

PACIFICORP ENERGY WEST MINING COMPANY ANNUAL REPORTS 1993

**PACIFICORP**

**ENERGY WEST MINING COMPANY**

**ANNUAL REPORTS**

**1993**

**DEER CREEK MINE    ACT/015/018**

**COTTONWOOD/WILBERG MINE    ACT/015/019**

**DES BEE DOVE MINE    ACT/015/017**

**TRAIL MOUNTAIN MINE    ACT/015/009**

COAL MINING AND RECLAMATION OPERATIONS FOR 1993

(Must be submitted to the Division by April 15, 1994)

State of Utah  
Department of Natural Resources  
Division of Oil, Gas and Mining  
3 Triad Center, Suite 350  
355 West North Temple  
Salt Lake City, Utah 84180-1203  
(801) 538-5340

Permittee: PacifiCorp  
Mine Name: Deer Creek Mine  
Mailing Address: Box 310, Huntington, Utah 84528  
Company Representative: Val Payne  
Resident Agent: Val Payne  
Permit Number: ACT/015/018  
MSHA ID Number: 42-00121  
Date of Initial Permanent Program Permit: February 7, 1986  
Date of Permit Renewal: February 8, 1991  
Quantity of Coal Mined (tonnage) 1993: 3,237,561.7

Attach Updated Mine Sequence Map(s) showing mine development through December 31, 1993.  
(Same as Lease Royalty Payment Map and/or MSHA Progress Map)

All monitoring activities during the report period to be submitted with this report (including, but not limited to):

A. General

1. Discuss anomalies, missing data and monitoring changes made throughout the year.
2. Summarize any corrective actions and the results that may have occurred during the year.

B. Water Monitoring Data:  
Groundwater Summary

1. Mine Discharge
  - a. Summarize the total annual discharge from mine water discharge points and breakdown on a monthly basis for each site.
  - b. Discuss the past five years of data comparing changes in discharge. Elements such as mining rate, location of faults or large in-mine flows during the year should be discussed.
  - c. Discuss trends and exceedence in water quality parameters. A correlation with flow could provide additional information.

# COAL MINING AND RECLAMATION OPERATIONS FOR 1993

(Must be submitted to the Division by April 15, 1994)

State of Utah  
Department of Natural Resources  
Division of Oil, Gas and Mining  
3 Triad Center, Suite 350  
355 West North Temple  
Salt Lake City, Utah 84180-1203  
(801) 538-5340

Permittee: PacifiCorp

Mine Name: Cottonwood/Wilberg Mine

Mailing Address: Box 310, Huntington, Utah 84528

Company Representative: Val Payne

Resident Agent: Val Payne

Permit Number: ACT/015/019

MSHA ID Number: Wilberg 42-00080 Cottonwood 42-01944

Date of Initial Permanent Program Permit: July 6, 1984

Date of Permit Renewal: July 6, 1989

Quantity of Coal Mined (tonnage) 1993: 2,868,621.51

Attach Updated Mine Sequence Map(s) showing mine development through December 31, 1993.  
(Same as Lease Royalty Payment Map and/or MSHA Progress Map)

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3 Triad Center, Suite 350  
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Salt Lake City, Utah 84180-1203  
(801) 538-5340

**Permittee:** PacifiCorp

**Mine Name:** Des Bee Dove

**Mailing Address:** Box 310, Huntington, Utah 84528

**Company Representative:** Val Payne

**Resident Agent:** Val Payne

**Permit Number:** ACT/015/017

**MSHA ID Number:** Deseret 42-00988, Beehive 42-00082, Little Dove 42-01393

**Date of Initial Permanent Program Permit:** August 29, 1985

**Date of Permit Renewal:** May 31, 1991

**Quantity of Coal Mined (tonnage) 1993:** -0-

**Attach Updated Mine Sequence Map(s) showing mine development through December 31, 1993.  
(Same as Lease Royalty Payment Map and/or MSHA Progress Map)**

