File in:
- ☐ Confidential
- ☐ Shelf
- ☒ Expandable

Refer to Record No 0019 Date 040202
In C/015/019, 2002, Incoming, E
For additional information Confidential

ENERGY WEST Mining Co.

PACIFICORP

2001 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

0019

OK

COPY

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

Incoming
C/015/009
Copy C/015/017
" C/015/018
✓" C/015/019

March 30, 2002

Utah Coal Regulatory Program
Division of Oil, Gas and Mining
1594 West North Temple, Suite 121 0
Box 145801
Salt Lake City, Utah 84114-5801

Attention: Ms. Pamela Grubaugh-Littig

Re: Submittal of Annual Report for 2001, PacifiCorp, Trail Mountain Mine, C/015/009, Cottonwood Mine, C/015/019, Deer Creek Mine, C/015/018, Des-Bee-Dove, C/015/017, Emery County, Utah.

PacifiCorp, by and through its wholly-owned subsidiary, Energy West Mining Company as mine operator, herewith submits two copies of the Annual Hydrologic and Subsidence Reports for 2001. The General Section, including all forms and activities of the above mines related to coal mining and reclamation monitoring during the 2001, including the Vegetation report will be submitted on or before April 1, 2002 (refer to Annual Report-General Section extension request dated March 29, 2002).

If there are any questions or concerns please call Dennis Oakley at 687-4825.

Sincerely,

Charles A. Semborski

Charles A. Semborski
Geology/Environmental Supervisor

File in:
☐ Confidential
☐ Shelf
☒ Expandable
Refer to Record No 0019 Date 04/02/2002
In C/015/0019 2002 Incoming
For additional information Confidential

RECEIVED
APR 0 2 2002
DIVISION OF
OIL, GAS AND MINING

cc: Carl Pollastro
(File)

J:\Environmental\PERMITS\Annualreports\2000Annual\ANNUAL01Hydro-Subsidence.wpd

Huntington Office:
(801) 687-9821
Fax (801) 687-2695
Purchasing Fax (801) 687-9092

Deer Creek Mine:
(801) 381-2317
Fax (801) 381-2285

Cottonwood Mine:
(801) 748-2319
Fax (801) 748-2380

PacifiCorp

Energy West Mining Company

Cottonwood Mine

C/015/019

RECEIVED
APR 18 2002
DIV OF OIL GAS & MINING

*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	7/6/04
Permit Number	C/015/019
Authorized Representative Title	Charles 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	3

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	
MSHA Impoundment(s)	1211-UT-09-02052-02	North Sediment Pond	
	1211-UT-09-02052-03	South Sediment Pond	
NPDES/UPDES Permit(s)	UT0022896	Minor Industrial	10/31/02
		Site 001: Mine Discharge – Ctw Cyn	
		Site 002: Sediment Pond – Ctw Cyn	
		Site 003: Sediment Pond – Grimes Wash	
		Site 004: Mine Discharge – Miller Cyn	
		Site 005: Sediment Pond - WRS	
PSD Permit(s) (Air)	DAQE-694-95	Issued 8/9/95, Includes Trail Mtn. Mine	
	DAQE-835-91	Issued 12/16/91, WRS	

Other

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	☒	☐	☒	☐	Sediment Ponds: 003, 005 Includes MSHA inspection reports for the north and south ponds
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 Hydroligic Report
Subsidence Monitoring	☒	☐	☒	☐	Included in separate Subsidence Report
Vegetation Monitoring	☒	☐	☒	☐	Included in separate Vegetation Report
Raptor Survey	☒	☐	☒	☐	Confidential
Soils Monitoring	☐	☒	☐	☐	
Water Monitoring	☒	☐	☒	☐	Included in separate Hydroligic Report
First quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Second quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Third quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Fourth quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Geological / Geophysical	☐	☒	☐	☐	
Engineering	☐	☒	☐	☐	
Other Data					
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	

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	☒	☐	☐	☒	
Other					
Volume 1, Part 1, Legal and Financial Section w/Apps.	☒	☐	☐	☒	Pending DOGM approval for incorporation into MRP
	☐	☐	☐	☐	
	☐	☐	☐	☐	

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	Cottonwood Mine historically used as a coal transfer facility. Last production date 10/1995. Refer to previous Annual Report submittals	☐	☐
		☐	☐
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		☐	☐

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** ☒

Mine put into cessation 5/2001. Portals sealed at this time.

PacifiCorp

Energy West Mining Company

Deer Creek Mine

C/015/018

*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	Deer Creek Mine
Operator Name (If other then permittee)	Energy West Mining Company
Permit Expiration Date	2/7/06
Permit Number	C/015/018
Authorized Representative Title	Charles 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	3

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	
MSHA Impoundment(s)	None		
NPDES/UPDES Permit(s)	UT0023604	Minor Industrial	11/30/02
		Site 001: Sediment Pond	
		Site 002: Mine Discharge	
PSD Permit(s) (Air)	DAQE-926-96	Issued 10/4/96, Mine Tipple	
	DAQE-926-91	Issued 12/5/91, WRS	

Other

CERTIFIED REPORTS

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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: 001
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 Hydroligic Report
Subsidence Monitoring	☒	☐	☒	☐	Included in separate Subsidence Report
Vegetation Monitoring	☒	☐	☒	☐	Included in separate Vegetation Report
Raptor Survey	☒	☐	☒	☐	Confidential
Soils Monitoring	☐	☒	☐	☐	
Water Monitoring	☒	☐	☒	☐	Included in separate Hydroligic Report
First quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Second quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Third quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Fourth quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Geological / Geophysical	☐	☒	☐	☐	
Engineering	☐	☒	☐	☐	
Other Data					
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	☐	☐	☐	☐	
	☐	☐	☐	☐	

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	☒	☐	☐	☒	
Other					
Volume 1, Part 1, Legal and Financial Section Update w/Apps.	☒	☐	☐	☒	IBC for Mill Fork Access - Pending DOGM approval for incorporation into MRP
	☐	☐	☐	☐	
	☐	☐	☐	☐	

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, 2002)	☒	☐
		☐	☐
		☐	☐
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		☐	☐
		☐	☐

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** ☒

PacifiCorp

Energy West Mining Company

Des Bee Dove Mines

C/015/017

*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	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	Charles 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	3

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)	42-00988	Deseret Mine	
	42-01393	Little Dove Mine	
	42-00082	Beehive Mine	
MSHA Impoundment(s)	None		
NPDES/UPDES Permit(s)	UTG040022	Site 001: Sediment Pond	4/30/03
PSD Permit(s) (Air)		N/A	

Other

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	☒	☐	☒	☐	Sediment Pond: 001
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 Hydroligic Report
Subsidence Monitoring	☒	☐	☒	☐	Included in separate Subsidence Report
Vegetation Monitoring	☒	☐	☒	☐	Included in separate Vegetation Report
Raptor Survey	☒	☐	☒	☐	Confidential
Soils Monitoring	☐	☒	☐	☐	
Water Monitoring	☒	☐	☒	☐	Included in separate Hydroligic Report
First quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Second quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Third quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Fourth quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Geological / Geophysical	☐	☒	☐	☐	
Engineering	☐	☒	☐	☐	
Other Data					
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	

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	☒	☐	☐	☒	Legal and Financial information updated 11/2001
Other					
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	

MINE MAPS

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Map Number(s)	Map Title/ Description	Confidential Yes	Confidential No
None		☐	☐
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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** ☒

Mine currently in reclamation. Anticipated completion dates are as follows: Phase 1 – 5/2002 Phase 2 – Spring 2003
110,000 tons of coal was excavated from tipple pad (Valley Fill Excavation Project) July 2001
Portals sealed and backfilled – January 2000
Structures dismantled – December 1999

PacifiCorp

Energy West Mining Company

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	Trail Mountain Mine
Operator Name (If other then permittee)	Energy West Mining Company
Permit Expiration Date	8/30/05 (Mine Currently in Reclamation)
Permit Number	C/015/009
Authorized Representative Title	Charles 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	3

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	
MSHA Impoundment(s)	None		
NPDES/UPDES Permit(s)	UT0023728	Minor Industrial	11/30/02
		Site 001: Sediment Pond	
		Site 002: Mine Discharge	
PSD Permit(s) (Air)	DAQE-694-95	Issued 8/9/95	

Other

CERTIFIED REPORTS

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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: 001
Other					
	☐	☐	☐	☐	
	☐	☐	☐	☐	

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Raptor Survey	☒	☐	☒	☐	Confidential
Soils Monitoring	☐	☒	☐	☐	
Water Monitoring	☒	☐	☒	☐	Included in separate Hydroligic Report
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Second quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Third quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Fourth quarter	☒	☐	☒	☒	Included in separate Hydroligic Report
Geological / Geophysical	☐	☒	☐	☐	
Engineering	☐	☒	☐	☐	
Other Data					
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	☐	☐	☐	☐	

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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	☒	☐	☐	☒	
Other					
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	

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Map Number(s)	**Map Title/ Description**	**Confidential** Yes	No
None	Trail Mountain Mine Production Map (Current as of 7/01)	☒	☐
		☐	☐
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OTHER INFORMATION

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

Mine put into cessation 4/2001. Portals sealed at this time.

APPENDIX A

Certified Reports

Excess Spoil Piles
Refuse Piles
Impoundments

As required under R645-301-514

PacifiCorp

Energy West Mining Company

Cottonwood Mine

C/015/019

Quarterly Pond Inspection Reports
For 2001

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/019	Report Date	Dec. 27, 2001
Mine Name	Cottonwood/Wilberg		
Company Name	PacifiCorp		
Impoundment Identification	Impoundment Name	COTTONWOOD CANYON NORTH BASIN	SOUTH BASIN
	Impoundment Number	|	
	UPDES Permit Number	UT-0022896-002A	|
	MSHA ID Number	|	

IMPOUNDMENT INSPECTION

Inspection Date	Dec. 13, 2001
Inspected By	Rick Cullum/ John Christensen
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Fourth Quarter 2001 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. Snow covered the ground during the inspections.

Qualification Statement

LICENSED PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 165651 STATE

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:** 1/7/02

Signature: Richard Cullum **Date:** 1-7-02

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/019	Report Date	DEC. 27, 2001
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. 13, 2001
Inspected By	Rick Cullum/ John Christensen
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	4TH Quarter Inspection 2001

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	7353.30	7327.29	6760.60
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	0.20 AF	0.40 AF	0.04 AF
Changes, Comments,	Pond is functioning Normally at this time. Pond frozen.	Pond is fun-tioning nor-mally. Pond frozen.	Pond in func-tioning nor-mally. Pond frozen.

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:** 1/7/02

Signature: Richard Cullum **Date:** 1-7-02

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 3 3
Permit Number	ACT/015/019	**Report Date**	Sept. 22, 2001
Mine Name	Cottonwood/Wilberg		
Company Name	PacifiCorp		
Impoundment Identification	**Impoundment Name**	**COTTONWOOD CANYON** NORTH BASIN	SOUTH BASIN
	Impoundment Number		
	UPDES Permit Number	UT-0022896-002A	
	MSHA ID Number		

IMPOUNDMENT INSPECTION

Inspection Date	**Sept. 20, 2001**
Inspected By	Rick Cullum/ John Christensen
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Third Quarter 2001 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. 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:** 10/2/01

Signature: Richard Cullum **Date:** 10/2/01

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 3 3

Permit Number	ACT/015/019	**Report Date**	June 26, 2001
Mine Name	Cottonwood/Wilberg		
Company Name	PacifiCorp		
Impoundment Identification	**Impoundment Name**	**COTTONWOOD CANYON** NORTH BASIN	SOUTH BASIN
	Impoundment Number		
	UPDES Permit Number	UT-0022896-002A	
	MSHA ID Number		

IMPOUNDMENT INSPECTION

Inspection Date	**June 26, 2001**
Inspected By	Rick Cullum/ John Christensen
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Second Quarter 2001 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. 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:** 10/2/01

Signature: Richard Cullum **Date:** 10/2/01

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 3 5
Permit Number	ACT/015/019	Report Date	OCT. 4 2001
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.6, 2001
Inspected By	Rick Cullum/ John Christensen
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	3RD Quarter Inspection 2001

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.

2. **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.

3. **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

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 Pond	South Pond	Waste Rock Pond
Water Elevation	7353.72	7328.19	6760.57
Discharging	yes	yes	No
Inlet/Outlet Condition	Good	Good	Good
Slope conditions	Good	Good	Good

*See "Hydrologic Monitoring Data" report submitted to DOGM quarterly 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 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	0.24 AF	0.53 AF	0.04 AF
Changes, Comments,	Pond is functioning Normally at this time.	Pond is fun-tioning nor-mally.	Pond in func-tioning nor-mally.

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

Qualified Statement

LICENSED PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 165161

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:** 10/14/01

Signature: Richard Cullum **Date:** 10/15/01

TRAIL MOUNTAIN / COTTONWOOD MINE
42-01211

ANNUAL IMPOUNDMENT REPORT
JULY 2000 - JUNE 2001

North Impoundment: MSHA I.D. 1211-UT-09-01211-01
South Impoundment: MSHA I.D. 1211-UT-09-01211-02

Regulation	Report Data
General Information	The North and South Impoundment structures at the Cottonwood Facility meet the requirements of a MSHA Impoundment because the height of the earthen dam structure exceeds 20 feet. The impoundments have the following capacities: North Impoundment • Total Capacity = 2.26 A.F. • Total Sediment Capacity = .56 A.F. • 60% Sediment Cap. = .34 A.F. (Cleaning Level) • Dam Height = 24'8" South Impoundment • Total Capacity = 2.16 A.F. • Total Sediment Capacity = .32 A.F. • 60% Sediment Cap. = .19 A.F. (Cleaning Level) • Dam Height = 22'0" Inspections are done monthly, an approved variance, by the MSHA District Manager. Inspections were by Guy Davis, Certified MSHA Impoundment Inspector.
30 CFR 77.216-4(a)(1)	There have been no geometric or structural changes.
30 CFR 77.216-4(a)(2)	South Impoundment Discharge Meter. (Max Flow was 28.0 gpm)
30 CFR 77.216-4(a)(3)	For a majority of the 12 month period the water elevation of the impoundments remained constant because of the designed discharge system. The discharge valve was operated manually on occasion. With the manual control, the maximum water depth of the South Impoundment was 11' 1 ½" (elevation 7327.83'). The minimum depth was 8' ½" (elevation 7324.50'). The North Impoundment water level was at the normal discharge level of 7354.83' except for June where evaporation exceeded inlet volumes, lowering the elevation to 7354.33'. The impoundments are surveyed and inspected quarterly, in addition to the required MSHA monthly inspection, to determine sediment accumulation. The impoundments are cleaned when the sediment volume reaches the 60% design capacity. (See above)

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 3 5
Permit Number	ACT/015/019	Report Date	June 26, 2001
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 26, 2001
Inspected By	Rick Cullum/ John Christensen/ Seth McCourt
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	2nd Quarter Inspection 2001

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.

2. 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.

3. 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

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 Pond	South Pond	Waste Rock Pond
Water Elevation	7354.17	7328.29	6760.82
Discharging	yes	yes	No
Inlet/Outlet Condition	Good	Good	Good
Slope conditions	Good	Good	Good

*See "Hydrologic Monitoring Data" report submitted to DOGM quarterly 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 Pond	South Pond	Waste Rock Pond
Sediment Volume	0.13 AF	0.10 AF	1.01 AF
Remaining Sediment Storage Capacity	0.43 AF	0.22 AF	1.41 AF
Water Impounded	0.33 AF	0.51 AF	0.49 AF
Changes, Comments,	Pond is functioning Normally at this time.	Pond is fun-tioning nor-mally.	Pond in func-tioning nor-mally.

NORTH AND SOUTH PONDS WERE CLEANED IN THE FOURTH QUARTER OF 2000. The Trail Mountain/Cottonwood mining complex has ceased operation. The only water flowing into the pond will be from storm events.

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:** 7/10/01

Signature: Richard Cullum **Date:** 7/10/01

CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	X	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	X	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	X	

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 3
Permit Number	ACT/015/019	Report Date	Mar. 28, 2001
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. 20, 2001
Inspected By	Rick Cullum/ John Christensen/ Ed Riggle
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	1st Quarter Inspection 2001

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.

2. **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.

3. **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

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 Pond	South Pond	Waste Rock Pond
Water Elevation	7354.42	7329.19	6761.74
Discharging	yes	yes	No
Inlet/Outlet Condition	Good	Good	Good
Slope conditions	Good	Good	Good

*See "Hydrologic Monitoring Data" report submitted to DOGM quarterly 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 Pond	South Pond	Waste Rock Pond
Sediment Volume	0.0 AF	0.0 AF	0.83 AF
Remaining Sediment Storage Capacity	0.56 AF	0.32 AF	1.59 AF
Water Impounded	0.48 AF	0.72 AF	0.62 AF
Changes, Comments,	Pond is functioning Normally at this time.	Pond is fun-tioning nor-mally.	Pond in func-tioning nor-mally.

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: 4/4/01

Signature: Richard Cullum Date: 4/9/01

CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	x	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	x	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	x	

COMMENTS AND OTHER INFORMATION

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 3
Permit Number	ACT/015/019	Report Date	Mar. 28, 2001
Mine Name	Cottonwood/Wilberg		
Company Name	PacifiCorp		
Impoundment Identification	Impoundment Name	COTTONWOOD CANYON NORTH BASIN	SOUTH BASIN
	Impoundment Number		
	UPDES Permit Number	UT-0022896-002A	
	MSHA ID Number		

IMPOUNDMENT INSPECTION

Inspection Date	Mar. 20, 2001
Inspected By	Rick Cullum/ John Christensen/Ed Riggle
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	First Quarter 2001 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. VERY SMALL AMOUNT OF WATER IN BASINS FROM STORM RUNOFF.

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:** 4/5/01

Signature: J. Richard Cullum **Date:** 4/9/01

CERTIFIED REPORT

Monthly M.S.H.A. Impoundment Inspection Reports

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

December 18, 2001

COTTONWOOD PREP PLANT MSHA IMPOUNDMENT INSPECTIONS

NORTH SEDIMENT POND: (MSHA I.D. 1211-UT-09-02052-02)

- Ice level is approximately12" below the normal discharge elevation *7353.83'.
- No inlet or discharge flows during time of the inspection.
- *Water depth is calculated at 10'2".
- Dam and slopes appear stable and unchanged. Are snow covered.
- Dam outslope rip-rap is intact.
- MSHA I.D. sign present. New sign is ordered to reflect the MSHA I.D. number changes.

SOUTH SEDIMENT POND: (MSHA I.D. 1211-UT-09-02052-03)

- Ice level is approximately 21" below the normal discharge elevation *7323.50'.
- No inlet or discharge flows during time of the inspection.
- *Water depth is calculated at 6' 10 1/2".
- Dam and slopes appear stable and unchanged. Are snow covered.
- Dam outslope rip-rap is intact
- MSHA I.D. sign present. New sign is ordered to reflect the MSHA I.D. number changes.

* Information taken drawing KS1576D of the Mine Permit.

Inspection Date: 12/18/01

Inspector: Guy Davis

Guy Davis
MSHA Qualified Impoundment Inspector / Instructor

cc: Dennis Oakley

Huntington Office:
(801) 687-9821
Fax (801) 687-2695
Purchasing Fax (801) 687-9092

Deer Creek Mine:
(801) 381-2317
Fax (801) 381-2285

Cottonwood Mine:
(801) 748-2319
Fax (801) 748-2380

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

November 19, 2001

COTTONWOOD PREP PLANT MSHA IMPOUNDMENT INSPECTIONS

NORTH SEDIMENT POND: (MSHA I.D. 1211-UT-09-02052-02)

- Water level is approximately18" below the normal discharge elevation *7353.33'.
- No inlet or discharge flows during time of the inspection.
- *Water depth is calculated at 9'8".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact.
- MSHA I.D. sign present. New sign is ordered to reflect the recent changes.

SOUTH SEDIMENT POND: (MSHA I.D. 1211-UT-09-02052-03)

- Water level is approximately 21" below the normal discharge elevation *7323.50'.
- No inlet or discharge flows during time of the inspection.
- *Water depth is calculated at 6' 10 1/2".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact
- MSHA I.D. sign present. New sign is ordered to reflect the recent changes.

* Information taken from drawing KS1576D of the Mine Permit.

Inspection Date: 11/16/01

Inspector: Guy Davis
Guy Davis
MSHA Qualified Impoundment Inspector / Instructor

cc: Dennis Oakley

Huntington Office:
(801) 687-9821
Fax (801) 687-2695
Purchasing Fax (801) 687-9092

Deer Creek Mine:
(801) 381-2317
Fax (801) 381-2285

Cottonwood Mine:
(801) 748-2319
Fax (801) 748-2380

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

October 23, 2001

COTTONWOOD PREP PLANT MSHA IMPOUNDMENT INSPECTIONS

NORTH SEDIMENT POND: (MSHA I.D. 1211-UT-09-02052-02)

- New MSHA I.D. numbers assigned by MSHA.
- Water level is 18" below the normal discharge elevation *7353.33'.
- No inlet or discharge flows during time of the inspection.
- *Water depth is calculated at 9'8".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact.
- MSHA I.D. sign present. New signs are ordered to reflect the recent I.D. changes.

SOUTH SEDIMENT POND: (MSHA I.D. 1211-UT-09-02052-03)

- New MSHA I.D. numbers assigned by MSHA.
- Water level is 21" below the normal discharge elevation. *7323.50'.
- No inlet or discharge flows during time of the inspection.
- *Water depth is calculated at 6' 10 1/2".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact
- MSHA I.D. sign present. New signs are ordered to reflect the recent I.D. changes.

* Information taken from drawing KS1576D of the Mine Permit.

Inspection Date: 10/22/01

Inspector: Guy Davis

Guy Davis
MSHA Qualified Impoundment Inspector / Instructor

cc: Dennis Oakley

Huntington Office:
(801) 687-9821
Fax (801) 687-2695
Purchasing Fax (801) 687-9092

Deer Creek Mine:
(801) 381-2317
Fax (801) 381-2285

Cottonwood Mine:
(801) 748-2319
Fax (801) 748-2380

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

September 17, 2001

COTTONWOOD MSHA IMPOUNDMENT INSPECTIONS

NORTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-01)

- Water level is 6" below the normal discharge elevation *7354.33'.
- No inlet or discharge flows during time of the inspection.
- *Water depth is calculated at 10'8".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact.
- MSHA I.D. sign present.

SOUTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-02)

- Water level is 9" below the normal discharge elevation. *7324.50'.
- No inlet or discharge flows during time of the inspection.
- *Water depth is calculated at 7' 10 1/2".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact
- MSHA I.D. sign present.

* Information taken from drawing KS1576D of the Mine Permit.

Inspection Date: 9/17/01

Inspector: Guy Davis
Guy Davis
MSHA Qualified Impoundment Inspector / Instructor

cc: Dennis Oakley

Huntington Office:
(801) 687-9821
Fax (801) 687-2695
Purchasing Fax (801) 687-9092

Deer Creek Mine:
(801) 381-2317
Fax (801) 381-2285

Cottonwood Mine:
(801) 748-2319
Fax (801) 748-2380

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

August 27, 2001

COTTONWOOD MSHA IMPOUNDMENT INSPECTIONS

NORTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-01)

- Water level is 6" below the normal discharge elevation *7354.33'.
- No inlet or discharge flows during time of the inspection.
- *Water depth is calculated at 10'8".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact.
- MSHA I.D. sign present.

SOUTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-02)

- Water level is 6" below the normal discharge elevation. *7324.83'.
- No inlet or discharge flows during time of the inspection.
- *Water depth is calculated at 8' 1 1/2".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact
- MSHA I.D. sign present.

* Information taken from drawing KS1576D of the Mine Permit.

Inspection Date: 8/27/01

Inspector: Guy Davis

Guy Davis
MSHA Qualified Impoundment Inspector / Instructor

cc: Dennis Oakley

Huntington Office:
(801) 687-9821
Fax (801) 687-2695
Purchasing Fax (801) 687-9092

Deer Creek Mine:
(801) 381-2317
Fax (801) 381-2285

Cottonw
(801) 7
Fax (801

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

July 17, 2001

COTTONWOOD MSHA IMPOUNDMENT INSPECTIONS

NORTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-01)

- Water level is at the normal discharge elevation *7354.83'.
- Was not discharging during inspection.
- *Water depth is calculated at 11'2".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact.
- MSHA I.D. sign present.
- Water elevations is higher than last inspection because of the recent precipitation events at the site.

SOUTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-02)

- Water level is at the normal discharge elevation. *7325.33'.
- Discharge was clean and estimated at be 5.0 gpm. (Flow meter was not working)
- *Water depth is calculated at 8' 7 1/2".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact
- MSHA I.D. sign present.

* Information taken from drawing KS1576D of the Mine Permit.

Inspection Date: 7/16/01

Inspector: Guy Davis

Guy Davis
MSHA Qualified Impoundment Inspector / Instructor

cc: Dennis Oakley

Huntington Office:
(435) 687-9821
Fax (435) 687-2695
Purchasing Fax (435) 687-9092

Deer Creek Mine:
(435) 687-2317
Fax (435) 687-2285

Trail Mountain Mine:
(435) 748-2140
Fax (435) 748-5125

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

July 9, 2001

COTTONWOOD MSHA IMPOUNDMENT INSPECTIONS

NORTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-01)

- Pond water level is approximately 6" below the normal discharge elevation *7354.33'.
- *Water depth is calculated at 10'8".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact.
- MSHA I.D. sign present.

SOUTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-02)

- Water elevation is 10" below the normal discharge elevation. *7324.50'.
- *Water depth is calculated at 8' 1/2".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact
- MSHA I.D. sign present.

Mine is now idle. Evaporation may exceed discharge in the future.

* Information taken from drawing KS1576D of the Mine Permit.

Inspection Date: 6/29/01

Inspector: Guy Davis
Guy Davis
MSHA Qualified Impoundment Inspector / Instructor

cc: Dennis Oakley

Huntington Office:
(435) 687-9821
Fax (435) 687-2695
Purchasing Fax (435) 687-9092

Deer Creek Mine:
(435) 687-2317
Fax (435) 687-2285

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(435) 748-2140
Fax (435) 748-5125

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

May 18, 2001

COTTONWOOD MSHA IMPOUNDMENT INSPECTIONS

NORTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-01)

- Pond at normal discharge elevation of *7354.83'.
- *Water depth is calculated at 11'2".
- Height of dam (East side) may be lower than plans.
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact.
- MSHA I.D. sign present.

SOUTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-02)

- Water level is approx. 30" higher than the normal discharge elevation. The current elevation is 7327.83'. Discharge is being manually controlled. Valve is closed.
- *Water depth is calculated at 11' 1 1/2".
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact
- MSHA I.D. sign present.

* Information taken from drawing KS1576D of the Mine Permit.

Inspection Date: 5/18/01

Inspector: Guy Davis

Guy Davis
MSHA Qualified Impoundment Inspector / Instructor

cc: Dennis Oakley

Huntington Office:
(435) 687-9821
Fax (435) 687-2695
Purchasing Fax (435) 687-9092

Deer Creek Mine:
(435) 687-2317
Fax (435) 687-2285

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(435) 748-2140
Fax (435) 748-5125

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

April 18, 2001

COTTONWOOD MSHA IMPOUNDMENT INSPECTIONS

NORTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-01)

- Pond at normal discharge elevation of *7354.83'.
- *Water depth is calculated at 11'2".
- No runoff into or out of the pond. The operations at the facility are shut down.
- Height of dam on the East side may be lower than plans. This was the area used for sediment access during the last cleaning.
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact.
- MSHA I.D. sign present.

SOUTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-02)

- Water level is approx. 1.0' higher than the normal discharge elevation (7326.33'). Discharge is being manually controlled.
- *Water depth is calculated at 9' 71/2/".
- No discharge
- Dam and slopes appear stable and unchanged.
- Dam outslope rip-rap is intact
- MSHA I.D. sign present.

* Information taken from drawing KS1576D of the Mine Permit.

Inspection Date: 4/18/01

Inspector: Guy Davis
Guy Davis
MSHA Qualified Impoundment Inspector / Instructor

cc: Dennis Oakley

Huntington Office:
(435) 687-9821
Fax (435) 687-2695
Purchasing Fax (435) 687-9092

Deer Creek Mine:
(435) 687-2317
Fax (435) 687-2285

Trail Mountain Mine:
(435) 748-2140
Fax (435) 748-5125

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

March 22, 2001

COTTONWOOD MSHA IMPOUNDMENT INSPECTIONS

NORTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-01)

- Pond at normal discharge elevation of *7354.83'.
- *Water depth is calculated at 11'2".
- Slopes and dam appear stable and unchanged.
- Dam outslope rip-rap is intact.
- MSHA I.D. sign present.

SOUTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-02)

- Water at normal discharge elevation of 7325.33'.
- *Water depth is calculated at 8' 71/2/".
- Discharge is 21.0 gpm and appears clean.
- Slopes and dam appear stable and unchanged.
- Dam outslope rip-rap is intact
- MSHA I.D. sign present.

* Information taken from drawing KS1576D of the Mine Permit.

Inspection Date: 3/22/01

Inspector: Guy Davis
Guy Davis
MSHA Qualified Impoundment Inspector / Instructor

cc: Dennis Oakley

Huntington Office:
(435) 687-9821
Fax (435) 687-2695
Purchasing Fax (435) 687-9092

Deer Creek Mine:
(435) 687-2317
Fax (435) 687-2285

Trail Mountain Mine:
(435) 748-2140
Fax (435) 748-5125

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

February 23, 2001

COTTONWOOD MSHA IMPOUNDMENT INSPECTIONS

NORTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-01)

- Pond at normal discharge elevation of *7354.83' (Decant Elevation).
- *Water depth is calculated at 11'2".
- Slopes and dam are snow covered. They appear stable and unchanged.
- Dam outslope rip-rap is intact.
- MSHA I.D. sign present.

SOUTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-02)

- Water at normal elevation of 7325.33' (Decant Elevation).
- *Water depth is calculated at 8' 71/2/".
- Discharge is 28.0 gpm and appears clean.
- Slopes and dam is snow covered. They appear stable and unchanged.
- SE road draingae inlet culvert is replaced and functioning.
- Dam outslope rip-rap is intact
- MSHA I.D. sign present.

* Information taken from drawing KS1576D of the Mine Permit.

Inspection Date: 2/23/01

Inspector: Guy Davis
Guy Davis
MSHA Qualified Impoundment Inspector / Instructor

cc: Dennis Oakley

Huntington Office:
(435) 687-9821
Fax (435) 687-2695
Purchasing Fax (435) 687-9092

Deer Creek Mine:
(435) 687-2317
Fax (435) 687-2285

Trail Mountain Mine:
(435) 748-2140
Fax (435) 748-5125

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

January 17, 2001

COTTONWOOD MSHA IMPOUNDMENT INSPECTIONS

NORTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-01)

- Pond at normal discharge level.
- Slopes and dam appear stable and unchanged.
- Dam outslope rip-rap is intact.
- MSHA I.D. sign present.

SOUTH IMPOUNDMENT: (MSHA I.D. 1211-UT-09-01211-02)

- Water at normal elevation.
- Discharge is 28.0 gpm and appears clean.
- Slopes and dam appear stable and unchanged.
- SE road draingae inlet culvert is being replaced.
- Dam outslope rip-rap is intact
- MSHA I.D. sign present.

Inspection Date: 1/17/01

Inspector: Guy Davis
Guy Davis
MSHA Qualified Impoundment Inspector / Instructor

cc: Dennis Oakley

Huntington Office:
(435) 687-9821
Fax (435) 687-2695
Purchasing Fax (435) 687-9092

Deer Creek Mine:
(435) 687-2317
Fax (435) 687-2285

Trail Mountain Mine:
(435) 748-2140
Fax (435) 748-5125

PacifiCorp

Energy West Mining Company

Deer Creek Mine

C/015/018

Quarterly Pond Inspection Reports
For 2001

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/018	Report Date	Dec. 27, 2001
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:12/10/01	Waste Rock Pond:12/10/01
Inspected By	Rick Cullum / John Christensen	
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Fourth Quarter 2001 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	7222.08 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	6.72 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:** 1/7/02

Signature: Richard Cullum **Date:** 1-7-02

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 3 4
Permit Number	ACT/015/018	Report Date	Sept. 12, 2001
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:9/7/01	Waste Rock Pond:6/18/01
Inspected By	Rick Cullum / John Christensen	
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Third Quarter 2001 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.

2. **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.

3. **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

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.

	Mine Site Pond	Waste Rock Pond
Water Elevation	7223.78	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.

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.

	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	8.28 A.F.	NONE
Changes, Comments, etc.	No changes from previous inspection.	No change from previous Inspection

Qualification Statement

LICENSED JOHN No. 165651 ENGINEER 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 Christer **Date:** 10/14/01

Signature: Richard Cullum **Date:** 10/15/01

CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	X	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	X	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	X	

COMMENTS AND OTHER INFORMATION

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/018	Report Date	June 29, 2001
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:6/29/01	Waste Rock Pond:6/18/01
Inspected By	Rick Cullum / John Christensen	
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Second Quarter 2001 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.

2. **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.

3. **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

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.

	Mine Site Pond	Waste Rock Pond
Water Elevation	7227.68	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.

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.

	Mine Site Pond	Waste Rock Pond
Sediment Volume	1.32 A.F.	None
Remaining Sediment Storage Capacity	1.8 A.F.	0.98 A.F.
Water impounded	8.28 A.F.	NONE
Changes, Comments, etc.	No changes from previous inspection.	No change from previous 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:** 9/10/01

Signature: Richard Cullen **Date:** 9-10-01

CERTIFIED REPORT

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	X	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	X	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	X	

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 3 4
Permit Number	ACT/015/018	Report Date	Mar. 29, 2001
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:3/29/01	Waste Rock Pond:3/26/01
Inspected By	Rick Cullum / John Christensen/ Ed Riggle	
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	First Quarter 2001 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.

2. **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.

3. **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

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.

	Mine Site Pond	Waste Rock Pond
Water Elevation	7227.68	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.

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.

	Mine Site Pond	Waste Rock Pond
Sediment Volume	1.32 A.F.	None
Remaining Sediment Storage Capacity	1.80 A.F.	0.98 A.F.
Water impounded Mine Site Pond Partially frozen.	8.28 A.F.	NONE
Changes, Comments, etc.	No changes from previous inspection.	No change from previous 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:** 4/5/01

Signature: Richard Cullum **Date:** 4/9/01

PacifiCorp

Energy West Mining Company

Des Bee Dove Mines

C/015/017

Quarterly Pond Inspection Reports
For 2001

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/017	**Report Date**	Dec. 27, 2001
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	12/13/01
Inspected By	Rick Cullum/John Christensen
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Fourth Quarter 2001 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.

60% Design Storage Capacity 1.2 A.F. at 6756

100% Sediment Capacity 2.0 A.F. at 6757

Principle and emergency spillway elevations.

Principle Spillway Elevation (F.A.S.L.): 6757.0

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	6757.64 Top of ice
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:** 1/7/02

Signature: Richard Cullum **Date:** 1-7-02

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 3
Permit Number	ACT/015/017	Report Date	OCT. 4, 2001
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	9/28/01
Inspected By	Rick Cullum/John Christensen
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Third Quarter 2001 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.** **60% Design Storage Capacity** 1.2 A.F. at 6756 **100% Sediment Capacity** 2.0 A.F. at 6757
	Principle and emergency spillway elevations. **Principle Spillway Elevation (F.A.S.L.):** 6757.0 **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	6760.84
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:	3.18 A.F.

Changes or Comments: Pond appears to be functioning normally at time of inspection. The pond is scheduled to be cleaned in the 4th Quarter.

Qualification Statement

LICENSED PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 157851

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:** 10/14/01

Signature: Richard Cullum **Date:** 10/15/01

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 3
Permit Number	ACT/015/017	**Report Date**	June 29, 2001
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	6/27/01
Inspected By	Rick Cullum/John Christensen
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Second Quarter 2001 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.

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

60% Design Storage Capacity 1.2 A.F. at 6756

100% Sediment Capacity 2.0 A.F. at 6757

3. Principle and emergency spillway elevations.

Principle Spillway Elevation (F.A.S.L.): 6757.0

Emergency Spillway Elevation: (F.A.S.L.): 6771.8

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	6759.46
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:	1.41
Remaining Sediment Storage Capacity:	0.59
Water Impoundment:	2.89 A.F.

Changes or Comments: Pond appears to be functioning normally 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:** 7/10/01

Signature: Richard Cullum **Date:** 7/10/01

IMPOUNDMENT INSPECTION AND TIFIED REPORT			Page 1 of 3
Permit Number	ACT/015/017	Report Date	Mar. 20, 2001
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	3/20/01
Inspected By	Rick Cullum/John Christensen/ Ed Riggle
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	First Quarter 2001 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.

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

60% Design Storage Capacity 1.2 A.F. at 6756

100% Sediment Capacity 2.0 A.F. at 6757

3. Principle and emergency spillway elevations.

Principle Spillway Elevation (F.A.S.L.): 6757.0

Emergency Spillway Elevation:(F.A.S.L.): 6771.8

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	6760.54
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:	1.11
Remaining Sediment Storage Capacity:	0.89
Water Impoundment:	4.49 A.F.

Changes or Comments: Pond appears to be functioning normally at this time

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:** 4/4/01

Signature: Richard Cullum **Date:** 4/9/01

PacifiCorp

Energy West Mining Company

Trail Mountain Mine

C/015/009

Quarterly Pond Inspection Reports
For 2001

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	7184.00 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	0.16 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:** 1/7/02
Signature: Richard Cuddum **Date:** 1-7-02

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 3 4
Permit Number	ACT/015/009	**Report Date**	OCT. 4, 2001
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. 27, 2001
Inspected By	John Christensen / Rick Cullum/
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Third Quarter 2001 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	7184.44
Discharging	Yes
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	0.19 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:** 10/15/01
Signature: Richard Williams **Date:** 10/15/01

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	x	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	x	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	x	

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 3 4
Permit Number	ACT/015/009	**Report Date**	June 26, 2001
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 26, 2001
Inspected By	John Christensen / Rick Cullum/
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	Second Quarter 2001 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

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 3 4

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	7185.10
Discharging	Yes
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	0.23 A.F.
Remaining Sediment Storage Capacity	0.24 A.F.
Water Impounded	0.38 A.F.
Changes, comments, etc.	Mining operations has ceased at Trail Mtn., only storm run off will run into the pond.

Qualified Signature

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: [signature] **Date:** 7/10/01
Signature: Richard Cullum **Date:** 7/10/01

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	x	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	x	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	x	

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 3
Permit Number	ACT/015/009	Report Date	Mar. 28, 2001
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. 20, 2001
Inspected By	John Christensen / Rick Cullum/ Ed Riggle
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	First Quarter 2001 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	7188.15	Top of ice
Discharging	Yes	
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	0.12 A.F.
Remaining Sediment Storage Capacity	0.35 A.F.
Water Impounded	0.82 A.F.

Changes, comments, etc.

Qualified Professional Engineer 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: 4/5/01

Signature: Richard Cullum Date: 4/9/01

IMPOUNDMENT EVALUATION (If NO, explain under Comments)	YES	NO
1. Is impoundment designed and constructed in accordance with the approved plan?	x	
2. Is impoundment free of instability, structural weakness, or any other hazardous condition?	x	
3. Has the impoundment met all applicable performance standards and effluent limitations from the previous date of inspection?	x	

COMMENTS AND OTHER INFORMATION

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

ENERGY WEST MINING COMPANY
VEGETATION MONITORING
2001

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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March 2002

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INTRODUCTION

The following document addresses the results of vegetation monitoring of seeded areas for the year 2001. The following is a list of areas monitored and reported within this document.

Cottonwood Mine Area

Old Fan Road
Reference Area
4th East Road
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

Sediment Storage Slope
Sediment Pond Banks
Sediment Pond Area
Subsoil Pile at Sed. Pond Jan. '98
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 2001. 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 2001 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), belt transects, or in some cases, counting the entire population of a given area. 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.

In the belt transect method, sizes of transects varied with individual sites. In this method total counts of the woody species were conducted in each transect. They were then summed and averaged to calculate the number of individuals per acre.

Productivity

Total annual biomass was estimated by clipping, drying and weighing current annual productivity. When there was enough space within the sample area, "double sampling" or relative ocular estimates were also made placing four quadrats near the "clipped" quadrat to increase accuracy of the productivity estimates. In other words, one quadrat was placed. From this sample, four more quadrat estimates were made relative to the first quadrat. Biomass from the first quadrat was clipped and weighed.

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.

Additional vegetation monitoring was conducted in 2001 for some of the areas reported in this document. This monitoring will be reported to Energy West Mining Company in separate documents.

Also in addition to this report, a "close-out" meeting was conducted by representatives of *Mt. Nebo Scientific, Inc.* and *Energy West Mining Company* at the end of the sample season 2001. This meeting was conducted to summarize the findings of the sample year.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Old Fan Road

AREA: Cottonwood Mine (1984)

DATE: August 31 - September 1, 2001

WORKERS: P. Collins, D. Oakley

SLOPE: 13-15 deg.

EXPOSURE: Variable

AREA: .8 acres

ANIMAL USE/DISTURBANCE: Heavy deer sign.

EROSION: Negligible

COVER: (cover not sampled this year).

DOMINANT PLANT SPECIES OBSERVED:
Artemisia tridentata
Atriplex confertifolia
Cercocarpus montanus
Chrysothamnus nauseosus
Eriogonum corymbosum
Gutierrezia sarothrae
Populus angustifolia
Ribes sp.
Salix exigua
Sambucus caerulea
Symphoricarpos oreophilus

Aster chilensis
Astragalus cicer
Cirsium sp.
Cynoglossum officinale
Linum lewisii
Machaeranthera canescens
Melilotus officinalis

Tragopogon dubius
Viguiera multiflora

Bromus carinatus
Elymus cinereus
Elymus salinus
Elymus spicatus
Elymus junceus
Elymus lanceolatus
Stipa hymenoides
Elymus smithii
Elymus salinus
Stipa hymenoides

NOTES:

1) We sampled for qualitative data in 2001.

2) Revegetation site looked excellent.

3) Cover, density and diversity looked very good.

4) A few areas had lower diversity and were comprised mainly of grasses and aster.

5) There were about 5 musk thistles noted in the area (~01). Walking up from the storage yard, the thistles were located near the end of the channel where some large boulders are present in the channel bottom. The area is near the location that you turn to walk up to the Ninth East Breakout from the channel bottom.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Reference Area

AREA: Cottonwood Mine

DATE: September 10, 2001

WORKERS: P. Collins, D. Oakley

SLOPE: 36 deg.

EXPOSURE: NE

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 2001.
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
2001

SITE NAME: 4th East Road

AREA: Cottonwood Mine (1986)

DATE: September 10, 2001

WORKERS: P. Collins, D. Oakley

SLOPE: 3 - 5 degrees

EXPOSURE: N

AREA: .1 acre

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (Cover not sampled this year) .

DOMINANT PLANT SPECIES OBSERVED:

Chrysothamnus nauseosus
Gutierrezia sarothrae

Aster chilensis
Medicago sativa
Penstemon palmeri

Agropyron cristatum
Elymus cinereus
Elymus lanceolatus
Elymus smithii

NOTES:

1) We sampled for qualitative data this year.

2) Excellent grass and alfalfa cover with very few shrubs.

3) Site looked similar to last year.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Storage Yard Slope

AREA: Cottonwood Mine (1988 Reveg. Area)

DATE: August 31 - September 1, 2001

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
Gutierrezia sarothrae

Aster chilensis
Kochia scoparis
Penstemon palmeri

Agropyron cristatum
Elymus cinereus
Elymus lanceolatus
Elymus smithii
Elymus elymoides

NOTES:

1) Sampled for qualitative data only.

2) Slopes appear to be stable. The vegetation of most areas is good, but there were some areas were patchy weeds were present.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Parking Lot Slope

AREA: Cottonwood Mine

DATE: August 31 - September 1, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 26 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE:

EROSION: Slight to moderate, but controlled by rocks.

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

Chrysothamnus nauseosus
Atriplex confertifolia

Aster chilensis
Elymus cinereus
Elymus elymoides
Elymus lanceolatus
Elymus hispidus
Elymus salinus
Hordeum jubatum
Kochia scoparia
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
2001

SITE NAME: Road/Silo Pad Slope

AREA: Cottonwood Mine (1988 Reveg. Area)

DATE: August 31 - September 1, 2001

WORKERS: P. Collins, D. 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
Chrysothamnus nauseosus
Eriogonum corymbosum

Aster chilensis
Penstemon palmeri
Halogeton glomeratus
Kochia scoparia

Elymus cinereus
Elymus smithii
Elymus spicatus

NOTES:

1) Area was active with mine activity and constantly under change. The plant growth is unstable (~00, 01).

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Tipple Area Slope

AREA: Cottonwood Mine (1988 Reveg. Area)

DATE: August 31 - September 1, 2001

WORKERS: P. Collins, D. 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

Bromus inermis
Elymus lanceolatus
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
2001

SITE NAME: Sediment Pond Banks

AREA: Cottonwood Mine (1988 Reveg. Area)

DATE: August 31 - September 1, 2001

WORKERS: P. Collins, D. 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
Helianthus annuus
Kochia scoparia
Malcomia africana
Salsola pestifer

Bromus inermis
Elymus cinereus
Elymus elymoides
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.

4) Many weedy species were present.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Ninth East Road Breakout

AREA: Cottonwood Mine (1988 Reveg. Area)

DATE: August 31 - September 1, 2001

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
Descurainia pinnata
Kochia scoparia
Linum lewisii

Cirsium sp.

Agropyron cristatum
Bromus inermis
Elymus lanceolatus
Elymus smithii

NOTES:

1) Qualitative and quantitative data were taken in 2001.

2) There was signs of recent cattle use.

3) There were lots of young sagebrush plants this years.

4) The site look better this year.

5) Erosion is being controlled by roughed ground techniques.

6) 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. We should at least keep an eye on these areas in the 2002 monitoring (~01).

Woody Species Density

NINTH EAST BREAKOUT	*No/Ac*
Artemisia tridentata	580.79
Atriplex canescens	184.80
Atriplex confertifolia	52.80
Chrysothamnus nauseosus	158.40
Eriogonum corymbosum	79.20
Total	**1055.99**

ENERGY WEST
Ninth East Breakout
Cottonwood Mine (1988 Reveg. Area)
Slope: Variable
Exposure: Variable

Sample Date: 31 Aug - 1 Sept 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
SHRUBS							
Artemisia tridentata	0.00	0.00	5.00	0.00	10.00	0.00	0.00
Atriplex canescens	0.00	0.00	0.00	0.00	0.00	10.00	0.00
Chrysothamnus nauseosus	1.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS							
Aster chilensis	0.00	5.00	0.00	5.00	0.00	10.00	3.00
Halogeton glomeratus	0.00	0.00	5.00	5.00	0.00	0.00	0.00
Linum lewisii	2.00	5.00	0.00	0.00	5.00	0.00	5.00
Machaeranthera canescens	0.00	0.00	0.00	0.00	0.00	5.00	0.00
Penstemon palmeri	0.00	0.00	0.00	0.00	5.00	0.00	0.00
GRASSES							
Bromus carinatus	0.00	0.00	0.00	0.00	0.00	5.00	0.00
Elymus junceus	0.00	0.00	0.00	0.00	2.00	0.00	0.00
Elymus lanceolatus	2.00	10.00	5.00	0.00	5.00	5.00	7.00
Elymus trachycaulus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stipa hymenoides	0.00	0.00	0.00	0.00	3.00	0.00	0.00
COVER							
Total Living Cover	5.00	20.00	15.00	10.00	30.00	35.00	15.00
Litter	55.00	10.00	10.00	5.00	10.00	5.00	15.00
Bareground	5.00	25.00	50.00	55.00	35.00	15.00	45.00
Rock	35.00	45.00	25.00	30.00	25.00	45.00	25.00
% COMPOSITION							
Shrubs	20.00	0.00	33.33	0.00	33.33	28.57	0.00
Forbs	40.00	50.00	33.33	100.00	33.33	42.86	53.33
Grasses	40.00	50.00	33.33	0.00	33.33	28.57	46.67

ENERGY WEST
Ninth East Breakout
Cottonwood Mine (1988 Reveg. Area)
Slope: Variable
Exposure: Variable
Sample Date: 31 Aug - 1 Sept 01

8.00	9.00	10.00	Mean	SDev	Freq	
						SHRUBS
0.00	0.00	0.00	1.50	3.20	20.00	*Artemisia tridentata*
0.00	0.00	0.00	1.00	3.00	10.00	*Atriplex canescens*
0.00	0.00	0.00	0.10	0.30	10.00	*Chrysothamnus nauseosus*
						FORBS
20.00	50.00	30.00	12.30	15.64	70.00	*Aster chilensis*
0.00	0.00	0.00	1.00	2.00	20.00	*Halogeton glomeratus*
5.00	0.00	0.00	2.20	2.36	50.00	*Linum lewisii*
0.00	0.00	0.00	0.50	1.50	10.00	*Machaeranthera canescens*
0.00	0.00	0.00	0.50	1.50	10.00	*Penstemon palmeri*
						GRASSES
0.00	0.00	0.00	0.50	1.50	10.00	*Bromus carinatus*
0.00	0.00	0.00	0.20	0.60	10.00	*Elymus junceus*
0.00	5.00	10.00	4.90	3.36	80.00	*Elymus lanceolatus*
5.00	0.00	5.00	1.00	2.00	20.00	*Elymus trachycaulus*
0.00	0.00	0.00	0.30	0.90	10.00	*Stipa hymenoides*
						COVER
30.00	55.00	45.00	26.00	15.13		Total Living Cover
10.00	10.00	10.00	14.00	13.93		Litter
20.00	30.00	25.00	30.50	15.07		Bareground
40.00	5.00	20.00	29.50	11.72		Rock
						% COMPOSITION
0.00	0.00	0.00	11.52	14.53		Shrubs
83.33	90.91	66.67	59.38	23.24		Forbs
16.67	9.09	33.33	29.10	15.23		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Cell #1

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

DATE: August 13 - August 18, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 0-1 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Slight to Moderate

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Artemisia tridentata
Atriplex canescens
Chrysothamnus nauseosus
Cercocarpus montanus
Gutierrezia sarothrae

Agropyron cristatum
Elymus lanceolatus
Elymus smithii
Stipa hymenoides

NOTES:

1) Sampled for qualitative and quantitative 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 dates and the earliest we could begin is on the 9th year or 2002.

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 this year as though we may attempt bond release to see what the data reveal. If, in fact, we come up short on sample sizes it will not be too critical. We will then know how many samples to take in years 9 and 10 and whether or not we should receive final bond release. *A separate report for this for pre-bond release will be submitted to Energy West Mining Company.*

5) We recorded some data then made some calculations in the field. Based on previous years, the production will be the parameter most likely to fall short on sample size. Therefore, we decided to increase sample size of production while keeping cover and density to sizes that may meet about 80% within 10% deviation. In other words, we let production samples drive the other parameters for sample sizes.

6) The sample sizes in the table below were therefore achieved.

7) By first observations, Cells 1 and 2 seemed to have less grass cover than previous years.

8) All plots appeared to have more crested wheatgrass. Check quantitative data of this year and previous years. This may be a result of climatic variations.

Energy West Cottonwood Mine - Old Waste Rock Site
Sample Sizes for 2001

	COVER	DENSITY	PRODUCTION
CELL 1	20	20	20
CELL 2	20	20	20
CELL 3	20	20	20
CELL 4	30	30	30
CELL 5	30	30	30
CELL 6	30	30	30
CELL 7	40	40	40
BERM 1	10	10	10
BERM 2	10	10	10
BERM 3	10	10	10
BERM 4	10	10	10
TOTALS	230	230	230

ENERGY WEST MINING
Cell #1
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 0 -1 deg.
Sample Date: 13-18 Aug 01

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Artemisia tridentata	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atriplex canescens	0.00	30.00	0.00	30.00	5.00	0.00	0.00
Atriplex confertifolia	0.00	0.00	0.00	0.00	0.00	0.00	13.00
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ephedra viridis	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gutierrezia sarothrae	0.00	20.00	10.00	5.00	30.00	20.00	7.00
FORBS							
Macharanthera grindelioides	0.00	0.00	0.00	0.00	0.00	5.00	0.00
GRASSES							
Agropyron cristatum	0.00	0.00	5.00	15.00	5.00	5.00	40.00
Bromus tectorum	0.00	5.00	0.00	0.00	0.00	0.00	0.00
Elymus lanceolatus	15.00	0.00	0.00	15.00	5.00	5.00	10.00
Elymus smithii	35.00	0.00	30.00	0.00	10.00	5.00	0.00
Stipa comata	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stipa hymenoides	5.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER							
Total Living Cover	55.00	55.00	45.00	65.00	55.00	40.00	70.00
Litter	15.00	10.00	20.00	20.00	10.00	5.00	5.00
Bareground	5.00	15.00	10.00	5.00	10.00	10.00	20.00
Rock	25.00	20.00	25.00	10.00	25.00	45.00	5.00
% COMPOSITION							
Shrubs	0.00	90.91	22.22	53.85	63.64	50.00	28.57
Forbs	0.00	0.00	0.00	0.00	0.00	12.50	0.00
Grasses	100.00	9.09	77.78	46.15	36.36	37.50	71.43

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
0.00	0.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00
20.00	0.00	0.00	10.00	0.00	0.00	30.00	65.00	15.00	45.00
0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	10.00	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	1.00	0.00	0.00	0.00
20.00	15.00	20.00	0.00	25.00	40.00	20.00	0.00	10.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	8.00	0.00	5.00	0.00	0.00	15.00	25.00	5.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	25.00	0.00
0.00	0.00	23.00	15.00	0.00	0.00	0.00	0.00	0.00	10.00
0.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	40.00	50.00	35.00	25.00	40.00	70.00	90.00	55.00	60.00
10.00	15.00	10.00	5.00	5.00	5.00	10.00	3.00	10.00	5.00
10.00	10.00	10.00	10.00	15.00	10.00	5.00	5.00	15.00	10.00
20.00	35.00	30.00	50.00	55.00	45.00	15.00	2.00	20.00	25.00
66.67	62.50	40.00	42.86	100.00	100.00	78.57	72.22	45.45	83.33
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33.33	37.50	60.00	57.14	0.00	0.00	21.43	27.78	54.55	16.67

ENERGY WEST MINING
Cell #1
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 0 -1 deg.
Sample Date: 13-18 Aug 01

18.00	19.00	20.00	Mean	SDev	Freq	
						TREES & SHRUBS
0.00	0.00	0.00	0.20	0.87	5.00	*Artemisia tridentata*
0.00	0.00	25.00	13.75	18.09	50.00	*Atriplex canescens*
0.00	0.00	0.00	0.90	2.98	10.00	*Atriplex confertifolia*
0.00	0.00	0.00	0.50	2.18	5.00	*Chrysothamnus nauseosus*
0.00	0.00	0.00	0.05	0.22	5.00	*Ephedra viridis*
30.00	10.00	0.00	14.35	11.25	80.00	*Gutierrezia sarothrae*
						FORBS
0.00	0.00	0.00	0.25	1.09	5.00	*Macharanthera grindelioides*
						GRASSES
10.00	20.00	20.00	9.15	10.28	70.00	*Agropyron cristatum*
0.00	0.00	0.00	0.25	1.09	5.00	*Bromus tectorum*
10.00	5.00	0.00	3.75	5.21	40.00	*Elymus lanceolatus*
5.00	10.00	10.00	7.10	10.41	50.00	*Elymus smithii*
0.00	0.00	0.00	2.40	6.08	15.00	*Stipa comata*
0.00	0.00	5.00	0.85	2.06	15.00	*Stipa hymenoides*
						COVER
55.00	45.00	60.00	53.50	14.15		Total Living Cover
15.00	10.00	5.00	9.65	4.98		Litter
15.00	25.00	25.00	12.00	5.79		Bareground
15.00	20.00	10.00	24.85	14.37		Rock
						% COMPOSITION
54.55	22.22	41.67	55.96	26.25		Shrubs
0.00	0.00	0.00	0.63	2.72		Forbs
45.45	77.78	58.33	43.41	26.25		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Cell #2

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

DATE: August 13 - August 18, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 0-1 deg.

EXPOSURE: E

AREA: ~ 1 acre

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens
Atriplex confertifolia
Gutierrezia sarothrae

Agropyron cristatum
Elymus lanceolatus
Elymus spicatus
Elymus hispidus
Elymus smithii
Hilaria jamesii
Sitanion hystrix
Stipa hymenoides
Stipa comata

NOTES:
1) Sampled for qualitative and quantitative data in 2001.
2) See "Notes" in Cell 1.
3) Plot looks excellent.
4) By first observations, Cells 1 and 2 seemed to have less grass cover than previous years.

ENERGY WEST MINING
Cell #2
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 0 -1 deg.
Sample Date: 13-18 Aug 01

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Atriplex canescens	30.00	0.00	7.00	10.00	0.00	15.00	7.00
Gutierrezia sarothrae	5.00	15.00	18.00	20.00	0.00	20.00	8.00
FORBS							
GRASSES							
Agropyron cristatum	10.00	0.00	10.00	25.00	5.00	10.00	5.00
Bromus tectorum	0.00	0.00	0.00	5.00	0.00	0.00	0.00
Elymus hispidus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Elymus lanceolatus	5.00	15.00	0.00	0.00	0.00	0.00	0.00
Elymus smithii	10.00	0.00	0.00	0.00	60.00	5.00	5.00
Hilaria jamesii	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Hordeum jubatum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stipa comata	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stipa hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	15.00
COVER							
Total Living Cover	65.00	30.00	35.00	60.00	65.00	50.00	40.00
Litter	20.00	5.00	10.00	10.00	10.00	10.00	10.00
Bareground	5.00	25.00	30.00	15.00	10.00	10.00	40.00
Rock	10.00	40.00	25.00	15.00	15.00	30.00	10.00
% COMPOSITION							
Shrubs	53.85	50.00	71.43	50.00	0.00	70.00	37.50
Forbs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grasses	46.15	50.00	28.57	50.00	100.00	30.00	62.50

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
10.00	0.00	0.00	5.00	0.00	0.00	10.00	10.00	0.00	0.00
5.00	15.00	20.00	15.00	5.00	5.00	5.00	0.00	10.00	10.00
15.00	0.00	5.00	5.00	0.00	0.00	0.00	10.00	20.00	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	0.00	0.00	25.00	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
10.00	25.00	0.00	5.00	30.00	5.00	0.00	10.00	10.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	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	0.00	15.00	5.00	0.00	0.00	15.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
40.00	40.00	35.00	30.00	35.00	30.00	45.00	30.00	40.00	40.00
10.00	10.00	5.00	5.00	10.00	5.00	15.00	5.00	10.00	5.00
25.00	15.00	35.00	5.00	15.00	45.00	20.00	10.00	25.00	35.00
25.00	35.00	25.00	60.00	40.00	20.00	20.00	55.00	25.00	20.00
37.50	37.50	57.14	66.67	14.29	16.67	33.33	33.33	25.00	25.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
62.50	62.50	42.86	33.33	85.71	83.33	66.67	66.67	75.00	75.00

ENERGY WEST MINING
Cell #2
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 0 -1 deg.
Sample Date: 13-18 Aug 01

18.00	19.00	20.00	Mean	SDev	Freq	
						TREES & SHRUBS
25.00	20.00	0.00	7.45	8.84	55.00	*Atriplex canescens*
15.00	20.00	35.00	12.30	8.40	90.00	*Gutierrezia sarothrae*
						FORBS
						GRASSES
5.00	10.00	0.00	6.75	6.94	65.00	*Agropyron cristatum*
0.00	0.00	0.00	0.50	1.50	10.00	*Bromus tectorum*
0.00	0.00	0.00	1.25	5.45	5.00	*Elymus hispidus*
0.00	0.00	0.00	1.25	3.49	15.00	*Elymus lanceolatus*
0.00	0.00	0.00	9.00	14.20	60.00	*Elymus smithii*
0.00	0.00	0.00	0.25	1.09	5.00	*Hilaria jamesii*
0.00	0.00	0.00	0.25	1.09	5.00	*Hordeum jubatum*
5.00	0.00	5.00	2.25	4.60	25.00	*Stipa comata*
0.00	0.00	0.00	1.25	3.83	10.00	*Stipa hymenoides*
						COVER
50.00	50.00	40.00	42.50	10.78		Total Living Cover
10.00	5.00	10.00	9.00	3.74		Litter
10.00	15.00	25.00	20.75	11.43		Bareground
30.00	30.00	25.00	27.75	12.89		Rock
						% COMPOSITION
80.00	80.00	87.50	46.34	23.77		Shrubs
0.00	0.00	0.00	0.00	0.00		Forbs
20.00	20.00	12.50	53.66	23.77		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Cell #3

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

DATE: August 13 - August 18, 2001

WORKERS: P. Collins, D. 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

Agropyron cristatum
Elymus lanceolatus
Hilaria jamesii
Sporobolus airoides
Stipa hymenoides
Stipa comata

NOTES:

1) Sampled for qualitative and quantitative data in 2001.

