 60.00 | 42.86 | 50.00 | 20.00 | 28.57 | 80.00 |

ENERGY WEST
Refuse Berm ' 94 (Final) New Waste Ro
Cottonwood Mine
Slope: 25 deg
Exposure: South
Sample Date: 2- 6 Sept 02

| 8.00 | 9.00 | 10.00 | Mean | SDev | Freq | |
|---|---|---|---|---|---|---|
| | | | | | | SHRUBS |
| 0.00 | 5.00 | 7.00 | 4.90 | 3.36 | 80.00 | *Atriplex canescens* |
| 0.00 | 8.00 | 0.00 | 0.80 | 2.40 | 10.00 | *Atriplex confertifolia* |
| 0.00 | 7.00 | 0.00 | 3.50 | 4.01 | 50.00 | *Atriplex gardneri* |
| 15.00 | 0.00 | 8.00 | 6.50 | 3.75 | 90.00 | *Celatoides lanata* |
| 0.00 | 0.00 | 0.00 | 0.50 | 1.50 | 10.00 | *Eriogonum corymbosum* |
| | | | | | | FORBS |
| | | | | | | GRASSES |
| 10.00 | 0.00 | 0.00 | 1.00 | 3.00 | 10.00 | *Elymus cinereus* |
| 0.00 | 5.00 | 10.00 | 9.80 | 5.13 | 90.00 | *Elymus lanceolatus* |
| 0.00 | 0.00 | 0.00 | 1.50 | 2.29 | 30.00 | *Stipa hymenoides* |
| | | | | | | COVER |
| 25.00 | 25.00 | 25.00 | 28.50 | 3.91 | | Total Living Cover |
| 5.00 | 5.00 | 10.00 | 8.50 | 3.20 | | Litter |
| 45.00 | 55.00 | 55.00 | 43.50 | 7.76 | | Bareground |
| 25.00 | 15.00 | 10.00 | 19.50 | 5.68 | | Rock |
| | | | | | | % COMPOSITION |
| 60.00 | 80.00 | 60.00 | 56.86 | 17.44 | | Shrubs |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | Forbs |
| 40.00 | 20.00 | 40.00 | 43.14 | 17.44 | | Grasses |

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Refuse Berm (seeded 1996)

AREA: Cottonwood Mine New Waste Rock Area (1990 Interim)

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: 28 deg.

EXPOSURE: S & E

ANIMAL USE/DISTURBANCE: No obvious disturbance

EROSION: Slight

COVER: (see quantitative data sheets)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex canescens*

*Elymus junceus*
*Elymus lanceolatus*

**Woody Species Density**

| REFUSE BERM 96 | *No/Ac* |
|---|---|
| *Atriplex canescens* | 4356.50 |
| *Atriplex gardneri* | 111.71 |
| Total | 4468.21 |

NOTES:

1) Recorded quantitative and qualitative data this year.

2) There were large mature shrubs in this area.

3) There were areas that had good cover, whereas other areas were rather sparse.

4) The site was dominated by fourwing saltbush and thickspike wheatgrass.

5) Species diversity, however, was quite low and possibly less cover than in the '94 Berm.

ENERGY WEST
Refuse Berm ' 96 New Waste Rock
Cottonwood Mine
Slope: 28 deg
Exposure: South & East

| Sample Date: 2- 6 Sept 02 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 |
|---|---|---|---|---|---|---|---|
| SHRUBS | | | | | | | |
| *Atriplex canescens* | 25.00 | 15.00 | 30.00 | 25.00 | 60.00 | 55.00 | 55.00 |
| FORBS | | | | | | | |
| GRASSES | | | | | | | |
| *Elymus junceus* | 0.00 | 0.00 | 0.00 | 5.00 | 0.00 | 0.00 | 0.00 |
| *Elymus lanceolatus* | 10.00 | 0.00 | 10.00 | 20.00 | 5.00 | 10.00 | 10.00 |
| COVER | | | | | | | |
| Total Living Cover | 35.00 | 15.00 | 40.00 | 50.00 | 65.00 | 65.00 | 65.00 |
| Litter | 20.00 | 15.00 | 25.00 | 10.00 | 10.00 | 10.00 | 5.00 |
| Bareground | 25.00 | 60.00 | 25.00 | 30.00 | 15.00 | 20.00 | 25.00 |
| Rock | 20.00 | 10.00 | 10.00 | 10.00 | 10.00 | 5.00 | 5.00 |
| % COMPOSITION | | | | | | | |
| Shrubs | 71.43 | 100.00 | 75.00 | 50.00 | 92.31 | 84.62 | 84.62 |
| Forbs | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Grasses | 28.57 | 0.00 | 25.00 | 50.00 | 7.69 | 15.38 | 15.38 |

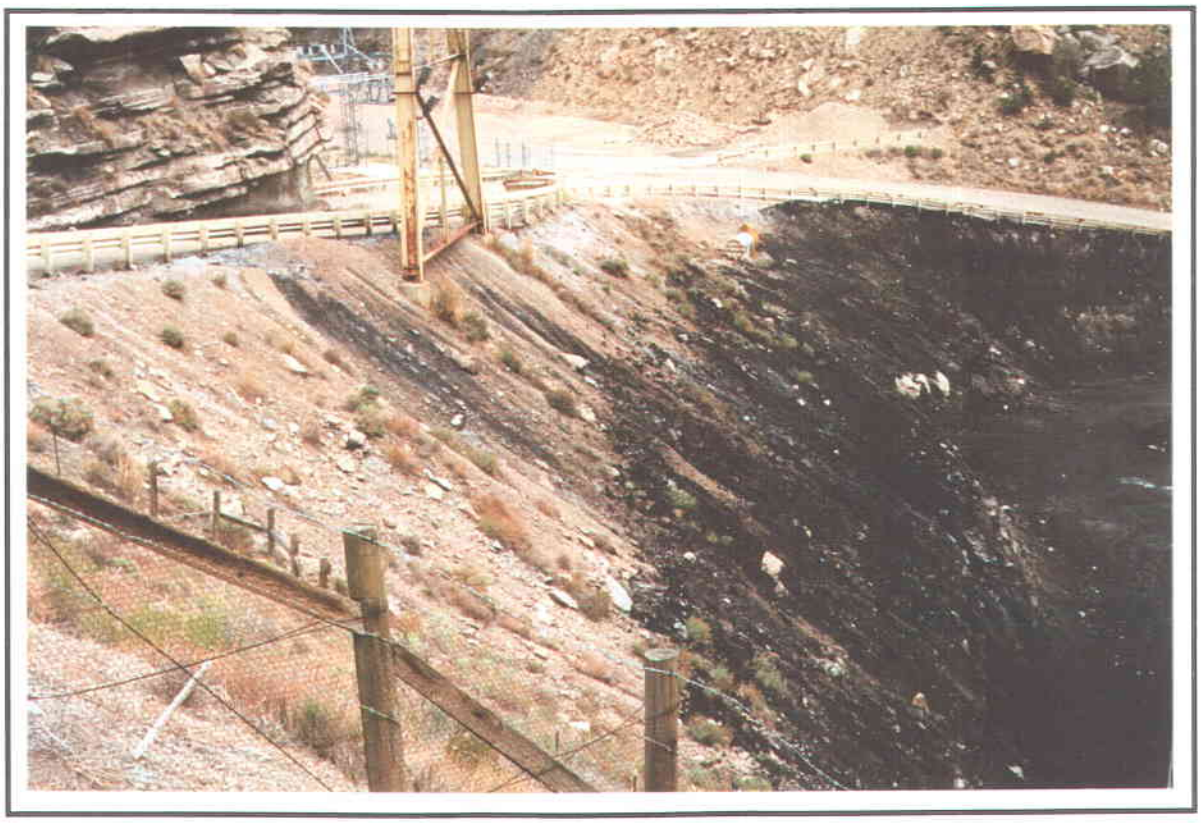
ENERGY WEST
Refuse Berm ' 96 New Waste Rock
Cottonwood Mine
Slope: 28 deg
Exposure: South & East
Sample Date: 2- 6 Sept 02

| 8.00 | 9.00 | 10.00 | Mean | SDev | Freq | |
|---|---|---|---|---|---|---|
| | | | | | | SHRUBS |
| 20.00 | 1.00 | 15.00 | 30.10 | 18.95 | 100.00 | *Atriplex canescens* |
| | | | | | | FORBS |
| | | | | | | GRASSES |
| 0.00 | 0.00 | 0.00 | 0.50 | 1.50 | 10.00 | *Elymus junceus* |
| 0.00 | 0.00 | 5.00 | 7.00 | 6.00 | 70.00 | *Elymus lanceolatus* |
| | | | | | | COVER |
| 20.00 | 1.00 | 20.00 | 37.60 | 22.11 | | Total Living Cover |
| 5.00 | 4.00 | 20.00 | 12.40 | 6.92 | | Litter |
| 70.00 | 85.00 | 50.00 | 40.50 | 22.85 | | Bareground |
| 5.00 | 10.00 | 10.00 | 9.50 | 4.15 | | Rock |
| | | | | | | % COMPOSITION |
| 100.00 | 100.00 | 75.00 | 83.30 | 15.19 | | Shrubs |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | Forbs |
| 0.00 | 0.00 | 25.00 | 16.70 | 15.19 | | Grasses |