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## COAL MINING AND RECLAMATION OPERATIONS FOR 1993

**(Must be submitted to the Division by April 15, 1994)**

State of Utah  
Department of Natural Resources  
Division of Oil, Gas and Mining  
3 Triad Center, Suite 350  
355 West North Temple  
Salt Lake City, Utah 84180-1203  
(801) 538-5340

**Permittee:** PacifiCorp

**Mine Name:** Trail Mountain

**Mailing Address:** Box 310, Huntington, Utah 84528

**Company Representative:** Val Payne

**Resident Agent:** Val Payne

**Permit Number:** ACT/015/009

**MSHA ID Number:** 42-01211

**Date of Initial Permanent Program Permit:** May 11, 1978

**Date of Permit Renewal:** September 12, 1991

**Quantity of Coal Mined (tonnage) 1993:** -0-

**Attach Updated Mine Sequence Map(s) showing mine development through December 31, 1993.  
(Same as Lease Royalty Payment Map and/or MSHA Progress Map)**

**All monitoring activities during the report period to be submitted with this report (including, but not limited to):**

**A. General**

1. Discuss anomalies, missing data and monitoring changes made throughout the year.
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  - c. Discuss trends and exceedence in water quality parameters. A correlation with flow could provide additional information.

# **SECTIONS A AND B**

## **WATER MONITORING DATA**

**SEE: ANNUAL HYDROLOGIC MONITORING REPORT  
EAST MOUNTAIN PROPERTY  
1993**

# **SECTION C**

## **SUBSIDENCE MONITORING REPORT**

**SEE: ANNUAL SUBSIDENCE MONITORING REPORT  
EAST MOUNTAIN PROPERTY  
1993**

## **SECTION D**

# **VEGETATION MONITORING**

**SEE: VEGETATION MONITORING OF THE COTTONWOOD/  
WILBERG, DES BEE DOVE, DEER CREEK, AND  
COTTONWOOD FAN PORTAL AREAS  
1993**

**SECTION D: VEGETATION DATA OR REVEGETATION SUCCESS MONITORING**

1. See enclosed report (Mt. Nebo Scientific)
2. See enclosed report (Mt. Nebo Scientific)
3. See enclosed report (Mt. Nebo Scientific)
4. During the fall of 1993, three areas were seeded:
  1. The remaining portion of the Cottonwood/Wilberg Waste Rock Cell #7 was seeded with the approved final seedmix (see Appendix VII for details). (Final Reclamation)
  2. Drill pads TMTN-10 through TMTN-14 with several associated roads in compliance with the "1993 Trail Mountain Drill Plan". (Final Reclamation)  
  
Several associated roads to be used for the proposed 1994 Drill Plan. (Interim Vegetation)
  3. Drainage along the backside of Deer Creek C-2 Conveyor between IU-132 and IU-190. (Interim Vegetation)

# **SECTION E**

## **IMPOUNDMENT CERTIFICATION**

**ENGINEERS STATEMENT:**

**I do hereby certify that the 1993 Annual Engineering Reports for the Sedimentation Structures for the Deer Creek, Cottonwood/Wilberg, Des Bee Dove Mines, Cottonwood Exploration Site and the Trail Mountain Mine are true and correct to the best of my knowledge and belief.**



*John Christensen* 4/4/94  
\_\_\_\_\_  
John Christensen Date  
PE # 165651

**ANNUAL ENGINEERING REPORT  
DEER CREEK SEDIMENT POND  
1993**

This report is submitted as required by Federal and State regulations:

**R645-301-514.300  
30 CFR 77.216-4  
30 CFR 817.49**

**Design data:**

<b>Top of Dam Elevation</b>	<b>7235.00</b>
<b>Toe of Dam Elevation</b>	<b>7217.14</b>
<b>Spillway Crest Elevation</b>	<b>7232.03</b>
<b>Total Storage Capacity</b>	<b>12.51 ac.ft.</b>
<b>Sediment Storage Capacity</b>	<b>3.11 ac.ft.</b>
<b>Control Points</b>	<b>1-7235.54</b>
	<b>2-7235.50</b>
	<b>3-7235.64</b>
	<b>4-7235.98</b>