2) See "Notes" in Cell 1.

3) Cell 3 had better overall cover than Cell 1 & 2. The number of fourwing is somewhat "masked" by the number of broom snakeweed with the methods we used.

4) Cell 3 had different dominant species than Cells 1 and 2.

ENERGY WEST MINING
Cell #3
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 0 -1 deg.
Sample Date: 13-18 Aug 01

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Artemisia tridentata	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atriplex canescens	5.00	15.00	15.00	25.00	0.00	0.00	20.00
Gutierrezia sarothrae	10.00	10.00	5.00	15.00	25.00	45.00	15.00
FORBS							
GRASSES							
Agropyron cristatum	10.00	5.00	15.00	5.00	0.00	0.00	15.00
Elymus lanceolatus	0.00	5.00	0.00	0.00	0.00	0.00	5.00
Elymus smithii	5.00	5.00	10.00	0.00	0.00	0.00	0.00
Hilaria jamesii	0.00	25.00	0.00	0.00	15.00	5.00	0.00
Stipa comata	30.00	5.00	15.00	13.00	5.00	0.00	5.00
Stipa hymenoides	0.00	0.00	0.00	7.00	0.00	0.00	0.00
COVER							
Total Living Cover	60.00	70.00	60.00	65.00	45.00	50.00	60.00
Litter	5.00	10.00	20.00	15.00	10.00	5.00	20.00
Bareground	10.00	5.00	5.00	5.00	10.00	5.00	5.00
Rock	25.00	15.00	15.00	15.00	35.00	40.00	15.00
% COMPOSITION							
Shrubs	25.00	35.71	33.33	61.54	55.56	90.00	58.33
Forbs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grasses	75.00	64.29	66.67	38.46	44.44	10.00	41.67

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	20.00	10.00	20.00	10.00	0.00	0.00	5.00	5.00	0.00
25.00	15.00	15.00	10.00	5.00	10.00	15.00	20.00	10.00	20.00
0.00	0.00	15.00	0.00	0.00	5.00	0.00	5.00	0.00	0.00
0.00	5.00	0.00	5.00	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	10.00	0.00
0.00	0.00	5.00	5.00	15.00	0.00	0.00	0.00	0.00	0.00
25.00	10.00	0.00	15.00	10.00	30.00	50.00	20.00	20.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
50.00	50.00	45.00	55.00	50.00	45.00	65.00	50.00	45.00	40.00
10.00	15.00	10.00	10.00	10.00	5.00	5.00	10.00	10.00	10.00
5.00	5.00	10.00	5.00	5.00	5.00	10.00	15.00	10.00	25.00
35.00	30.00	35.00	30.00	35.00	45.00	20.00	25.00	35.00	25.00
50.00	70.00	55.56	54.55	30.00	22.22	23.08	50.00	33.33	50.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.00	30.00	44.44	45.45	70.00	77.78	76.92	50.00	66.67	50.00

ENERGY WEST MINING
Cell #3
Cottonwood Mine Old Was
Exposure: E
Slope: 0 -1 deg.
Sample Date: 13-18 Aug 01

18.00	19.00	20.00	Mean	SDev	Freq	
						TREES & SHRUBS
10.00	0.00	0.00	0.50	2.18	5.00	*Artemisia tridentata*
10.00	15.00	30.00	10.25	9.15	70.00	*Atriplex canescens*
10.00	0.00	0.00	14.00	9.82	90.00	*Gutierrezia sarothrae*
						FORBS
						GRASSES
0.00	0.00	15.00	4.50	5.89	45.00	*Agropyron cristatum*
0.00	0.00	0.00	1.75	2.86	30.00	*Elymus lanceolatus*
15.00	0.00	5.00	2.50	4.33	30.00	*Elymus smithii*
10.00	0.00	0.00	4.00	6.82	35.00	*Hilaria jamesii*
10.00	50.00	15.00	16.65	14.01	90.00	*Stipa comata*
0.00	0.00	0.00	0.85	2.59	10.00	*Stipa hymenoides*
						COVER
65.00	65.00	65.00	55.00	8.80		Total Living Cover
5.00	15.00	20.00	11.00	4.90		Litter
5.00	5.00	10.00	8.00	4.85		Bareground
25.00	15.00	5.00	26.00	10.20		Rock
						% COMPOSITION
46.15	23.08	46.15	45.68	17.24		Shrubs
0.00	0.00	0.00	0.00	0.00		Forbs
53.85	76.92	53.85	54.32	17.24		Grasses

QUALITATIVE SAMPLING DATA SHEET AND QUANTITATIVE/QUALITATIVE NOTES 2001

SITE NAME: Cell #4

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

DATE: August 13 - August 18, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 0 - 1 deg

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Moderate deer and rabbit use.

EROSION: negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Gutierrezia sarothrae

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

NOTES:

1) Sampled for qualitative and quantitative data in 2001.

2) See "Notes" in Cell 1.

ENERGY WEST MINING
Cell #4
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 0 -1 deg.

Sample Date: 13-18 Aug 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Cercocarpos montanus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gutierrezia sarothrae	0.00	5.00	10.00	0.00	0.00	13.00	0.00
FORBS							
Macharanthera grindelioides	0.00	0.00	0.00	0.00	5.00	0.00	0.00
Ephedra viridis	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sphraelcea coccinea	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES							
Agropyron cristatum	0.00	0.00	15.00	10.00	0.00	0.00	0.00
Elymus lanceolatus	0.00	0.00	0.00	0.00	5.00	20.00	0.00
Elymus smithii	40.00	0.00	0.00	20.00	25.00	0.00	55.00
Hilaria jamesii	0.00	0.00	0.00	0.00	10.00	7.00	0.00
Stipa comata	0.00	35.00	0.00	0.00	5.00	0.00	0.00
Stipa hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER							
Total Living Cover	40.00	40.00	25.00	30.00	50.00	40.00	55.00
Litter	5.00	10.00	5.00	5.00	15.00	10.00	30.00
Bareground	10.00	15.00	20.00	25.00	20.00	15.00	5.00
Rock	45.00	35.00	50.00	40.00	15.00	35.00	10.00
% COMPOSITION							
Shrubs	0.00	12.50	40.00	0.00	0.00	32.50	0.00
Forbs	0.00	0.00	0.00	0.00	10.00	0.00	0.00
Grasses	100.00	87.50	60.00	100.00	90.00	67.50	100.00

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	10.00	0.00	0.00	2.00	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	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	0.00
5.00	0.00	5.00	20.00	0.00	5.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	5.00	15.00	0.00	8.00	5.00	40.00	0.00
20.00	20.00	15.00	5.00	10.00	25.00	25.00	15.00	0.00	45.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	30.00	30.00	0.00	0.00	10.00	0.00	0.00	10.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.00	0.00	0.00
35.00	50.00	50.00	40.00	25.00	45.00	35.00	50.00	50.00	50.00
5.00	10.00	25.00	10.00	10.00	25.00	10.00	10.00	10.00	10.00
35.00	30.00	5.00	10.00	55.00	10.00	30.00	15.00	10.00	20.00
25.00	10.00	20.00	40.00	10.00	20.00	25.00	25.00	30.00	20.00
14.29	0.00	0.00	25.00	0.00	11.11	5.71	0.00	0.00	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85.71	100.00	100.00	75.00	100.00	88.89	94.29	100.00	100.00	90.00

18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00
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	5.00	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	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
25.00	0.00	0.00	0.00	10.00	10.00	0.00	0.00	0.00	5.00
5.00	0.00	40.00	5.00	50.00	0.00	10.00	0.00	15.00	0.00
0.00	30.00	5.00	35.00	0.00	10.00	20.00	25.00	35.00	45.00
0.00	0.00	0.00	0.00	0.00	15.00	0.00	0.00	0.00	0.00
0.00	5.00	5.00	5.00	0.00	10.00	10.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	10.00	10.00	0.00	0.00	0.00
30.00	35.00	50.00	50.00	60.00	55.00	50.00	30.00	50.00	50.00
5.00	10.00	25.00	5.00	10.00	20.00	10.00	10.00	20.00	10.00
45.00	35.00	10.00	5.00	20.00	5.00	10.00	40.00	5.00	20.00
20.00	20.00	15.00	40.00	10.00	20.00	30.00	20.00	25.00	20.00
0.00	0.00	0.00	10.00	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
100.00	100.00	100.00	90.00	100.00	100.00	100.00	100.00	100.00	100.00

ENERGY WEST MINING
Cell #4
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 0 -1 deg.
Sample Date: 13-18 Aug 01

28.00	29.00	30.00	Mean	SDev	Freq	
						TREES & SHRUBS
0.00	0.00	0.00	0.17	0.90	3.33	*Cercocarpos montanus*
0.00	0.00	0.00	1.83	3.52	26.67	*Gutierrezia sarothrae*
						FORBS
0.00	0.00	0.00	0.17	0.90	3.33	*Macharanthera grindelioides*
3.00	0.00	0.00	0.10	0.54	3.33	*Ephedra viridis*
2.00	0.00	0.00	0.07	0.36	3.33	*Sphraelcea coccinea*
						GRASSES
0.00	50.00	5.00	5.50	10.44	40.00	*Agropyron cristatum*
5.00	0.00	0.00	7.60	13.08	46.67	*Elymus lanceolatus*
5.00	0.00	0.00	17.67	15.80	73.33	*Elymus smithii*
5.00	0.00	20.00	1.90	4.80	16.67	*Hilaria jamesii*
35.00	0.00	10.00	7.00	10.69	50.00	*Stipa comata*
0.00	0.00	20.00	2.33	6.67	13.33	*Stipa hymenoides*
						COVER
55.00	50.00	55.00	44.33	9.64		Total Living Cover
5.00	25.00	10.00	12.33	7.16		Litter
5.00	10.00	15.00	18.50	12.92		Bareground
35.00	15.00	20.00	24.83	10.76		Rock
						% COMPOSITION
0.00	0.00	0.00	5.37	10.22		Shrubs
9.09	0.00	0.00	0.64	2.38		Forbs
90.91	100.00	100.00	93.99	10.16		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

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

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

DATE: August 13 - August 18, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 0-1 deg

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Used by deer and rabbits mostly

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens

Agropyron cristatum
Bromus tectorum
Elymus lanceolatus
Elymus smithii
Hordeum jubatum
Stipa comata

NOTES:

1) Sampled for qualitative and quantitative data in 2001.

2) See "Notes" in Cell 1.

3) There were some good, mature shrubs present but probably less dense than other cells.

4) Like previous years' data shows, there were some bare spots.

ENERGY WEST MINING
Cell #5 '89 (Reseeded '93)
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 0 -1 deg.

Sample Date: 13-18 Aug 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Atriplex canescens	5.00	5.00	0.00	15.00	15.00	0.00	0.00
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	0.00	15.00	0.00
Gutierrezia sarothrae	5.00	0.00	0.00	1.00	5.00	0.00	0.00
FORBS							
Kochia scoparia	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES							
Agropyron cristatum	10.00	35.00	5.00	9.00	5.00	15.00	25.00
Bromus tectorum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Elymus cinereus	0.00	0.00	0.00	0.00	5.00	0.00	0.00
Elymus lanceolatus	0.00	0.00	0.00	5.00	0.00	0.00	0.00
Elymus smithii	0.00	10.00	0.00	0.00	5.00	0.00	0.00
Stipa comata	15.00	10.00	45.00	10.00	30.00	0.00	30.00
COVER							
Total Living Cover	35.00	60.00	50.00	40.00	65.00	30.00	55.00
Litter	10.00	5.00	10.00	5.00	10.00	5.00	5.00
Bareground	35.00	10.00	20.00	45.00	15.00	10.00	20.00
Rock	20.00	25.00	20.00	10.00	10.00	55.00	20.00
% COMPOSITION							
Shrubs	28.57	8.33	0.00	40.00	30.77	50.00	0.00
Forbs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grasses	71.43	91.67	100.00	60.00	69.23	50.00	100.00

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	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	10.00	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
20.00	20.00	20.00	10.00	50.00	25.00	20.00	10.00	25.00	35.00
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	0.00	0.00
5.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00
0.00	0.00	0.00	10.00	0.00	20.00	10.00	5.00	5.00	0.00
10.00	0.00	35.00	10.00	15.00	20.00	0.00	5.00	25.00	15.00
35.00	20.00	60.00	30.00	65.00	65.00	40.00	70.00	60.00	65.00
10.00	5.00	5.00	5.00	10.00	5.00	5.00	5.00	10.00	5.00
45.00	50.00	25.00	45.00	10.00	15.00	15.00	10.00	10.00	10.00
10.00	25.00	10.00	20.00	15.00	15.00	40.00	15.00	20.00	20.00
0.00	0.00	0.00	0.00	0.00	0.00	25.00	71.43	0.00	23.08
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	100.00	100.00	100.00	100.00	100.00	75.00	28.57	100.00	76.92

18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00
20.00	0.00	25.00	5.00	5.00	0.00	45.00	0.00	15.00	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	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
20.00	30.00	30.00	10.00	25.00	5.00	5.00	15.00	20.00	8.00
0.00	0.00	0.00	0.00	0.00	15.00	20.00	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
5.00	0.00	0.00	5.00	0.00	0.00	0.00	5.00	0.00	0.00
0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	5.00	5.00
10.00	5.00	10.00	15.00	5.00	0.00	0.00	20.00	10.00	20.00
55.00	35.00	65.00	35.00	40.00	20.00	70.00	40.00	50.00	35.00
10.00	5.00	25.00	5.00	5.00	5.00	5.00	5.00	5.00	10.00
20.00	20.00	5.00	40.00	20.00	25.00	20.00	20.00	20.00	10.00
15.00	40.00	5.00	20.00	35.00	50.00	5.00	35.00	25.00	45.00
36.36	0.00	38.46	14.29	12.50	0.00	64.29	0.00	30.00	5.71
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
63.64	100.00	61.54	85.71	87.50	100.00	35.71	100.00	70.00	94.29

ENERGY WEST MINING
Cell #5 '89 (Reseeded '93)
Cottonwood Mine Old Was
Exposure: E
Slope: 0 -1 deg.
Sample Date: 13-18 Aug 01

28.00	29.00	30.00	Mean	SDev	Freq	
						TREES & SHRUBS
0.00	45.00	20.00	9.57	14.41	50.00	*Atriplex canescens*
0.00	0.00	0.00	0.50	2.69	3.33	*Chrysothamnus nauseosus*
0.00	0.00	0.00	0.70	2.13	13.33	*Gutierrezia sarothrae*
						FORBS
0.00	0.00	20.00	0.67	3.59	3.33	*Kochia scoparia*
						GRASSES
5.00	0.00	5.00	17.23	11.38	96.67	*Agropyron cristatum*
0.00	0.00	5.00	1.33	4.46	10.00	*Bromus tectorum*
0.00	0.00	0.00	0.17	0.90	3.33	*Elymus cinereus*
0.00	0.00	0.00	1.17	2.11	23.33	*Elymus lanceolatus*
0.00	0.00	0.00	2.67	4.61	33.33	*Elymus smithii*
40.00	10.00	10.00	14.33	11.81	83.33	*Stipa comata*
						COVER
45.00	55.00	60.00	48.33	14.68		Total Living Cover
5.00	20.00	5.00	7.50	4.61		Litter
20.00	5.00	10.00	20.83	12.59		Bareground
30.00	20.00	25.00	23.33	12.67		Rock
						% COMPOSITION
0.00	81.82	33.33	19.80	23.43		Shrubs
0.00	0.00	33.33	1.11	5.98		Forbs
100.00	18.18	33.33	79.09	24.79		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

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

AREA: Cottonwood Mine Waste Rock Area (Interim Reveg)

DATE: August 13 - August 18, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 0-1 deg.

EXPOSURE: E

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

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens
Atriplex confertifolia
Artemisia tridentata
Gutierrezia sarothrae

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

NOTES:

1) Sampled for qualitative and quantitative data in 2001.

2) See "Notes" in Cell 1.

3) As mentioned other years, there were some bare spots that supported weedy species. The size of this area was about 120 ft x 50 ft. This cell had more bare areas than other cells, but still relatively small when one considers the entire reclaimed area (~01).

ENERGY WEST MINING
Cell #6 '89 (Reseeded '93)
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 0 -1 deg.

Sample Date: 13-18 Aug 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & 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	35.00	0.00	0.00	0.00
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ephedra viridis	0.00	0.00	0.00	0.00	0.00	0.00	10.00
Gutierrezia sarothrae	10.00	0.00	0.00	0.00	0.00	0.00	5.00
FORBS							
Halogeton glomeratus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kochia scoparia	0.00	0.00	10.00	0.00	20.00	0.00	0.00
GRASSES							
Agropyron cristatum	20.00	5.00	5.00	5.00	5.00	25.00	20.00
Bromus tectorum	0.00	10.00	10.00	20.00	0.00	0.00	5.00
Elymus lanceolatus	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Elymus smithii	0.00	10.00	0.00	0.00	0.00	0.00	5.00
Hordeum jubatum	0.00	0.00	5.00	0.00	0.00	0.00	0.00
Stipa comata	5.00	15.00	0.00	5.00	0.00	25.00	15.00
Stipa hymenoides	5.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER							
Total Living Cover	45.00	40.00	30.00	65.00	25.00	50.00	60.00
Litter	10.00	5.00	5.00	5.00	5.00	10.00	5.00
Bareground	10.00	15.00	20.00	10.00	25.00	20.00	20.00
Rock	35.00	40.00	45.00	20.00	45.00	20.00	15.00
% COMPOSITION							
Shrubs	22.22	0.00	0.00	53.85	0.00	0.00	25.00
Forbs	0.00	0.00	33.33	0.00	80.00	0.00	0.00
Grasses	77.78	100.00	66.67	46.15	20.00	100.00	75.00

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
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	10.00	0.00	0.00	10.00	20.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	10.00	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	0.00
35.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
0.00	20.00	15.00	10.00	5.00	25.00	30.00	20.00	50.00	35.00
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	5.00	0.00	10.00	0.00	0.00	0.00
0.00	5.00	5.00	15.00	0.00	0.00	0.00	5.00	5.00	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	10.00	15.00	20.00	55.00	0.00	5.00	5.00	10.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40.00	40.00	45.00	55.00	65.00	30.00	55.00	50.00	65.00	50.00
1.00	5.00	5.00	5.00	5.00	2.00	5.00	5.00	5.00	5.00
50.00	10.00	10.00	10.00	10.00	13.00	15.00	10.00	5.00	10.00
9.00	45.00	40.00	30.00	20.00	55.00	25.00	35.00	25.00	35.00
0.00	12.50	22.22	18.18	0.00	0.00	18.18	40.00	0.00	10.00
100.00	0.00	0.00	0.00	0.00	16.67	0.00	0.00	0.00	0.00
0.00	87.50	77.78	81.82	100.00	83.33	81.82	60.00	100.00	90.00

18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00
0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	5.00	0.00
30.00	20.00	0.00	0.00	15.00	0.00	0.00	0.00	5.00	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	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	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	0.00	0.00	0.00
25.00	40.00	45.00	65.00	35.00	30.00	15.00	10.00	15.00	20.00
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	10.00	0.00	0.00
0.00	0.00	0.00	0.00	10.00	5.00	0.00	0.00	5.00	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	10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.00	0.00	0.00
60.00	60.00	55.00	65.00	60.00	45.00	40.00	20.00	45.00	35.00
5.00	10.00	5.00	10.00	10.00	5.00	5.00	5.00	10.00	5.00
10.00	5.00	10.00	15.00	10.00	5.00	5.00	25.00	20.00	50.00
25.00	25.00	30.00	10.00	20.00	45.00	50.00	50.00	25.00	10.00
50.00	33.33	0.00	0.00	25.00	0.00	37.50	0.00	55.56	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.00	66.67	100.00	100.00	75.00	100.00	62.50	100.00	44.44	100.00

ENERGY WEST MINING
Cell #6 '89 (Reseeded '93)
Cottonwood Mine Old Was
Exposure: E
Slope: 0 -1 deg.
Sample Date: 13-18 Aug 01

28.00	29.00	30.00	Mean	SDev	Freq	
						TREES & SHRUBS
0.00	20.00	0.00	1.17	4.02	10.00	*Artemisia tridentata*
0.00	0.00	35.00	6.33	10.72	36.67	*Atriplex canescens*
0.00	0.00	5.00	0.33	1.25	6.67	*Chrysothamnus nauseosus*
0.00	0.00	0.00	0.33	1.80	3.33	*Ephedra viridis*
10.00	5.00	5.00	2.00	4.00	23.33	*Gutierrezia sarothrae*
						FORBS
0.00	0.00	0.00	0.17	0.90	3.33	*Halogeton glomeratus*
0.00	0.00	0.00	2.33	7.27	13.33	*Kochia scoparia*
						GRASSES
0.00	10.00	20.00	20.83	15.23	93.33	*Agropyron cristatum*
0.00	0.00	0.00	1.50	4.31	13.33	*Bromus tectorum*
0.00	0.00	0.00	1.17	2.79	46.67	*Elymus lanceolatus*
0.00	0.00	0.00	3.17	4.56	40.00	*Elymus smithii*
0.00	0.00	0.00	0.17	0.90	3.33	*Hordeum jubatum*
25.00	0.00	5.00	7.83	11.60	53.33	*Stipa comata*
0.00	0.00	0.00	0.50	1.98	6.67	*Stipa hymenoides*
						COVER
35.00	35.00	70.00	47.83	13.08		Total Living Cover
5.00	5.00	5.00	5.77	2.29		Litter
15.00	30.00	5.00	15.60	11.17		Bareground
45.00	30.00	20.00	30.80	12.78		Rock
						% COMPOSITION
28.57	71.43	64.29	19.59	21.83		Shrubs
0.00	0.00	0.00	7.67	23.11		Forbs
71.43	28.57	35.71	72.74	26.65		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

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

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

DATE: August 13 - August 18, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 0 - 2 deg

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens
Gutierrezia sarothrae

Agropyron cristatum
Elymus lanceolatus
Elymus smithii
Stipa comata
Stipa hymenoides

NOTES:

1) Sampled for qualitative and quantitative data in 2001.

2) See "Notes" in Cell 1.

ENERGY WEST MINING
Cell #7 '92 Partial Cell #7 '93
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 0 - 2 deg.
Sample Date: 13-18 Aug 01

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Artemisia tridentata	0.00	0.00	0.00	5.00	5.00	0.00	0.00
Atriplex canescens	0.00	0.00	0.00	0.00	0.00	5.00	0.00
Gutierrezia sarothrae	5.00	0.00	7.00	0.00	0.00	0.00	5.00
FORBS							
GRASSES							
Agropyron cristatum	0.00	10.00	8.00	0.00	0.00	0.00	0.00
Elymus lanceolatus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Elymus smithii	15.00	0.00	0.00	30.00	5.00	0.00	30.00
Stipa comata	15.00	30.00	25.00	5.00	5.00	30.00	5.00
Stipa hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER							
Total Living Cover	35.00	40.00	40.00	40.00	15.00	35.00	40.00
Litter	5.00	5.00	10.00	10.00	5.00	5.00	5.00
Bareground	20.00	10.00	20.00	10.00	30.00	40.00	30.00
Rock	40.00	45.00	30.00	40.00	50.00	20.00	25.00
% COMPOSITION							
Shrubs	14.29	0.00	17.50	12.50	33.33	14.29	12.50
Forbs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grasses	85.71	100.00	82.50	87.50	66.67	85.71	87.50

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
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	0.00
0.00	0.00	0.00	0.00	0.00	0.00	25.00	0.00	0.00	0.00
5.00	10.00	0.00	5.00	0.00	15.00	10.00	20.00	0.00	0.00
0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	40.00	0.00
5.00	15.00	0.00	0.00	0.00	10.00	5.00	10.00	0.00	45.00
20.00	10.00	15.00	25.00	15.00	0.00	5.00	10.00	5.00	0.00
0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00
35.00	35.00	20.00	40.00	15.00	25.00	45.00	40.00	45.00	45.00
5.00	5.00	2.00	15.00	5.00	5.00	5.00	5.00	10.00	5.00
10.00	40.00	23.00	20.00	25.00	25.00	25.00	35.00	25.00	15.00
50.00	20.00	55.00	25.00	55.00	45.00	25.00	20.00	20.00	35.00
14.29	0.00	0.00	0.00	0.00	0.00	55.56	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
85.71	100.00	100.00	100.00	100.00	100.00	44.44	100.00	100.00	100.00

18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	5.00	0.00	5.00	10.00	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
10.00	5.00	0.00	0.00	5.00	10.00	15.00	10.00	10.00	5.00
0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	10.00	15.00	15.00	0.00	10.00	10.00	5.00	15.00	0.00
10.00	0.00	15.00	5.00	20.00	15.00	10.00	25.00	10.00	15.00
10.00	0.00	5.00	0.00	5.00	0.00	0.00	0.00	0.00	15.00
45.00	25.00	35.00	25.00	40.00	35.00	35.00	40.00	35.00	35.00
15.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	15.00
15.00	20.00	35.00	40.00	25.00	35.00	20.00	25.00	30.00	25.00
25.00	45.00	20.00	25.00	25.00	20.00	35.00	25.00	25.00	25.00
11.11	20.00	0.00	20.00	25.00	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
88.89	80.00	100.00	80.00	75.00	100.00	100.00	100.00	100.00	100.00

28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00
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	5.00	0.00	5.00	0.00	0.00	10.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	10.00	10.00	10.00	0.00	10.00	30.00	0.00	10.00	15.00
0.00	5.00	5.00	0.00	10.00	0.00	0.00	0.00	10.00	0.00
0.00	0.00	5.00	25.00	10.00	0.00	0.00	10.00	10.00	15.00
20.00	25.00	15.00	0.00	5.00	15.00	15.00	15.00	10.00	15.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00	0.00	0.00
30.00	40.00	35.00	40.00	25.00	30.00	45.00	40.00	50.00	45.00
10.00	15.00	10.00	10.00	5.00	10.00	5.00	10.00	5.00	15.00
45.00	25.00	25.00	25.00	45.00	45.00	35.00	10.00	10.00	20.00
15.00	20.00	30.00	25.00	25.00	15.00	15.00	40.00	35.00	20.00
0.00	0.00	0.00	12.50	0.00	16.67	0.00	0.00	20.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	100.00	100.00	87.50	100.00	83.33	100.00	100.00	80.00	100.00

ENERGY WEST MINING
Cell #7 '92 Partial Cell #7 '93
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 0 - 2 deg.
Sample Date: 13-18 Aug 01

38.00	39.00	40.00	Mean	SDev	Freq	
						TREES & SHRUBS
0.00	0.00	5.00	0.38	1.32	7.50	*Artemisia tridentata*
0.00	0.00	0.00	1.38	2.74	22.50	*Atriplex canescens*
0.00	0.00	0.00	1.05	4.12	10.00	*Gutierrezia sarothrae*
						FORBS
						GRASSES
15.00	10.00	10.00	7.33	6.60	67.50	*Agropyron cristatum*
0.00	0.00	10.00	2.25	6.70	20.00	*Elymus lanceolatus*
0.00	0.00	10.00	8.63	9.94	62.50	*Elymus smithii*
25.00	30.00	5.00	13.50	8.67	90.00	*Stipa comata*
10.00	10.00	10.00	2.25	4.47	22.50	*Stipa hymenoides*
						COVER
50.00	50.00	50.00	36.75	8.84		Total Living Cover
15.00	10.00	10.00	8.68	3.60		Litter
15.00	30.00	10.00	25.33	10.22		Bareground
20.00	10.00	30.00	29.25	11.54		Rock
						% COMPOSITION
0.00	0.00	10.00	7.74	11.74		Shrubs
0.00	0.00	0.00	0.00	0.00		Forbs
100.00	100.00	90.00	92.26	11.74		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Berm 1

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

DATE: August 13 - August 18, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 1-20 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens
Gutierrezia sarothrae

Salsola pestifer
Halogeton glomeratus

Elymus lanceolatus
Stipa hymenoides

NOTES:

1) Sampled for qualitative and quantitative data in 2001.