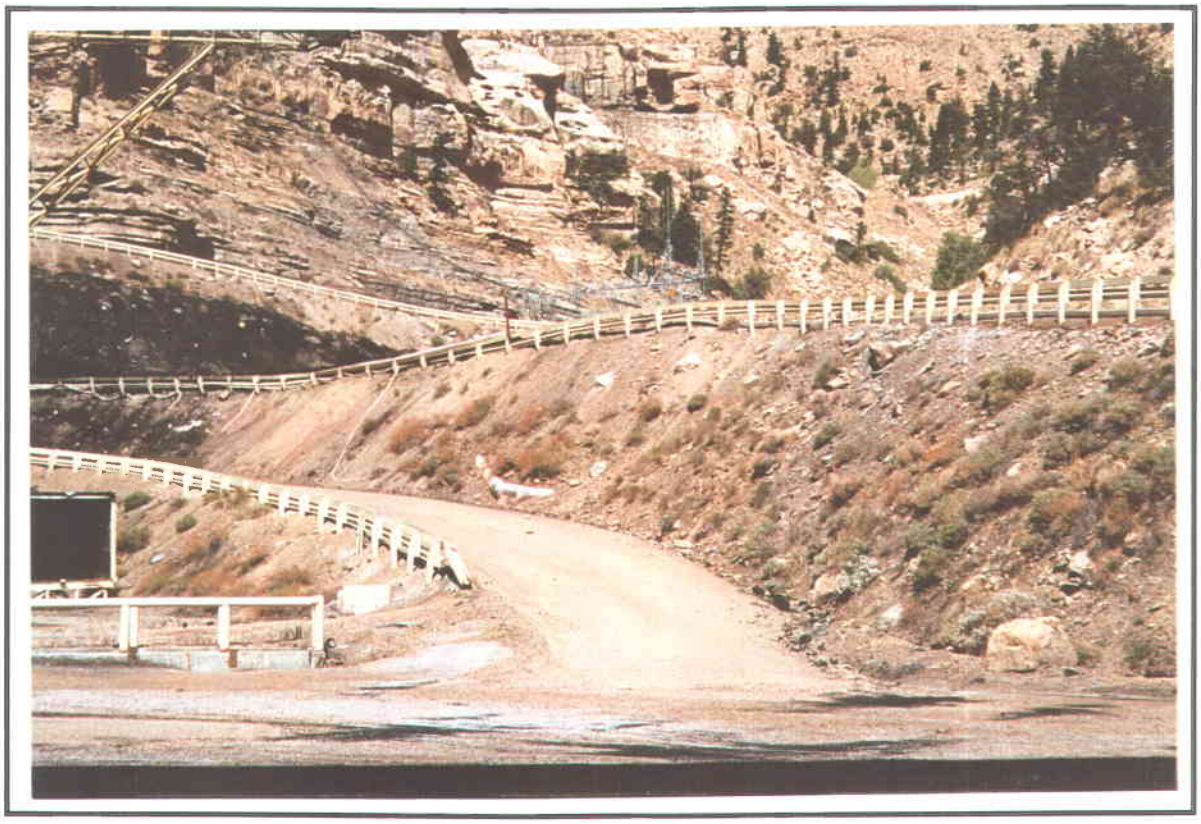
Cottonwood Mine - Reference Area

Cottonwood Mine - Storage Yard Slope

Cottonwood Mine - Parking Lot Slope



Cottonwood Mine - Road/Silo Pad Slope



Cottonwood Mine - Tipple Area Slopes

Cottonwood Mine - Sediment Pond Banks

Cottonwood Mine - Ninth East Breakout

Cottonwood Mine - Old Waste Rock Cell #1

Cottonwood Mine - Old Waste Rock Cell #2

Cottonwood Mine -Old Waste Rock Cell #3

Cottonwood Mine - Old Waste Rock Cell #4

Cottonwood Mine - Old Waste Rock Cell #5

Cottonwood Mine - Old Waste Rock Cell #6

Cottonwood Mine - Old Waste Rock Cell #7

Cottonwood Mine - Old Waste Rock Berm #1

Cottonwood Mine - Old Waste Rock Berm #2

Cottonwood Mine - Old Waste Rock Berm #3 (South West Exposure) 1 of 2

Cottonwood Mine - Old Waste Rock Berm #3 (South East Exposure) 2 of 2

Cottonwood Mine - Old Waste Rock Berm #4

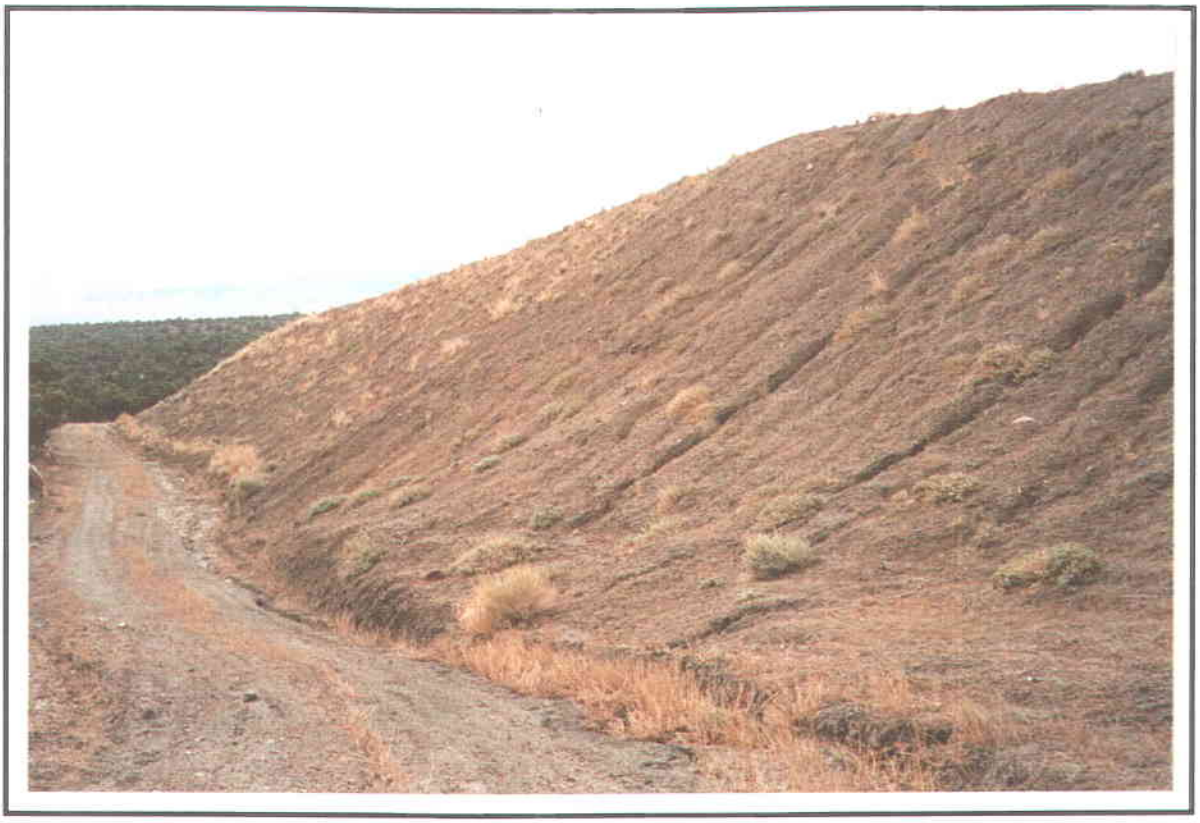
Cottonwood Mine - CTW Reference Area

Cottonwood Mine - CTW Old Waste Rock Soil Pile A

Cottonwood Mine - CTW Old Waste Rock Soil Pile C

Cottonwood Mine - New Waste Rock Road Slopes

Cottonwood Mine - New Waste Rock Topsoil Stockpiles



Cottonwood Mine - New Waste Rock Subsoil Stockpiles

Cottonwood Mine - New Waste Rock Sediment Pond Banks

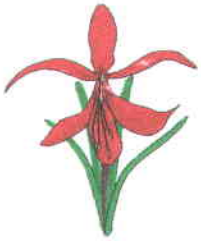
Cottonwood Mine - New Waste Rock - Refuse Berm 1991

Cottonwood Mine - New Waste Rock - Refuse Berm 1994

Cottonwood Mine - New Waste Rock - Refuse Berm 1996

Cottonwood Mine - New Waste Rock - Refuse Berm
Upper (1996) Middle (1994) Lower (1991)

# COTTONWOOD CANYON AREA



ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Soil Piles

AREA: Cottonwood Fan Portal Area

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: 35 deg.

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Artemisia tridentata*
*Chrysothamnus nauseosus*

*Aster chilensis*
*Aster foliaceous*
*Penstemon palmeri*

*Elymus cinereus*
*Elymus lanceolatus*
*Elymus smithii*
*Elymus salinus*
*Elymus junceus*

NOTES:

1) Recorded only qualitative data this year.

2) Sites looked excellent with good diversity.

3) Much of north pile has been removed. The remaining area has been reseeded (see photograph).

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Reclaimed Slope (old,'81)

AREA: Cottonwood Fan Portal Area

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: 35-41 deg.

EXPOSURE: W

ANIMAL USE/DISTURBANCE: Slight to moderate

EROSION: Minor erosion near roadside

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

*Artemisia tridentata*
*Atriplex canescens*
*Atriplex confertifolia*
*Ceratoides lanata*
*Chrysothamnus nauseosus*
*Chrysothamnus viscidifolius*
*Ephedra viridis*
*Gutierrezia sarathrae*

*Aster foliaceous*

*Agropyron cristatum*
*Bromus carinatus*
*Elymus lanceolatus*
*Elymus salinus*
*Elymus smithii*
*Elymus junceus*
*Elymus cinereus*
*Poa pratensis*

NOTES:

1) Slope is in excellent condition.

2) Qualitative sampling only this year.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Reference Area

AREA: Cottonwood Fan Portal Area

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: 33 deg.

EXPOSURE: W

ANIMAL USE/DISTURBANCE: Slight to moderate

EROSION: Slight, natural patterns.

COVER:(see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

*Amalanchier utahensis*
*Atriplex confertifolia*
*Chrysothamnus nauseosus*
*Eriogonum corymbosum*
*Ephedra viridis*
*Juniperus osteosperma*
*Pinus edulis*

*Stanleya pinnata*
*Machaeranthera canescens*

*Elymus salinus*
*Stipa hymenoides*

NOTES:

1) This Reference Area still in good shape, but destructive results of a large storm event a few years ago.

2) Qualitative data only were taken this year.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: CFP Tube Conveyor Area (1996 Seeding)

AREA: Trail Mtn. Mine/Cottonwood Fan Portal Area

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: 28 deg.

EXPOSURE: W, N, S.

ANIMAL USE/DISTURBANCE: None

EROSION: Negligible. Rocks in area seem to be greatly enhancing erosion control.

COVER: (no quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex canescens*
*Atriplex confertifolia*
*Artemisia tridentata*
*Chrysothamnus nauseosus*

*Aster foliaceus*
*Cirsium sp.*
*Linum lewisii*
*Penstemon palmeri*

*Elymus spicatus*
*Elymus lanceolatus*
*Elymus cinereus*
*Elymus smithii*

NOTES:

1) We sampled qualitative data this year.
2) This year in this area we saw no yellow sweetclover.
3) In 1997 the area was dominated by yellow sweetclover, whereas in 1998 we didn't see much of it. There was a lot again in 1999 and 2000. In 2001 there were many more desirable species and very little sweetclover. In 2002 we saw no yellow sweetclover and the fourwing saltbush looked much larger and mature. More shrubs were also present.
4) Even though it was not seeded that long ago, the site was in excellent condition.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Belt Portal ('96)

AREA: Cottonwood Fan Portal Area

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: Variable

EROSION: Negligble

EXPOSURE: SSW

ANIMAL USE/DISTURBANCE: Slight

COVER: (no quantitative data recorded)

DOMINANT PLANT SPECIES OBSERVED:

*Artemisia tridentata*
*Chrysothamnus nauseosus*
*Rosa woodsii*

*Elymus cinereus*
*Elymus lanceolatus*
*Elymus salinus*

NOTES:
1) Qualitative sampling done in 2002.
2) Site looked very good.
3) Most of the area was dominated by Gt. Basin Wildrye.
4) Large boulders greatly enhanced erosion control.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Portal Diesel ('96)

AREA: Cottonwood Fan Portal Area

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: 43 deg.

EXPOSURE: SW

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible

COVER: (no quantitative data recorded this year)

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*

*Astragalus cicer*
*Aster foliaceus*

*Elymus cinereus*
*Elymus smithii*
*Elymus lanceolatus*
*Elymus spicatus*
*Stipa hymenoides*

NOTES:

1) In 2002, soil material from the topsoil pile was used to reclaim the 2 sediment ponds historical used at the CFP area. The area was then re-seeded in late summer or early fall 2002.
2) Cover seemed higher this year.
3) Site looked very good.
4) Site was dominated by grasses with some forbs and shrubs.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Reclaimed Slope (Final) '98

AREA: Cottonwood Fan Portal Area

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: variable

EXPOSURE: SW

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

*Aster chilensis*
*Aster glaucodes*
*Linum lewisii*
*Melilotus officinalis*
*Malcomia africana*
*Penstemon palmeri*
*Salsola pestifer*

*Agropyron cristatum*
*Elymus lanceolatus*
*Elymus junceus*
*Elymus cinereus*
*Elymus smithii*
*Elymus spicatus*

NOTES:

1) Generally, the site looked good.

2) Road areas were rocky.

3) There were patches where diversity was high; other areas diversity was low.

5) We sampled quantitatively for cover (n=20) and woody species density (n=20).

6) There were areas that had lots of small sagebrush seedlings.

7) This was the 4th year of drought over the general area. This may have influenced the sampling results.

**Woody Species Density**

| RECLAIMED SLOPE '98 | *No/Ac* |
|---|---|
| *Artemisia tridentata* | 206.64 |
| *Atriplex canescens* | 533.83 |
| *Chrysothamnus nauseosus* | 602.71 |
| *Gutierrezia sarothrae* | 34.44 |
| Total | **1377.63** |

ENERGY WEST
Reclaimed Slope '98 (Final)
Cottonwood Fan Portal Area
Slope: Variable
Exposure: S W

| Sample Date: 2 - 6 Sept 02 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 | 7.00 |
|---|---|---|---|---|---|---|---|
| SHRUBS | | | | | | | |
| *Artemisia tridentata* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Atriplex canescens* | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.00 | 10.00 |
| *Chrysothamnus nauseosus* | 0.00 | 2.00 | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| FORBS | | | | | | | |
| *Artemisia drucunculus* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 |
| *Aster chilensis* | 0.00 | 0.00 | 2.00 | 5.00 | 5.00 | 0.00 | 5.00 |
| *Linum lewisii* | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.00 | 0.00 |
| *Melilotus officinalis* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Penstemon palmeri* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.00 | 5.00 |
| GRASSES | | | | | | | |
| *Agropyron cristatum* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Bromus carinatus* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Elymus cinereus* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 |
| *Elymus junceus* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Elymus lanceolatus* | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.00 | 0.00 |
| *Elymus smithii* | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.00 | 0.00 |
| *Elymus spicatus* | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.00 | 5.00 |
| *Elymus trachycaulus* | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Stipa hymenoides* | 25.00 | 3.00 | 3.00 | 5.00 | 0.00 | 10.00 | 0.00 |
| COVER | | | | | | | |
| Total Living Cover | 25.00 | 5.00 | 15.00 | 10.00 | 30.00 | 20.00 | 35.00 |
| Litter | 5.00 | 1.00 | 5.00 | 5.00 | 5.00 | 10.00 | 5.00 |
| Bareground | 20.00 | 70.00 | 10.00 | 55.00 | 40.00 | 50.00 | 35.00 |
| Rock | 50.00 | 24.00 | 70.00 | 30.00 | 25.00 | 20.00 | 25.00 |
| % COMPOSITION | | | | | | | |
| Shrubs | 0.00 | 40.00 | 66.67 | 0.00 | 16.67 | 0.00 | 28.57 |
| Forbs | 0.00 | 0.00 | 13.33 | 50.00 | 33.33 | 50.00 | 42.86 |
| Grasses | 100.00 | 60.00 | 20.00 | 50.00 | 50.00 | 50.00 | 28.57 |

| 8.00 | 9.00 | 10.00 | 11.00 | 12.00 | 13.00 | 14.00 | 15.00 | 16.00 | 17.00 |
|---|---|---|---|---|---|---|---|---|---|
| 1.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.00 | 5.00 | 1.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 3.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4.00 | 3.00 | 7.00 | 0.00 | 0.00 | 0.00 | *0.00* | 3.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.00 |
| 0.00 | 5.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 | 0.00 | 15.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 30.00 |
| 0.00 | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.00 | 25.00 | 0.00 |
| 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | *5.00* | 30.00 | 0.00 | 0.00 |
| 0.00 | 8.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.00 | 0.00 | 0.00 | 0.00 |
| 5.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 20.00 | 3.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 40.00 | 20.00 | 30.00 | 5.00 | 15.00 | 35.00 | 25.00 | 35.00 | 25.00 | 40.00 |
| 10.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 10.00 | 15.00 | 5.00 | 5.00 |
| 25.00 | 45.00 | 35.00 | 15.00 | 50.00 | 35.00 | 40.00 | 25.00 | 15.00 | 40.00 |
| 25.00 | 30.00 | 30.00 | 75.00 | 30.00 | 25.00 | 25.00 | 25.00 | 55.00 | 15.00 |
| 2.50 | 10.00 | 10.00 | 40.00 | 0.00 | 28.57 | 20.00 | 2.86 | 0.00 | 0.00 |
| 22.50 | 40.00 | 23.33 | 0.00 | 0.00 | 0.00 | 0.00 | 11.43 | 0.00 | 25.00 |
| 75.00 | 50.00 | 66.67 | 60.00 | 100.00 | 71.43 | 80.00 | 85.71 | 100.00 | 75.00 |

ENERGY WEST
Reclaimed Slope '98 (Final)
Cottonwood Fan Portal Area
Slope: Variable
Exposure: S W
Sample Date: 2 - 6 Sept 02

| 18.00 | 19.00 | 20.00 | Mean | SDev | Freq | |
|---|---|---|---|---|---|---|
| | | | | | | SHRUBS |
| 0.00 | 0.00 | 0.00 | 0.15 | 0.48 | 10.00 | *Artemisia tridentata* |
| 3.00 | 5.00 | 0.00 | 1.95 | 3.23 | 35.00 | *Atriplex canescens* |
| 0.00 | 0.00 | 2.00 | 0.95 | 2.27 | 25.00 | *Chrysothamnus nauseosus* |
| | | | | | | FORBS |
| 0.00 | 0.00 | 0.00 | 0.25 | 1.09 | 5.00 | *Artemisia drucunculus* |
| 0.00 | 0.00 | 3.00 | 1.85 | 2.26 | 45.00 | *Aster chilensis* |
| 2.00 | 0.00 | 0.00 | 0.35 | 1.15 | 10.00 | *Linum lewisii* |
| 0.00 | 0.00 | 0.00 | 0.75 | 2.38 | 10.00 | *Melilotus officinalis* |
| 0.00 | 0.00 | 0.00 | 1.05 | 2.54 | 20.00 | *Penstemon palmeri* |
| | | | | | | GRASSES |
| 0.00 | 0.00 | 0.00 | 0.75 | 3.27 | 5.00 | *Agropyron cristatum* |
| 0.00 | 0.00 | 0.00 | 0.75 | 3.27 | 5.00 | *Bromus carinatus* |
| 20.00 | 10.00 | 30.00 | 4.75 | 9.68 | 25.00 | *Elymus cinereus* |
| 0.00 | 0.00 | 0.00 | 1.60 | 5.49 | 15.00 | *Elymus junceus* |
| 0.00 | 0.00 | 0.00 | 1.00 | 2.55 | 15.00 | *Elymus lanceolatus* |
| 5.00 | 5.00 | 5.00 | 3.75 | 7.56 | 35.00 | *Elymus smithii* |
| 5.00 | 10.00 | 0.00 | 2.15 | 3.51 | 30.00 | *Elymus spicatus* |
| 0.00 | 0.00 | 0.00 | 0.25 | 1.09 | 5.00 | *Elymus trachycaulus* |
| 0.00 | 0.00 | 0.00 | 3.45 | 6.85 | 35.00 | *Stipa hymenoides* |
| | | | | | | COVER |
| 35.00 | 30.00 | 40.00 | 25.75 | 10.99 | | Total Living Cover |
| 10.00 | 10.00 | 10.00 | 6.80 | 3.17 | | Litter |
| 25.00 | 20.00 | 25.00 | 33.75 | 14.99 | | Bareground |
| 30.00 | 40.00 | 25.00 | 33.70 | 15.83 | | Rock |
| | | | | | | % COMPOSITION |
| 8.57 | 16.67 | 5.00 | 14.80 | 17.55 | | Shrubs |
| 5.71 | 0.00 | 7.50 | 16.25 | 17.80 | | Forbs |
| 85.71 | 83.33 | 87.50 | 68.95 | 22.18 | | Grasses |

Cottonwood Canyon - Soil Pile (Removed) North

Cottonwood Canyon - Soil Pile (Not Removed) South

Cottonwood Canyon - Fan Portal Reclaimed Slope 1981

Cottonwood Canyon - Fan Portal Reference Area

Cottonwood Canyon - Tube Conveyor

Cottonwood Canyon - Belt Portal 1996

Cottonwood Canyon - Portal (Diesel) 1996

Cottonwood Canyon - Reclaimed Slope 1998 (Final)

DES-BEE-DOVE AREA

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Pumphouse (Final)

AREA: Des-Bee-Dove

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 2-14 deg.