**Operational data:**

	<b><u>ACCUMULATED SEDIMENT</u></b>	<b><u>WATER ELEVATION</u></b>	<b><u>CONTROL POINT ELEVATION</u></b>
<b>1st Quarter 3-30-93</b>	<b>Frozen</b>	<b>7225.78</b>	<b>No Change</b>
<b>2nd Quarter 6-22-93</b>	<b>0.57</b>	<b>7222.88</b>	<b>No Change</b>
<b>3rd Quarter 9-29-93</b>	<b>0.60</b>	<b>7222.98</b>	<b>No Change</b>
<b>4th Quarter 12-21-93</b>	<b>Frozen</b>	<b>7220.48</b>	<b>No Change</b>

**Inspection:**

**Visual inspections were made during each quarter, no stability problems or other concerns were found.**

**ANNUAL ENGINEERING REPORT  
DEER CREEK WASTE ROCK DETENTION POND  
1993**

This report is submitted as required by Federal and State regulations:

R645-301-514.300  
30 CFR 77.216-4  
30 CFR 817.49

**Design data:**

Top of Dam Elevation	6319.00
Toe of Dam Elevation	6311.20
Spillway Crest Elevation	6317.30
Total Storage Capacity	4.64 ac.ft.
Sediment Storage Capacity	2.90 ac.ft.
Control Points	1. 6313.70 2. 6326.10 3. 6326.80

**Operational data:**

	<u>ACCUMULATED SEDIMENT</u>	<u>WATER ELEVATION</u>	<u>CONTROL POINT ELEVATION</u>
1st Quarter 3-30-93	0.0	6313.00	No Change
2nd Quarter 6-22-93	0.0	6311.40	No Change
3rd Quarter 9-29-93	0.0	Dry	No Change
4th Quarter 12-21-93	0.0	Dry	No Change

**Inspection:**

**Visual inspections were made during each quarter, no stability problems or other concerns were found.**

**ANNUAL ENGINEERING REPORT  
DES BEE DOVE SEDIMENT POND  
1993**

This report is submitted as required by Federal and State regulations:

**R645-301-514.300  
30 CFR 77.216-4  
30 CFR 817.49**

**Design data:**

<b>Top of Dam Elevation</b>	<b>6775.00</b>
<b>Toe of Dam Elevation</b>	<b>6756.00</b>
<b>Spillway Crest Elevation</b>	<b>6771.80</b>
<b>Total Storage Capacity</b>	<b>19.80 ac.ft.</b>
<b>Sediment Storage Capacity</b>	<b>2.00 ac.ft.</b>
<b>Control Points</b>	<b>0+00 - 6775.20</b>
	<b>0+85 - 6775.00</b>
	<b>1+25 - 6775.20</b>
	<b>1+65 - 6775.40</b>

**Operational data:**

	<u>ACCUMULATED SEDIMENT</u>	<u>WATER ELEVATION</u>	<u>CONTROL POINT ELEVATION</u>
<b>1st Quarter 3-26-93</b>	<b>0.0</b>	<b>6756.30</b>	<b>No Change</b>
<b>2nd Quarter 6-22-93</b>	<b>0.0</b>	<b>6758.27</b>	<b>No Change</b>
<b>3rd Quarter 9-29-93</b>	<b>0.0</b>	<b>6756.67</b>	<b>No Change</b>
<b>4th Quarter 12-21-93</b>	<b>Frozen</b>	<b>6757.27</b>	<b>No Change</b>

**Inspection:**

**Visual inspections were made during each quarter, no stability problems or other concerns were found.**

**ANNUAL ENGINEERING REPORT  
COTTONWOOD SEDIMENT POND  
1993**

This report is submitted as required by Federal and State regulations:

**R645-301-514.300  
30 CFR 77.216-4  
30 CFR 817.49**

**NORTH POND (#1)**

**Design data:**

<b>Top of Dam Elevation</b>	<b>7367.00</b>
<b>Toe of Dam Elevation</b>	<b>7345.20</b>
<b>Spillway Crest Elevation</b>	<b>7365.00</b>
<b>Total Storage Capacity</b>	<b>2.15 ac.ft.</b>
<b>Sediment Storage Capacity</b>	<b>0.90 ac.ft.</b>
<b>Control Points</b>	<b>N-1 7367.36</b>
	<b>N-2 7267.63</b>
	<b>N-3 7367.09</b>

**Operational data:**

	<u>ACCUMULATED SEDIMENT</u>	<u>WATER ELEVATION</u>	<u>CONTROL POINT ELEVATION</u>
<b>1st Quarter 3-30-93</b>	<b>0.90</b>	<b>7357.00</b>	<b>No Change</b>
<b>2nd Quarter 6-22-93</b>	<b>0.0 Cleaning Completed 4-16-93</b>	<b>7356.13</b>	<b>No Change</b>
<b>3rd Quarter 9-29-93</b>	<b>0.12</b>	<b>7354.4</b>	<b>No Change</b>
<b>4th Quarter 12-21-93</b>	<b>Frozen</b>	<b>7358.59</b>	<b>No Change</b>

## SOUTH POND (#2)

### Design data:

Top of Dam Elevation	7337.00
Toe of Dam Elevation	7317.00
Spillway Crest Elevation	7335.00
Total Storage Capacity	1.88 ac.ft.
Sediment Storage Capacity	0.30 ac.ft.
Control Points	S-1 7338.52
	S-2 7336.42
	S-4 7339.45

### Operational data:

	<u>ACCUMULATED SEDIMENT</u>	<u>WATER ELEVATION</u>	<u>CONTROL POINT ELEVATION</u>
1st Quarter 3-30-93	0.00	7330.30	No Change
2nd Quarter 6-22-93	0.00	7330.30	No Change
3rd Quarter 9-29-93	0.00	7330.30	No Change
4th Quarter 12-21-93	Frozen	7330.30	No Change

**Inspection:**

**Visual inspections were made during each quarter, no stability problems or other concerns were found.**

**North Pond was cleaned of sediment during 2nd Quarter.**

**ANNUAL ENGINEERING REPORT  
COTTONWOOD WASTE ROCK DETENTION POND  
1993**

This report is submitted as required by Federal and State regulations:

**R645-301-514.300  
30 CFR 77.216-4  
30 CFR 817.49**

**Design data:**

<b>Top of Dam Elevation</b>	<b>6772.00</b>
<b>Toe of Dam Elevation</b>	<b>6755.00</b>
<b>Spillway Crest Elevation</b>	<b>6770.00</b>
<b>Total Storage Capacity</b>	<b>4.58 ac.ft.</b>
<b>Sediment Storage Capacity</b>	<b>1.65 ac.ft.</b>
<b>Control Points</b>	
	<b>0+00 6770.0</b>
	<b>0+30 6772.0</b>
	<b>0+67 6772.0</b>
	<b>1+05 6772.0</b>

**Operational data:**

	<u>ACCUMULATED SEDIMENT</u>	<u>WATER ELEVATION</u>	<u>CONTROL POINT ELEVATION</u>
<b>1st Quarter 3-30-93</b>	<b>0.0</b>	<b>6759.74</b>	<b>No Change</b>
<b>2nd Quarter 6-22-93</b>	<b>0.0</b>	<b>6758.00</b>	<b>No Change</b>
<b>3rd Quarter 9-29-93</b>	<b>0.0</b>	<b>6754.84</b>	<b>No Change</b>
<b>4th Quarter 12-21-93</b>	<b>Frozen</b>	<b>6755.94</b>	<b>No Change</b>