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
Berm #1
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 1 - 20 deg.
Sample Date: 13-18 Aug 01

1 thru 5 North

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Atriplex canescens	5.00	0.00	45.00	0.00	0.00	5.00	15.00
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	25.00	5.00	0.00
Gutierrezia sarothrae	10.00	5.00	15.00	5.00	0.00	0.00	0.00
FORBS							
Halogeton glomeratus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Malcomia africana	35.00	25.00	0.00	5.00	0.00	5.00	0.00
GRASSES							
Agropyron cristatum	0.00	0.00	0.00	0.00	0.00	15.00	5.00
Bromus tectorum	5.00	0.00	0.00	0.00	30.00	0.00	25.00
Elymus lanceolatus	0.00	0.00	0.00	0.00	0.00	5.00	0.00
Elymus smithii	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hordeum jubatum	5.00	5.00	5.00	0.00	0.00	0.00	0.00
Poa secunda	0.00	0.00	0.00	10.00	0.00	0.00	0.00
Stipa hymenoides	0.00	0.00	0.00	10.00	0.00	0.00	0.00
COVER							
Total Living Cover	60.00	35.00	65.00	30.00	55.00	35.00	45.00
Litter	5.00	30.00	25.00	10.00	25.00	5.00	5.00
Bareground	15.00	10.00	5.00	20.00	5.00	10.00	20.00
Rock	20.00	25.00	5.00	40.00	15.00	50.00	30.00
% COMPOSITION							
Shrubs	25.00	14.29	92.31	16.67	45.45	28.57	33.33
Forbs	58.33	71.43	0.00	16.67	0.00	14.29	0.00
Grasses	16.67	14.29	7.69	66.67	54.55	57.14	66.67

ENERGY WEST MINING
Berm #1
Cottonwood Mine Old Was
Exposure: E
Slope: 1 - 20 deg.
Sample Date: 13-18 Aug 01

6 thru 10 South

8.00	9.00	10.00	Mean	SDev	Freq	
						TREES & SHRUBS
40.00	10.00	30.00	15.00	16.28	70.00	*Atriplex canescens*
0.00	0.00	0.00	3.00	7.48	20.00	*Chrysothamnus nauseosus*
0.00	0.00	0.00	3.50	5.02	40.00	*Gutierrezia sarothrae*
						FORBS
0.00	5.00	0.00	0.50	1.50	10.00	*Halogeton glomeratus*
0.00	5.00	0.00	7.50	11.67	50.00	*Malcomia africana*
						GRASSES
10.00	25.00	30.00	8.50	10.74	50.00	*Agropyron cristatum*
5.00	5.00	0.00	7.00	10.54	50.00	*Bromus tectorum*
0.00	0.00	0.00	0.50	1.50	10.00	*Elymus lanceolatus*
5.00	0.00	0.00	0.50	1.50	10.00	*Elymus smithii*
0.00	0.00	0.00	1.50	2.29	30.00	*Hordeum jubatum*
0.00	0.00	0.00	1.00	3.00	10.00	*Poa secunda*
0.00	0.00	0.00	1.00	3.00	10.00	*Stipa hymenoides*
						COVER
60.00	50.00	60.00	49.50	11.93		Total Living Cover
10.00	20.00	10.00	14.50	9.07		Litter
10.00	10.00	10.00	11.50	5.02		Bareground
20.00	20.00	20.00	24.50	12.13		Rock
						% COMPOSITION
66.67	20.00	50.00	39.23	23.62		Shrubs
0.00	20.00	0.00	18.07	24.74		Forbs
33.33	60.00	50.00	42.70	21.56		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Berm 2

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

DATE: August 13 - August 18, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 0-20 deg.

EXPOSURE: E & N

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Artemisia tridentata
Atriplex confertifolia
Atriplex canescens
Chrysothamnus nauseosus
Gutierrezia sarothrae

Elymus lanceolatus
Elymus smithii
Stipa hymenoides

NOTES:

1) Sampled for qualitative and quantitative data in 2001.

2) See "Notes" in Cell 1.

ENERGY WEST MINING
Berm #2
Cottonwood Mine Old Waste Rock
Exposure: E & N
Slope: 1 - 20 deg.
Sample Date: 13-18 Aug 01

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Atriplex canescens	55.00	5.00	20.00	40.00	30.00	45.00	20.00
Atriplex confertifolia	0.00	0.00	5.00	10.00	0.00	0.00	5.00
Gutierrezia sarothrae	0.00	0.00	0.00	0.00	0.00	0.00	5.00
FORBS							
GRASSES							
Agropyron cristatum	0.00	50.00	30.00	20.00	30.00	20.00	20.00
Elymus smithii	0.00	10.00	0.00	0.00	0.00	0.00	0.00
COVER							
Total Living Cover	55.00	65.00	55.00	70.00	60.00	65.00	50.00
Litter	15.00	10.00	10.00	10.00	15.00	10.00	10.00
Bareground	10.00	10.00	10.00	5.00	10.00	5.00	10.00
Rock	20.00	15.00	25.00	15.00	15.00	20.00	30.00
% COMPOSITION							
Shrubs	100.00	7.69	45.45	71.43	50.00	69.23	60.00
Forbs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grasses	0.00	92.31	54.55	28.57	50.00	30.77	40.00

ENERGY WEST MINING
Berm #2
Cottonwood Mine Old Was
Exposure: E & N
Slope: 1 - 20 deg.
Sample Date: 13-18 Aug 01

8.00	9.00	10.00	Mean	SDev	Freq	
						TREES & SHRUBS
45.00	15.00	15.00	29.00	15.62	100.00	*Atriplex canescens*
0.00	0.00	0.00	2.00	3.32	30.00	*Atriplex confertifolia*
0.00	0.00	0.00	0.50	1.50	10.00	*Gutierrezia sarothrae*
						FORBS
						GRASSES
20.00	45.00	25.00	26.00	13.38	90.00	*Agropyron cristatum*
0.00	0.00	0.00	1.00	3.00	10.00	*Elymus smithii*
						COVER
65.00	60.00	40.00	58.50	8.38		Total Living Cover
10.00	10.00	10.00	11.00	2.00		Litter
5.00	10.00	20.00	9.50	4.15		Bareground
20.00	20.00	30.00	21.00	5.39		Rock
						% COMPOSITION
69.23	25.00	37.50	53.55	25.03		Shrubs
0.00	0.00	0.00	0.00	0.00		Forbs
30.77	75.00	62.50	46.45	25.03		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Berm 3

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

DATE: August 13 - August 18, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 0-20 deg.

EXPOSURE: NE & SW

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (see quantitative data)

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 and quantitative data in 2001.

2) See "Notes" in Cell 1.

ENERGY WEST MINING
Berm #3
Cottonwood Mine Old Waste Rock
Exposure: NE & SW
Slope: 1 -20 deg.

Sample Date: 13-18 Aug 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Artemisia tridentata	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atriplex canescens	10.00	30.00	80.00	25.00	0.00	25.00	40.00
Chrysothamnus nauseosus	15.00	0.00	0.00	0.00	0.00	0.00	0.00
Ephedra viridis	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS							
Halogeton glomeratus	0.00	0.00	0.00	0.00	20.00	0.00	5.00
Malcomia africana	0.00	0.00	0.00	0.00	5.00	0.00	0.00
GRASSES							
Agropyron cristatum	10.00	20.00	0.00	25.00	10.00	10.00	5.00
Bromus tectorum	0.00	0.00	0.00	0.00	10.00	0.00	0.00
Elymus smithii	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stipa comata	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stipa hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER							
Total Living Cover	35.00	50.00	80.00	50.00	45.00	35.00	50.00
Litter	10.00	10.00	10.00	20.00	10.00	10.00	35.00
Bareground	15.00	20.00	5.00	20.00	20.00	30.00	5.00
Rock	40.00	20.00	5.00	10.00	25.00	25.00	10.00
% COMPOSITION							
Shrubs	71.43	60.00	100.00	50.00	0.00	71.43	80.00
Forbs	0.00	0.00	0.00	0.00	55.56	0.00	10.00
Grasses	28.57	40.00	0.00	50.00	44.44	28.57	10.00

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.00
20.00	55.00	75.00	35.00	0.00	45.00	45.00	50.00	60.00	55.00
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	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	0.00
0.00	10.00	5.00	0.00	20.00	10.00	10.00	20.00	15.00	20.00
5.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	20.00	10.00	5.00	0.00	0.00	0.00
30.00	65.00	85.00	55.00	40.00	65.00	65.00	70.00	75.00	75.00
5.00	20.00	5.00	15.00	20.00	10.00	10.00	5.00	10.00	10.00
40.00	10.00	5.00	5.00	10.00	10.00	5.00	5.00	5.00	5.00
25.00	5.00	5.00	25.00	30.00	15.00	20.00	20.00	10.00	10.00
66.67	84.62	88.24	63.64	0.00	69.23	76.92	71.43	80.00	73.33
16.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16.67	15.38	11.76	36.36	100.00	30.77	23.08	28.57	20.00	26.67

ENERGY WEST MINING
Berm #3
Cottonwood Mine Old Was
Exposure: NE & SW
Slope: 1 -20 deg.
Sample Date: 13-18 Aug 01

18.00	19.00	20.00	Mean	SDev	Freq	
						TREES & SHRUBS
0.00	0.00	25.00	1.50	5.50	10.00	*Artemisia tridentata*
0.00	0.00	5.00	32.75	24.77	80.00	*Atriplex canescens*
0.00	0.00	0.00	0.75	3.27	5.00	*Chrysothamnus nauseosus*
5.00	0.00	0.00	0.25	1.09	5.00	*Ephedra viridis*
						FORBS
0.00	0.00	0.00	1.25	4.44	10.00	*Halogeton glomeratus*
0.00	0.00	0.00	0.50	1.50	10.00	*Malcomia africana*
						GRASSES
35.00	55.00	25.00	15.25	12.89	85.00	*Agropyron cristatum*
0.00	0.00	0.00	1.00	2.55	15.00	*Bromus tectorum*
5.00	10.00	0.00	1.25	3.11	15.00	*Elymus smithii*
10.00	0.00	0.00	1.00	3.00	10.00	*Stipa comata*
0.00	0.00	0.00	1.75	4.82	15.00	*Stipa hymenoides*
						COVER
55.00	65.00	55.00	57.25	15.29		Total Living Cover
10.00	10.00	20.00	12.75	6.98		Litter
10.00	10.00	10.00	12.25	9.28		Bareground
25.00	15.00	15.00	17.75	9.15		Rock
						% COMPOSITION
9.09	0.00	54.55	58.53	30.23		Shrubs
0.00	0.00	0.00	4.11	12.50		Forbs
90.91	100.00	45.45	37.36	27.93		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Berm 4

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

DATE: August 13 - August 18, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 28 deg.

EXPOSURE: N, E

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (see quantitative data)

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 and quantitative data in 2001.

2) See "Notes" in Cell 1.

ENERGY WEST MINING
Berm #4
Cottonwood Mine Old Waste Rock
Exposure: N , E
Slope: 28 deg.

Sample Date: 13-18 Aug 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
TREES & SHRUBS							
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	30.00	0.00	25.00
Ephedra viridis	5.00	0.00	10.00	0.00	0.00	0.00	0.00
FORBS							
GRASSES							
Agropyron cristatum	40.00	20.00	10.00	30.00	0.00	0.00	15.00
Elymus lanceolatus	0.00	0.00	0.00	0.00	0.00	35.00	0.00
Elymus smithii	0.00	15.00	10.00	0.00	0.00	0.00	10.00
Stipa comata	5.00	0.00	0.00	10.00	30.00	0.00	0.00
Stipa hymenoides	0.00	10.00	20.00	5.00	5.00	0.00	0.00
COVER							
Total Living Cover	50.00	45.00	50.00	45.00	65.00	35.00	50.00
Litter	5.00	20.00	25.00	10.00	10.00	10.00	25.00
Bareground	5.00	5.00	5.00	10.00	10.00	10.00	10.00
Rock	40.00	30.00	20.00	35.00	15.00	45.00	15.00
% COMPOSITION							
Shrubs	10.00	0.00	20.00	0.00	46.15	0.00	50.00
Forbs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grasses	90.00	100.00	80.00	100.00	53.85	100.00	50.00

ENERGY WEST MINING
Berm #4
Cottonwood Mine Old Was
Exposure: N , E
Slope: 28 deg.
Sample Date: 13-18 Aug 01

8.00	9.00	10.00	Mean	SDev	Freq	
						TREES & SHRUBS
0.00	0.00	0.00	5.50	11.06	20.00	*Chrysothamnus nauseosus*
0.00	0.00	0.00	1.50	3.20	20.00	*Ephedra viridis*
						FORBS
						GRASSES
10.00	25.00	20.00	17.00	12.08	80.00	*Agropyron cristatum*
5.00	0.00	0.00	4.00	10.44	20.00	*Elymus lanceolatus*
35.00	10.00	20.00	10.00	10.72	60.00	*Elymus smithii*
0.00	0.00	0.00	4.50	9.07	30.00	*Stipa comata*
0.00	5.00	5.00	5.00	5.92	60.00	*Stipa hymenoides*
						COVER
50.00	40.00	45.00	47.50	7.50		Total Living Cover
10.00	10.00	10.00	13.50	6.73		Litter
10.00	10.00	5.00	8.00	2.45		Bareground
30.00	40.00	40.00	31.00	10.44		Rock
						% COMPOSITION
0.00	0.00	0.00	12.62	18.81		Shrubs
0.00	0.00	0.00	0.00	0.00		Forbs
100.00	100.00	100.00	87.38	18.81		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: CTW Reference Area

AREA: Cottonwood Mine Old Waste Rock Area

DATE: August 13 - August 18, 2001

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

Lepidium montanum
Descurainia pinnata
Eriogonum bicolor
Euphorbia fendleri
Penstemon pachyphyllus
Cryptantha sp.

NOTES:

1) Qualitative and quantitative data taken in 2001.

2) No noticeable change from last year.

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

ENERGY WEST MINING
CTW Reference Area
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 1 - 5 deg.

Sample Date: 13-18 Aug 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
OVERSTORY							
Juniperus osteosperma	35.00	0.00	0.00	0.00	0.00	0.00	0.00
Pinus edulis	0.00	0.00	0.00	0.00	40.00	0.00	35.00
UNDERSTORY							
SHRUBS							
Cercocarpos montanus	0.00	15.00	0.00	0.00	0.00	0.00	0.00
Ephedra viridis	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Eriogonum bicolor	0.00	0.00	0.00	0.00	5.00	0.00	0.00
Euphorpia fendleri	0.00	0.00	5.00	0.00	0.00	0.00	0.00
Juniperus osteosperma	15.00	0.00	15.00	0.00	0.00	23.00	0.00
Opuntia polyacantha	0.00	0.00	0.00	4.00	0.00	0.00	0.00
Pinus edulis	0.00	0.00	25.00	0.00	5.00	0.00	10.00
Rhus aromatica	0.00	0.00	0.00	0.00	0.00	2.00	0.00
Yucca harrmannia	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FORBS							
Cryptantha sp.	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Penstemon sp.	0.00	0.00	0.00	1.00	0.00	0.00	0.00
GRASSES							
Elymus salinus							
COVER							
Overstory	35.00	0.00	0.00	0.00	40.00	0.00	35.00
Understory	15.00	15.00	45.00	5.00	10.00	25.00	15.00
Litter	65.00	15.00	10.00	25.00	85.00	45.00	80.00
Bareground	10.00	10.00	5.00	15.00	4.00	20.00	3.00
Rock	10.00	60.00	40.00	55.00	1.00	10.00	2.00
% COMPOSITION							
Shrubs	100.00	100.00	100.00	80.00	100.00	100.00	66.67
Forbs	0.00	0.00	0.00	20.00	0.00	0.00	33.33
Grasses	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Overstory + Understory	50.00	15.00	45.00	5.00	50.00	25.00	50.00

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
0.00	0.00	0.00	0.00	0.00	24.00	0.00	0.00	0.00	25.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.00	65.00	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	0.00	0.00	0.00
7.00	3.00	5.00	5.00	0.00	0.00	10.00	0.00	0.00	1.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	5.00	2.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	10.00	0.00	0.00	10.00	0.00	0.00	1.00	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	0.00	0.00	0.00	0.00
0.00	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	1.00	0.00	0.00	0.00	1.00
0.00	0.00	0.00	0.00	0.00	24.00	0.00	60.00	65.00	25.00
7.00	15.00	25.00	5.00	10.00	1.00	10.00	1.00	5.00	4.00
15.00	5.00	15.00	25.00	85.00	25.00	10.00	90.00	85.00	25.00
58.00	25.00	50.00	25.00	4.00	59.00	25.00	4.00	5.00	15.00
20.00	55.00	10.00	45.00	1.00	15.00	55.00	5.00	5.00	56.00
100.00	86.67	100.00	100.00	100.00	0.00	100.00	100.00	100.00	75.00
0.00	13.33	0.00	0.00	0.00	100.00	0.00	0.00	0.00	25.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7.00	15.00	25.00	5.00	10.00	25.00	10.00	61.00	70.00	29.00

18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00
40.00	0.00	5.00	0.00	35.00	0.00	0.00	0.00	0.00	60.00
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	0.00	0.00
1.00	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	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	0.00	0.00	0.00	0.00	10.00	0.00	0.00
0.00	10.00	0.00	3.00	25.00	40.00	0.00	0.00	0.00	10.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	20.00	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	2.00	0.00
0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
40.00	0.00	5.00	0.00	35.00	0.00	0.00	0.00	20.00	60.00
1.00	10.00	25.00	5.00	25.00	40.00	5.00	10.00	2.00	10.00
50.00	15.00	40.00	15.00	29.00	40.00	5.00	10.00	75.00	70.00
25.00	15.00	5.00	20.00	45.00	15.00	80.00	70.00	20.00	19.00
24.00	60.00	30.00	60.00	1.00	5.00	10.00	10.00	3.00	1.00
100.00	100.00	80.00	60.00	100.00	100.00	100.00	100.00	0.00	100.00
0.00	0.00	20.00	40.00	0.00	0.00	0.00	0.00	100.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41.00	10.00	30.00	5.00	60.00	40.00	5.00	10.00	22.00	70.00

28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30.00	0.00	25.00	0.00	25.00	0.00	0.00	19.00	60.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00
0.00	0.00	0.00	0.00	1.00	0.00	25.00	0.00	0.00	0.00
0.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25.00	17.00	0.00	25.00	24.00	25.00	5.00	0.00	10.00	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	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
0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
30.00	0.00	25.00	0.00	25.00	0.00	0.00	19.00	60.00	0.00
25.00	20.00	2.00	25.00	25.00	25.00	30.00	1.00	10.00	15.00
55.00	25.00	15.00	10.00	70.00	35.00	10.00	5.00	50.00	20.00
10.00	25.00	43.00	20.00	4.00	25.00	30.00	80.00	39.00	25.00
10.00	30.00	40.00	45.00	1.00	15.00	30.00	14.00	1.00	40.00
100.00	95.00	100.00	100.00	100.00	100.00	100.00	0.00	100.00	100.00
0.00	5.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55.00	20.00	27.00	25.00	50.00	25.00	30.00	20.00	70.00	15.00

38	39.00	40.00	41.00	42.00	43.00	44.00	45.00	46.00	47.00
0	10.00	35.00	0.00	15.00	65.00	10.00	0.00	0.00	0.00
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	1.00	0.00	25.00	0.00	0.00	0.00	10.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	1.00	4.00	0.00	0.00	5.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	5.00	0.00	0.00	0.00	0.00	25.00	10.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
0	1.00	1.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00
40	10.00	35.00	0.00	15.00	65.00	10.00	0.00	0.00	0.00
35	3.00	5.00	30.00	1.00	5.00	2.00	10.00	40.00	10.00
55	10.00	5.00	25.00	35.00	90.00	8.00	25.00	55.00	30.00
5	10.00	25.00	40.00	44.00	4.00	65.00	40.00	4.00	35.00
5	77.00	65.00	5.00	20.00	1.00	25.00	25.00	1.00	25.00
100	66.67	80.00	100.00	0.00	100.00	0.00	100.00	100.00	100.00
0	33.33	20.00	0.00	100.00	0.00	100.00	0.00	0.00	0.00
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	13.00	40.00	30.00	16.00	70.00	12.00	10.00	40.00	10.00

ENERGY WEST MINING
CTW Reference Area
Cottonwood Mine Old Waste Rock
Exposure: E
Slope: 1 - 5 deg.
Sample Date: 13-18 Aug 01

48.00	49.00	50.00	Mean	SDev	Freq	
						OVERSTORY
0.00	20.00	0.00	5.18	12.46	20.00	*Juniperus osteosperma*
0.00	0.00	0.00	10.78	19.49	28.00	*Pinus edulis*
						UNDERSTORY
						SHRUBS
0.00	0.00	0.00	1.22	4.42	10.00	*Cercocarpos montanus*
0.00	0.00	0.00	0.52	3.50	4.00	*Ephedra viridis*
0.00	0.00	0.00	1.10	2.22	28.00	*Eriogonum bicolor*
0.00	0.00	2.00	0.16	0.76	6.00	*Euphorpia fendleri*
0.00	25.00	0.00	2.54	6.27	20.00	*Juniperus osteosperma*
0.00	0.00	0.00	0.28	1.50	4.00	*Opuntia polyacantha*
25.00	0.00	8.00	7.72	10.60	50.00	*Pinus edulis*
0.00	0.00	0.00	0.04	0.28	2.00	*Rhus aromatica*
0.00	0.00	0.00	0.40	2.80	2.00	*Yucca harrmannia*
						FORBS
0.00	0.00	0.00	0.30	1.04	10.00	*Cryptantha sp.*
0.00	0.00	0.00	0.22	0.50	16.00	*Penstemon sp.*
						GRASSES
						Elymus salinus
						COVER
0.00	20.00	0.00	15.96	20.58		Overstory
25.00	25.00	10.00	14.50	11.64		Understory
55.00	20.00	5.00	35.34	26.57		Litter
10.00	50.00	60.00	26.88	21.20		Bareground
10.00	5.00	25.00	23.28	21.45		Rock
						% COMPOSITION
100.00	100.00	100.00	85.80	30.25		Shrubs
0.00	0.00	0.00	14.20	30.25		Forbs
0.00	0.00	0.00	0.00	0.00		Grasses
25.00	45.00	10.00	30.46	20.55		Overstory + Understory

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

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

AREA: Cottonwood Mine

DATE: August 27 - August 31, 2001

WORKERS: P. Collins

SLOPE: 25 deg.

EXPOSURE: South

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible to Slight

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

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

Halogeton glomeratus
Astragalus cicer
Machaeranthera canescens

Agropyron cristatum
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

Penstemon palmeri

Agropyron cristatum

Elymus smithii
Elymus lanceolatus
Sporobolus airoides

NOTES:

1) Only qualitative data taken this year.

2) Pile A: Cover, density and diversity were in very good shape. Weeds were present but not common.

3) Pile C: Cover, density and diversity were in good shape. Not quite as good condition as Pile C. The middle section of pile has been removed (check photo ~01).

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Road Slopes

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

DATE: August 27, 2001 - August 31, 2001

WORKERS: P. Collins

SLOPE: Variable

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

Artemisia tridentata
Artemisia nova
Atriplex canescens
Atriplex confertifolia
Ceratoides lanata
Chrysothamnus nauseosus

Penstemon palmeri

Elymus lanceolatus
Elymus cinereus
Elymus spicatus
Sporobolus airoides
Stipa hymenoides

NOTES:
1) Qualitative data only. Most of the plant species were desirable with good cover.
2) Good species diversity.
3) Site looked excellent for cover and diversity.
4) There was a lot of Palmer penstemon this year.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Topsoil Stockpiles

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

DATE: August 27, 2001 - August 31, 2001

WORKERS: P. Collins

SLOPE: Variable

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:
Artemisia tridentata
Atriplex confertifolia
Ceratoides lanata

Malcomia africana
Penstemon palmeri
Salsola pestifer

Bromus tectorum
Elymus cinereus
Elymus lanceolatus
Elymus salina
Sporobolus airoides

NOTES:

1) Sampled qualitatively only this year.

2) Majority of site looked very good.

3) Good diversity.

4) All 3 piles looked good

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Subsoil Stockpiles

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

DATE: August 27, 2001 - August 31, 2001

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 canescens
Atriplex confertifolia
Atriplex gardneri

Halogeton glomeratus
Penstemon palmeri

Elymus cinereus
Elymus lanceolatus
Elymus smithii

NOTES:

1) Qualitative data taken his year.

2) The north end of the subsoil pile had slight to moderate erosion and was dominated by weedy species e.g. halogeton and other species e.g. Gardner saltbush.(~00, ~01). This is because this material is removed periodically and used as soil cover.

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

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

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

6) 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
2001

SITE NAME: Sediment Pond Banks

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

DATE: August 27 - August 31, 2001

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 confertifolia
Ceratoides lanata
Gutierrezia sarothrae

Penstemon palmeri

Elymus lanceolatus
Elymus cinereus
Stipa hymenoides

NOTES:

1) Site looked good.

2) Sampled qualitatively this year.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

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

AREA: Cottonwood Mine

DATE: August 27, 2001 - August 31, 2001

WORKERS: P. Collins

SLOPE: 28 deg.

EXPOSURE: S.

ANIMAL USE/DISTURBANCE: Slight

EROSION: Mostly "Slight", but moderate in a couple of areas. Some handwork could correct this (~01).

COVER: (no quantitative data this year)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens
Atriplex confertifolia
Ceratoides lanata

Penstemon palmeri

Elymus lanceolatus
Stipa hymenoides

NOTES:

1) Like last year, 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 more similar to each other than previous years.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

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

AREA: Cottonwood Mine

DATE: August 27, 2001 - August 31, 2001

WORKERS: P. Collins

SLOPE: 25 deg.

EXPOSURE: South

ANIMAL USE/DISTURBANCE: Moderate

EROSION: Slight erosion this year on west side.

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex confertifolia
Atriplex canescens
Atriplex gardneri
Ceratoides lanata

Elymus lanceolatus
Sporobolus airoides

WOODY SPECIES DENSITY:

NOTES:

1) Qualitative data only recorded this year.

2) See also notes for Refuse Berm '96.

3) Better diversity and more productive plants on this berm compared to '91.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Refuse Berm (seeded 1996)

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

DATE: August 27, 2001 - August 31, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 28 deg.

EXPOSURE: S & E

ANIMAL USE/DISTURBANCE: No obvious disturbance

EROSION: Negligible

COVER: (Cover not sampled this year)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens
Ceratoides lanata

Elymus lanceolatus

NOTES:

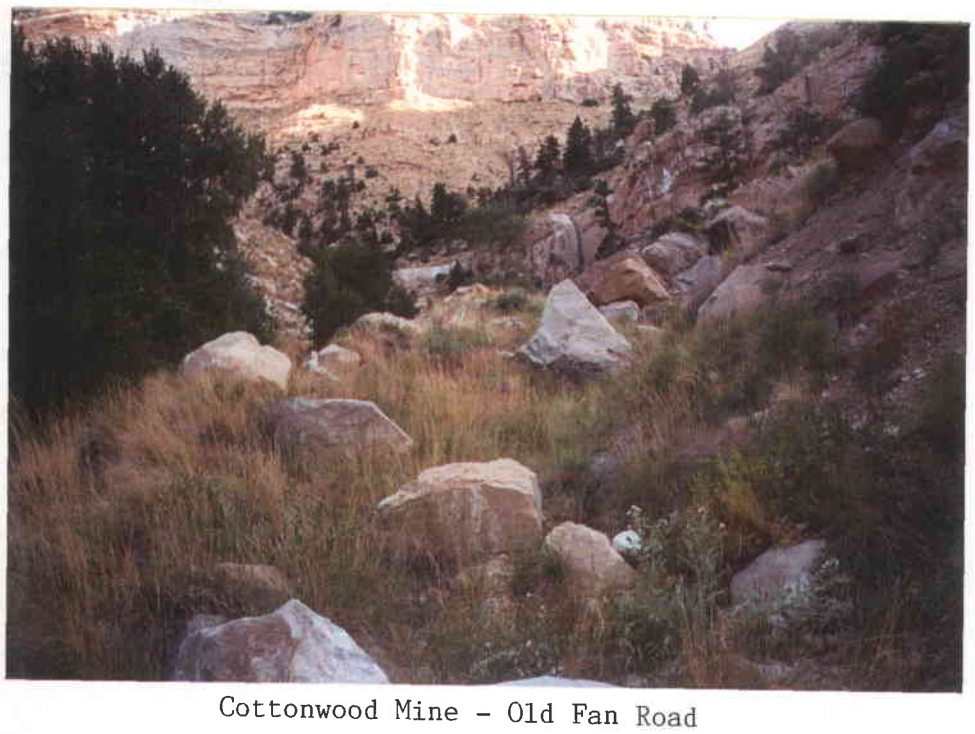
1) Took qualitative data this year.

2) Like last year, although Berm '96 is the most recent revegetation accomplished, the shrubs appear more mature and the cover is greater than the '91 and '94 Berms. However, the shrubs in Berm '96 were almost exclusively fourwing saltbush whereas species diversity was greater on the other berms.

3) The site was dominated by fourwing saltbush, having large and productive plants.