EXPOSURE: N

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible

COVER: (no quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

*Chrysothamnus nauseosus*
*Gutierrezia sarothrae*

*Malcomia africana*
*Salsola pestifer*
*Penstemon palmeri*
*Halogeton glomeratus*
*Sphraelcea coccinea*
*Artemisia ludoviciana*

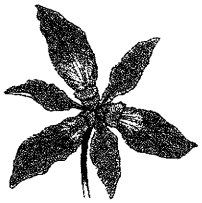
*Elymus smithii*
*Stipa hymenoides*
*Elymus lanceolatus*

NOTES:

1) Much fewer weedy species when compared to last year.
2) Not much perennial cover, but there were lots of seedlings.
3) The "slump area" had more desirable species when compared to last year, but the area had low diversity and cover.
4) Site looked fair to good especially considering it was so recently seeded.
5) The site had good "roughening" effect.
6) The photos won't show much cover because the seedlings were so small.

Des-Bee-Dove - Pumphouse (Final)

# DEER CREEK AREA



ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Mixed Conifer Reference Area

AREA: Deer Creek

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 15-25 deg.

EXPOSURE: WSW

ANIMAL USE/DISTURBANCE: Used by wildlife, mostly deer sign.

EROSION: Normal

COVER: (Cover not sampled this year; qualitative estimate ~40%)

DOMINANT PLANT SPECIES OBSERVED:

*Abies lasiocarpa* *
*Amalanchier utahensis* Serviceberry
*Brickellia microphylla* *
*Chrysothamnus depressus* *
*Chrysothamnus viscidiflorus* Low R. B.
*Chrysothamnus nauseosus* R. B.
*Eriogonum corymbosum**
*Juniperus scopulorum* R. M. J.
*Mahonia repens* Oregon g.
*Pachystima myrsinites* *
*Pinus edulis* Pinion pine
*Pseudotsuga menziesii* Doug. fir
*Symphoricarpos oreophilus* *Snowberry

*Aster foliaceous*
*Linum lewisii* Blue flax
*Machaeranthera canescens*
*Castilleja sp.* * Indian p. brush

*Elymus salinus**
*Elymus spicatus**
*Poa fendleriana*

NOTES: 1) Reference Area continues to look good.

2) Qualitative sampling this year.

3) Take access road behind (south) wooden water tank.

4) To locate, I found the SW t-post marking the area north of the adjacent drainage.

5) There was a good representation of Spruce/Fir/Grass, but it was mostly more open.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Riparian Reference Area

AREA: Deer Creek

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 2 - 3 deg.

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Moderate use

EROSION: Normal

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Abies concolor*
*Acer negundo*
*Chrysothamnus nauseosus*
*Cornus sericea*
*Mahonia repens*
*Populus angustifolia*
*Rosa woodsii*
*Salix sp.*

*Aster foliaceous**

*Agrostis stolonifera*
*Dactylis glomerata*
*Elymus canadensis*

NOTES:

1) Qualitative sampling this year.

2) To locate, find a t-post on the side of the road in a more open area. This was past a more coaly area approximately 200' down from "Temporary Storage Area" and it can be seen as one walks down the road. The t-post is 50 ft below the lower part of the "Roadside Area".

3) Site condition is very good.

4) Good representation of shrubs, forbs and grasses.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Pinyon-Juniper Reference Area

AREA: Deer Creek

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 28 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Used by wildlife, mostly deer and rabbit sign present.

EROSION: Normal

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Amalanchier utahensis*
*Cercocarpus montanus*
*Chrysothamnus nauseosus*
*Ephedra viridis**
*Eriogonum corymbosum*
*Juniperus osteosperma**
*Juniperus scopulorum*
*Pinus edulis**
*Symphoricarpos oreophilus*

*Bromus carinatus*
*Elymus salinus**
*Stipa hymenoides*

* Dominant species

NOTES:

1) Qualitative sampling this year.

2) Reference area continues to look good.

3) I met with C. Semborski and G. Davis in 1999 to help me locate the site. I used an aerial photograph to find the site, but I never did find t-posts marking it. So, I assumed it was above the "Permeter Boundary" marker. To get there I walked through more of a Mtn. Brush/PJ community to a more classic PJ area. The transition between the two appears to be where the Reference Area is on the photo. Calling it a PJ Reference area is satisfactory however.

4) There was a great deal of understory cover (shrub & grass) for a PJ community.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: C2 Conveyor (IU 132-190) '93

AREA: Deer Creek Mine

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 8 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible on flatter area, moderate on slopes

COVER: (no quantitative data this year)

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*+*
*Cercocarpus ledifolius**
*Ephedra viridis* +
*Eriogonum corymbosum* +
*Gutierrezia sarothrae* +
*Yucca harrimaniae*+*
*Artemisia tridentata**

*Aster chilensis* +*
*Halogeton glomeratus**

*Elymus lanceolatus* +
*Elymus cinereus*+*
*Elymus smithii**
*Stipa hymenoides*+*
*Stipa comata* +

* veg in surrounding area
+ veg in dist area (?)

NOTES: 1) Qualitative sampling only was done this year.

2) A sediment control area was recently constructed within the area.

3) Surrounding area looked very good. There has been a basin dug immediately in front of this area that catches water before it goes to the silt fences and vegetated area. Vegetation observed in this area is denoted by +.

4) Monitoring schedule by Energy West indicated to "check area behind belt line" We sampled this area too. Vegetation observed in this area is denoted by *. This area had lots of rock cover helping to control erosion.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Riparian Areas

AREA: Deer Creek Mine

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 1 to 5 deg.

EXPOSURE: Variable

AREA: < .5 acre

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (No quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

*Artemisia tridentata (N,S)*
*Chrysothamnus nauseosus (N)*
*Gutierrezia sarothrae (S)*
*Populus angustifolia (N,S)*
*Rosa woodsii (S)*
*Salix sp. (S)*

*Aster chilensis (N,S)*
*Cirsium sp. (S)*
*Tragopogon dubius (S)*

*Agropyron cristatum (S)*
*Elymus hispidus (N,S)*
*Elymus smithii (N)*
*Elymus spicatus (N,S)*

*N*=observed in north riparian area.
*S*=observed in south riparian area.

NOTES:

1) Qualitative data only again this year.

2) The south area is across from the transfer site.

3) Areas had negligible weed growth.

4) To locate, there is an opening just north of the riparian area (0.4 mi. from coal storage road turn off) on the west side of the road. (200 ft south of opening).

5) Sites looked excellent, nearly weed free now.

6) North riparian area was dominated by intermediate wheatgrass. It had good cover but low species diversity.

7) The south riparian area also looked good and perhaps had higher diversity.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Sediment Pond Dam

AREA: Deer Creek Mine Area

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 1 - 25 deg.

EXPOSURE: Variable

AREA: < 2 acres

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (qualitative data only)

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*
*Eriogonum corymbosum*

*Aster foliaceous*
*Astragalus cicer*
*Penstemon palmeri*

*Elymus smithii*
*Elymus cinereus*
*Elymus lanceolatus*

NOTES:
1) Qualitative data only this year.
2) The top areas have a fair representation of desirable species in one area. Another area on the top has been graded and is now a parking area with a turn-about. It is stable.
3) There were more shrub species this year and better diversity.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Temp. Sediment Basin

AREA: Deer Creek Mine Area

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 1-2 deg.

EXPOSURE: Variable

AREA: < 1 acre.

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (qualitative data only)

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*
*Populus angustifolia*

*Aster chilensis*
*Astragalus cicer*
*Medicago sativa*

*Elymus cinereus*
*Elymus smithii*
*Elymus lanceolatus*

NOTES:

1) There was a good representation of desirable species and almost no weedy species.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Roadside Areas

AREA: Deer Creek (1990 Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 5 deg.

EXPOSURE: NE

AREA: < 1 acre

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible.

COVER: (qualitative data only)

DOMINANT PLANT SPECIES OBSERVED:
*Aster chilensis*
*Grindelia squarrosa*
*Chrysothamnus nauseosus*
*Populus angustifolia*

*Artemisia dracunculus*
*Astragalus cicer*
*Machaeranthera canescens*
*Medicago sativa*
*Tragopogon dubius*

*Bromus carinatus*
*Elymus smithii*
*Elymus lanceolatus (dominated on the west side of road)*
*Elymus cinereus (observed on both sides, but dominated on the east side of road)*
*Stipa hymenoides*

NOTES:
1) Qualitative data sampled.
2) Cover was very good.
3) Dominated by grasses, mostly Gt. Basin wildrye.
4) Good diversity of grasses.
5) Very few weedy species.
6) Sampled both sides of the road.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Gate Area Slope

AREA: Deer Creek (1990 Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 20 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Some erosion, but stable

COVER: (qualitative data only)

DOMINANT PLANT SPECIES OBSERVED:
*Chrysothamnus nauseosus*

*Elymus cinereus**
*Elymus lanceolatus*
*Elymus smithii*
*Stipa hymenoides*

NOTES: 1) Qualitative data only recorded this year. Site looked in good condition considering the slope angle.

2) Site had very good vegetative cover and good grass diversity. Grasses dominate the site.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Fan Road Slopes

AREA: Deer Creek (1989 Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: Variable

EXPOSURE: Variable

AREA: 1.1 acres

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Slight (see below)

COVER: (qualitative only this year)

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*
*Eriogonum corymbosum*

*Aster chilensis*
*Cirsium sp.*
*Halogeton glomeratus*
*Medicago sative*
*Penstemon palmeri*

*Elymus smithii**
*Elymus cinereus**
*Hordeum jubatum*
*Poa pratensis*
*Stipa hymenoides*

NOTES:
1) Area was dryer this year possibly due to ongoing drought.
2) There were very few woody species here.
3) By the way the map looked, we considered everything on the south side of road (right as you walk up) the Fan Road Slopes.
4) Qualitative data only recorded this year.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Refuse Pile & Berm

AREA: Deer Creek (1988 Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 27 deg.

EXPOSURE: NE 300 deg.

AREA: 4.0 acres

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible in most areas.

COVER: (qualitative data only this year)

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*
*Eriogonum corymbosum*

*Aster chilensis*
*Halogeton glomeratus*
*Penstemon palmeri*

*Agropyron cristatum*
*Bromus inermis*
*Elymus lanceolatus*
*Elymus spicatus*
*Elymus salinus*
*Elymus cinereus*
*Stipa hymenoides*

NOTES:

1) Qualitative sampling only was done this year.

2) Site looked good.

3) Refuse pile vegetation was considered fair to good for cover and diversity. There was a good representation of forbs and grasses on both exposures. The dominants were rubber rabbitbrush, Palmer penstemon, bluebunch wheatgrass and aster.

4) The berm was dominated by rubber rabbitbrush and bluebunch wheatgrass.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Rock Slide and Berm

AREA: Deer Creek

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 53+ deg.

EXPOSURE: W

AREA: .5 acre

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Mostly minor

COVER: (Qualitative data only)

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*
*Eriogonum corymbosum*

*Aster chilensis*
*Halogeton glomeratus*

*Elymus lanceolatus*
*Elymus cinereus*
*Elymus spicatus*
*Elymus salinus*

NOTES:

1) Methods: Qualitative data only this year.

2) Areas appear stable.

3) No large erosional rills.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Water Plant Slope

AREA: Deer Creek (1988 Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 38 deg.

EXPOSURE: NE

ANIMAL USE/DISTURBANCE:

EROSION: Mostly slight. One re-seeded area had moderate erosion (~02).

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*
*Eriogonum corymbosum*
*Rosa woodsii*

*Aster chilensis**
*Machaeranthera grindelioides*
*Penstemon palmeri*

*Bromus carinatus*
*Elymus cinereus**
*Elymus smithii*
*Elymus spicatus**
*Elymus elymoides*

NOTES:

1) We sampled qualitatively this year.

2) Cover was less, maybe due to dry year.

3) Map showed this slope to be on the left as you walk uphill. The slope on the right were considered Fan Road Slopes.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Pipeline

AREA: Deer Creek (1986 Reveg. Area)

DATE: September 11-14, 2002

WORKERS: P. Collins

SLOPE: 5 - 30 deg.

EXPOSURE: Variable

AREA: 3.5 acre

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (Cover not sampled this year; qualitative data only)

DOMINANT PLANT SPECIES OBSERVED:

*Amalanchier utahensis*
*Artemisia tridentata*
*Atriplex canescens*
*Atriplex confertifolia*
*Chrysothamnus nauseosus*
*Clematis columbiana*
*Eriogonum corymbosum*
*Juniperus osteosperma*
*Juniperus scopulorum*
*Pinus edulis*
*Populus angustifolia*
*Rhus simplicifolia*
*Rosa woodsii*
*Salix sp.*
*Tamarix chinensis*

*Aster chilensis*
*Aster foliaceous*
*Castilleja sp.*
*Grindelia squarrosa*

*Machaeranthera canescens*
*Melilotus officinalis*
*Penstemon palmeri*

*Agropyron cristatum*
*Bromus tectorum*
*Elymus lanceolatus*
*Elymus cinereus*
*Elymus smithii*
*Elymus spicatus*
*Sporobolus airoides*
*Stipa hymenoides*

NOTES:

1) Qualitative sampling only was done this year.

2) Most of the area was in excellent shape.

3) Road grading inevitably disturbs some species.

4) Most plants looked dry, but this was the 4th drought year in the area.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Deer Canyon

AREA: Deer Creek (1986 Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 15-20 deg.

EXPOSURE: E

AREA: 0.1 acre

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (qualitative data only this year)

DOMINANT PLANT SPECIES OBSERVED:

*Cercocarpus ledifolius*
*Chrysothamnus nauseosus*

*Aster chilensis*
*Cirsium sp.*
*Penstemon palmeri*

*Dactylis glomeratus*
*Elymus spicatus*
*Elymus lanceolatus*
*Elymus cinereus*
*Elymus smithii*
*Stipa hymenoides*

NOTES:
1) Qualitative sampling only was done this year.
2) Site had excellent and fair diversity.
3) It was dominated by grasses with a fair representation of rubber rabbitbrush.
4) Rocks were enhancing erosion control.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Reference Area (Atriplex)

AREA: Deer Creek Waste Rock

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 10-20 deg

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Moderate

EROSION: Negligible

COVER: (qualitative data only)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex gardneri (very dry, lacked leaves)*
*Atriplex confertifolia*
*Chrysothamnus nauseosus*
*Artemisia nova*
*Eriogonum corymbosum*

*Stipa hymenoides*

NOTES: 1) Qualitative sampling this year.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Access Road Slopes

AREA: Deer Creek Waste Rock Site (1989 Interim Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 20 - 25 deg.