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

COLOR
PHOTOGRAPHS



Cottonwood Mine - Old Fan Road

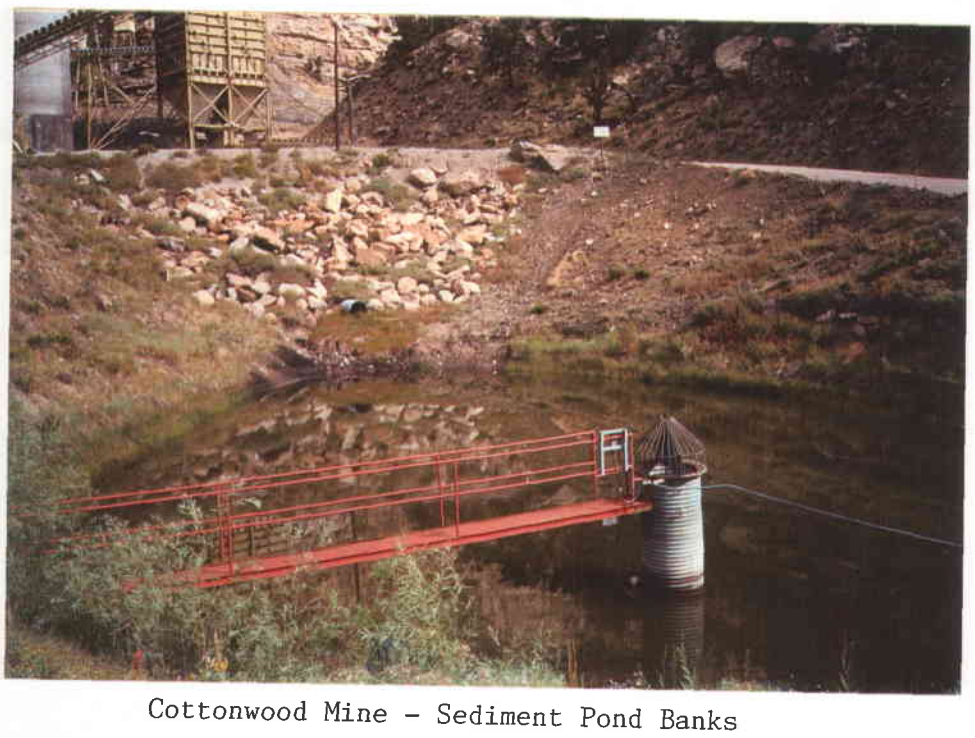
Cottonwood Mine - 4th East Road

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

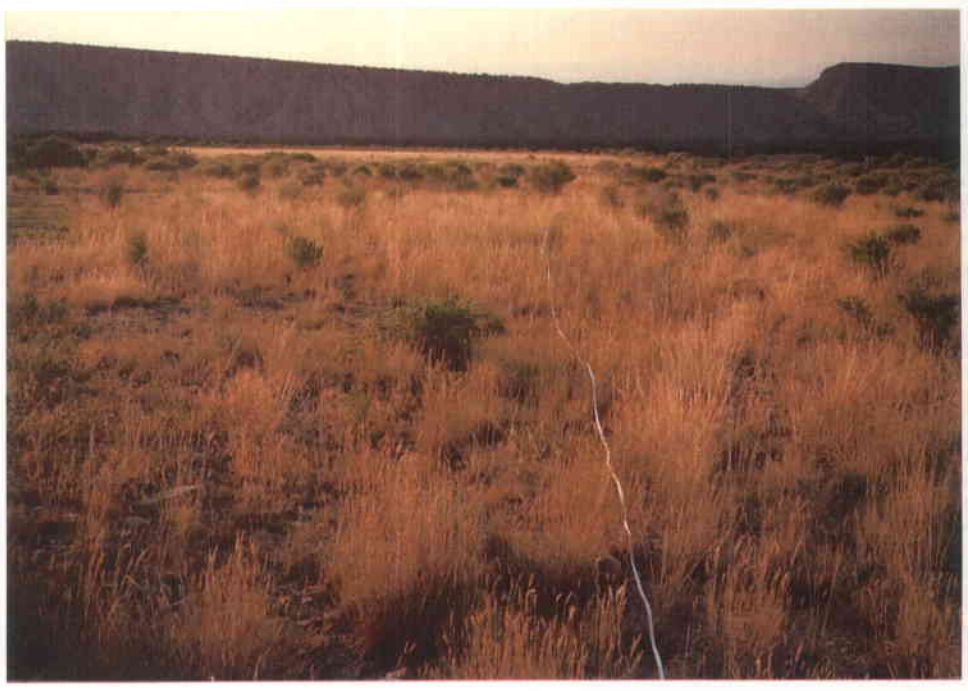
Cottonwood Mine - Old Waste Rock - Cell #1

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 #6 (Weedy Area)

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 N.E. Face

Cottonwood Mine - Old Waste Rock - Berm #3 S.W. Face

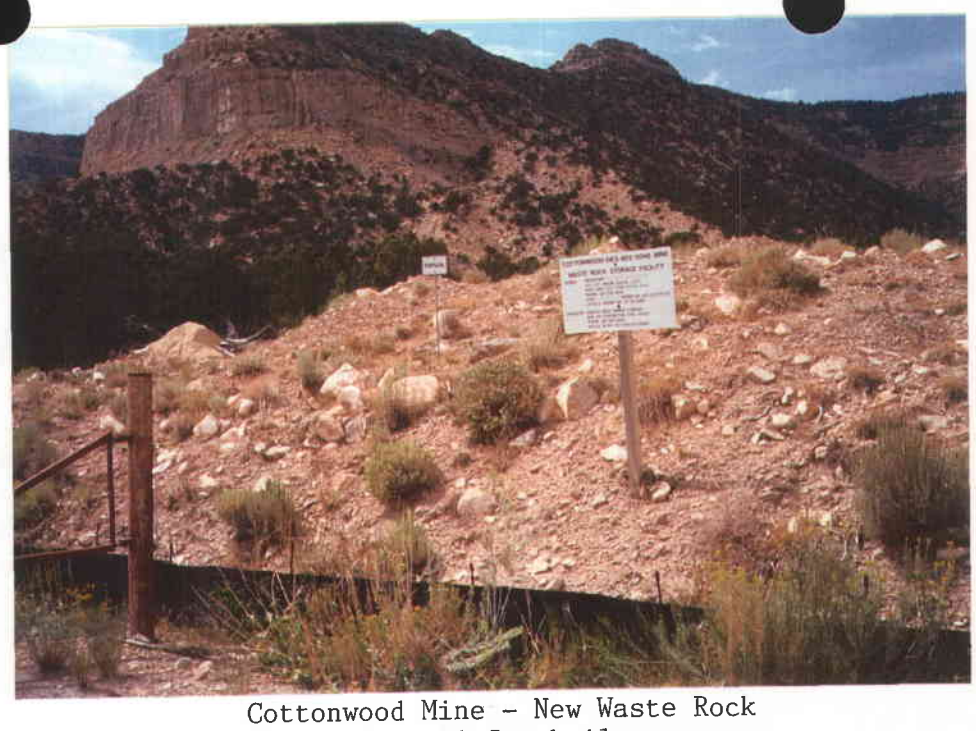
Cottonwood Mine - Old Waste Rock - Berm #4

Cottonwood Mine - Old Waste Rock - CTW Reference Area

Cottonwood Mine - CTW Soil Piles (A)
Old Waste Rock

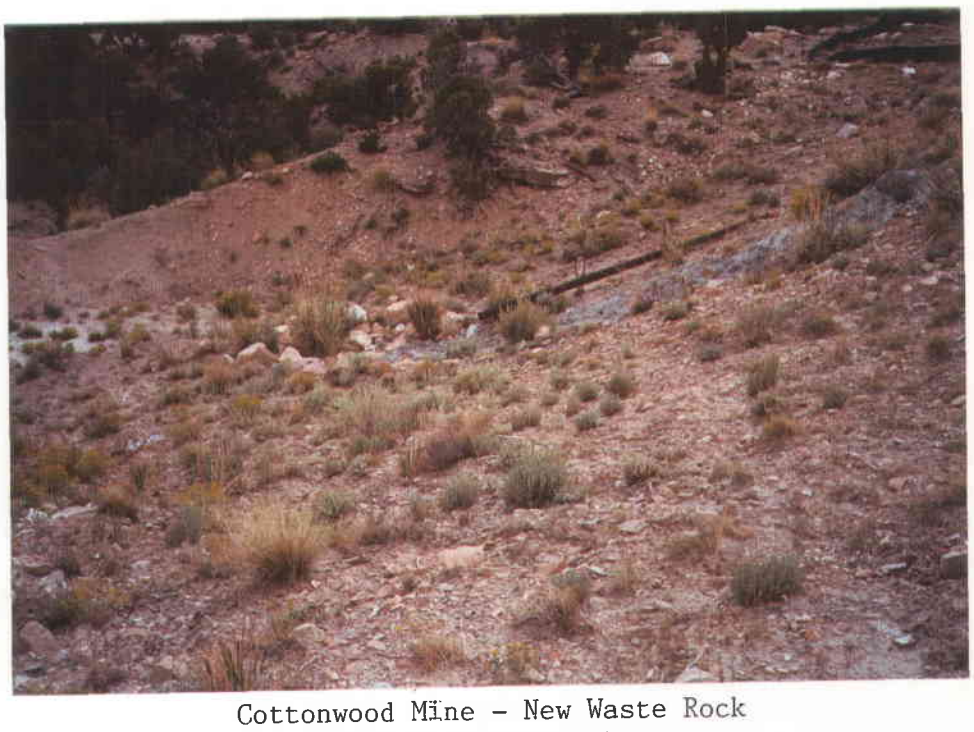
Cottonwood Mine - CTW Soil Piles (C)
Old Waste Rock

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 - Old Waste Rock
1996 (Upper), 1994 (Middle), 1991 (Lower)

COTTONWOOD CANYON AREA

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Soil Piles

AREA: Cottonwood Fan Portal Area

DATE: August 27, 2001 - August 31, 2001

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
Atriplex canescens
Atriplex confertifolia
Brickellia scabra
Chrysothamnus nauseosus
Rhus simplicifolia

Astragalus cicer
Aster foliaceous
Machaeranthera canescens

Elymus cinereus
Elymus lanceolatus
Elymus smithii
Elymus salinus
Elymus junceus
Stipa hymenoides

NOTES:
1) Recorded only qualitative data this year.
2) Topsoil and subsoil piles had nearly the same species present, but the subsoil pile looked better for species establishment.
3) Sites looked excellent with good diversity.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Reclaimed Slope (old,'81)

AREA: Cottonwood Fan Portal Area

DATE: August 27, 2001 - August 31, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 35 deg.

EXPOSURE: W

ANIMAL USE/DISTURBANCE: Slight to moderate

EROSION: Slight, natural patterns.

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Artemisia tridentata
Atriplex canescens
Atriplex confertifolia
Chrysothamnus nauseosus
Gutierrezia sarathrae

Aster foliaceous

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

NOTES:

1) Area continues to look excellent.

2) Qualitative sampling was also taken.

3) Previous data may be used to get an idea about nMin for bond release.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Reference Area

AREA: Cottonwood Fan Portal Area

DATE: August 27, 2001 - August 31, 2001

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
Ephedra viridis
Juniperus osteosperma
Mahonia repens
Pinus edulis

Cryptantha sp.
Galium bifolium
Stanleya pinnata
Machaeranthera canescens

Elymus salinus
Stipa hymenoides

NOTES:

1) Site looks good, but still has 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
2001

SITE NAME: CFP Tube Conveyor Area (1996 Seeding)

AREA: Trail Mtn. Mine/Cottonwood Fan Portal Area

DATE: August 27 - August 31, 2001

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: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Aster foliaceus
Hedysarum boreale
Melilotus officinalis

Elymus spicatus
Elymus lanceolatus
Elymus cinereus
Elymus smithii
Stipa hymenoides

Woody Species Density

CFP TUBE CONVEYOR	*No/Ac*
Artemisia tridentata	126.80
Atriplex canescens	1204.63
Atriplex confertifolia	253.61
Atriplex gardneri	126.80
Chrysothamnus nauseosus	824.22
Total	**2536.05**

NOTES:

1) We sampled randomly over area for cover and density (n=10).

2) This year the area had much less yellow sweetclover. The upper reaches had a lot of fourwing saltbush, for example in some plots (i.e. plot #10) it comprised 75% cover.

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, but in 2001 there were many more desirable species and very little sweetclover.

ENERGY WEST
CPF Tube Conveyor Area (' 96 Seeding)
Cottonwood Fan Portal Area
Slope: 28 deg
Exposure: West, North, South

Sample Date: 27 - 31 Aug 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
SHRUBS							
Atriplex canescens	0.00	0.00	0.00	10.00	0.00	0.00	5.00
Chrysothamnus nauseosus	0.00	0.00	0.00	5.00	5.00	0.00	0.00
FORBS							
Aster foliaceus	15.00	30.00	0.00	0.00	5.00	0.00	5.00
Linum lewisii	0.00	0.00	0.00	10.00	5.00	10.00	10.00
Penstemon palmeri	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES							
Dactylis glomeratus	0.00	0.00	0.00	0.00	5.00	0.00	0.00
Elymus cinereus	5.00	0.00	10.00	0.00	0.00	0.00	5.00
Elymus lanceolatus	10.00	5.00	5.00	10.00	0.00	10.00	5.00
Elymus smithii	5.00	5.00	15.00	0.00	0.00	5.00	5.00
Elymus spicatus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stipa hymenoides	5.00	0.00	15.00	0.00	0.00	0.00	0.00
COVER							
Total Living Cover	40.00	40.00	45.00	35.00	20.00	25.00	35.00
Litter	10.00	10.00	5.00	5.00	10.00	5.00	10.00
Bareground	25.00	30.00	30.00	40.00	50.00	45.00	35.00
Rock	25.00	20.00	20.00	20.00	20.00	25.00	20.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	42.86	25.00	0.00	14.29
Forbs	37.50	75.00	0.00	28.57	50.00	40.00	42.86
Grasses	62.50	25.00	100.00	28.57	25.00	60.00	42.86

ENERGY WEST
CPF Tube Conveyor Area (' 96 Seeding)
Cottonwood Fan Portal Area
Slope: 28 deg
Exposure: West, North, South
Sample Date: 28 Aug - 1 Sept 00

8.00	9.00	10.00	Mean	SDev	Freq	
						SHRUBS
35.00	20.00	75.00	14.50	22.96	50.00	*Atriplex canescens*
0.00	0.00	0.00	1.00	2.00	20.00	*Chrysothamnus nauseosus*
						FORBS
0.00	15.00	0.00	7.00	9.54	50.00	*Aster foliaceus*
5.00	0.00	0.00	4.00	4.36	50.00	*Linum lewisii*
0.00	10.00	0.00	1.00	3.00	10.00	*Penstemon palmeri*
						GRASSES
0.00	0.00	0.00	0.50	1.50	10.00	*Dactylis glomeratus*
0.00	0.00	0.00	2.00	3.32	30.00	*Elymus cinereus*
0.00	5.00	0.00	5.00	3.87	70.00	*Elymus lanceolatus*
0.00	5.00	0.00	4.00	4.36	60.00	*Elymus smithii*
10.00	0.00	0.00	1.00	3.00	10.00	*Elymus spicatus*
0.00	0.00	0.00	2.00	4.58	20.00	*Stipa hymenoides*
						COVER
50.00	55.00	75.00	42.00	14.87		Total Living Cover
10.00	10.00	2.00	7.70	2.93		Litter
25.00	10.00	3.00	29.30	13.87		Bareground
15.00	25.00	20.00	21.00	3.00		Rock
						% COMPOSITION
70.00	36.36	100.00	28.85	32.50		Shrubs
10.00	45.45	0.00	32.94	22.59		Forbs
20.00	18.18	0.00	38.21	27.46		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Belt Portal ('96)

AREA: Cottonwood Fan Portal Area

DATE: August 27 - August 31, 2001

WORKERS: P. Collins, D. Collins

SLOPE: Variable

EXPOSURE: SSW

ANIMAL USE/DISTURBANCE: Slight

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Artemisia tridentata
Chrysothamnus nauseosus
Rosa woodsii

Elymus cinereus
Elymus salinus

Woody Species Density

BELT PORTAL	No/Ac
Amalanchier utahensis	14.01
Artemisia tridentata	42.04
Atriplex canescens	14.01
Brickellia microphyla	14.01
Cercocarpos montanus	0.00
Chrysothamnus nauseosus	392.34
Ephedra viridis	0.00
Eriogonum corymbosum	28.02
Gutierrezia sarothrae	0.00
Mahonia repens	28.02
Pinus edulis	14.01

NOTES:
1) Qualitative and quantitative sampling in 2001.
2) Methods: Sampled for cover and density using random sample methods (n=10).
3) Site looked very good.
4) Some areas was dominated by Gt. Basin Wildrye and site had fair species diversity. Did not have very high woody species density.
5) Large boulders greatly enhanced erosion control.

ENERGY WEST
Belt Portal (' 96)
Cottonwood Fan Portal Area
Slope: Variable deg
Exposure: South, South West
Sample Date: 27 - 31 Aug 01

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
SHRUBS							
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	0.00	10.00	0.00
FORBS							
Apocynum cannabinum	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aster foliaceus	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Machaeranthera canescens	0.00	0.00	0.00	0.00	0.00	0.00	5.00
GRASSES							
Elymus cinereus	55.00	10.00	1.00	35.00	35.00	35.00	15.00
Stipa hymenoides	0.00	0.00	0.00	0.00	0.00	0.00	10.00
COVER							
Total Living Cover	60.00	10.00	1.00	35.00	35.00	45.00	30.00
Litter	5.00	5.00	4.00	5.00	5.00	5.00	10.00
Bareground	5.00	5.00	1.00	5.00	5.00	5.00	35.00
Rock	30.00	80.00	94.00	55.00	55.00	45.00	25.00
% COMPOSITION							
Shrubs	0.00	0.00	0.00	0.00	0.00	22.22	0.00
Forbs	8.33	0.00	0.00	0.00	0.00	0.00	16.67
Grasses	91.67	100.00	100.00	100.00	100.00	77.78	83.33

ENERGY WEST
Belt Portal (' 96)
Cottonwood Fan Portal Area
Slope: Variable deg
Exposure: South, South West
Sample Date: 27 - 31 Aug 01

8.00	9.00	10.00	Mean	SDev	Freq	
						SHRUBS
35.00	0.00	0.00	4.50	10.59	20.00	*Chrysothamnus nauseosus*
						FORBS
0.00	25.00	0.00	2.50	7.50	10.00	*Apocynum cannabinum*
0.00	0.00	0.00	0.50	1.50	10.00	*Aster foliaceus*
0.00	0.00	0.00	0.50	1.50	10.00	*Machaeranthera canescens*
						GRASSES
35.00	0.00	50.00	50.00	18.46	90.00	*Elymus cinereus*
0.00	0.00	0.00	1.00	3.00	10.00	*Stipa hymenoides*
						COVER
70.00	25.00	50.00	36.10	20.17		Total Living Cover
10.00	5.00	5.00	5.90	2.07		Litter
5.00	5.00	5.00	7.60	9.21		Bareground
15.00	65.00	40.00	50.40	23.42		Rock
						% COMPOSITION
50.00	0.00	0.00	7.22	15.72		Shrubs
0.00	100.00	0.00	12.50	29.64		Forbs
50.00	0.00	100.00	80.28	30.74		Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Portal Diesel ('96)

AREA: Cottonwood Fan Portal Area

DATE: August 27, 2001 - August 31, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 43 deg.

EXPOSURE: SW

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Chrysothamnus nauseosus

Astragalus cicer
Aster foliaceus

Elymus cinereus
Elymus smithii
Elymus lanceolatus
Stipa hymenoides

Woody Species Density

PORTAL DIESEL	*No/Ac*
Chrysothamnus nauseosus	200.00
Total	200.00

NOTES:

1) Methods: Steep, dangerous area so we had to estimate our quadrats and belts from a distance.

2) Sampled cover by long distance methods (n=6). For density I measured and counted all individuals in that area.

3) Site looked very good.

4) Site was dominated by grasses with some forbs and shrubs.

ENERGY WEST
Portal Diesel (' 96)
Cottonwood Fan Portal Area
Slope: 43 deg
Exposure: South West

Sample Date: 27 - 31 Aug 01	1.00	2.00	3.00	4.00	5.00	6.00	Mean
SHRUBS							
Chrysothamnus nauseosus	5.00	0.00	0.00	0.00	0.00	0.00	0.83
FORBS							
Aster foliaceus	0.00	0.00	0.00	10.00	10.00	0.00	3.33
Hedysarum boreale	5.00	0.00	0.00	0.00	0.00	5.00	1.67
GRASSES							
Elymus cinereus	10.00	0.00	25.00	0.00	15.00	0.00	8.33
Elymus lanceolatus	10.00	50.00	5.00	10.00	5.00	0.00	13.33
Elymus smithii	0.00	0.00	10.00	15.00	5.00	10.00	6.67
Stipa hymenoides	10.00	0.00	0.00	0.00	0.00	15.00	4.17
COVER							
Total Living Cover	40.00	50.00	40.00	35.00	35.00	30.00	38.33
Litter	10.00	5.00	5.00	25.00	5.00	5.00	9.17
Bareground	5.00	5.00	5.00	5.00	10.00	5.00	5.83
Rock	45.00	40.00	50.00	35.00	50.00	60.00	46.67
% COMPOSITION							
Shrubs	12.50	0.00	0.00	0.00	0.00	0.00	2.08
Forbs	12.50	0.00	0.00	28.57	28.57	16.67	14.38
Grasses	75.00	100.00	100.00	71.43	71.43	83.33	83.53

ENERGY WEST
Portal Diesel (' 96)
Cottonwood Fan Portal Area
Slope: 43 deg
Exposure: South West
Sample Date: 28 Aug - 1 Sept 00

SDev	Freq	
		SHRUBS
1.86	16.67	*Chrysothamnus nauseosus*
		FORBS
4.71	33.33	*Aster foliaceus*
2.36	33.33	*Hedysarum boreale*
		GRASSES
9.43	50.00	*Elymus cinereus*
16.75	83.33	*Elymus lanceolatus*
5.53	66.67	*Elymus smithii*
6.07	33.33	*Stipa hymenoides*

	COVER
6.24	Total Living Cover
7.31	Litter
1.86	Bareground
7.99	Rock
	% COMPOSITION
4.66	Shrubs
11.73	Forbs
12.30	Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Reclaimed Slope (Final) '98

AREA: Cottonwood Fan Portal Area

DATE: August 27, 2001 - August 31, 2001

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 or
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) We also sampled at a level higher than we did last year.

2) Quadrats numbers 1-10 were on the lower slope, numbers 11-20 were on the upper slope.

3) Reclaimed site looked very good.

4) Also sampled quantitatively for cover (n=20) and woody species density (n=20).

5) The upper areas of this reclaimed site had more cover and looked better generally.

6) Generally, the site looked better this year with fewer weeds.

Woody Species Density

RECLAIMED SLOPE '98	*No/Ac*
Artemisia tridentata	22.89
Atriplex canescens	1671.10
Atriplex confertifolia	137.35
Total	**1831.35**

ENERGY WEST
Reclaimed Slope ' 98 (Final)
Cottonwood Fan Portal Area
Slope: 35 deg
Exposure: West

Sample Date: 27 - 31 Aug 01	1.00	2.00	3.00	4.00	5.00	6.00	7.00
SHRUBS							
Atriplex canescens	5.00	0.00	0.00	10.00	3.00	13.00	0.00
FORBS							
Achillea millefolium	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aster glaucodes	0.00	5.00	5.00	0.00	0.00	0.00	20.00
Linum lewisii	5.00	5.00	0.00	0.00	0.00	0.00	0.00
Medicago sativa	0.00	0.00	0.00	0.00	2.00	0.00	0.00
Penstemon palmeri	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES							
Bromus carinatus	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Elymus cinereus	5.00	0.00	20.00	0.00	5.00	0.00	0.00
Elymus junceus	0.00	0.00	0.00	10.00	0.00	0.00	0.00
Elymus lanceolatus	5.00	15.00	5.00	10.00	0.00	0.00	0.00
Elymus smithii	5.00	0.00	0.00	0.00	5.00	2.00	3.00
COVER							
Total Living Cover	25.00	25.00	30.00	30.00	15.00	15.00	25.00
Litter	5.00	5.00	5.00	5.00	5.00	10.00	5.00
Bareground	30.00	40.00	55.00	40.00	15.00	45.00	20.00
Rock	40.00	30.00	10.00	25.00	65.00	30.00	50.00
% COMPOSITION							
Shrubs	20.00	0.00	0.00	33.33	20.00	86.67	0.00
Forbs	20.00	40.00	16.67	0.00	13.33	0.00	80.00
Grasses	60.00	60.00	83.33	66.67	66.67	13.33	20.00

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00
0.00	0.00	0.00	3.00	0.00	15.00	10.00	5.00	15.00	5.00
5.00	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	5.00	5.00	10.00	0.00	10.00	5.00
5.00	0.00	0.00	2.00	10.00	5.00	0.00	5.00	10.00	5.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	5.00	8.00	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	0.00	0.00	0.00
15.00	0.00	0.00	7.00	5.00	0.00	5.00	0.00	10.00	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	7.00	0.00	0.00	0.00	0.00	10.00	5.00	0.00
5.00	5.00	0.00	3.00	15.00	10.00	0.00	15.00	5.00	15.00
35.00	10.00	15.00	15.00	35.00	35.00	25.00	40.00	55.00	35.00
5.00	5.00	5.00	10.00	5.00	10.00	5.00	5.00	10.00	10.00
35.00	50.00	45.00	25.00	35.00	30.00	25.00	30.00	10.00	15.00
25.00	35.00	35.00	50.00	25.00	25.00	45.00	25.00	25.00	40.00
0.00	0.00	0.00	20.00	0.00	42.86	40.00	12.50	27.27	14.29
42.86	50.00	53.33	13.33	42.86	28.57	40.00	25.00	36.36	28.57
57.14	50.00	46.67	66.67	57.14	28.57	20.00	62.50	36.36	57.14

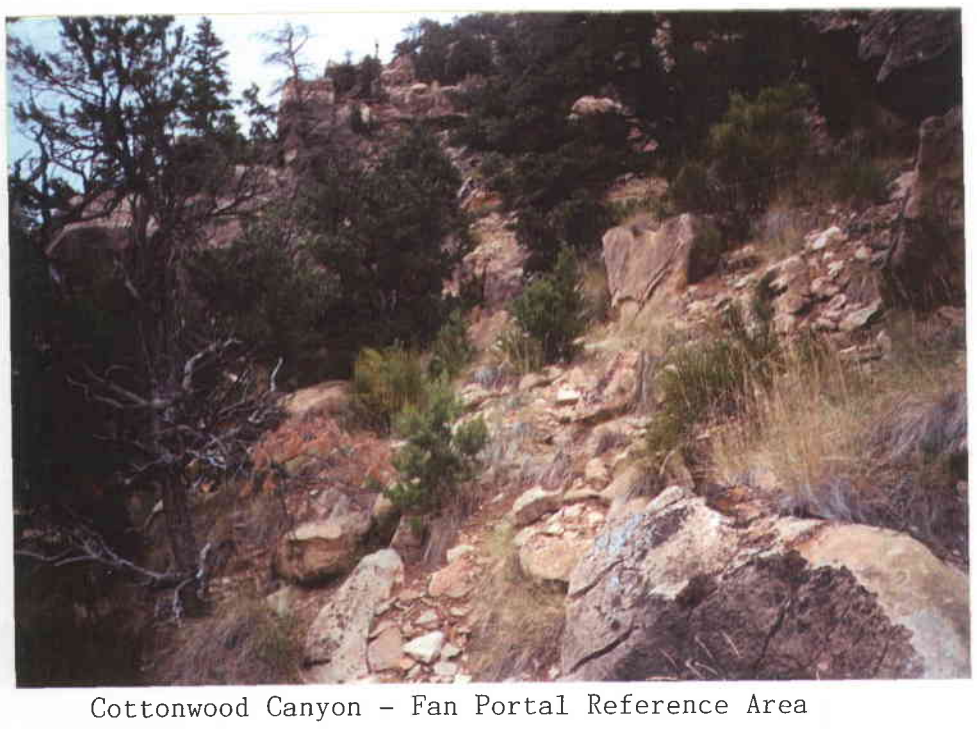
ENERGY WEST
Reclaimed Slope ' 98 (Final)
Cottonwood Fan Portal Area
Slope: 35 deg
Exposure: West
Sample Date: 27 - 31 Aug 01

18.00	19.00	20.00	Mean	SDev	Freq	
						SHRUBS
15.00	7.00	15.00	6.05	5.83	65.00	*Atriplex canescens*
						FORBS
0.00	0.00	0.00	0.25	1.09	5.00	*Achillea millefolium*
0.00	0.00	5.00	3.75	4.97	10.00	*Aster glaucodes*
10.00	5.00	10.00	3.85	3.76	60.00	*Linum lewisii*
0.00	0.00	0.00	0.10	0.44	5.00	*Medicago sativa*
5.00	8.00	5.00	1.80	2.86	30.00	*Penstemon palmeri*
						GRASSES
0.00	0.00	0.00	0.10	0.44	5.00	*Bromus carinatus*
0.00	5.00	0.00	3.85	5.49	45.00	*Elymus cinereus*
5.00	0.00	0.00	1.00	2.55	15.00	*Elymus junceus*
5.00	0.00	5.00	3.35	4.33	45.00	*Elymus lanceolatus*
10.00	15.00	0.00	5.65	5.52	70.00	*Elymus smithii*
						COVER
50.00	40.00	40.00	29.75	11.88		Total Living Cover
5.00	10.00	5.00	6.50	2.29		Litter
20.00	35.00	10.00	30.50	12.74		Bareground
25.00	15.00	45.00	33.25	12.87		Rock
						% COMPOSITION
30.00	17.50	37.50	20.10	21.09		Shrubs
30.00	32.50	50.00	32.17	18.70		Forbs
40.00	50.00	12.50	47.73	19.57		Grasses

COLOR
PHOTOGRAPHS

Cottonwood Canyon - Soil Piles

Cottonwood Canyon - Fan Portal Reclaimed Slope ('81)

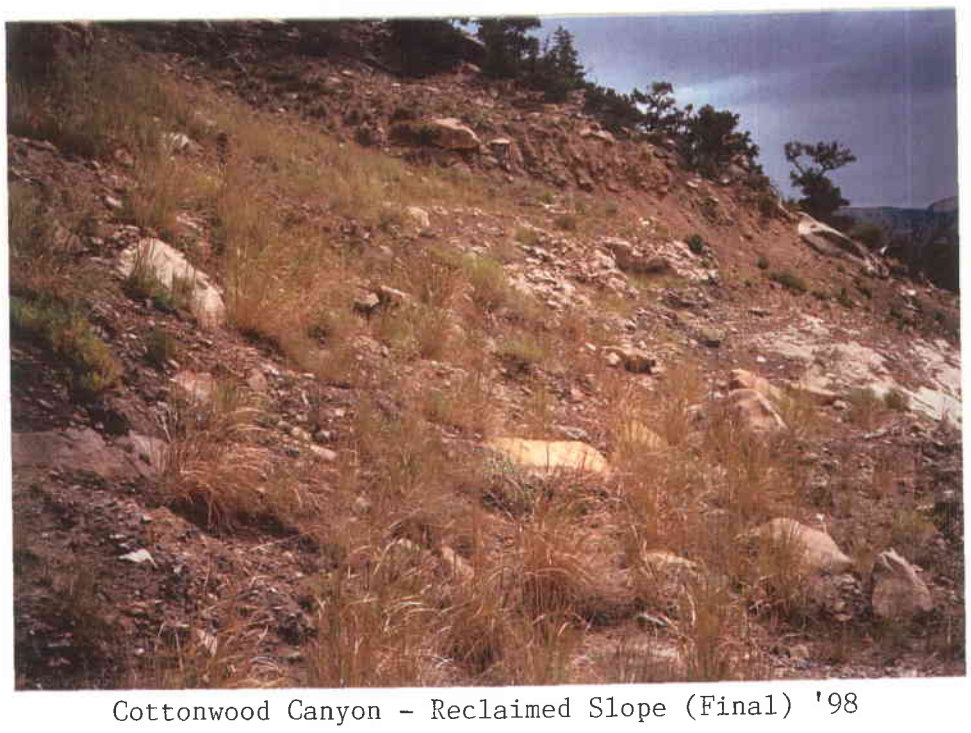


Cottonwood Canyon - Fan Portal Reference Area

Cottonwood Canyon - CFP Tube Conveyor

Cottonwood Canyon - Belt Portal ('96)

Cottonwood Canyon - Portal Diesel ('96)



Cottonwood Canyon - Reclaimed Slope (Final) '98

DES-BEE-DOVE AREA

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Sediment Storage Slope

AREA: Des-Bee-Dove (1988 Interim Reveg. Area)

DATE: August 31 - September 1, 2001

WORKERS: P. Collins

SLOPE: 3 - 5 deg.

EXPOSURE: S SE

AREA: 4.4 acres

ANIMAL USE/DISTURBANCE: Negligible

COVER: (No quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex gardneri
Chrysothamnus nauseosus
Eriogonum corymbosum
Sarcobatus vermiculatus

Halogeton glomeratus
Suaeda calceoliformis

Elymus salinus
Hordeum jubatum
Elymus cinereus
Stipa hymenoides

NOTES:
1) Site was dominated by Gardner saltbush and halogeton.
2) Possibly fewer weeds this year.
3) Map shows a large area to sample, but the name suggests only the slopes.
4) We have always monitored the entire area as map shows.
5) There were no grasses on top, but this year there were several. The slopes were mostly comprised of mat saltbush and Gardner salt bush.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Sediment Pond Banks

AREA: Des-Bee-Dove (1988 Interim Reveg Area)

DATE: August 31 - September 1, 2001

WORKERS: P. Collins

SLOPE: 30 deg.

EXPOSURE: E & W

AREA: .9 acre

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Minor

COVER: (No quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex confertifolia
Atriplex gardneri
Chrysothamnus nauseosus
Gutierrezia sarothrae
Tamarix chinensis

Halogeton glomeratus
Machaeranthera canescens
Penstemon palmeri
Elymus salinus
Elymus spicatus
Stipa hymenoides

NOTES:
1) Qualitative sampling only was done this year.
2) Site looked fair to excellent, depending on specific area. Banks were dominated by rubber rabbitbrush.
3) For some reason Salina wildrye is common here and not the planted species i.e. bluebunch and thickspike wheatgrasses.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Sediment Pond Area

AREA: Des-Bee-Dove (1985 Reveg. Area)

DATE: August 31 - September 1, 2001

WORKERS: P. Collins

SLOPE: 0-10 deg.

EXPOSURE: S

AREA: .7 acre

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (no quantitative data taken this year)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex canescens
Atriplex confertifolia
Chrysothamnus nauseosus
Gutierrezia sarothrae
Ephedra viridis
Sarcobatus vermiculatus

Agropyron cristatum
Elymus salinus
Elymus lanceolatus
Hilaria jamesii
Stipa hymenoides

NOTES:
1) We sampled qualitatively this year.
2) Site looked excellent.
3) Site was dominated by shrubs, mostly fourwing saltbush and broom snakeweed.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Subsoil Pile at Sediment Pond (Jan) '98

AREA: Des-Bee-Dove (1985 Reveg. Area)

DATE: August 31 - September 1, 2001

WORKERS: P. Collins, D. Collins

SLOPE: Sideslope ~ 28 deg., top ~ 1 deg.

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Minor on most slopes

COVER: No quantitative data taken this year

DOMINANT PLANT SPECIES OBSERVED:

Atriplex gardneri (T)
Atriplex canescens (S)
Chrysothamnus nauseosus (T,S)
Ephedra viridis (T,S)
Gutierrezia sarothrae (T)

Astragalus cicer (T)*
Eriogonum (annual) (S)
Hedysarum boreale (T)
Malcomia africana (T)
Salsola pestifer (T)

Agropyron cristatum (T)
Elymus spicatus (T)
Elymus cinereus (S)
Hilaria jamesii (T)

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* dominant desirable species.
T = present on top of pile
S = present on sideslopes

NOTES:

1) We sampled qualitatively this year.

2) The vegetation on the top of the pile was dominated by cicer milkvetch (90%). Check this species for identification again in 2002 (Paul Baker asked EW about it)

3) There was some Gardner saltbush becoming established.

4) Russian thistle was common.

5) The side slopes had better diversity but less cover when compared to the top of the pile.

6) The side-slopes had less cover.

7) Side-slopes were beginning slight to moderate erosion. May not be a problem this year, but some handwork next year may be warranted (~01).

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Pumphouse (Final)

AREA: Des-Bee-Dove

DATE: September 10, 2001

WORKERS: P. Collins, D. Oakley

SLOPE: 2-14 deg.

EXPOSURE: N

ANIMAL USE/DISTURBANCE: Slight

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED: (see quantitative data)

NOTES:

1) Methods for quantitative data: we ran (1) long transect line placing quadrats from random numbers every 15 ft from the transect line. We took cover using ocular methods and density with the point-quarter method.

2) There was a dense stand of halogeton in one area of the reclaimed site (see photograph). We should continue to watch this area. Hopefully, more desirable species will eventually out-compete the halogeton in this area.

3) Overall, the site was very diverse for its first growing season.

Woody Species Density

PUMPHOUSE	*No/Ac*
Artemisia tridentata	41.61
Atriplex confertifolia	47.56
Ceratoides lanata	41.61
Cercocarpus ledifolius	5.94
Chrysothamnus nauseosus	95.11
Ephedra viridis	11.89
Gutierrezia sarothrae	112.95
Total	**356.67**

ENERGY WEST
Pumphouse (Final)
Des- Bee-Dove
Slope: 2 - 14 deg
Exposure: North

Sample Date: 10-12 Sept 01	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 confertifolia	0.00	0.00	1.00	0.00	0.00	0.00	0.00
Ceratoides lanata	0.00	0.00	1.00	0.00	0.00	0.00	0.00
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	11.00	0.00	0.00
Ephedra viridis	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gutierrezia sarothrae	0.00	0.00	0.00	0.00	0.00	0.00	5.00
FORBS							
Halogeton glomeratus	0.00	0.00	6.00	0.00	1.00	65.00	4.00
Kochia scoparia	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Malcomia africana	0.00	2.00	8.00	2.00	1.00	5.00	0.00
Penstemon palmeri	3.00	3.00	0.00	0.00	0.00	0.00	2.00
Salsola pestifer	0.00	4.00	0.00	0.00	0.00	0.00	0.00
Stanleya pinnata	1.00	0.00	0.00	0.00	1.00	0.00	0.00
GRASSES							
Avena fatua	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Elymus lanceolatus	1.00	0.00	2.00	2.00	2.00	0.00	3.00
Elymus smithii	3.00	2.00	2.00	0.00	2.00	0.00	2.00
Stipa hymenoides	0.00	2.00	0.00	1.00	0.00	0.00	0.00
COVER							
Total Living Cover	8.00	13.00	20.00	5.00	18.00	70.00	17.00
Litter	2.00	12.00	7.00	15.00	17.00	5.00	8.00
Bareground	60.00	65.00	23.00	15.00	25.00	15.00	45.00
Rock	30.00	10.00	50.00	65.00	40.00	10.00	30.00
% COMPOSITION							
Shrubs	0.00	0.00	10.00	0.00	61.11	0.00	29.41
Forbs	50.00	69.23	70.00	40.00	16.67	100.00	35.29
Grasses	50.00	30.77	20.00	60.00	22.22	0.00	35.29

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	Mean	SDev
0.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00	0.20	0.75
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	2.74
0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.07	0.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	1.25
15.00	55.00	1.00	24.00	0.00	0.00	0.00	4.00	11.67	20.13
10.00	20.00	0.00	0.00	0.00	0.00	0.00	15.00	3.00	6.27
0.00	0.00	0.00	0.00	0.00	0.00	2.00	5.00	1.67	2.39
0.00	0.00	0.00	0.00	1.00	5.00	0.00	1.00	1.00	1.51
0.00	0.00	0.00	0.00	9.00	0.00	3.00	0.00	1.07	2.43
0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.20	0.40
0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.13	0.34
0.00	0.00	2.00	5.00	4.00	5.00	0.00	0.00	1.73	1.77
0.00	0.00	6.00	5.00	3.00	4.00	2.00	0.00	2.07	1.84
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.54
25.00	75.00	10.00	35.00	20.00	15.00	7.00	25.00	24.20	20.43
5.00	10.00	5.00	5.00	5.00	5.00	5.00	5.00	7.40	4.11
25.00	5.00	25.00	20.00	25.00	65.00	85.00	60.00	37.20	23.16
45.00	10.00	60.00	40.00	50.00	15.00	3.00	10.00	31.20	19.80
0.00	0.00	0.00	0.00	15.00	6.67	0.00	0.00	8.15	16.28
100.00	100.00	10.00	71.43	50.00	33.33	71.43	100.00	61.16	29.58
0.00	0.00	90.00	28.57	35.00	60.00	28.57	0.00	30.70	25.31

ENERGY WEST
Pumphouse (Final)
Des- Bee-Dove
Slope: 2 - 14 deg
Exposure: North
Sample Date: 10-12 Sept 01

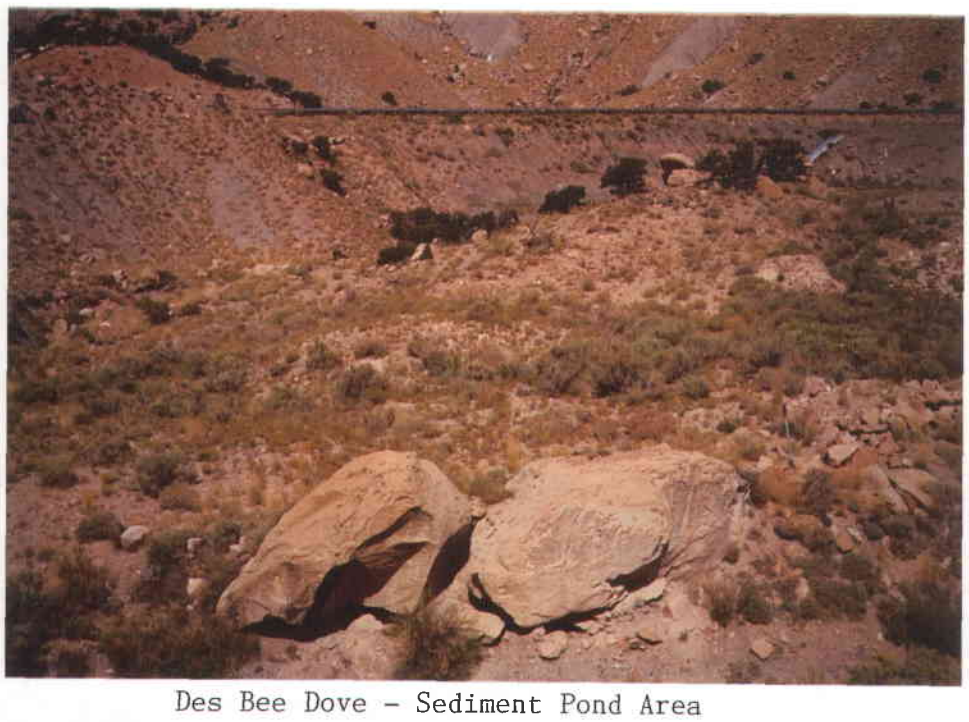
Freq	
	SHRUBS
6.67	*Artemisia tridentata*
6.67	*Atriplex confertifolia*
6.67	*Ceratoides lanata*
6.67	*Chrysothamnus nauseosus*
6.67	*Ephedra viridis*
6.67	*Gutierrezia sarothrae*
	FORBS
60.00	*Halogeton glomeratus*
20.00	*Kochia scoparia*
46.67	*Malcomia africana*
40.00	*Penstemon palmeri*
20.00	*Salsola pestifer*
20.00	*Stanleya pinnata*
	GRASSES
13.33	*Avena fatua*
60.00	*Elymus lanceolatus*
66.67	*Elymus smithii*
13.33	*Stipa hymenoides*

	COVER
	Total Living Cover
	Litter
	Bareground
	Rock
	% COMPOSITION
	Shrubs
	Forbs
	Grasses

COLOR
PHOTOGRAPHS

Des Bee Dove - Sediment Storage Slope

Des Bee Dove - Sediment Pond Banks

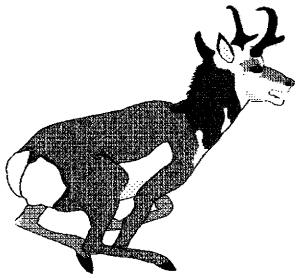


Des Bee Dove - Sediment Pond Area

Des Bee Dove - Subsoil Pile at Sediment Pond

Des Bee Dove - Pumphouse (Final)

DEER CREEK AREA



ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Mixed Conifer Reference Area

AREA: Deer Creek

DATE: August 19, 2001 - August 23, 2001

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 ~45%)

DOMINANT PLANT SPECIES OBSERVED:

Abies lasiocarpa
Amalanchier utahensis
Brickellia microphylla
Chrysothamnus depressus
Chrysothamnus viscidiflorus
Chrysothamnus nauseosus
*Eriogonum corymbosum**
Juniperus scopulorum
Mahonia repens
Pachystima myrsinites
Pinus edulis
Pseudotsuga menziesii
Symphoricarpos oreophilus

Aster foliaceous
Linum lewisii
Machaeranthera canescens
Castilleja sp.

*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
2001

SITE NAME: Riparian Reference Area

AREA: Deer Creek

DATE: August 19, 2001 - August 23, 2001

WORKERS: P. Collins

SLOPE: 2 - 3 deg.

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Used extensively, no severe disturbance.

EROSION: Normal

COVER: (Cover not sampled this year) (overstory plus understory >50%)

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.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Pinyon-Juniper Reference Area

AREA: Deer Creek

DATE: August 19, 2001 - August 23, 2001

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 oreophilus
Chrysothamnus nauseosus
*Ephedra viridis**
Eriogonum corymbosum
*Juniperus osteosperma**
*Pinus edulis**
Symphoricarpos oreophilus

Aster foliaceous
Castilleja sp.
Galium bifolium
Machaeranthera grindelioides
Stanleya pinnata

Bromus carinatus
*Elymus salinus**
Stipa hymenoides

* Dominant species

NOTES:

1) Qualitative sampling this year.

2) Reference area continues to look good.

3) Good for a PJ stand and reference area, but I should compare it visually with areas that will be reclaimed to meet these standards in the future. (~01). Chuck Semborski and Dennis Oakley thought this would be a good idea in 2002.

4) 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.

5) 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
2001

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

AREA: Deer Creek Mine

DATE: August 19, 2001 - August 23, 2001

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**+
Ephedra viridis +
Eriogonum corymbosum +
Gutierrezia sarothrae +
*Yucca harrimaniae**
*Artemisia tridentata**

Aster chilensis +
*Halogeton glomeratus**
Machaeranthera canescens +

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

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

2) A sediment control area was recently constructed within one area. This created some

disturbance. 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 +.

3) 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
2001

SITE NAME: Riparian Areas

AREA: Deer Creek Mine

DATE: August 19, 2001 - August 23, 2001

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
Chrysothamnus nauseosus
Clematis sp.
Populus angustifolia
Prunus virginiana
Rosa woodsii
Sambucus caerulea

Aster chilensis
Cirsium sp.
Grindelia squarrosa

Agropyron cristatum
Elymus cinereus
Elymus hispidus
Elymus spicatus

NOTES:

1) Qualitative data only again this year.

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

3) Both areas were <5% weeds this year.

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

7) Sites looked excellent, nearly weed free now.

8) Most of the species observed were found in both riparian areas.

9) North Riparian Area was dominated by intermediate wheatgrass. It had good cover but low species diversity.

10) The South Riparian Area also looked good and perhaps had higher diversity.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Sediment Pond Dam

AREA: Deer Creek Mine Area

DATE: August 19, 2001 - August 23, 2001

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
Grindelia squarrosa
Kochia scoparia
Penstemon palmeri

Elymus smithii
Elymus cinereus
Elymus lanceolatus

NOTES:

1) Qualitative data only this year.

2) Pond has again been disturbed with more modifications to it.

3) 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.

4) There were more shrub species this year and better diversity.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Temp. Sediment Basin

AREA: Deer Creek Mine Area

DATE: August 19, 2001 - August 23, 2001

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
Grindelia squarrosa
Medicago sativa

Elymus cinereus
Elymus smithii
Elymus lanceolatus

NOTES:

1) There was a good representation of desirable and almost no weedy spp. The site continues to appear to be improving over time.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Roadside Areas

AREA: Deer Creek (1990 Reveg. Area)

DATE: August 19, 2001 - August 23, 2001

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

Machaeranthera canescens
Artemisia dracunculus
Tragopogon dubius
Medicago sativa
Astragalus cicer
Bromus carinatus
Elymus smithii
Elymus lanceolatus (* west side of road)
Elymus cinereus (* east side of road)
Stipa hymenoides

NOTES:
1) Qualitative data sampled.
2) Cover was very good. Dominated by grasses, mostly Gt. Basin wildrye.
3) Good diversity of grasses and more shrubs were becoming established this year, esp. rabbitbrush.

4) Very few weedy species.

5) Good design: Most of the cover was in the low part of roughened topography.

6) Sampled both side of road.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Gate Area Slope

AREA: Deer Creek (1990 Reveg. Area)

DATE: August 19, 2001 - August 23, 2001

WORKERS: P. Collins

SLOPE: 20 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Still some erosion, but considering the angle of the slope, it's not bad. It doesn't appear to be getting worse.

COVER: (qualitative data only)

DOMINANT PLANT SPECIES OBSERVED:
Chrysothamnus nauseosus

Aster chilensis
Astragalus cicer
Halogeton glomeratus
Medicago sativa
Penstemon palmeri

*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 diversity. Grasses dominate the site.

3) Weedy species were uncommon except for the toe of the slope where it is disturbed regularly by road maintenance.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Fan Road Slopes

AREA: Deer Creek (1989 Reveg. Area)

DATE: August 19, 2001 - August 23, 2001

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

*Aster chilensis**
Cirsium sp.

Agropyron cristatum
Bromus carinatus
Elymus spicatus
Elymus salinus
Elymus cinereus
Hordeum jubatum
Poa pratensis
Stipa hymenoides

NOTES:

1) Area and species diversity looked good.

2) There were very few woody species here.

3) By the way the map looked, we considered everything on the south side of road (left as you walk up) the Fan Road Slopes.

4) One small area had been reseeded.

5) Some small erosional rills have begun in the area where some culvert repair was conducted (~01).

6) Thistle plants have been treated (cut) for removal.

7) Qualitative data only.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Refuse Pile & Berm

AREA: Deer Creek (1988 Reveg. Area)

DATE: August 19, 2001 - August 23, 2001

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
Machaeranthera canescens
Penstemon palmeri
Salsola pestifer

Agropyron cristatum
Bromus inermis
Elymus lanceolatus
Elymus spicatus
Elymus salinus
Elymus cinereus
Hordeum jubatum
Stipa hymenoides

NOTES:

1) Qualitative sampling only was done this year.

2) 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.

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

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Rock Slide and Berm

AREA: Deer Creek

DATE: August 19, 2001 - August 23, 2001

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) Berm has good vegetative cover except where the slope has been work on (this area filling in with vegetation however).

3) Areas appear stable.

4) No large erosional rills.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Water Plant Slope

AREA: Deer Creek (1988 Reveg. Area)

DATE: August 19, 2001 - August 23, 2001

WORKERS: P. Collins

SLOPE: 38 deg.

EXPOSURE: NE

ANIMAL USE/DISTURBANCE:

EROSION: Slight

DOMINANT PLANT SPECIES OBSERVED:

Chrysothamnus nauseosus
Eriogonum corymbosum
Rosa woodsii

*Aster chilensis**
Machaeranthera grindelioides
Melilotus officinalis
Penstemon palmeri
Viguiera multiflora

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

NOTES:

1) We sampled qualitatively this year.

2) Cover was excellent. Areas contrasted in species composition.

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
2001

SITE NAME: Pipeline

AREA: Deer Creek (1986 Reveg. Area)

DATE: August 19, 2001 - August 23, 2001

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
Gutierrezia sarothrae
Juniperus osteosperma
Juniperus scopulorum
Pinus edulis
Populus angustifolia
Rhus simplicifolia
Rosa woodsii
Salix sp.
Tamarix chinensis

Aster chilensis
Aster foliaceous
Castilleja sp.
Grindelia squarrosa
Halogeton glomeratus
Helianthus annuus
Kochia scoparia

Machaeranthera canescens
Melilotus officinalis
Penstemon palmeri
Salsola pestifer

Agropyron cristatum
Agropyron cristatum
Bromus tectorum
Bromus tectorum
Elymus lanceolatus
Elymus cinereus
Elymus smithii
Elymus spicatus
Hordeum jubatum
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.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Deer Canyon

AREA: Deer Creek (1986 Reveg. Area)

DATE: August 19, 2001 - August 23, 2001

WORKERS: P. Collins

SLOPE: 15-20 deg.

EXPOSURE: E

AREA: .1 acre

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Negligible

COVER: (qualitative data only this year)

DOMINANT PLANT SPECIES OBSERVED:

Chrysothamnus nauseosus

Aster chilensis
Cirsium sp.
Penstemon palmeri

Dactylis glomeratus
Elymus spicatus
Elymus lanceolatus
Elymus cinereus
Elymus salinus
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
2001

SITE NAME: Reference Area (Atriplex)

AREA: Deer Creek Waste Rock

DATE: August 19, 2001 - August 23, 2001

WORKERS: P. Collins

SLOPE: 10-20 deg

EXPOSURE: Variable

ANIMAL USE/DISTURBANCE: Moderate

EROSION: N

COVER: (qualitative data only)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex gardneri *
Atriplex confertifolia
Chrysothamnus nauseosus
Artemisia nova
Eriogonum corymbosum

Halogeton glomeratus

Stipa hymenoides

NOTES:
1) Qualitative sampling this year.
2) Slopes were dominated by Gardner saltbush with patches of mat saltbush.
3) Drainages had more grass and black sagebrush.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Access Road Slopes

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

DATE: August 19, 2001 - August 23, 2001

WORKERS: P. Collins

SLOPE: 20 - 25 deg.

EXPOSURE: Variable

AREA: Part of 5 acres

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Erosion control repair work has been done previously, but there were some slight rills beginning (not enough to worry about at this time).

COVER: (no quantitative data recorded this year)

DOMINANT PLANT SPECIES OBSERVED:

Fill Slopes

Artemisia tridentata
Atriplex confertifolia
Atriplex canescens
Atriplex gardneri
Ceratoides lanata
Chrysothamnus nauseosus
Eriogonum corymbosum
Juniperus osteosperma
Yucca harrimaniae
Sarcobatus vermiculatus

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
Salsola pestifer

Elymus lanceolatus
Elymus salinus

NOTES:

1) Qualitative sampling only was done this year.

2) Like mentioned last year, the cut slopes had more weedy species whereas the fill slopes were mostly desirable species.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Phase I Berm

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

DATE: August 19, 2001 - August 23, 2001

WORKERS: P. Collins

SLOPE: 0-29 deg.

EXPOSURE: Variable

AREA: 4 Acres

ANIMAL USE/DISTURBANCE: Negligible

EROSION: Minor on slopes. No repair needed yet.

COVER: (See quantitative data this year)

DOMINANT PLANT SPECIES OBSERVED:
Atriplex gardneri
Atriplex canescens
Ceratoides lanata
Chrysothamnus viscidiflorus
Chrysothamnus nauseosus
Sarcobatus vermiculatus

Halogeton glomeratus
Kochia scoparia
Machaeranthera canescens
Malcomia africana
Penstemon palmeri
Salsola pestifer

Agropyron cristatum
Elymus cinereus
Elymus lanceolatus
Elymus salinus
Hordeum jubatum

Poa secunda
Stipa hymenoides

NOTES:

1) Qualitative and quantitative sampling was done this year for cover (n=15) and density (n=15).

2) Sampled alternately top and sides.

3) The bottomline is: the south exposure looked poor, west was fair and north was in good condition.

4) The top of the south berm looked better this year but had bare spots and some areas with good shrub growth.

5) There was a bare area on the west end of the north exposure.

6) The top of the north berm was comprised mostly of "weedy" species.

7) The side slopes were mostly in fair to good condition.

8) Also see "Notes" in the Phase I Diversion for comments about bond release. (~01).

Woody Species Density

PHASE I DIVERSION	*No/Ac*
Atriplex canescens	106.65
Atriplex confertifolia	191.97
Atriplex corrugata	85.32
Atriplex gardneri	490.58
Ceratoides lanata	234.62
Chrysothamnus nauseosus	149.31
Sarcobatus vermiculatus	21.33
Total	**1279.77**

ENERGY WEST
Phase I Berm (1989 Final Reveg Area)
Deer Creek Waste Rock Site
Slope: 0-29 deg
Exposure: Variable
Sample Date: 19 Aug - 23 Aug 01

1 thru 5 = South Face

	1.00	2.00	3.00	4.00	5.00	6.00	7.00
SHRUBS							
Atriplex confertifolia	10.00	0.00	0.00	0.00	0.00	0.00	0.00
Atriplex gardneri	0.00	30.00	0.00	0.00	0.00	0.00	0.00
Ceratoides lanata	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Chrysothamnus nauseosus	0.00	0.00	0.00	0.00	5.00	5.00	0.00
FORBS							
Halogeton glomeratus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Malcomia africana	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GRASSES							
Elymus lanceolatus	0.00	0.00	35.00	0.00	0.00	20.00	5.00
Stipa hymenoides	20.00	5.00	0.00	20.00	25.00	0.00	0.00
COVER							
Total Living Cover	30.00	35.00	35.00	20.00	30.00	25.00	10.00
Litter	5.00	5.00	4.00	5.00	5.00	10.00	2.00
Bareground	55.00	50.00	60.00	65.00	60.00	60.00	80.00
Rock	10.00	10.00	1.00	10.00	5.00	5.00	8.00
% COMPOSITION							
Shrubs	33.33	85.71	0.00	0.00	16.67	20.00	50.00
Forbs	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grasses	66.67	14.29	100.00	100.00	83.33	80.00	50.00

6 thru 10 = West Face

11 thru 15 = North Face

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	Mean	SDev
0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	1.00	2.71
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	7.48
0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.67	1.70
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.67	1.70
0.00	0.00	5.00	0.00	0.00	0.00	2.00	0.00	0.47	1.31
5.00	5.00	5.00	25.00	8.00	0.00	3.00	0.00	3.40	6.32
10.00	0.00	0.00	0.00	0.00	35.00	0.00	0.00	7.00	12.22
5.00	10.00	0.00	0.00	2.00	0.00	5.00	5.00	6.47	8.17
20.00	15.00	10.00	25.00	10.00	35.00	10.00	15.00	21.67	9.43
3.00	5.00	2.00	5.00	2.00	5.00	5.00	5.00	4.53	1.89
72.00	75.00	87.00	65.00	85.00	55.00	80.00	75.00	68.27	11.32
5.00	5.00	1.00	5.00	3.00	5.00	5.00	5.00	5.53	2.78
0.00	0.00	0.00	0.00	0.00	0.00	0.00	66.67	18.16	27.24
25.00	33.33	100.00	100.00	80.00	0.00	50.00	0.00	25.89	37.04
75.00	66.67	0.00	0.00	20.00	100.00	50.00	33.33	55.95	34.27

ENERGY WEST
Phase I Berm (1989 Final Reveg Area)
Deer Creek Waste Rock Site
Slope: 0-29 deg
Exposure: Variable
Sample Date: 19 Aug - 23 Aug 01

Freq	
	SHRUBS
13.33	*Atriplex confertifolia*
6.67	*Atriplex gardneri*
13.33	*Ceratoides lanata*
13.33	*Chrysothamnus nauseosus*
	FORBS
13.33	*Halogeton glomeratus*
40.00	*Malcomia africana*
	GRASSES
33.33	*Elymus lanceolatus*
60.00	*Stipa hymenoides*
	COVER
	Total Living Cover
	Litter
	Bareground
	Rock
	% COMPOSITION
	Shrubs
	Forbs
	Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Phase I Diversion

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

DATE: August 19, 2001 - August 23, 2001

WORKERS: P. Collins

SLOPE: 5 deg.