EXPOSURE: Variable

AREA: Part of 5 acres

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Erosion repair work has been accomplished. Erosion was slight to negligible in most areas.

COVER: (no quantitative data recorded this year)

DOMINANT PLANT SPECIES OBSERVED:

Fill Slopes

*Artemisia tridentata*
*Atriplex confertifolia*
*Atriplex canescens*
*Ceratoides lanata*
*Chrysothamnus nauseosus*
*Eriogonum corymbosum*
*Juniperus osteosperma*
*Yucca harrimaniae*

*Penstemon palmeri*

*Elymus cinereus*
*Elymus lanceolatus*
*Elymus smithii*
*Stipa hymenoides*

. Cut Slopes

*Artemisia tridentata*
*Atriplex canescens*
*Atriplex confertifolia*
*Atriplex gardneri*
*Chrysothamnus nauseosus*
*Eriogonum corymbosum*

*Halogeton glomeratus*

NOTES: 1) Qualitative sampling only was done this year

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Phase I Berm

AREA: Deer Creek Waste Rock Site (1989 Final Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 0-29 deg.

EXPOSURE: Variable

AREA: 4 Acres

ANIMAL USE/DISTURBANCE: Slight

EROSION: Minor on slopes. No repair needed yet.

COVER: (No quantitative data recorded this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex gardneri*
*Atriplex canescens*
*Atriplex corrugata*
*Chrysothamnus nauseosus*
*Sarcobatus vermiculatus*

*Malcomia africana*
*Penstemon palmeri*

*Agropyron cristatum*
*Elymus cinereus*
*Elymus lanceolatus*
*Elymus salinus*

NOTES:
1) Qualitative sampling only was done this year.
2) This was the 4th drought year in the area.
3) The side slopes were mostly in fair to good condition.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Phase I Diversion

AREA: Deer Creek Waste Rock Site (1989 Final Reveg. Area)

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 5 deg.

EXPOSURE: Variable

AREA: 4 acres

ANIMAL USE/DISTURBANCE: Negligible.

EROSION: Negligible

COVER: (no quantitative data this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex gardneri*
*Artemisia tridentata*
*Chrysothamnus nauseosus*
*Sarcobatus vermiculatus*

*Penstemon palmeri*

*Agropyron cristatum*
*Sporobolus airoides*
*Elymus lanceolatus*
*Elymus cinereus*
*Stipa hymenoides*

NOTES: 1) Site looks good overall, even though this was the 4th drought year in the area.

2) Added for future reference: *In 2001, I called Dennis Oakley and Chuck Semborski about sampling this for bond release as planned previously. I wanted to ascertain which areas should be concentrated on for bond release. I spoke with Chuck and then visited him about this. When he looked at the engineer's drawings of this area, they showed that the berms would be re-disturbed and used as a cover source once the waste site was filled to capacity. This was not straightforward to us because the monitoring schedule calls the site "Final Reveg. 1989". This was confusing to me because "Phase I" suggested that there are more phases. At any rate, we decided that sampling as intensive as is necessary for bond release would not be necessary until it is used for cover.*

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Drain Field (Reconstruction '97)

AREA: Deer Creek

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 2 - 3 deg.

EXPOSURE: N

ANIMAL USE/DISTURBANCE: Used by wildlife

EROSION: Negligible

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*

*Aster chilensis*
*Astragalus cicer*
*Cirsium sp.*
*Medicago sativa*
*Penstemon palmeri*
*Xanthium pennsylvanica*

*Bromus tectorum*
*Elymus cinereus*
*Elymus lanceolatus*
*Elymus spicatus*
*Elymus smithii*
*Stipa hymenoides*

NOTES:
1) Qualitative sampling this year.
2) To locate it, it is 0.5 miles south of northern riparian area (only back side of conveyor).
3) Site had excellent cover, mostly grasses.
4) Grasses dominated site. Gt. Basin wildrye was more dominant in some areas, other areas were dominated by other wheatgrasses (that's different from last year).

Deer Creek Mine - Reference Area - Mixed Conifer

Deer Creek Mine - Reference Area - Riparian

Deer Creek Mine - Reference Area - Pinyon-Juniper

Deer Creek Mine - C2 Conveyor (IU 132-190) 1993

Deer Creek Mine - C2 Conveyor (IU 132-190) 1993 Behind Belt

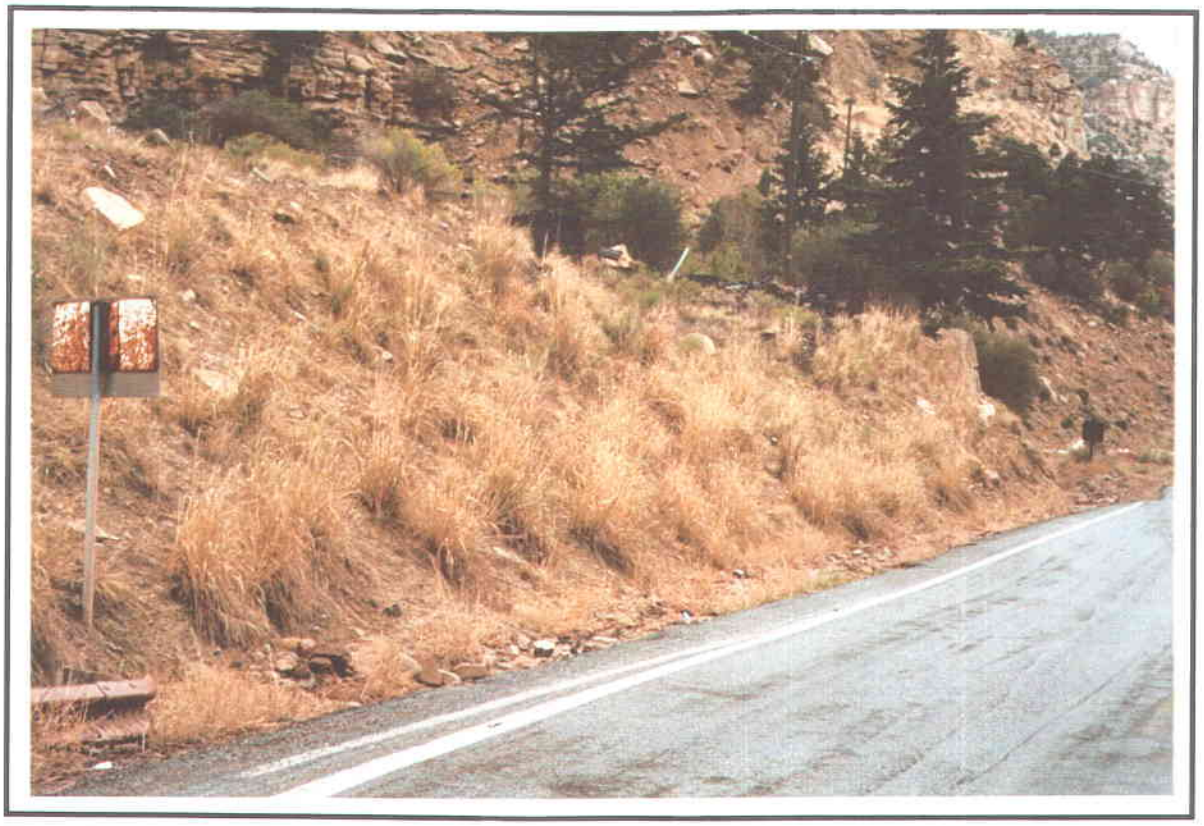
Deer Creek Mine - Riparian Areas (South)

Deer Creek Mine - Riparian Areas (North)

Deer Creek Mine - Sediment Pond Dam

Deer Creek Mine - Temp. Sediment Basin

Deer Creek Mine - Roadside Areas



Deer Creek Mine - Gate Areas Slope

Deer Creek Mine - Fan Road Slope

Deer Creek Mine - Refuse Pile and Berm

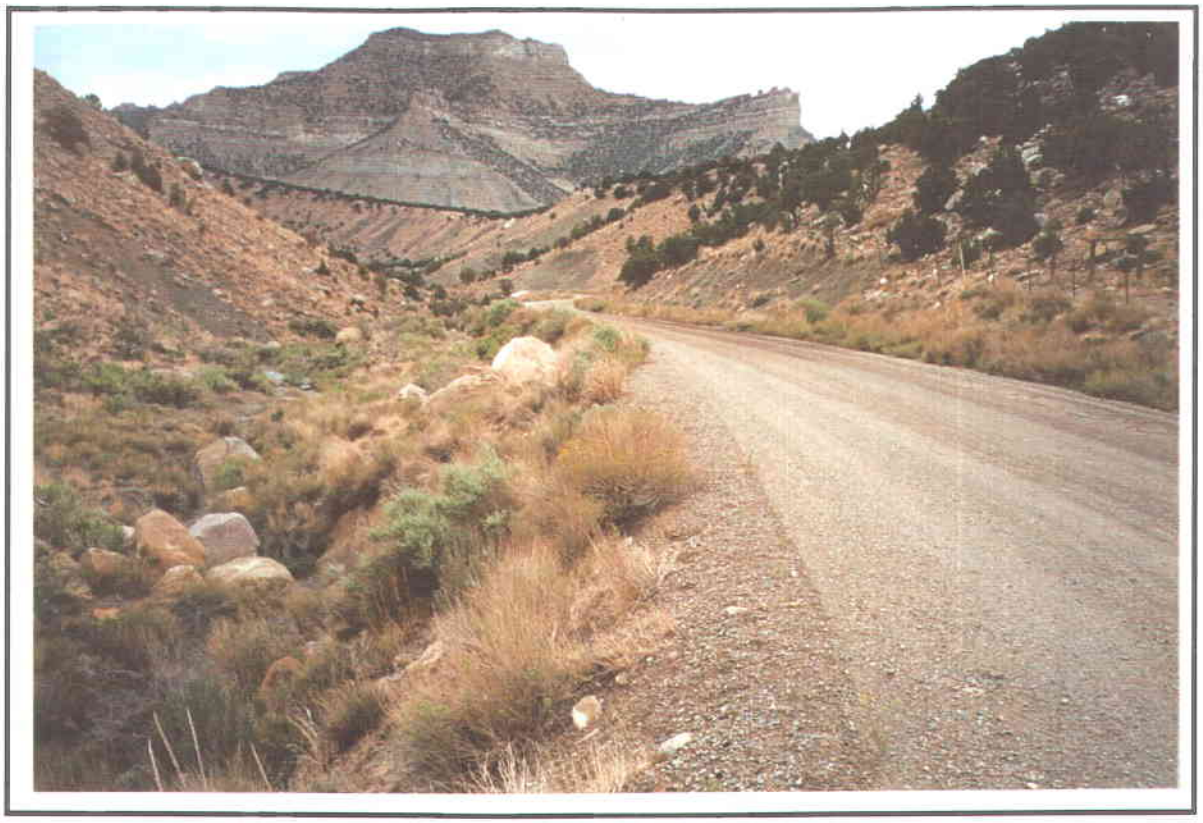
Deer Creek Mine - Rock Slide and Berm

Deer Creek Mine - Water Plant Slope

Deer Creek Mine - Pipeline

Deer Creek Mine - Deer Canyon

Deer Creek Mine - Waste Rock Site - Atriplex Reference Area



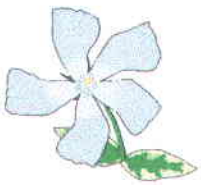
Deer Creek Mine -Waste Rock Site - Access Road Slopes

Deer Creek Mine - Waste Rock Site - Phase I Berm

Deer Creek Mine - Waste Rock Site - Phase I Diversion

Deer Creek Mine - Drain Field Reconstruction - Field Drains December 1997

TRAIL MOUNTAIN MINE AREA



ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Reference Area (Grassland/Shrub)

AREA: Trail Mountain Mine

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

EXPOSURE: W

ANIMAL USE/DISTURBANCE: Yes, normal conditions

EROSION: Negligible

COVER: (No quantitative data recorded this year)

DOMINANT PLANT SPECIES OBSERVED:

*Amalanchier utahensis*
*Atriplex confertifolia*
*Chrysothamnus nauseosus*
*Ephedra viridis*
*Eriogonum corymbosum*
*Juniperus osteosperma*

*Achillea millefolium*
*Aster foliaceus*
*Astragalus spp.*
*Penstemon spp.*
*Lomatium nuttallii*

*Elymus salinus**
*Stipa hymenoides*

NOTES:
1) Recorded qualitative data only.
2) Found one old lath and some with old red flags for markers.
3) Site looked excellent.
4) Recorded data observing from the toe of cut slope.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Sediment Pond Outslope

AREA: Trail Mountain Mine Area

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: 25 deg.

EXPOSURE: E&S

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible to Slight

COVER: (no quantitative data recorded this year)

DOMINANT PLANT SPECIES OBSERVED:

*Atriplex canescens*
*Atriplex confertifolia*
*Artemisia tridentata*
*Brickelia microphylla*
*Gutierrezia sarothrae*

*Aster foliaceus*
*Halogeton glomeratus*

*Agropyron cristatum*
*Elymus cinereus*

NOTES:

1) Qualitative sampling only was done this year.

2) Very dry plants (look dead) probably due to the 4th year of drought conditions. (I don't believe they are dead, maybe dormant).

2) The north side of the outslope was dominated by halogeton and almost no desirable species in 2001 (~01). Chuck Semborski and Dennis Oakley told me to make observations again in 2002 to see if things have changed. The slope is mostly bare this year (~02).

3) The boulder area was dominated by aster, while the other areas were dominated by grasses.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Parking Lot Extension ('96)

AREA: Trail Mountain Mine Area

DATE: September 2-6, 2002

WORKERS: P. Collins, D. Collins

SLOPE: 20 deg.

EXPOSURE: NW

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Slight

COVER: (no quantitative data recorded this year)

DOMINANT PLANT SPECIES OBSERVED:

*Aster foliaceus*
*Astragalus cicer*

*Elymus cinereus**
*Elymus lanceolatus*
*Elymus smithii*

* dominant species

NOTES:

1) Qualitative sampling only was done this year.

2) Silt fences remain in good condition.

3) Site looks good

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Soil Pile

AREA: Trail Mountain Mine Area

DATE: September 2-6, 2002

WORKERS: P. Collins

SLOPE: 35 deg.

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (no quantitative data recorded this year)

DOMINANT PLANT SPECIES OBSERVED:

*Chrysothamnus nauseosus*

*Apocynum cannabinum*
*Aster glaucodes*

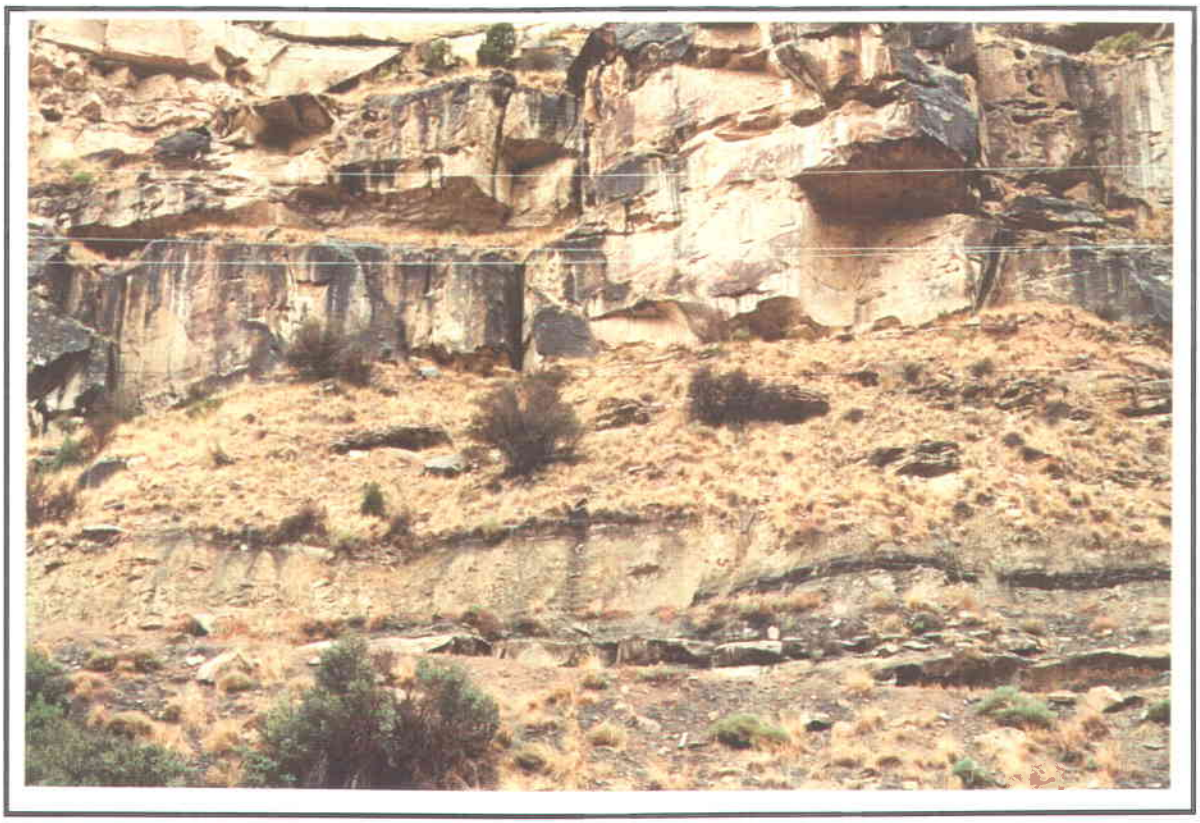
*Elymus cinereus*
*Elymus smithii*
*Elymus lanceolatus*
*Stipa hymenoides*

NOTES:

1) Qualitative sampling only was done this year.

2) Site had good cover comprising mostly of grasses

3) Diversity was fair..



Trail Mountain Mine - Reference Area

Trail Mountain Mine - Sediment Pond Outslope

Trail Mountain Mine - Parking Ext. 1996

Trail Mountain Mine - Soil Pile

# RILDA CANYON AREA

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Pad Area Slopes (96)

AREA: Rilda Canyon

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 20-30 deg.

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Slight

EROSION: Minimal

COVER: (no quantitative data were recorded this year)

DOMINANT PLANT SPECIES OBSERVED:

*Artemisia tridentata*
*Chrysothamnus nauseosus*
*Rosa woodsii*

*Astragalus cicer*
*Circium sp.*
*Cynoglossum officiniale*
*Melilotus officinalis*

*Elymus cinereus**
*Elymus smithii*
*Elymus lanceolatus*

NOTES:

1) Qualitative sampling only was done this year.
2) Most slopes looked good, but there were some bare areas
3) There were some rather small areas dominated by yellow sweetclover.
4) Grasses mostly dominated the area, some by thickspike wheatgrass.
5) While sampling it was raining hard. Identifications were difficult.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Topsoil Pile (Roadway Slopes on separate sheet)

AREA: Rilda Canyon

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 30 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Heavily grazed

EROSION: Slight

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

*Artemisia tridentata*
*Gutierrezia sarothrae*
*Rosa woodsii*
*Populus tremuloides*

*Melilotus officinalis*
*Astragalus cicer*
*Cynoglossum officinale*
*Penstemon palmeri*

*Elymus lanceolatus*
*Elymus smithii*
*Elymus cinereus*

NOTES:

1) Qualitative sampling only was done.

2) Few forbs were present this year.

3) Living cover was lower this year; may be due to 4th year of drought.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2002

SITE NAME: Roadway Slopes

AREA: Rilda Canyon

DATE: September 9-14, 2002

WORKERS: P. Collins

SLOPE: 10-20 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Heavily grazed

EROSION: Negligible

COVER: (No quantitative data were recorded this year)

DOMINANT PLANT SPECIES OBSERVED:

*Populus tremuloides*
*Rosa woodsii*

*Astragalus cicer**
*Medicago sativa*
*Penstemon eatonii*

*Elymus lanceolatus**
*Elymus smithii*
*Elymus cinereus*

NOTES:

1) Qualitative sampling only was done this year.

2) The drought has had an effect on the cover and diversity seen.

3) Mostly grasses were visible this year.

4) Some areas were disturbed and reseeded in 2002. These area were located on the back side of the fence and around the pad area.

Rilda Canyon - Pad Area Slopes 1996

Rilda Canyon - Topsoil Pile and Roadway 1995

Rilda Canyon - Roadway Slopes

# APPENDIX C

## Legal Financial, Compliance and Related Information

Annual Report of Officers
As submitted to the Utah Department of Commerce

Other change in ownership and control information
As required under R645-301-110

**CONTENTS**

# DIRECTORS AND OFFICERS OF SCOTTISH POWER, PLC
(As of February, 2003)

The directors and officers of Scottish Power, plc are as follows:

| Name | Position | Address and Telephone Number | Date Elected |
|---|---|---|---|
| Ian Simon MacGregor Russell | Director (Executive); Chief Executive | 71 Braid Avenue<br>Edinburgh, Lothian,<br>EH10 6ED, Scotland | 2/19/99 |
| Charles Andrew Berry | Director (Executive) | "Beaumont" 5 Grange Road<br>Bearsden, GLASGOW<br>G61 3PL, Scotland | 4/1/99 |
| David Thomas Nish | Director (Executive); Finance Director | Kinnoul<br>Lochwinnoch Road<br>Kilmacolm, PA13 4DZ<br>Scotland | 12/13/99 |
| Charles Miller Smith | Director (Non Executive); Chairman | 60 Chester Row<br>Belgravia, London<br>SW1W 8JP | 8/1/99 |
| Mrs. Mair Barnes | Director (Non Executive) | Ashe Ingen Court<br>Bridstow, Ross on Wye<br>Herefordshire<br>HR9 6QA, ENGLAND | 3/29/99 |
| Sir Peter Lewis Gregson GCB | Director (Senior Independent Non Executive Director) | 36A Elwill Way<br>Beckenham, Kent<br>BR3 6RZ, ENGLAND | 3/29/99 |
| Nolan Eldon Karras | Director (Non Executive) | 4096 South 2275 West<br>Roy, Utah 84067 | 11/30/99 |
| Ewen Cameron Stewart Macpherson | Director (Non Executive) | 61 Holland Park Mews<br>London W11 3SS, ENGLAND | 3/29/99 |
| Philip Joseph Carroll jrn. | Director (Non Executive) | 29 Smithcliffs Road<br>Laguna Beach, CA 92651 | 1/15/02 |
| Euan Baird | Director (Non Executive) | 131 East 66th Street<br>New York, NY 10021 | 1/8/01 |
| Nicholas Charles Rose | Director (Non Executive) | Blackhall Barns, 1 Woodland Rise<br>Sevenoaks, Kent, TN15 0HZ,<br>England | 2/19/03 |

## DIRECTORS AND OFFICERS OF SCOTTISH POWER NA1, LIMITED
(As of May, 2002)

The directors and officers of Scottish Power NA1, Limited are as follows:

| Name | Position | Address and Telephone Number | Date Elected |
|---|---|---|---|
| Andrew Ross Mitchell | Executive Director | 1 Atlantic Quay<br>Glasgow, Scotland<br>G2 8SP | 11/25/98 |
| David Thomas Nish | Executive Director | 1 Atlantic Quay<br>Glasgow, Scotland<br>G2 8SP | 11/25/98 |
| Ian Simon MacGregor Russell | Executive Director | 1 Atlantic Quay<br>Glasgow, Scotland<br>G2 8SP | 12/1/98 |
| Rupert James Stanley | Executive Director | 1 Atlantic Quay<br>Glasgow, Scotland<br>G2 8SP | 11/25/98 |

DIRECTORS AND OFFICERS OF SCOTTISH POWER NA2, LIMITED
(As of May, 2002)

The directors and officers of Scottish Power NA2, Limited are as follows:

| Name | Position | Address and Telephone Number | Date Elected |
|---|---|---|---|
| Andrew Ross Mitchell | Executive Director | 1 Atlantic Quay<br>Glasgow, Scotland<br>G2 8SP | 11/25/98 |
| David Thomas Nish | Executive Director | 1 Atlantic Quay<br>Glasgow, Scotland<br>G2 8SP | 11/25/98 |
| Ian Simon MacGregor Russell | Executive Director | 1 Atlantic Quay<br>Glasgow, Scotland<br>G2 8SP | 12/1/98 |
| Rupert James Stanley | Executive Director | 1 Atlantic Quay<br>Glasgow, Scotland<br>G2 8SP | 11/25/98 |

# OFFICERS OF PACIFICORP HOLDINGS, INC.
(As of May, 2002)

The officers of PacifiCorp Holdings, Inc. are as follows:

| Name | Position | Address and Telephone Number | Date Elected to Current Position |
|---|---|---|---|
| Bruce N. Williams | President and Treasurer | 825 NE Multnomah, Suite 1900<br>Portland, Oregon 97232<br>(503) 813-5000 | 4-1-02 |
| Andrew P. Haller | Senior Vice President, General Counsel and Secretary | 825 NE Multnomah, Suite 2000<br>Portland, Oregon 97232<br>(503) 813-5000 | 4-1-02 |
| Jeffery B. Erb | Assistant Secretary | 825 NE Multnomah, Suite 1800<br>Portland, Oregon 97232<br>(503) 813-5000 | 4-1-02 |
| Larry O. Martin | Assistant Secretary | 825 NE Multnomah, Suite 1900<br>Portland, Oregon 97232<br>(503) 813-5000 | 4-1-02 |
| Tanya S. Sacks | Assistant Treasurer | 825 NE Multnomah, Suite 1900<br>Portland, Oregon 97232<br>(503) 813-5000 | 4-1-02 |

# DIRECTORS OF PACIFICORP HOLDINGS, INC.

(As of October, 2002)

The directors of PacifiCorp Holdings, Inc. are as follows:

| Name | Position | Address and Telephone Number | Date Elected to Current Position |
|---|---|---|---|
| Ian M. Russell | Director | 825 NE Multnomah, Suite 2000<br>Portland, Oregon 97232<br>(503) 813-5000 | 7-1-02 |
| David T. Nish | Director | 825 NE Multnomah, Suite 2000<br>Portland, Oregon 97232<br>(503) 813-5000 | 7-1-02 |
| James R. Stanley | Director | 825 NE Multnomah, Suite 2000<br>Portland, Oregon 97232<br>(503) 813-5000 | 7-1-02 |
| Andrew P. Haller | Director | 825 NE Multnomah, Suite 2000<br>Portland, Oregon 97232<br>(503) 813-5000 | 7-1-02 |

# OFFICERS OF PACIFICORP
(As of January, 2003)

The officers of PacifiCorp are as follows:

| Name | Position | Address and Telephone Number | Date Elected to Current Position |
|---|---|---|---|
| Judith A. Johansen | President and Chief Executive Officer | 825 NE Multnomah, Suite 2000<br>Portland, OR 97232<br>(503) 813-5000 | 6-4-01 |
| Richard D. Peach | Chief Financial Officer | 825 NE Multnomah, Suite 2000<br>Portland, OR 97232<br>(503) 813-5000 | 1-1-03 |
| William D. Landels | Executive Vice President | 201 South Main, Suite 2300<br>Salt Lake City, Utah 84140<br>(801) 220-4140 | 11-29-99 |
| Andrew N. MacRitchie | Executive Vice President | 825 NE Multnomah, Suite 2000<br>Portland, OR 97232<br>(503) 813-5000 | 6-4-01 |
| Matthew R. Wright | Executive Vice President | 825 NE Multnomah, Suite 2000<br>Portland, OR 97232<br>(503) 813-5000 | 1-1-02 |
| Andrew P. Haller | Senior Vice President, General Counsel and Corporate Secretary | 825 NE Multnomah, Suite 2000<br>Portland, OR 97232<br>(503) 813-5000 | 6-4-01 |
| Donald A. Furman | Senior Vice President | 825 NE Multnomah, Suite 2000<br>Portland, OR 97232<br>(503) 813-5000 | 7-2-01 |
| Michael J. Pittman | Senior Vice President | 825 NE Multnomah, Suite 2000<br>Portland, OR 97232<br>(503) 813-5000 | 5-19-93 |
| A. Richard Walje | Senior Vice President | 825 NE Multnomah, Suite 2000<br>Portland, OR 97232<br>(503) 813-5000 | 6-4-01 |
| Robert A. Klein | Senior Vice President | 825 NE Multnomah, Suite 2000<br>Portland, Oregon 97232<br>(503) 813-5000 | 8-6-01 |
| Barry G. Cunningham | Senior Vice President | 201 South Main, Suite 2300<br>Salt Lake City, Utah 84140<br>(801) 220-4140 | 2-11-02 |