EXPOSURE: Variable

AREA: 4 acres

ANIMAL USE/DISTURBANCE: Negligible in most places but minor erosion on other slopes (not bad enough to repair).

EROSION: Negligible

COVER: (see quantitative data)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex gardneri
Atriplex confertifolia
Artemisia tridentata
Gutierrezia sarothrae
Sarcobatus vermiculatus

Penstemon palmeri

Agropyron cristatum
Sporobolus airoides
Elymus lanceolatus
Elymus cinereus
Stipa hymenoides

NOTES:

1) Site looks good overall.

2) Used random numbers to sample.

3) Sampled cover and frequency by ocular methods.

4) Sampled density using the point-quarter method.

5) The sample area was assumed to be on the north and west side of the berm (C. Semborski later confirmed this). Sample numbers 1-8 were on the north side of berm. About 75% of this area was in excellent shape and 25% (sample numbers 9-15) was poor (west end of north side).

Woody Species Density

PHASE I DIVERSION	*No/Ac*
Atriplex gardneri	544.75
Artemisia tridentata	170.23
Atriplex canescens	204.28
Atriplex confertifolia	272.37
Chrysothamnus nauseosus	408.56
Ceratoides lanata	204.28
Atriplex corrugata	170.23
Eriogonum corymbosum	68.09
Total	**2042.81**

6) 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. We decided on cover and density but no production and the need to be concerned about nMin (~01).

7) The berm is 3-sided for sampling and the diversion is 2-sided, thus Chuck said sample top and sides.

ENERGY WEST
Phase I Diversion (1989 Final Reveg Area)
Deer Creek Waste Rock Site
Slope: 5 deg
Exposure: Variable
Sample Date: 19 Aug - 23 Aug 01

	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	5.00	0.00	0.00	0.00	0.00	0.00	0.00
Atriplex confertifolia	0.00	5.00	0.00	0.00	0.00	0.00	0.00
Atriplex corrugata	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atriplex gardneri	5.00	0.00	0.00	5.00	0.00	0.00	15.00
Ceratoides lanata	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chrysothamnus nauseosus	2.00	10.00	0.00	0.00	0.00	0.00	0.00
Eriogonum corymbosum	0.00	0.00	0.00	0.00	0.00	0.00	5.00
FORBS							
Eriogonum gordonii	0.00	0.00	5.00	0.00	0.00	0.00	0.00
Halogeton glomeratus	0.00	0.00	0.00	0.00	0.00	20.00	5.00
Malcomia africana	0.00	0.00	0.00	0.00	0.00	15.00	0.00
Penstemon palmeri	0.00	10.00	0.00	0.00	0.00	0.00	0.00
GRASSES							
Elymus cinereus	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Elymus lanceolatus	15.00	0.00	0.00	30.00	50.00	0.00	5.00
Elymus smithii	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hilaria jamesii	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hordeum jubatum	3.00	0.00	0.00	0.00	0.00	0.00	0.00
Stipa hymenoides	5.00	0.00	0.00	0.00	0.00	0.00	0.00
COVER							
Total Living Cover	35.00	25.00	5.00	35.00	50.00	35.00	30.00
Litter	10.00	5.00	1.00	5.00	10.00	5.00	5.00
Bareground	50.00	65.00	90.00	55.00	35.00	50.00	60.00
Rock	5.00	5.00	4.00	5.00	5.00	10.00	5.00
% COMPOSITION							
Shrubs	34.29	60.00	0.00	14.29	0.00	0.00	66.67
Forbs	0.00	40.00	100.00	0.00	0.00	100.00	16.67
Grasses	65.71	0.00	0.00	85.71	100.00	0.00	16.67

8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	Mean	SDev
0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.67	2.49
0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	0.67	1.70
0.00	0.00	15.00	0.00	0.00	0.00	0.00	0.00	1.33	3.86
0.00	0.00	0.00	5.00	10.00	0.00	0.00	0.00	1.00	2.71
0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	2.00	4.00
0.00	0.00	5.00	0.00	0.00	0.00	0.00	0.00	0.33	1.25
0.00	0.00	0.00	0.00	0.00	10.00	20.00	20.00	4.13	7.06
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	1.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	1.25
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.67	5.06
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.74
0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	1.00	2.71
0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.33	1.25
30.00	0.00	20.00	5.00	0.00	0.00	5.00	10.00	11.33	14.54
0.00	0.00	0.00	0.00	0.00	5.00	10.00	0.00	1.00	2.71
0.00	0.00	0.00	25.00	0.00	0.00	0.00	0.00	1.67	6.24
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.75
0.00	25.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	6.27
30.00	25.00	40.00	35.00	10.00	20.00	45.00	45.00	31.00	12.14
8.00	5.00	5.00	5.00	5.00	2.00	5.00	10.00	5.73	2.59
60.00	60.00	50.00	50.00	75.00	75.00	45.00	40.00	57.33	14.01
2.00	10.00	5.00	10.00	10.00	3.00	5.00	5.00	5.93	2.59
0.00	0.00	50.00	14.29	100.00	75.00	55.56	66.67	35.78	32.74
0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.11	17.85	33.88
100.00	100.00	50.00	85.71	0.00	25.00	44.44	22.22	46.37	38.85

ENERGY WEST
Phase I Diversion (1989 Final Reveg Area)
Deer Creek Waste Rock Site
Slope: 5 deg
Exposure: Variable
Sample Date: 19 Aug - 23 Aug 01

Freq	
	SHRUBS
6.67	*Artemisia tridentata*
13.33	*Atriplex canescens*
13.33	*Atriplex confertifolia*
13.33	*Atriplex corrugata*
26.67	*Atriplex gardneri*
6.67	*Ceratoides lanata*
33.33	*Chrysothamnus nauseosus*
6.67	Eriogonum corymbosum
	FORBS
6.67	*Eriogonum gordonii*
13.33	*Halogeton glomeratus*
6.67	*Malcomia africana*
13.33	*Penstemon palmeri*
	GRASSES
6.67	*Elymus cinereus*
60.00	*Elymus lanceolatus*
13.33	*Elymus smithii*
6.67	*Hilaria jamesii*
6.67	*Hordeum jubatum*
13.33	*Stipa hymenoides*

	COVER
	Total Living Cover
	Litter
	Bareground
	Rock
	% COMPOSITION
	Shrubs
	Forbs
	Grasses

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Drain Field (Reconstruction '97)

AREA: Deer Creek

DATE: August 19, 2001 - August 23, 2001

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

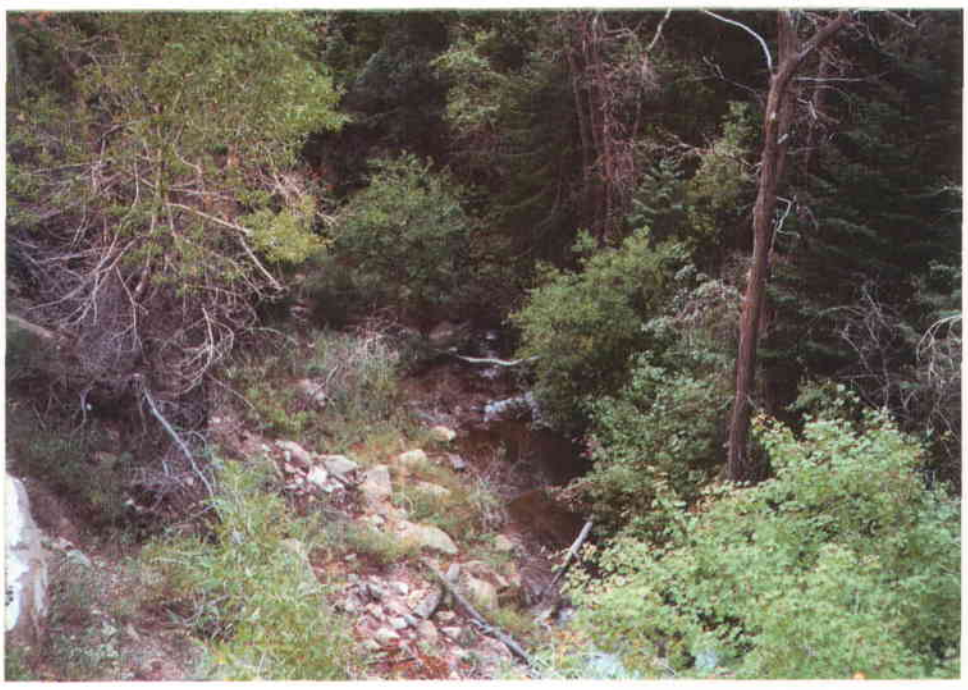
Aster chilensis
Astragalus cicer
Cirsium sp.
Lactuca serriola
Medicago sativa
Penstemon palmeri
Xanthium pennsylvanica

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) Gt. Basin wildrye was more dominant this year.

COLOR
PHOTOGRAPHS

Deer Creek Mine - Mixed Conifer Reference Area



Deer Creek Mine - Riparian Reference Area

Deer Creek Mine - Pinyon-Juniper Reference Area

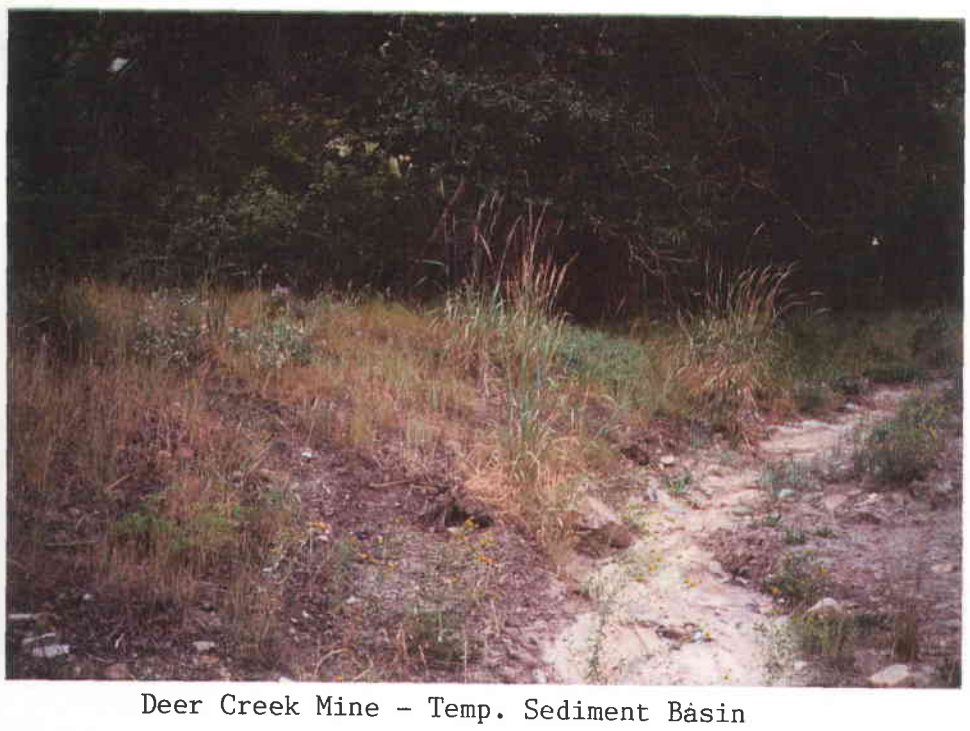
Deer Creek Mine - C2 Conveyor

Deer Creek Mine - C2 Conveyor (Behind Belt Line)

Deer Creek Mine - Riparian Area (North)

Deer Creek Mine - Riparian Area (South)

Deer Creek Mine - Sediment Pond Dam



Deer Creek Mine - Temp. Sediment Basin

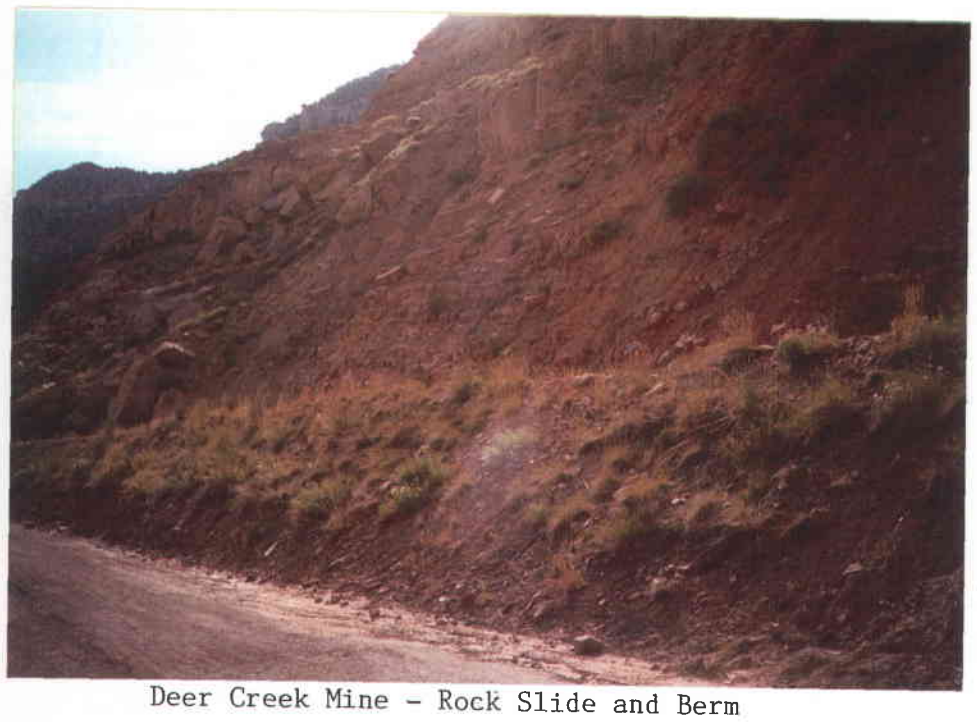
Deer Creek Mine - Roadside Areas

Deer Creek Mine - Gate Area Slope

Deer Creek Mine - Fan Road Slope

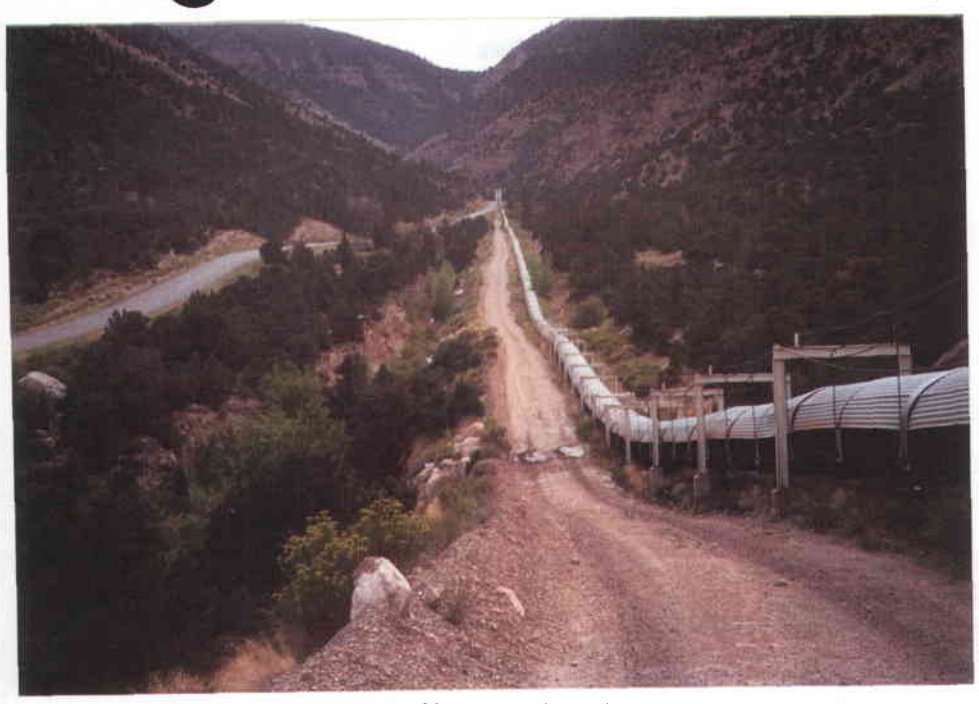
Deer Creek Mine - "Refuse Pile"/Berm

Deer Creek Mine - Refuse Pile/"Berm"



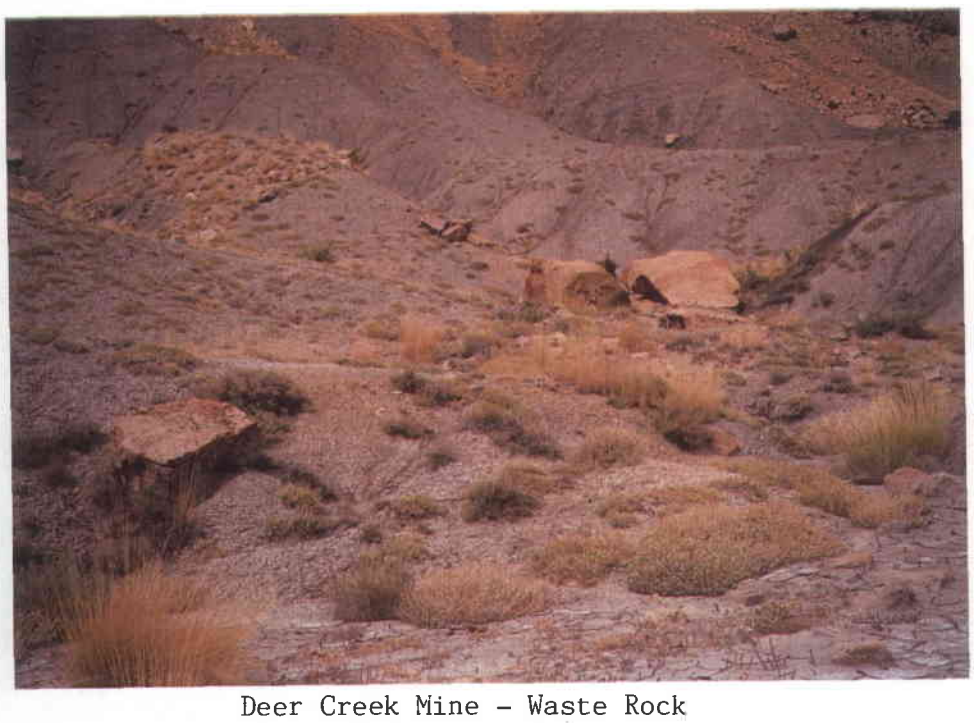
Deer Creek Mine - Rock Slide and Berm

Deer Creek Mine - Water Plant Slope

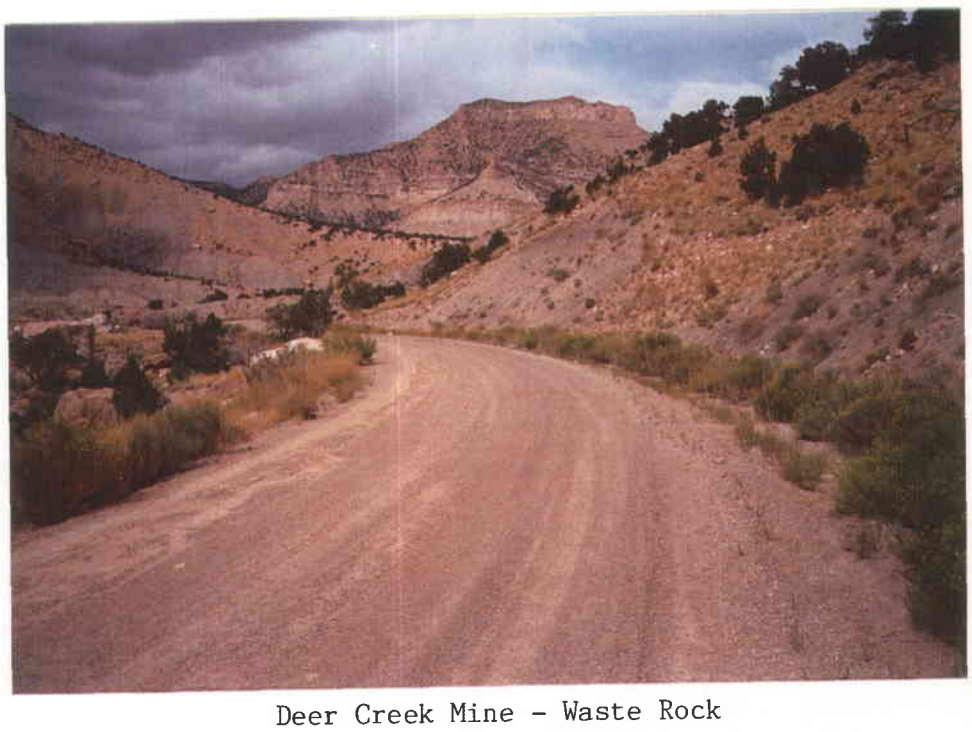


Deer Creek Mine - Pipeline

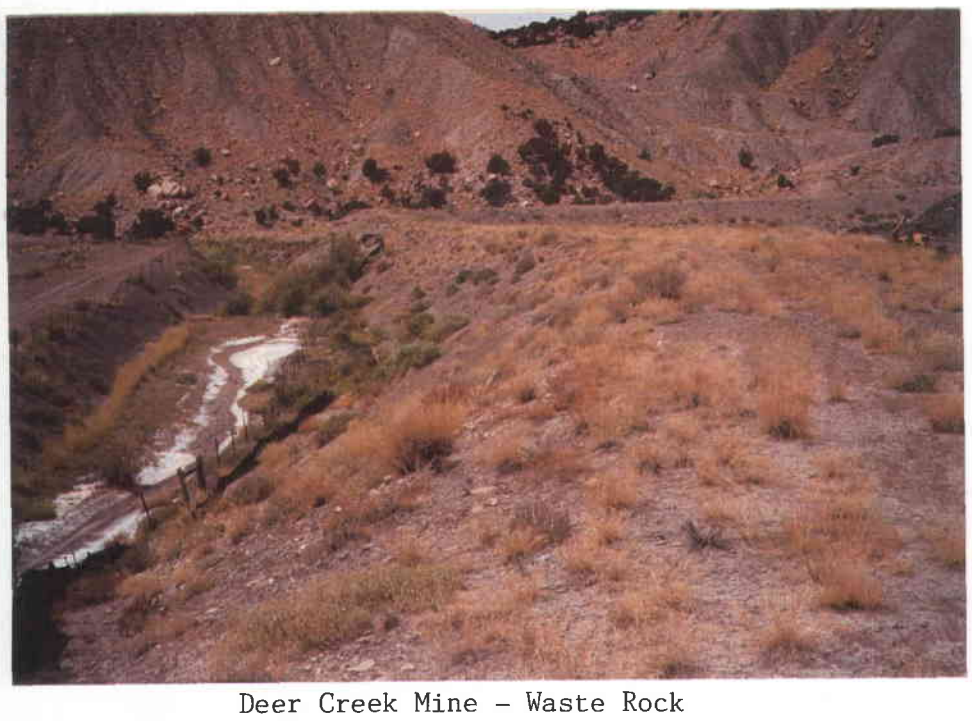
Deer Creek Mine - Deer Canyon



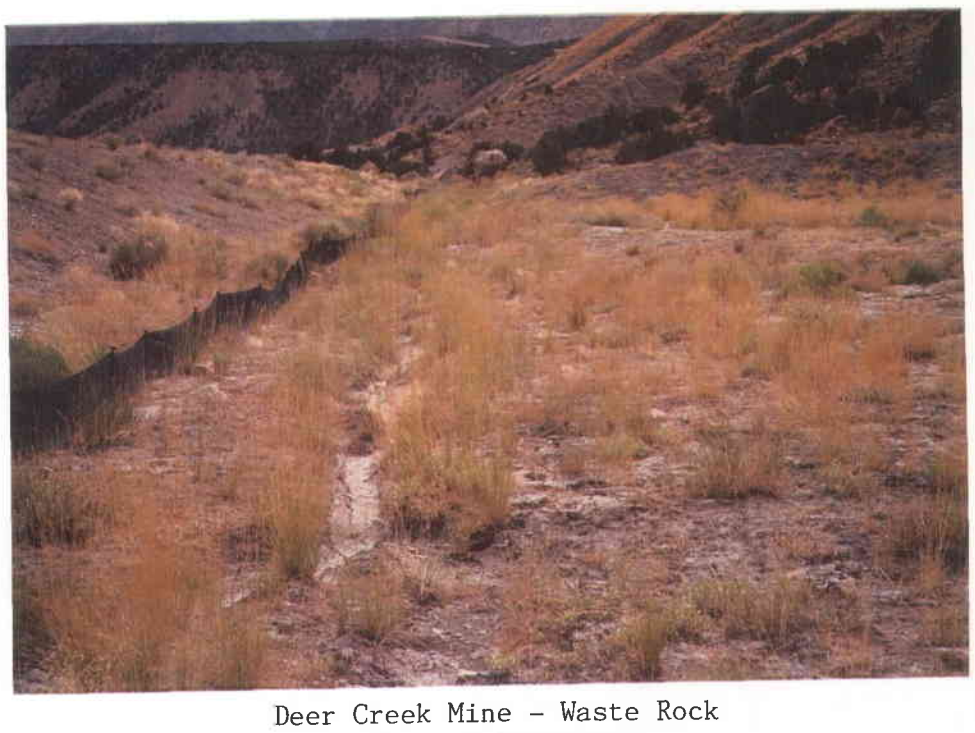
Deer Creek Mine - Waste Rock
Reference Area



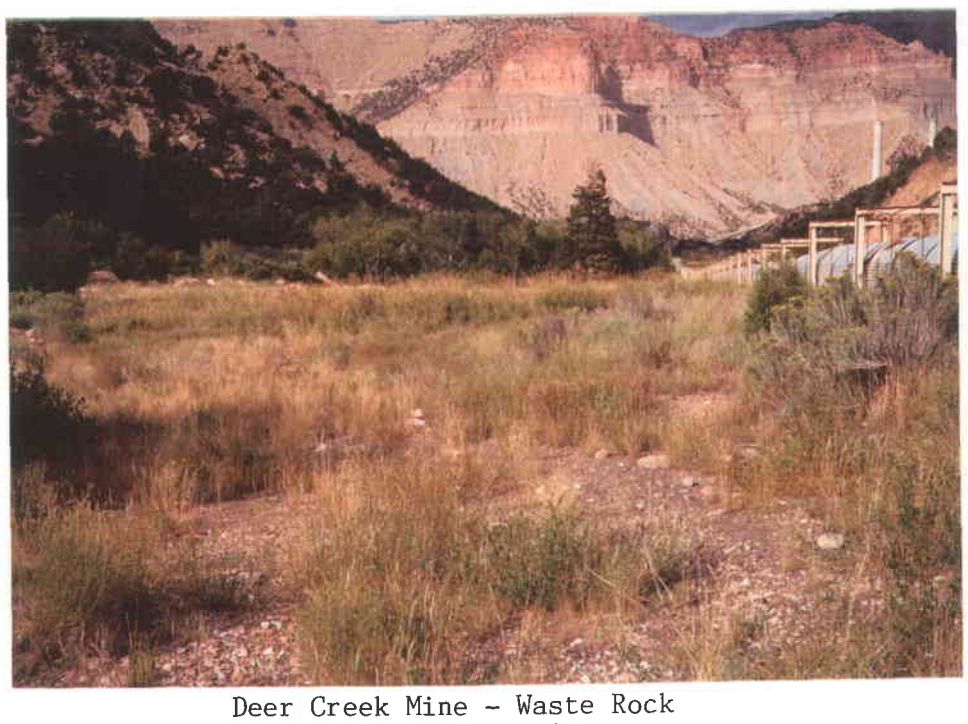
Deer Creek Mine - Waste Rock
Access Road Slopes



Deer Creek Mine - Waste Rock
Phase I Berm



Deer Creek Mine - Waste Rock
Phase I Diversion



Deer Creek Mine - Waste Rock
Drain Field '97

TRAIL MOUNTAIN MINE AREA

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Reference Area (Grassland/Shrub)

AREA: Trail Mountain Mine

DATE: August 27 - August 31, 2001

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 white stake at the base of the sandstone cliffs.
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
2001

SITE NAME: Sediment Pond Outslope

AREA: Trail Mountain Mine Area

DATE: August 27 - August 31, 2001

WORKERS: P. Collins, D. Collins

SLOPE: 25 deg.

EXPOSURE: E&S

ANIMAL USE/DISTURBANCE: Slight

EROSION: Slight

COVER: (no quantitative data recorded this year)

DOMINANT PLANT SPECIES OBSERVED:

Atriplex confertifolia
Artemisia tridentata
Brickelia microphylla
Chrysothamnus nauseosus
Gutierrezia sarothrae

Aster foliaceus
Halogeton glomeratus

Agropyron cristatum
Elymus cinereus

NOTES:

1) Qualitative sampling only was done this year.

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

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
2001

SITE NAME: Parking Lot Extension ('96)

AREA: Trail Mountain Mine Area

DATE: August 27 - August 31, 2001

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
Poa secunda

* dominant species

NOTES:

1) Qualitative sampling only was done this year.