# OFFICERS OF PACIFICORP
(As of January, 2003)

The officers of PacifiCorp are as follows:

| | | | |
|---|---|---|---|
| Robert A. Moir | Senior Vice President | 825 NE Multnomah, Suite1600<br>Portland, Oregon 97232<br>(503) 813-5000 | 2-11-02 |
| Jeffery K. Larsen | Vice President | 201 South Main, Suite 2300<br>Salt Lake City, Utah 84111<br>(801) 220-4907 | 8-22-02 |
| Donald D. Larson (Doug) | Vice President | 201 South Main, Suite 2300<br>Salt Lake City, Utah 84140<br>(801) 220-2190 | 7-2-01 |
| Ernest E. Wessman | Vice President | 201 South Main, Suite 2100<br>Salt Lake City, Utah 84140<br>(801) 220-4140 | 5-19-93 |
| Stan K. Watters | Vice President | 825 NE Multnomah, Suite 600<br>Portland, Oregon 97232<br>(503) 813-5000 | 8-6-01 |
| Bruce N. Williams | Treasurer | 825 NE Multnomah, Suite 1900<br>Portland, Oregon 97232<br>(503) 813-5000 | 2-16-00 |
| Tanya S. Sacks | Assistant Treasurer | 825 NE Multnomah, Suite 1900<br>Portland, OR 97232<br>(503) 813-5660 | 6-4-01 |
| Michael G. Jenkins | Assistant Secretary | 201 South Main, Suite 2100<br>Salt Lake City, Utah 84140<br>(801) 220-2233 | 6-4-01 |
| Alexander D. Tait | Assistant Secretary | 825 NE Multnomah, Suite 2000<br>Portland, Oregon 97232<br>(503) 813-5000 | 6-4-01 |
| Larry O. Martin | Assistant Secretary | 825 NE Multnomah, Suite 1900<br>Portland, Oregon 97232<br>(503) 813-5000 | 6-4-01 |
| Jeffery B. Erb | Assistant Secretary | 825 NE Multnomah, Suite 1800<br>Portland, Oregon 97232<br>(503) 813-5000 | 3-13-02 |

# DIRECTORS OF PACIFICORP
(As of May, 2002)

The directors of PacifiCorp are as follows:

| Name | Position | Address and Telephone Number | Date Elected to Current Position |
|---|---|---|---|
| Ian M. Russell | Director (Chair) | One Atlantic Quay<br>Glasgow, Scotland G28FP<br>UK<br>(503) 813-5000 (US Phone) | 1-1-02 |
| Judith A. Johansen | Director | 825 NE Multnomah, Suite 2000<br>Portland, Oregon 97232<br>(503) 813-5000 | 12-01-00 |
| Nolan E. Karras<br>(outside) | Director | 4096 S. 2275 W.<br>Roy, Utah 84067 | 2-17-93 |
| William D. Landels | Director | 201 South Main, Suite 2300<br>Salt Lake City, Utah 84140<br>(801) 220-4140 | 11-29-99 |
| Andrew N. MacRitchie | Director | 825 NE Multnomah, Suite 2000<br>Portland, OR 97232<br>(503) 813-5000 | 5-15-00 |
| Michael J. Pittman | Director | 825 NE Multnomah, Suite 2000<br>Portland, OR 97232<br>(503) 813-5000 | 5-15-00 |
| A. Richard Walje | Director | 825 NE Multnomah, Suite 2000<br>Portland, OR 97232<br>(503) 813-5000 | 7-2-01 |
| Matthew R. Wright | Director | 825 NE Multnomah, Suite 2000<br>Portland, OR 97232<br>(5030 813-5000 | 7-2-01 |
| Barry G. Cunningham | Director | 201 South Main, Suite 2300<br>Salt Lake City, Utah 84140<br>(801) 220-4140 | 4-18-02 |

# OFFICERS OF INTERWEST MINING COMPANY
(As of October, 2002)

The officers of Interwest Mining Company are as follows:

| Name | Position | Address and Telephone Number | Date Elected |
|---|---|---|---|
| Dee W. Jense | President | 201 S. Main, #2100<br>Salt Lake City, Utah 84140<br>(801) 220-4140 | 10/16/00 |
| Robert P. King | Vice President | 201 South Main, #2100<br>Salt Lake City, Utah 84140<br>(801) 220-4590 | 2/01/01 |
| Andrew P. Haller | Secretary<br>Senior Vice President<br>General Counsel | 825 NE Multnomah, Suite 2000<br>Portland, Oregon 97232<br>(503) 813-5000 | 2/01/01 |
| Jeffery B. Erb | Assistant Secretary | 825 NE Multnomah, # 1800<br>Portland, Oregon 97232<br>(503) 813-5000 | 10/01/02 |
| Larry O. Martin | Assistant Secretary | 825 NE Multnomah, Suite 1900<br>Portland, Oregon 97232<br>(503) 813-5000 | 2/01/01 |
| Bruce N. Williams | Treasurer | 825 NE Multnomah, Suite 1900<br>Portland, Oregon 97232<br>(503) 813-5000 | 10/16/00 |
| Tanya S. Sacks | Assistant Treasurer | 825 NE Multnomah, Suite 1900<br>Portland, Oregon 97232<br>(503) 813-5660 | 2/01/01 |

# DIRECTORS OF INTERWEST MINING COMPANY
(As of October, 2002)

The directors of Interwest Mining Company are as follows:

| Name | Position | Address and Telephone Number | Date Elected |
|---|---|---|---|
| Dee W. Jense | Director | 201 S. Main, #2100<br>Salt Lake City, Utah 84140<br>(801) 220-4140 | 11/15/99 |
| Robert P. King | Director | 201 S. Main, #2100<br>Salt Lake City, Utah 84140<br>(801) 220-4590 | 10/16/00 |

# DIRECTORS OF ENERGY WEST MINING COMPANY
(As of October, 2002)

The directors of Energy West Mining Company are as follows:

| Name | Position | Address and Telephone Number | Date Elected |
|---|---|---|---|
| Dee W. Jense | Director | 201 S. Main, #2100<br>Salt Lake City, Utah 84140<br>(801) 220-4140 | 8/11/93 |
| Robert P. King | Director | 201 S. Main, #2100<br>Salt Lake City, Utah 84140<br>(801) 220-4590 | 7/9/99 |

# SCOTTISH POWER PLC

## SUMMARY OF OFFICERS AND DIRECTORS

| Name | Election Date | Departure Date |
|---|---|---|
| Ian Simon MacGregor Russell | 04-94 (2-99) | Current |
| Robert G. Miller | 08-94 | 06-01 |
| Kenneth L. Vowles | 09-94 | 03-02 |
| John Parnaby | 09-94 | 07-01 |
| Sir Ian Robinson | 03-95 | 05-01 |
| Ewen Cameron Stewart Mcpherson | 09-96 (3-99) | Current |
| Sir Peter Lewis Gregson | 12-96 (3-99) | Current |
| Mair Barnes | 04-99 (3-99) | Current |
| Charles Miller Smith | 08-99 | Current |
| Alan V. Richardson | 11-99 | 01-01 |
| Nolan E. Karras | 11-99 | Current |
| Keith R. McKennon | 11-99 | 07-01 |
| David Thomas Nish | 12-99 | Current |
| Charles Andrew Berry | 05-00 (4-99) | Current |
| Allan Leslie Leighton | 08-01 | 06-02 |
| Euan Baird | 08-01 | Current |
| Philip Joseph Carroll Jnr. | 01-02 | Current |
| Nick Rose | 02-20-03 | Current |

# SCOTTISH POWER NA1, LIMITED

## SUMMARY OF OFFICERS AND DIRECTORS

| Name | Election Date | Departure Date |
|---|---|---|
| David Thomas Nish | 11-98 | Current |
| Andrew Ross Mitchell | 11-98 | Current |
| Rupert James Stanley | 11-98 | Current |
| Ian Simon MacGregor Russell | 12-98 | Current |

# SCOTTISH POWER NA2, LIMITED

## SUMMARY OF OFFICERS AND DIRECTORS

| Name | Election Date | Departure Date |
|---|---|---|
| David Thomas Nish | 11-98 | Current |
| Andrew Ross Mitchell | 11-98 | Current |
| Rupert James Stanley | 11-98 | Current |
| Ian Simon MacGregor Russell | 12-98 | Current |

# PACIFICORP HOLDINGS, INC.

## SUMMARY OF OFFICERS

| Name | Election Date | Departure Date |
|---|---|---|
| Ian M. Russell | 06-02 | Current |
| David T. Nish | 06-02 | Current |
| James Stanley | 06-02 | Current |
| Bruce N. Williams | 04-02 | Current<br>(Resigned President 6-28-02) |
| Andrew P. Haller | 04-02<br>(Asst. Gen. Counsel 6-28-02) | Current<br>(Resigned Gen Counsel 6-28-02) |
| Jeffery B. Erb | 04-02<br>(Asst. Secretary 6-28-02) | Current |
| Larry O. Martin | 04-02 | Current |
| Tanya S. Sacks | 04-02 | Current |

# PACIFICORP HOLDINGS, INC.

## SUMMARY OF DIRECTORS

| Name | Election Date | Departure Date |
|---|---|---|
| Bruce N. Williams | 04-02 | 07-02 |
| Ian M. Russell | 07-02 | Current |
| David T. Nish | 07-02 | Current |
| James R. Stanley | 07-02 | Current |
| Andre P. Haller | 07-02 | Current |

# PACIFICORP

## SUMMARY OF OFFICERS

| Name | Election Date | Departure Date |
|---|---|---|
| John M. Schweitzer | 07-84 | 05-00 |
| Sally A. Nofziger | 01-84 | 05-99 |
| Verl R. Topham | 05-94 | 05-99 |
| William C. Brauer | 02-92 | 07-99 |
| Dan R. Baker | 02-94 | 10-99 |
| Donald A. Bloodworth | | 10-99 |
| Daniel L. Spalding | 02-92 | 10-99 |
| Dennis P. Steinberg | 05-94 | 11-99 |
| John A. Bohling | 02-93 | 11-99 |
| William E. Peressini | 01-94 | 01-00 |
| Keith R. McKennon | 02-94 | 08-01 |
| John F. Fryer | 02-95 | 10-00 |
| Richard D. Westerberg | 05-95 | 01-00 |
| Henry H. Hewitt | 07-99 | 02-00 |
| Richard T. O'Brien | 08-95 | 02-00 |
| Lenore M. Martin | 07-87<br>06-01 | 05-00<br>Current |
| Brian D. Sickels | 02-97 | 05-00 |
| Thomas J. Imerson | 11-90 | 06-00 |
| Marsha E. Carrol | | 08-00 |

| | | |
|---|---|---|
| Paul G. Lorenzini | 05-94 | 09-00 |
| Michael J. Pittman | 05-93 | Current |
| Ernest E. Wessman | 05-93 | Current |
| Anne E. Eakin | 02-97 | 07-01 |
| Donald A. Furman | 05-97 (2-97) | Current |
| Timothy E. Meier | 09-97 | 03-01 |
| Michael G. Jenkins | 05-98 (06-01) | Current |
| Robert R. Dalley | 08-98 | 12-00 |
| A. Richard Walje | 11-98 | Current |
| Barry G. Cunningham | 05-99 | Current |
| Craig N. Longfield | 05-99 | 02-01 |
| C. Alex Miller | 08-99 (11-99) | 02-01 |
| Sir Ian Robinson | 11-99 | 01-01<br>(Chairman of Board) |
| Alan V. Richardson | 11-99 | 12-01 |
| William D. Landels | 11-99 | Current |
| Karen K. Clark | 01-00 | 05-00 (09-01) |
| Bruce N. Williams | 02-00 (08-90) | Current |
| Terry F. Hudgens | 04-00 | 06-01 |
| Andrew N. MacRitchie | 05-00 | Current |
| Robert A. Moir | 05-00 | Current |
| Matthew R. Wright | 05-00 | Current |
| Andrew P. Haller | 12-00 | Current |
| Judith A. Johansen | 12-00 (01-00) | Current |

| | | |
|---|---|---|
| Alexander D. Tait | 06-01 | Current |
| Tanya S. Sacks | 06-01 | Current |
| Donald (Doug) D. Larsen | 07-01 | Current |
| Stan K. Watters | 08-01 | Current |
| Robert A. Klein | 08-01 | Current |
| Geoffrey (Jeff) O. Huggins | 10-01 | 08-12-02 |
| Jeffery B. Erb | 03-02 | Current |
| Jeffery K. Larsen | 08-22-2002 | Current |
| Richard D. Peach | 1-1-2003 | Current |

# PACIFICORP

## SUMMARY OF DIRECTORS

| Name | Election Date | Departure Date |
|---|---|---|
| Don M. Wheeler | 01-89 | 02-99 |
| W. Charles Armstrong | 11-96 | 11-99 |
| C. Todd Conover | 08-91 | 11-99 |
| Kathern Braun Lewis | 11-94 | 11-99 |
| Alan K. Simpson | 01-97 | 11-99 |
| Verl R. Topham | 05-94 | 11-99 |
| Nancy Wilgenbusch | 10-86 | 11-99 |
| Peter I. Wold | 05-95 | 11-99 |
| Richard T. O'Brien | | 02-00 |
| Keith R. McKennon | 11-90 | 08-01 |
| Nolan E. Karras | 02-93 | Current |
| Robert G. Miller | 08-94 | 08-01 |
| Sir Ian Robinson | 11-99 | 01-01 |
| Alan V. Richardson | 11-99 | 12-01 |
| William D. Landels | 11-99 | Current |
| Ian Simon MacGregor Russell | 11-99<br>01-02 | 6-01<br>Current |
| Kenneth L. Vowles | 11-99 | 03-02 |
| Karen K. Clark | 01-00 | 09-01 |
| Judith A. Johansen | 12-00 (01-00) | Current |

| | | |
|---|---|---|
| Terry F. Hudgens | 05-00 | 06-01 |
| Andrew N. MacRitchie | 05-00 | Current |
| Timothy E. Meier | 05-00 | 03-01 |
| Michael J. Pittman | 05-00 | Current |
| A. Richard Walje | 07-01 | Current |
| Matthew R. Wright | 07-01 | Current |
| Barry C. Cunningham | 04-02 | Current |

# INTERWEST MINING COMPANY

## SUMMARY OF OFFICERS

| Name | Election Date | Departure Date |
|---|---|---|
| Dee W. Jense | 10-16-00 | Current |
| Bruce N. Williams | 10-16-00 | Current |
| Robert P. King | 02-01 | Current |
| Andrew P. Haller | 02-01 | Current |
| Larry O. Martin | 02-01 | Current |
| Tanya S. Sacks | 02-01 | Current |
| Jeffrey B. Erb | 10-02 | Current |

# INTERWEST MINING COMPANY

## SUMMARY OF DIRECTORS

| Name | Election Date | Departure Date |
|---|---|---|
| Dee W. Jense | 11-15-99 | Current |
| Robert P. King | 10-16-00 | Current |
| Judith A. Johansen | 09-01 | 10-02 |

# ENERGY WEST MINING COMPANY

## SUMMARY OF OFFICERS

| Name | Election Date | Departure Date |
|---|---|---|
| Bruce N. Williams | 12-92 | Current |
| Dee W. Jense | 10-00 | Current |
| Robert R. Dalley | 10-00 | 02-01 |
| George C. Schreck | 10-00 | 02-01 |
| Robert P. King | 02-01 | Current |
| Andrew P. Haller | 02-01 | Current |
| Larry O. Martin | 02-01 | Current |
| Tanya S. Sacks | 02-01 | Current |
| Jeffrey B. Erb | 10-02 | Current |

# ENERGY WEST MINING COMPANY

## SUMMARY OF DIRECTORS

| Name | Election Date | Departure Date |
|---|---|---|
| Dee W. Jense | 08-93 | Current |
| Robert P. King | 07-99 | Current |
| Terry F. Hudgens | 10-00 | 09-01 |
| Judith A. Johansen | 09-01 | 10-02 |

# GLENROCK COAL COMPANY

## SUMMARY OF OFFICERS

| Name | Election Date | Departure Date |
|---|---|---|
| Dee W. Jense | 01-92 (10-16-00) | Current |
| Sally A. Nofziger | 01-92 | 05-99 |
| Bruce N. Williams | 01-92 | Current |
| Larry O. Martin | 01-92 (02-01) | Current |
| Dexter E. Martin | 08-93 | 06-00 |
| John F. Fryer | 03-97 | 10-00 |
| Michael T. Winslow | 07-99 | 10-00 |
| Robert P. King | 02-01 | Current |
| Andrew P. Haller | 02-01 | Current |
| Tanya S. Sacks | 02-01 | Current |
| Jeffrey B. Erb | 10-02 | Current |

# GLENROCK COAL COMPANY

## SUMMARY OF DIRECTORS

| Name | Election Date | Departure Date |
|---|---|---|
| Dee W. Jense | 08-93 | Current |
| Robert P. King | 07-99 | Current |
| Ernest E. Wessman | 10-00 | 10-02 |

# TRAPPER MINING COMPANY

## SUMMARY OF OFFICERS

| Name | Election Date | Departure Date |
|---|---|---|
| W. Gordon Peters | 10-93 | Current |
| William W. Arnett | 12-97 | Current |
| James W. Mattern | 07-01 | Current |
| Kathy L. Innes | 07-01 | Current |

# TRAPPER MINING COMPANY

## SUMMARY OF DIRECTORS

| Name | Election Date | Departure Date |
|---|---|---|
| William W. Arnett | 12-97 | Current |
| Gary W. Harper | 12-97 | Current |
| Glen D. Reeves | 12-97 | Current |
| Harold J. Thompson | 12-97 | Current |
| Lloyd E. Barling | 12-97 | 04-02 |
| Bernard Fehringer | 12-97 | Current |
| Neil L. Getzelman | 12-97 | Current |
| Ralph Mullinix | 10-98 | Current |
| Brian Moech | 05-99 | Current |
| Dee W. Jense | 04-00 | Current |

# CENTRALIA MINING COMPANY

## SUMMARY OF OFFICERS

| Name | Election Date | Departure Date |
|---|---|---|
| Bruce N. Williams | 12-92 | Current |
| Dee W. Jense | 10-16-00 | Current |
| Robert P. King | 02-01 | Current |
| Andrew P. Haller | 02-01 | Current |
| Larry O. Martin | 02-01 | Current |
| Tanya S. Sacks | 02-01 | Current |
| Jeffrey B. Erb | 10-02 | Current |

# CENTRALIA MINING COMPANY

## SUMMARY OF DIRECTORS

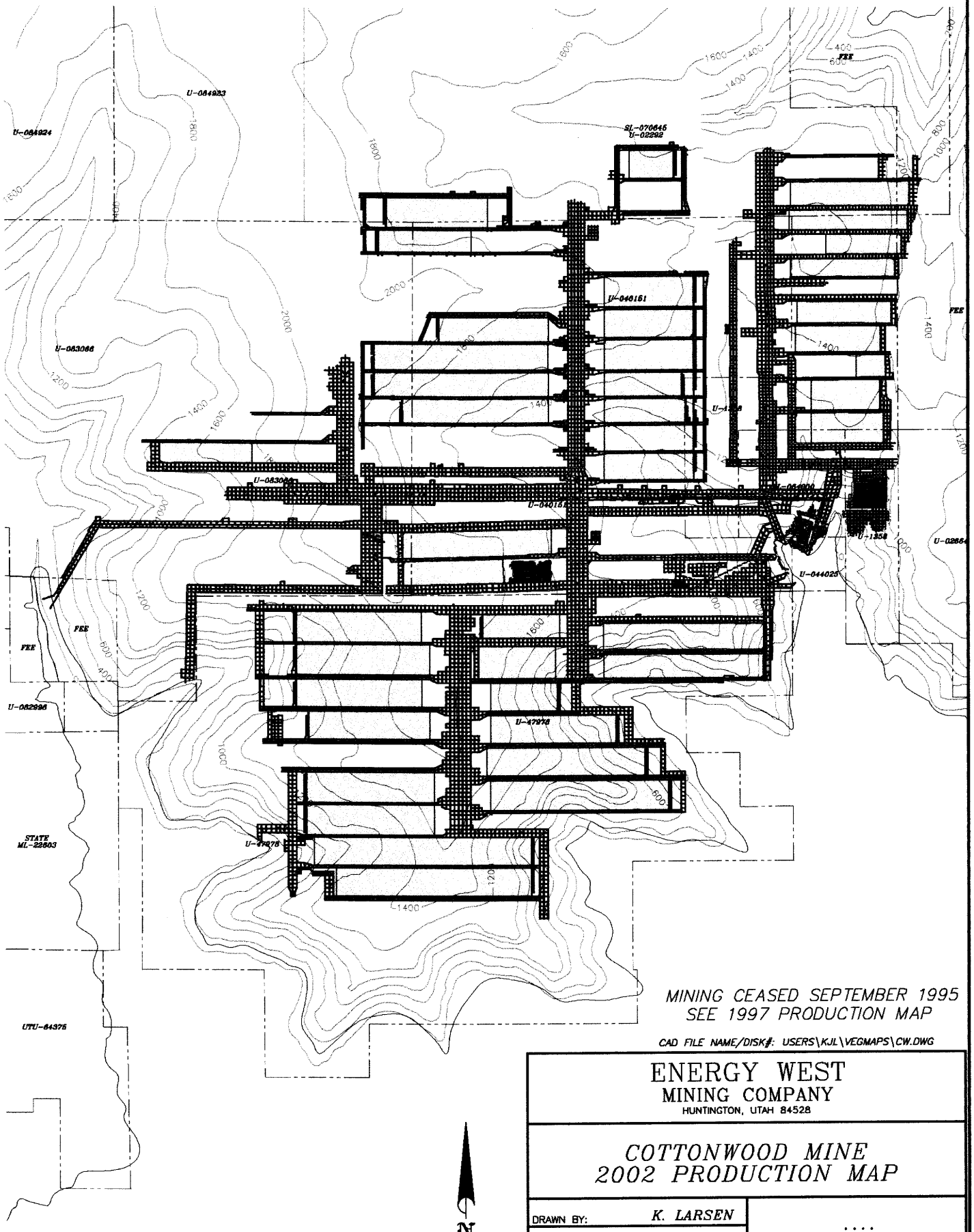
| Name | Election Date | Departure Date |
|---|---|---|
| Dee W. Jense | 08-93 | Current |
| Robert P. King | 07-99 | Current |
| Ernest E. Wessman | 10-16-00 | 10-02 |

# APPENDIX D

## Mine Maps

As required under R645-302-525-270

**CONTENTS**



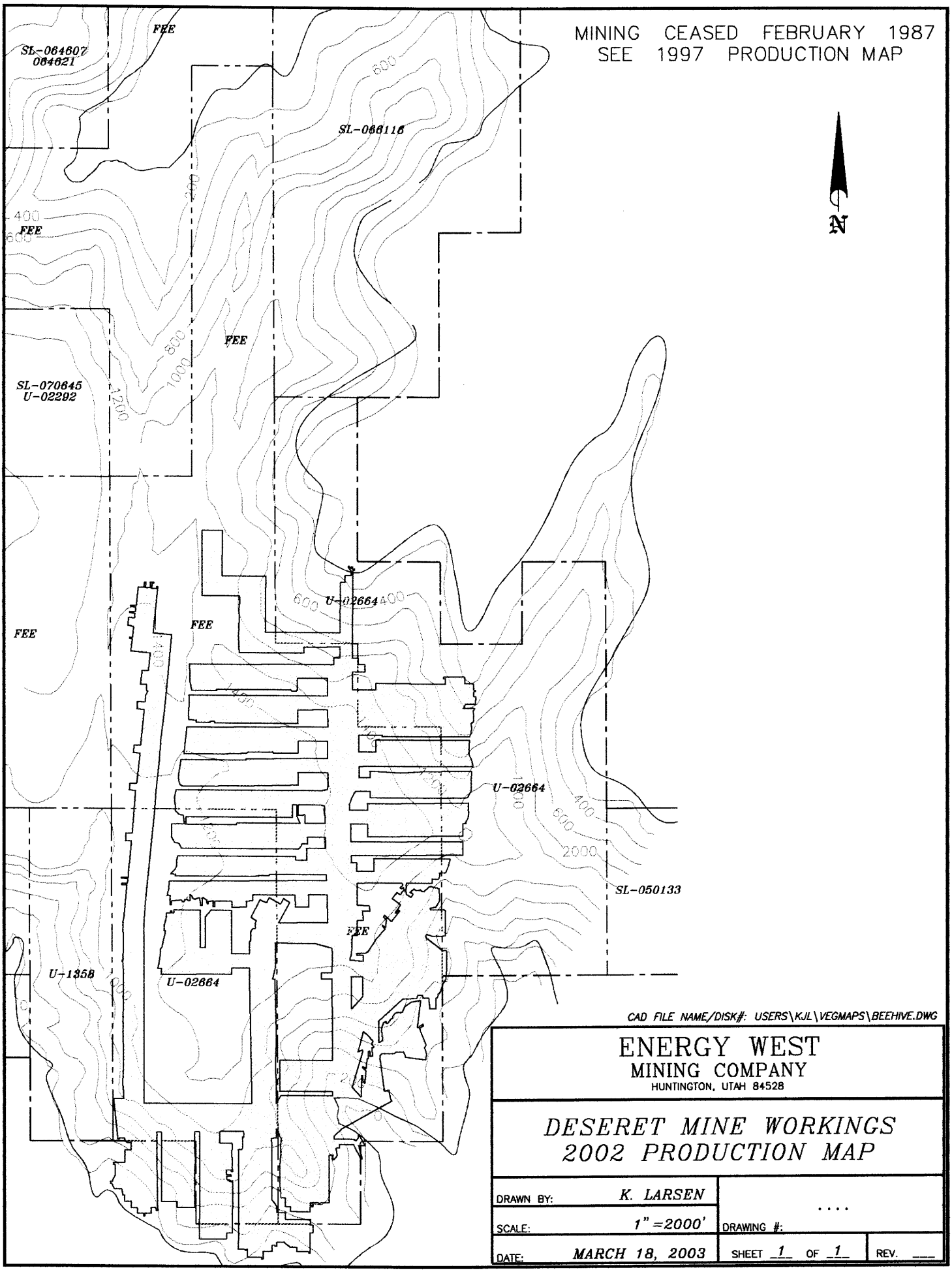

MINING CEASED SEPTEMBER 1995
SEE 1997 PRODUCTION MAP

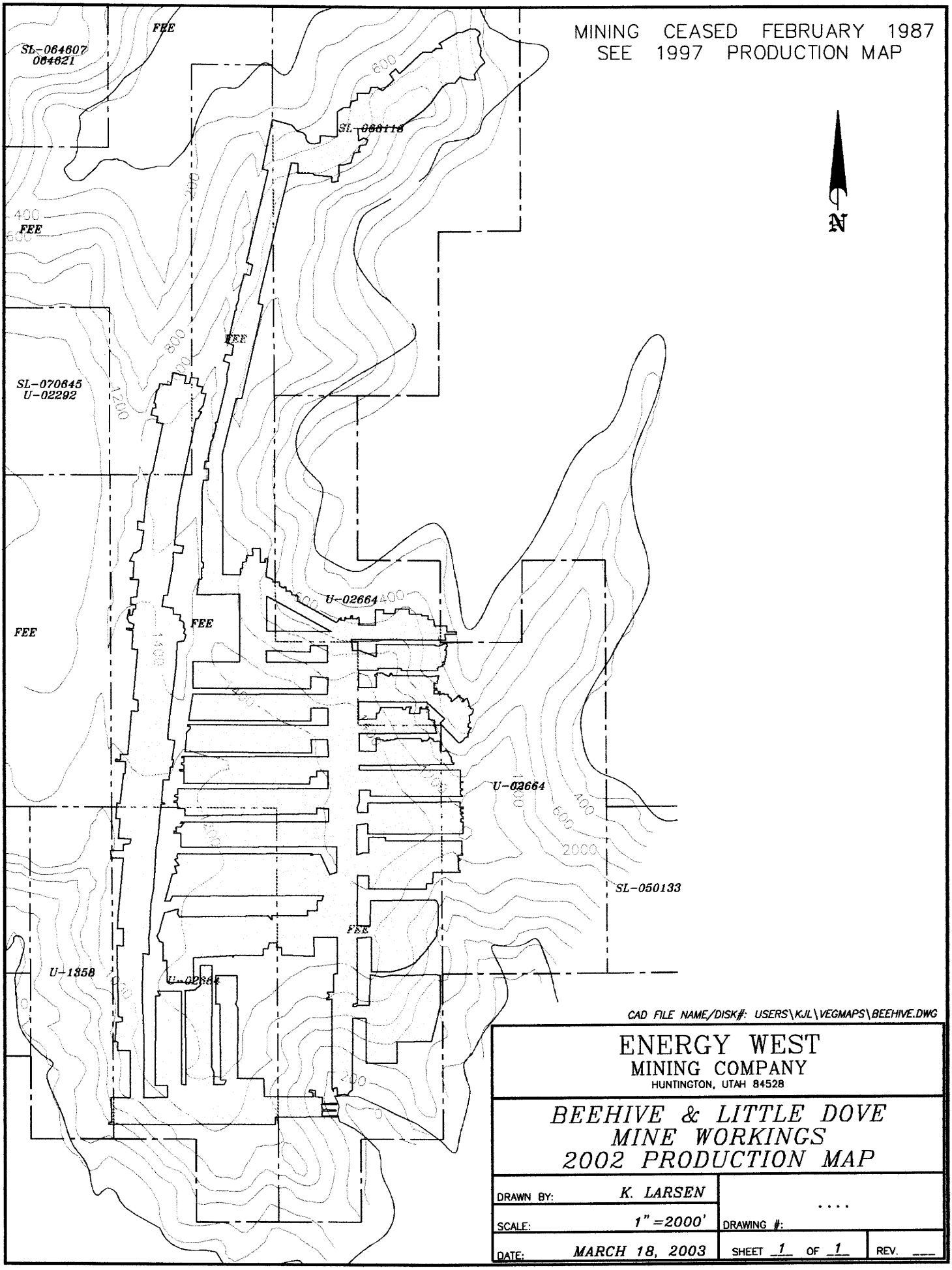
CAD FILE NAME/DISK#: USERS\KJL\VEGMAPS\CW.DWG

ENERGY WEST
MINING COMPANY
HUNTINGTON, UTAH 84528

COTTONWOOD MINE
2002 PRODUCTION MAP

| | | | |
|---|---|---|---|
| DRAWN BY: | K. LARSEN | .... | |
| SCALE: | NONE | DRAWING #: | |
| DATE: | MARCH 18, 2003 | SHEET 1 OF 1 | REV. ___ |


MINING CEASED FEBRUARY 1987
SEE 1997 PRODUCTION MAP
N
FEE
SL-064607
064621
SL-066116
FEE
SL-070645
U-02292
FEE
FEE
U-02664
FEE
U-02664
SL-050133
FEE
U-1358
U-02664
CAD FILE NAME/DISK#: USERS\KJL\VEGMAPS\BEEHIVE.DWG
ENERGY WEST
MINING COMPANY
HUNTINGTON, UTAH 84528
DESERET MINE WORKINGS
2002 PRODUCTION MAP
DRAWN BY: K. LARSEN
SCALE: 1" =2000'
DRAWING #: ....
DATE: MARCH 18, 2003
SHEET 1 OF 1
REV.