2) Silt fences remain in good condition.

3) Site has been maintained and more fence added.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Soil Pile

AREA: Trail Mountain Mine Area

DATE: August 27 - August 31, 2001

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:

Atriplex confertifolia
Chrysothamnus nauseosus

Apocynum cannabinum
Aster glaucodes
Astragalus cicer
Halogeton glomeratus
Penstemon palmeri
Tragopogon dubius

Bromus carinatus
Elymus cinereus
Elymus smithii
Elymus lanceolatus
Stipa hymenoides

NOTES:

1) Qualitative sampling only was done this year.

2) Site looks excellent.

3) Site has very good diversity and cover.

COLOR PHOTOGRAPHS

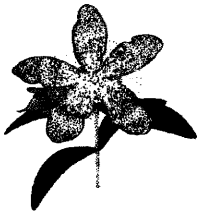
Trail Mountain Mine - Reference Area

Trail Mountain Mine - Sediment Pond Outslope

Trail Mountain Mine - Parking Ext. '96

Trail Mountain Mine - Topsoil Pile

RILDA CANYON AREA



ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Pad Area Slopes (96)

AREA: Rilda Canyon

DATE: August 19, 2001 - August 23, 2001

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:

Populus tremuloides
Rosa woodsii

Astragalus cicer
Melilotus officinalis
Medicago sativa
Penstemon eatonii
Tragopogon dubius

Bromus japonicas
Poa pratensis
*Elymus cinereus**
Elymus smithii
Elymus lanceolatus

NOTES:

1) Qualitative sampling only was done this year.

2) All slopes looked very good.

3) There was lots of yellow sweetclover on 1/3 of the slope behind the fan.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

SITE NAME: Roadway Slopes

AREA: Rilda Canyon

DATE: August 19, 2001 - August 23, 2001

WORKERS: P. Collins

SLOPE: 10-20 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE:

EROSION: Negligible

COVER: (No quantitative data were recorded this year)

DOMINANT PLANT SPECIES OBSERVED:

Artemisia tridentata
Chrysothamnus nauseosus
Gutierrezia sarothrae
Rosa woodsii
Populus tremuloides

Aster foliaceus
*Astragalus cicer**
Cirsium sp.
Cynoglossum officinale
Medicago sativa
Melilotus officinalis
Penstemon palmeri

*Elymus lanceolatus**
Elymus smithii
Elymus cinereus

NOTES:
1) Qualitative sampling only was done this year.
2) There were some bare areas, but all slopes appeared to be holding well.
3) The '96 areas were removed from study because they were sampled for removal of erosion control structures.
4) '95 areas were on right side as you walk uphill.
5) Separated roadside from topsoil pile.

ENERGY WEST MINING COMPANY
QUALITATIVE SAMPLING DATA SHEET AND
QUANTITATIVE/QUALITATIVE NOTES
2001

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

AREA: Rilda Canyon

DATE: August 19, 2001 - August 23, 2001

WORKERS: P. Collins

SLOPE: 30 deg.

EXPOSURE: E

ANIMAL USE/DISTURBANCE: Appeared over-grazed this year by deer, elk (~01).

EROSION: Slight

COVER: (Cover not sampled this year) Approx. 15%-20%

DOMINANT PLANT SPECIES OBSERVED:

Artemisia tridentata (S,P)
Gutierrezia sarothrae (S,P)
Rosa woodsii (S,P)
Populus tremuloides (P)

Medicago sativa (P)
Melilotus officinalis (S,P)
Astragalus cicer (P)
Cynoglossum officinale (P)
Penstemon palmeri (P)

Elymus lanceolatus (S,P)
Elymus smithii (P)
Elymus cinereus (P)
Stipa hymenoides (P)
Poa pratensis (S)

S= Present on slopes.
P= Present on soil pile.

1) Qualitative sampling only was done this year.

2) In 1997 it was reported that "from a distance it appeared the entire pile was growing nothing but yellow sweetclover, but on further examination there were lots of grasses under it."

3) In 1998, the grasses dominated the site. In 1999 grasses and yellow sweetclover dominated. In 2000 and 2001, there was little sweetclover.

4) There was very good slope stabilization occurring.

COLOR
PHOTOGRAPHS

Rilda Canyon - Pad Area Slopes '96

Rilda Canyon - Road Slopes '96

Rilda Canyon - Topsoil Pile '95

Vegetation Monitoring Location Maps

Cottonwood Mine/Deer Creek Mine/Des Bee Dove Mines/Trail Mountain Mine

APPENDIX C

Legal Financial, Compliance and Related Information (Not Applicable)

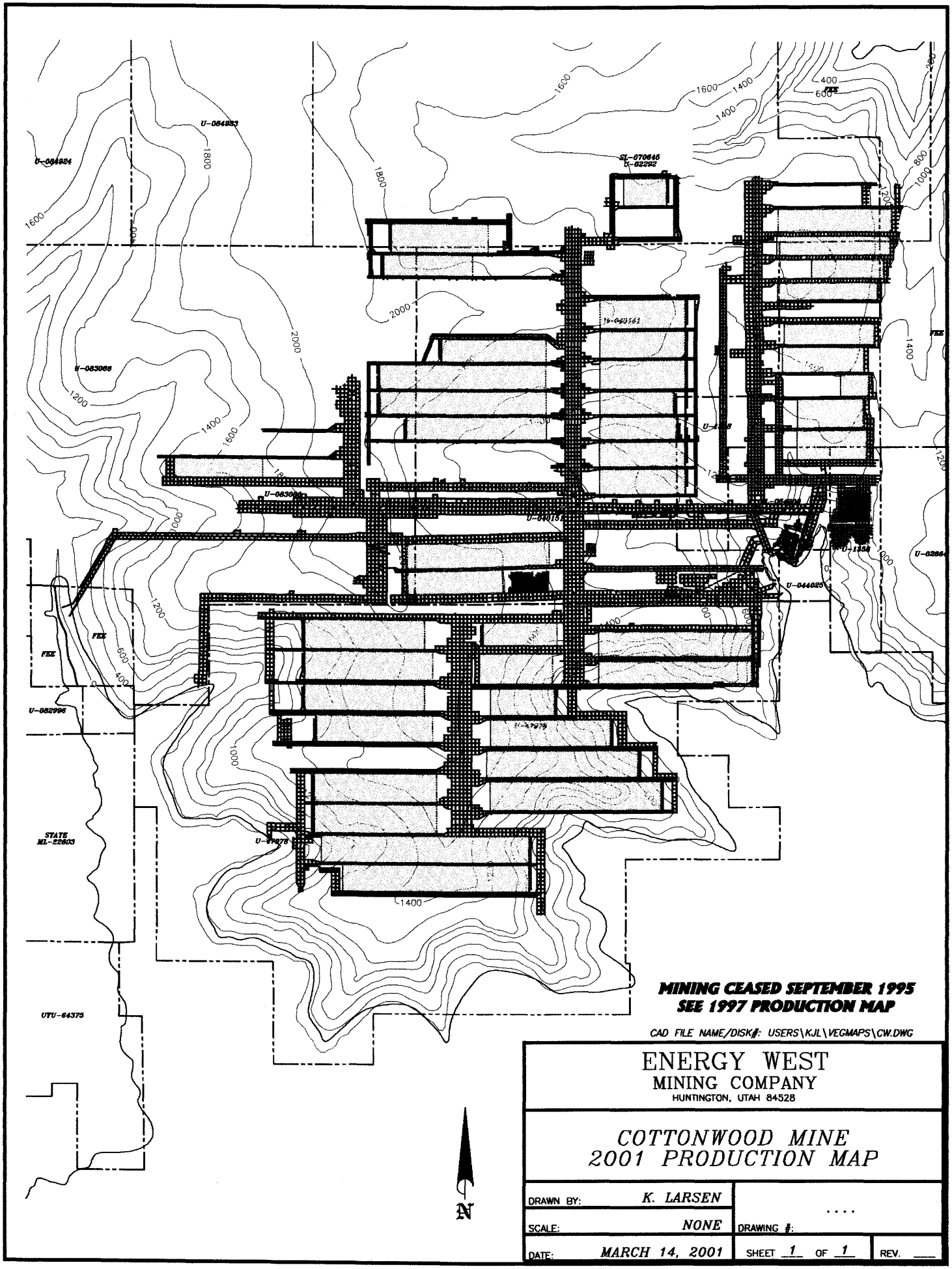
Annual Report of Officers
As submitted to the Utah Department of Commerce

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

APPENDIX D

Mine Maps

As required under R645-302-525-270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U-083066
U-083151
U-083151
U-044025
U-02292
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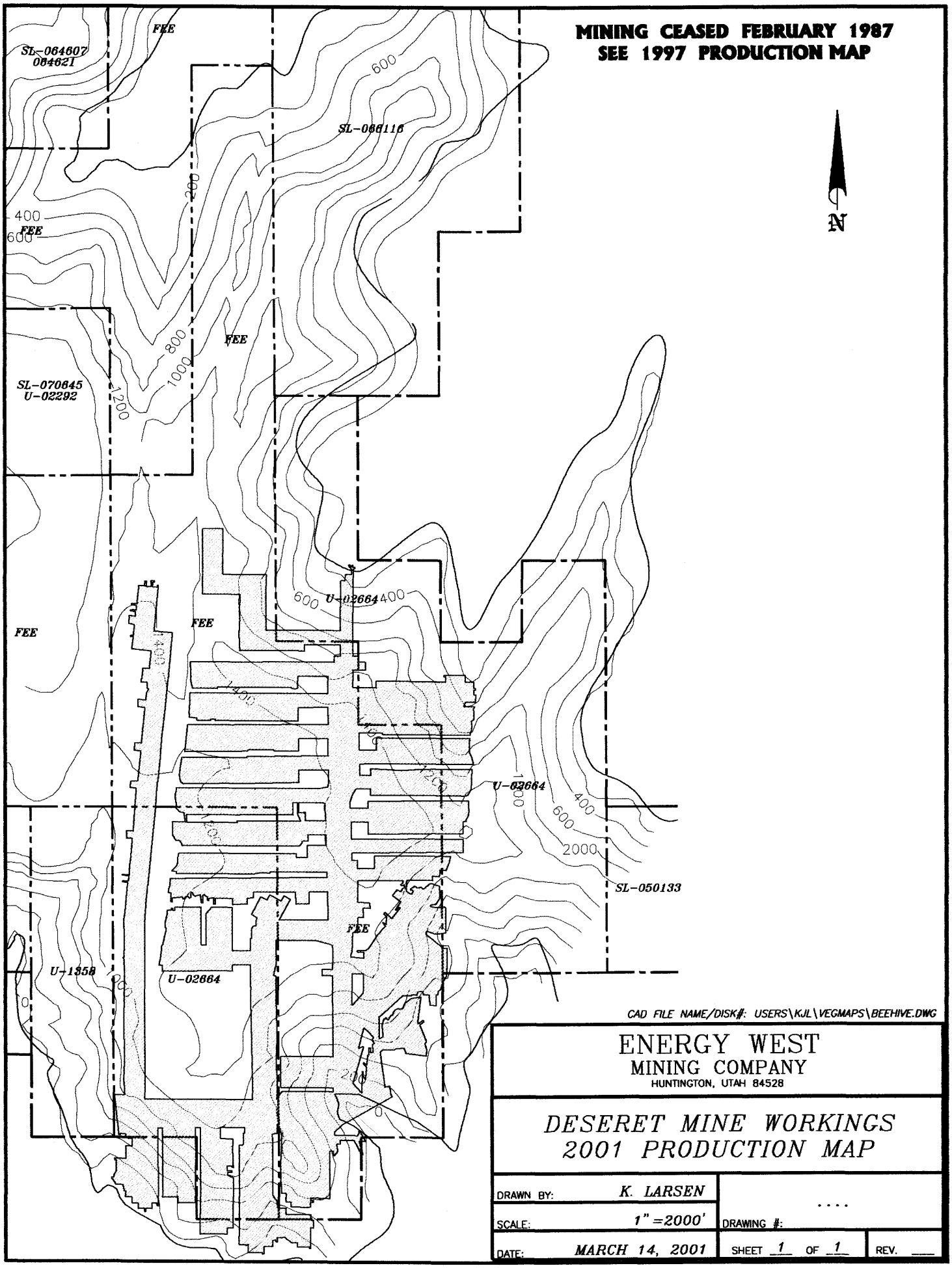
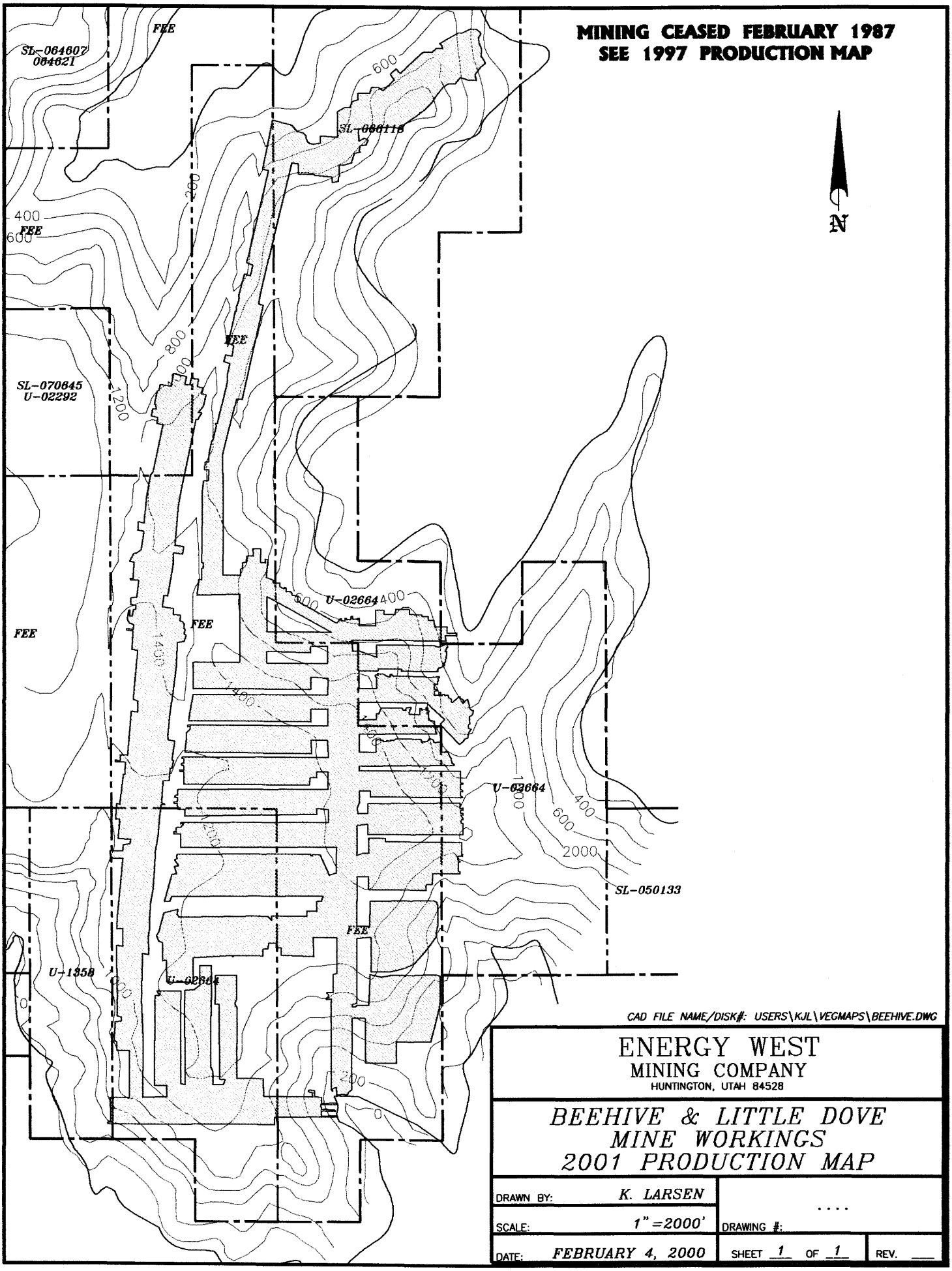
U-02292
U-02996
STATE
ML-22603
UTU-64375
FEE
FEE
FEE
FEE
1600
1400
1200
1000
800
600
400
1800
2000
N
MINING CEASED SEPTEMBER 1995
SEE 1997 PRODUCTION MAP
CAD FILE NAME/DISK#: USERS\KJL\VEGMAPS\CW.DWG
ENERGY WEST
MINING COMPANY
HUNTINGTON, UTAH 84528
COTTONWOOD MINE
2001 PRODUCTION MAP
DRAWN BY: K. LARSEN
SCALE: NONE
DRAWING #: ....
DATE: MARCH 14, 2001
SHEET 1 OF 1
REV.


MINING CEASED FEBRUARY 1987
SEE 1997 PRODUCTION MAP
N
FEE
SL-064607
064621
SL-066116
SL-070645
U-02292
U-02664
U-1358
SL-050133
600
400
200
800
1000
1200
2000
CAD FILE NAME/DISK#: USERS\KJL\VEGMAPS\BEEHIVE.DWG
ENERGY WEST
MINING COMPANY
HUNTINGTON, UTAH 84528
DESERET MINE WORKINGS
2001 PRODUCTION MAP
DRAWN BY: K. LARSEN
SCALE: 1" =2000'
DATE: MARCH 14, 2001
DRAWING #: ....
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
2001 PRODUCTION MAP

DRAWN BY:	K. LARSEN	....	
SCALE:	1" =2000'	DRAWING #:	
DATE:	FEBRUARY 4, 2000	SHEET 1 OF 1	REV. ___

Deer Creek Mine 2001 Production Maps

Hiawatha Seam
Blind Canyon Seam

Trail Mountain Mine 2001 Production Map

APPENDIX E

Other Information

Abandoned Equipment

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

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Kathleen Clarke
Executive Director

Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210
PO Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

February 26, 2002

Chuck Semborski, Environmental Supervisor
Energy West Mining Company
P.O. Box 310
Huntington, Utah 84528

Re: 9th East Conveyor Pan Section, PacifiCorp, Deer Creek Mine, C/015/018-AB01F-1, Outgoing File

Dear Mr. Semborski:

The above-referenced amendment has been reviewed. There are deficiencies that must be adequately addressed prior to approval. A copy of our Technical Analysis is enclosed for your information. In order for us to continue to process your application, please respond to these deficiencies by.

If you have any questions, please call me at (801) 538-5325 or at Jim Smith at (801) 538-5262.

Sincerely,

Daron R. Haddock
Permit Supervisor

sm
Enclosure
cc: Price Field Office
O:\015018.DER\FINAL\DEF01F-1.DOC

ENERGY WEST Mining Co.
PO Box 310
Huntington, Utah 84528

July 16, 2001

Utah Coal Regulatory Program
Division of Oil, Gas and Mining
1594 North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Attention: Daron Haddock
Permit Supervisor

Re: Abandonment of Mining Machinery: 9th East Longwall Conveyor Pan Sections, PacifiCorp, Deer Creek Mine, C/015/018, Emery County, Utah

PacifiCorp, by and through its wholly-owned subsidiary, Energy West Mining Company ("Energy West") as mine operator, herewith submits a request to the Division concerning abandonment of mine machinery in the Deer Creek Mine. PacifiCorp, on July 16, 2001 submitted a request to the Bureau of Land Management for a "Lease Term and Condition Modification Request; Removal of Machinery, Federal Lease U-06039."

Federal Coal Lease U-06039 (modified on February 11, 1999) includes stipulations; Sec. 10 - Delivery of Premises, Removal of Machinery, Equipment, ETC and Sec. 15 - Special Stipulations 24: WASTE CERTIFICATION, which documents abandonment of mine machinery within the federal coal lease. PacifiCorp worked closely with the BLM during development of "Special Stipulations 24." It was PacifiCorp understanding that this material did not qualify under the stipulations listed in the federal coal lease, however, courtesy notification was given to the BLM.

As documented in the July 16, 2001 request to the BLM, the 9th East Longwall panel is scheduled for final extraction in late August / early September of this year. This longwall systems are made up of hydraulic roof supports, face conveyor drives, face conveyor line pans, stageloader, crusher, belt tailpiece and face electrics. All equipment, with exception of the longwall conveyor line pans, is planned for fully recovery during the extraction of the 9th East panel. The equipment planned for abandonment consist of 140 American Longwall (1 m X 1500mm) conveyor line pans with face and gob side accessories consisting of toe plates, clevises, cable trays, bretby tray, spill plates and dynatrac castings, conveyor chain and flight bars (see attached map). No hoses, cables, lubricants, and/or oils of any kind were requested to be included in the abandonment.

Huntington Office:
(435) 687-9821
Fax (435) 687-2695
Purchasing Fax (435) 687-9092

Deer Creek Mine:
(435) 687-2317
Fax (435) 687-2285

Trail Mountain Mine:
(435) 748-2140
Fax (435) 748-5125

Energy West made every reasonable effort to economically recover and salvage the referenced face conveyor line pans prior to panel extraction. However, due to the equipment's condition and low market scrap prices for steel, it was not reasonable or economical to recover the referenced machinery parts.

To comply with the Division's request, PacifiCorp has provided the following:

- A map identifying the location of the line pan (see attached map)
- Description of the longwall component:
  The longwall component abandoned consist of 140 American Longwall (1m X 1500mm) conveyor line pans with face and gob side accessories consisting of toe plates, clevises, cable trays, bretby tray, spill plates and dynatrac castings, conveyor chain and flight bars (see attached map). No hoses, cables, lubricants, and/or oils of any kind were requested to be included in the abandonment.
- Revision to the Probable Hydrologic Consequences section of the permit (Volume 9: Hydrologic Section) is not necessary. Structurally, the material abandoned is similar to the primary/secondary roof support systems utilized during the mining process. As discussed in Volume 11, Deer Creek MRP: North Rilda Area, the dip of the strata is to the east and intercepted groundwater will not contribute to the surface discharge system upon completion of mining.
- This request is almost identical to the approval received by your office and dated January 29, 2001 for abandonment of a previous face conveyor panline.
- A copy of the BLM request is included for your reference.

If there are any questions or concerns please call Chuck Semborski at 687-4720 or Dennis Oakley 687-4825.

Sincerely,

Charles A. Semborski
Geology and Environmental Supervisor
enclosures:
cc: Scott Child
Carl Pollastro
File

J:\Environmental\PERMITS\DeerCreekMine\AMENDMNT\2001\MachineryAbandonment9E.wpd

One Utah Center, Suite 2000
Salt Lake City, Utah 84140-0020
(801) 220-4616 • FAX (801) 220-4725

INTERWEST
MINING COMPANY

A Subsidiary of PacifiCorp

July 16, 2001

Mr. Richard Manus
Field Manager
Bureau of Land Management
125 South 600 West
Price, Utah 84501

Subject: **Lease term and condition modification request:**
Removal of machinery (9th East longwall conveyor pan sections)
Deer Creek Mine: Federal Lease U-0639

Mr. Manus:

PacifiCorp, by and through its wholly-owned subsidiaries, Interwest Mining Company ("Interwest") as managing agent and Energy West Mining Company ("Energy West ") as mine operator hereby submits the following request to modify the current lease terms and conditions of Federal lease U-06039 (specifically removal of machinery), to allow for the abandonment of longwall face conveyor line and in the 9th East gate road entries (see Enclosure #1).

The 9th East longwall face is currently scheduled for final extraction in late August / early September of this year. This longwall system is made up of hydraulic roof supports, face conveyor drives, face conveyor line pans, stageloader, crusher, belt tailpiece and face electrics. All existing equipment, **with the exception of the longwall conveyor line pans,** is planned for full recovery prior to completion of operations and permanent abandonment of Federal Lease U – 06039.

Interwest formally requests approval from the Authorized Officer, with concurrence from the surface managing agency(s) and regulatory authority(s), to abandon approximately (46) 3 pan sections of the existing American Longwall face conveyor in available entry cross-cuts of the 9th and 10th East gate roads (see Enclosure #1). The total length of the conveyor is ~680' long.

The equipment recommended for abandonment consists of 140 conveyor line pan sections which measure 1500mm long x 1 m wide with face side and gob side accessories consisting of toe plates, clevises, cable trays, bretby tray, spill plates, dynatrac castings, conveyor chain and flight bars. All conveyor drive frames and drive components are scheduled for full recovery. No hoses, cables, lubricants and/or oils of any kind are requested to be included in the abandoned equipment.

Energy West has made reasonable efforts to economically recover and salvage the referenced face conveyor line pans prior to final panel extraction. However, the equipment has reached its service life and the current market salvage prices does not warrant recovery and transportation of the equipment. A similar request of abandonment for another face conveyor was made in November of 2000 and after research by UDOGM was concluded, there were no findings of long term consequence and was approved for abandonment.

Energy West makes the above request based on full consideration to the absence of any short term or long term effect of proposed abandonment to present and / or future underground or surface resources and / or operations.

Your attention to this request is appreciated and if there are any questions, please contact Carl Pollastro at Energy West at 687-4701.

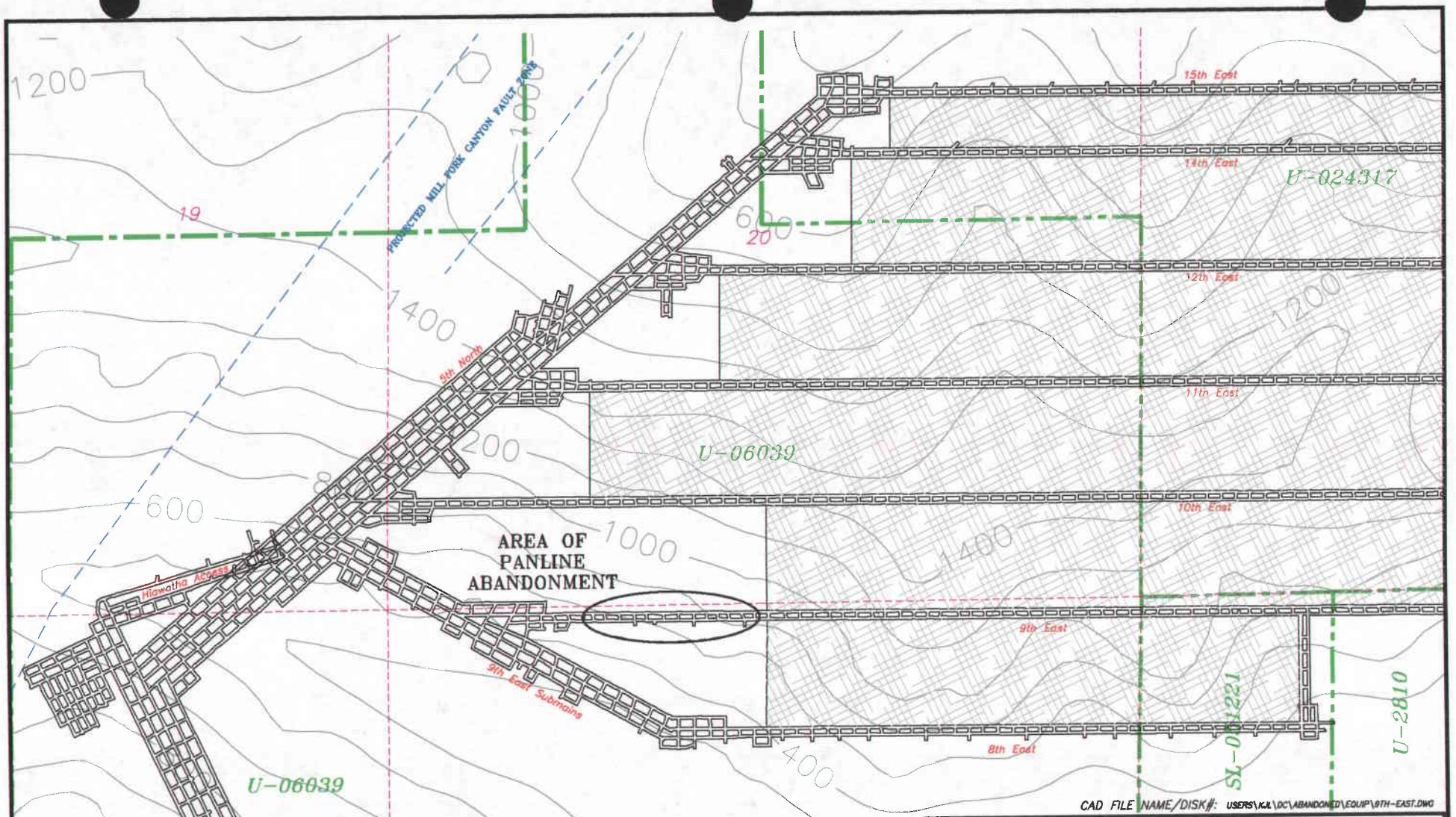
Sincerely,

Steven E. Kochevar, P.E.
Manager, Technical Services
Interwest Mining Company

One (1) enclosure

Cc:	Jim Kohler	BLM
	Dee Jense	IMC
	Steve Kochevar	IMC
	Scott Child	IMC
	Jim Noyes	EW
	Carl Pollastro	EW
	Chuck Semborski	EW
	Larry LaFrentz	EW

Abandoned Equipment Location Map



CAD FILE NAME/DISK#: USERS\KJL\DC\ABANDONED\EQUIP\9TH-EAST.DWG

ENERGY WEST
MINING COMPANY
HUNTINGTON, UTAH 84528

DEER CREEK MINE
9TH EAST LONGWALL
2001 PANLINE ABANDONMENT

DRAWN BY:	K. LARSEN	....	
SCALE:	1" =1000'	DRAWING #:	
DATE:	APRIL 15, 2002	SHEET 1 OF 1	REV. ___