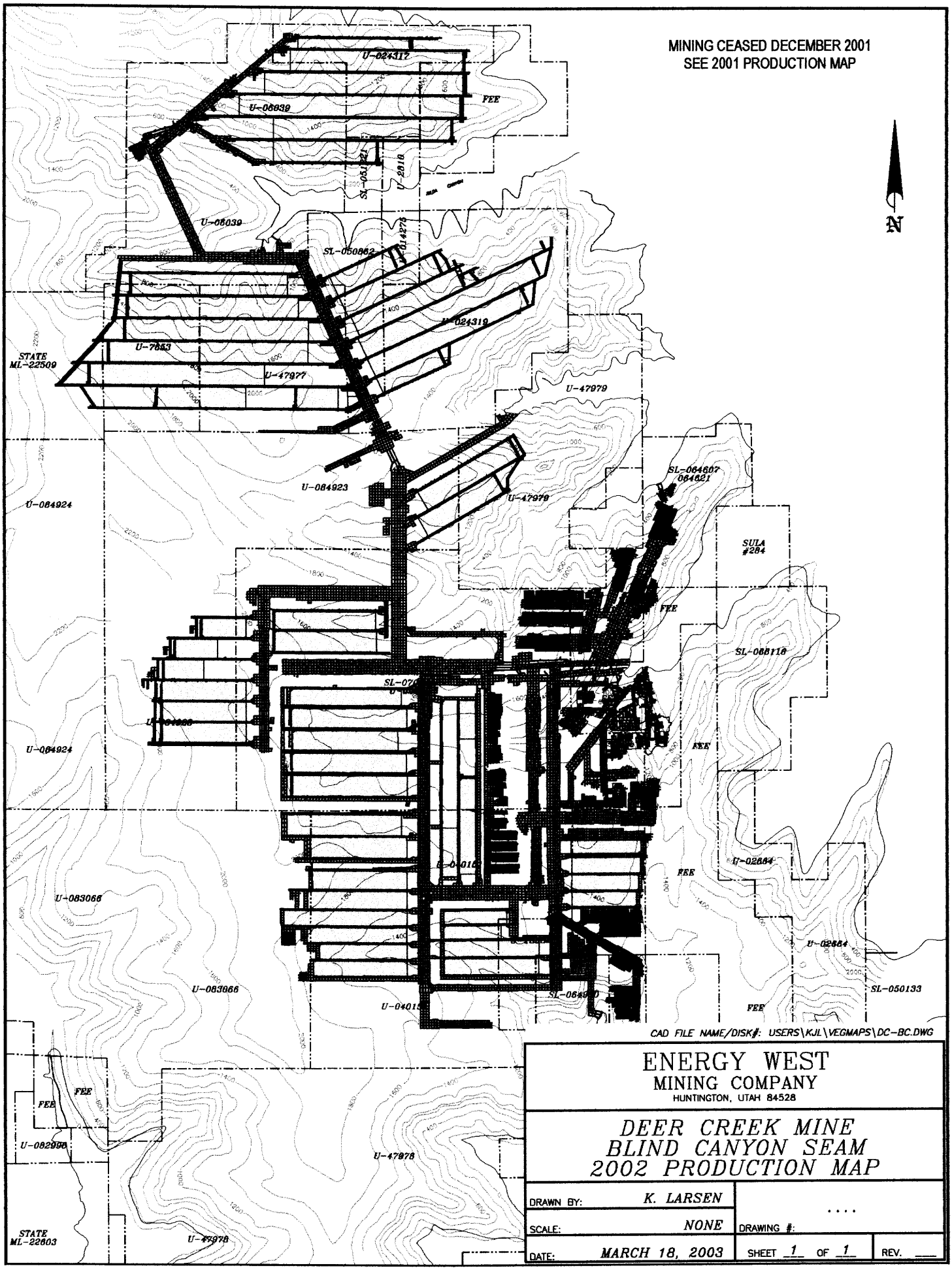



CAD FILE NAME/DISK#: USERS\KJL\VEGMAPS\BEEHIVE.DWG

ENERGY WEST
MINING COMPANY
HUNTINGTON, UTAH 84528

BEEHIVE & LITTLE DOVE
MINE WORKINGS
2002 PRODUCTION MAP

| | | | |
|---|---|---|---|
| DRAWN BY: | K. LARSEN | .... | |
| SCALE: | 1" =2000' | DRAWING #: | |
| DATE: | MARCH 18, 2003 | SHEET 1 OF 1 | REV. ___ |

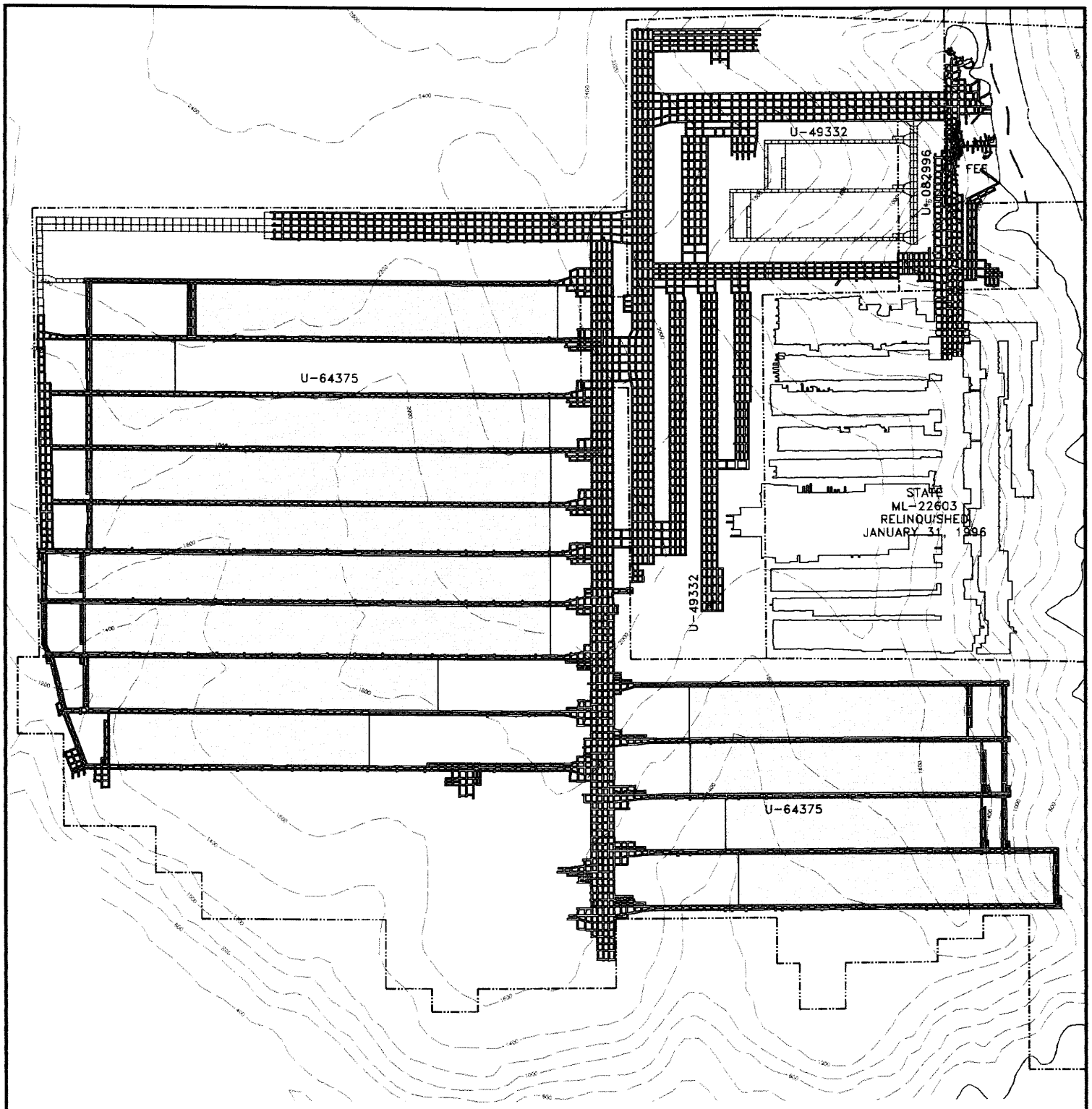



CAD FILE NAME/DISK#: USERS\KJL\VEGMAPS\DC-BC.DWG

ENERGY WEST
MINING COMPANY
HUNTINGTON, UTAH 84528

DEER CREEK MINE
BLIND CANYON SEAM
2002 PRODUCTION MAP

| | | | |
|---|---|---|---|
| DRAWN BY: | K. LARSEN | .... | |
| SCALE: | NONE | DRAWING #: | |
| DATE: | MARCH 18, 2003 | SHEET 1 OF 1 | REV. ___ |




MINING CEASED MARCH 2001
SEE 2001 PRODUCTION MAP

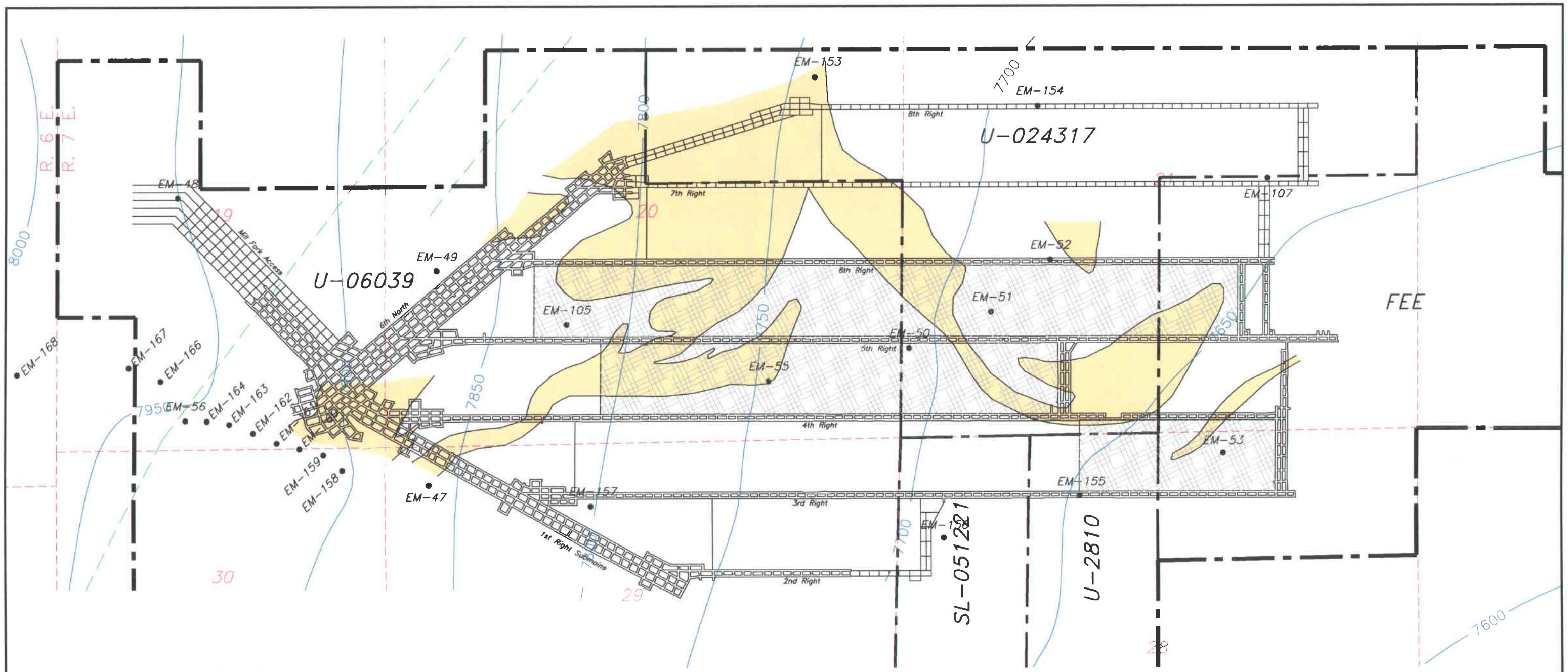
CAD FILE NAME/DISK#: USERS\KJL\VEGMAPS\TMANNUAL-2002.DWG

ENERGY WEST
MINING COMPANY
HUNTINGTON, UTAH 84528

*TRAIL MOUNTAIN MINE*
*2002 PRODUCTION MAP*

N

| | | | |
|---|---|---|---|
| DRAWN BY: | *K. LARSEN* | ..... | |
| SCALE: | *1" =2000'* | DRAWING #: | |
| DATE: | *MARCH 18, 2003* | SHEET 1 OF 1 | REV. ___ |




LEGEND

| | |
|---|---|
| | PACIFICORP EAST MOUNTAIN PROPERTY BOUNDARY |
| | FEDERAL LEASE BOUNDARY |
| U-024317 | LEASE NUMBERS |
| | FAULT (DASHED WHERE INFERRED) |
| | SANDSTONE CHANNELS |
| EM-35 ● | DRILL HOLES |
| | SECTION LINES |
| 23 | SECTION NUMBERS |
| 7800 | HIAWATHA COAL SEAM STRUCTURE CONTOURS (FLOOR ELEVATIONS) |

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I, JOHN CHRISTENSEN BEING A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF UTAH, DO HEREBY CERTIFY THAT THE INFORMATION CONTAINED ON THIS DRAWING IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

John Christensen 3-6-02
JOHN CHRISTENSEN NO. 165651 DATE

N

CAD FILE NAME/DISK#: HM-2A

**HM-2A**

ENERGY WEST
MINING COMPANY
HUNTINGTON, UTAH 84528

*EAST MOUNTAIN PROPERTY*
*HIAWATHA COAL SEAM*
*IN-MINE WATER MONITORING LOCATIONS*

| | | | |
|---|---|---|---|
| DRAWN BY: | K. LARSEN | CE-10908-DR | |
| SCALE: | 1" =1000' | DRAWING #: | |
| DATE: | MARCH 22, 2003 | SHEET 1 OF 1 | REV. ___ |

CONFIDENTIAL



# APPENDIX E

## Other Information

In accordance with the requirements of R645-301 and R645-302

**CONTENTS**