**Inspection:**

**Visual inspections were made during each quarter, no stability problems or other concerns were found.**

**ANNUAL ENGINEERING REPORT  
COTTONWOOD EXPLORATION SITE SEDIMENT PONDS  
1993**

This report is submitted as required by Federal and State regulations:

**R645-301-514.300  
30 CFR 77.216-4  
30 CFR 817.49**

**Design data:**

	<u>SEDIMENT CAPACITY</u>	<u>TOTAL CAPACITY</u>
North Basin	.047 ac.ft.	.107 ac.ft.
Center Basin	.115 ac.ft.	.511 ac.ft.
<b>TOTAL</b>	<b>.245 ac.ft.</b>	<b>.696 ac.ft.</b>

**Operational data:**

**ACCUMULATED SEDIMENT (AC.FT.)**

	<u>NORTH #1</u>	<u>SOUTH #2</u>
1st Quarter 3-26-93	.001	.050
2nd Quarter 6-22-93	.001	.050
3rd Quarter 9-29-93	0.0 Pond was Cleaned During 3rd Quarter	.050
4th Quarter 12-21-93	0.0	.050

## **WATER ELEVATION**

	<b><u>NORTH #1</u></b>	<b><u>SOUTH #2</u></b>
<b>1st Quarter</b>	<b>Dry</b>	<b>Dry</b>
<b>2nd Quarter</b>	<b>Damp Bottom</b>	<b>1" Water in North 1/4 of Pond</b>
<b>3rd Quarter</b>	<b>Dry</b>	<b>Dry</b>
<b>4th Quarter</b>	<b>Damp Bottom</b>	<b>1" Water in N. 1/4 of pond</b>

### **Inspection:**

**Visual inspections were made during each quarter, no stability problems or other concerns were found.**

**North #1 pond cleaned during 3rd Quarter. Summer rain storm filled in about 1.0 ft. of Sediment in th bottom of this pond.**

**ANNUAL ENGINEERING REPORT  
TRAIL MOUNTAIN SEDIMENT POND  
1993**

This report is submitted as required by Federal and State regulations:

**R645-301-514.300  
30 CFR 77.216-4  
30 CFR 817.49**

**Design data:**

<b>Total Storage Capacity</b>	<b>2.12 ac.ft.</b>
<b>Sediment Storage Capacity</b>	<b>0.47 ac.ft.</b>

**Operational data:**

	<b><u>ACCUMULATED SEDIMENT</u></b>	<b><u>WATER ELEVATION</u></b>	<b><u>CONTROL POINT ELEVATION</u></b>
<b>1st Quarter 3-26-93</b>	<b>0.00</b>	<b>7180.00</b>	<b>No Change</b>
<b>2nd Quarter 6-22-93</b>	<b>0.00</b>	<b>Dry</b>	<b>No Change</b>
<b>3rd Quarter 9-29-93</b>	<b>0.00</b>	<b>7180.6</b>	<b>No Change</b>
<b>4th Quarter 12-21-93</b>	<b>Frozen</b>	<b>7181.25</b>	<b>No Change</b>

**Inspection:**

**Visual inspections were made, no stability problems or other concerns were found.**

# **SECTION F**

## **REFUSE DATA**

**SECTION F: REFUSE DATA**

1. Samples were collected at the Cottonwood/Wilberg/Des-Bee-Dove Waste Rock Storage Facility, Cottonwood Mine, Deer Creek Waste Rock Storage Facility and the Deer Creek Mine.
2. Samples were collected in accordance with procedures outlined in the Cottonwood/Wilberg Waste Rock Storage Facility Volume, Chapter II, pages 2-12.1 through 2-12.2 and the Deer Creek Waste Rock Storage Facility Volume, Chapter VII, pages 7-4 through 7-5.
3. Please refer to the attached laboratory analyses. Analyses for the 1993 Mine Workings are from a FAX copy. The original is not available to date. Please note that Lab No. CTW0594 and CTW0694 are samples of Waste Rock Berm #3 and will be submitted in the 1994 annual report. All parameters were analyzed according to the Division's **"GUIDELINES FOR MANAGEMENT OF TOPSOIL AND OVERBURDEN"**.
4. All analyzed parameters fall in the "acceptable" range of the Division's **"GUIDELINES FOR MANAGEMENT OF TOPSOIL AND OVERBURDEN"** Table 2, with the exception of the following:

<u>LAB NO.</u>	<u>LOCATION</u>	<u>UNACCEPTABLE PARAMETER</u>
102894	DC1 WASTE ROCK	ELECTRICAL CONDUCTIVITY
87775	DC WASTE ROCK #4	ELECTRICAL CONDUCTIVITY
89768	CTW1	SODIUM ADSORPTION RATIO
102897	DC4 WASTE ROCK	SELENIUM
89768	CTW1	SELENIUM
105840	DC0694	SELENIUM

The material will be covered by 4' of suitable material for the vegetative root zone.



Inter-Mountain Laboratories, Inc.

1633 Terra Avenue

Sheridan, Wyoming 82801

Tel. (307) 672-8945

ENERGY WEST  
HUNTINGTON, UTAH  
MINE: COTTONWOOD

February 6, 1994

Page 1 of 1

Lab No.	Location	Depths	pH	EC mmhos/cm @ 25°C	Calcium meq/l	Magnesium meq/l	Sodium meq/l	SAR	Sand %	Silt %	Clay %	Texture	Boron ppm	Selenium ppm
102891	CTW2 WASTE ROCK		8.5	<u>6.43</u> ≈	17.3	53.7	8.39	1.41	69.5	20.7	9.8	SANDY LOAM	1.02	<u>0.10</u>
102892	CTW3 WASTE ROCK		8.4	<u>4.57</u>	23.9	25.0	6.15	1.24	71.3	20.7	8.0	SANDY LOAM	1.11	0.04
102893	CTW4 WASTE ROCK		8.0	1.14	2.21	3.50	4.67	2.76	69.6	20.6	9.8	SANDY LOAM	1.09	0.04
102893A	CTW5 WASTE ROCK		9.0	3.53	21.4	10.1	5.61	1.41	70.5	22.4	7.1	SANDY LOAM	0.73	0.05
102894	DC1 WASTE ROCK		7.2	<u>26.9</u> ∪	70.7	65.7	95.2	11.5 ≈	65.1	25.3	9.6	SANDY LOAM	1.60	0.05
102895	DC2 WASTE ROCK		7.6	2.21	10.1	5.57	7.65	2.73	83.3	13.4	3.3	LOAMY SAND	1.09	0.02
102896	DC3 WASTE ROCK		7.4	<u>11.2</u> ≈	40.1	49.2	22.8	3.42	64.4	25.1	10.5	SANDY LOAM	1.34	0.08
102897	DC4 WASTE ROCK		7.5	<u>5.73</u> ≈	27.9	22.8	13.7	2.72	64.0	22.7	13.3	SANDY LOAM	0.97	<u>0.16</u>

DC SAMPLES COLLECTED  
11/1/93 AT 1000  
GD

CTW SAMPLES COLLECTED  
11/1/93 AT 1330



Inter-Mountain Laboratories, Inc.

1633 Terra Avenue

Sheridan, Wyoming 82801

Tel. (307) 672-8945

ENERGY WEST  
HUNTINGTON, UTAH  
MINE: COTTONWOOD

Page 1 of 1

January 6, 1994

Lab No.	Location	Depths	pH	EC mmhos/cm @ 25°C	Calcium meq/l	Magnesium meq/l	Sodium meq/l	SAR	Sand %	Silt %	Clay %	Texture	Boron ppm	Selenium ppm
102896	DC3 WASTE ROCK		7.4	<u>11.2</u> ~	40.1	49.2	22.8	3.42	64.4	25.1	10.5	SANDY LOAM	1.34	0.08
102899	102896(DUP)		7.4	<u>11.3</u> ~	41.2	50.5	23.3	3.44	65.1	25.3	9.6	SANDY LOAM	1.22	0.08

Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage, Exch= Exchangeable, Avail= Available

**Energy West  
Munsell Color**

<b>Lab No.</b>	<b>Location</b>	<b>Color</b>
102891	CTW2 Waste Rock	10YR 6/2, Light Brownish Gray
102892	CTW3 Waste Rock	2.5Y 4/1, Dark Gray
102893	CTW4 Waste Rock	2.5Y 4/1, Dark Gray
102893A	CTW5 Waste Rock	2.5Y 5/1, Gray
102894	DC1 Waste Rock	2.5Y 4/1, Dark Gray
102895	DC2 Waste Rock	5Y 2.5/1, Black
102896	DC3 Waste Rock	2.5Y 4/1, Dark Gray
102897	DC4 Waste Rock	10YR 4/1, Dark Gray
102899 (lab duplicate 102896)	DC3 Waste Rock	2.5Y 4/1, Dark Gray



InterMountain Laboratories, Inc.

1633 Terra Avenue

Sheridan, Wyoming 82801

Tel. (307) 672-8945

ENERGY WEST MINING COMPANY  
HUNTINGTON, UTAH

SITE: DEER CREEK WASTE ROCK

April 6, 1993

Page 1 of 2

Lab No.	Location	Depths	pH	EC mmhos/cm @ 25°C	Satur- ation %	Calcium meq/l	Magnesium meq/l	Sodium meq/l	SAR	Coarse Fragments %	Sand %	Silt %	Clay %	Texture
87772	DC WASTE ROCK#1	0.0-0.0	7.2	2.62	45.5	18.1	6.57	5.61	1.60	79.6	85.1	9.4	5.5	LOAMY SAND
87773	DC WASTE ROCK#2	0.0-0.0	7.3	10.2 ≈	39.0	37.4	41.2	29.6	4.71	65.3	66.9	24.0	9.1	SANDY LOAM
87774	DC WASTE ROCK#3	0.0-0.0	7.3	7.22 ≈	39.9	32.1	38.2	13.3	2.25	74.5	66.9	23.1	10.0	SANDY LOAM
87775	DC WASTE ROCK#4	0.0-0.0	7.2	19.4 ∪	31.8	49.6	107.	60.7	6.86	74.3	66.0	21.3	12.7	SANDY LOAM

SAMPLES COLLECTED  
12/21/92 @ 11:00  
PER CHAIN OF CUSTODY RECORD  
GD.



Inter-Mountain Laboratories, Inc.

Sheridan, Wyoming 82801

Tel. (307) 672-8945

1633 Terra Avenue

ENERGY WEST MINING COMPANY  
HUNTINGTON, UTAH

SITE: DEER CREEK WASTE ROCK

April 6, 1993

Page 2 of 2

Lab No.	Location	Depths	Carbonate %	Total Sulfur %	Sulfate Sulfur %	Pyritic Sulfur %	Organic Sulfur %	Boron ppm	Selenium ppm
87772	DC WASTE ROCK#1	0.0-0.0	2.9	0.44	0.04	0.02	0.38	0.70	<0.02
87773	DC WASTE ROCK#2	0.0-0.0	18.6	0.57	0.12	0.10	0.35	1.21	0.03
87774	DC WASTE ROCK#3	0.0-0.0	15.7	0.61	0.12	0.06	0.43	2.76	0.06
87775	DC WASTE ROCK#4	0.0-0.0	13.7	0.78	0.22	0.13	0.43	1.62	0.05

Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur,  
Neut. Pot.= Neutralization Potential

P.03  
10:01AM  
10:01AM  
APR 8, 1994  
11 3, 1994  
001 653 2479  
TO:  
FROM: KONICA FAX



Inter-Mountain Laboratories, Inc.

1633 Terra Avenue

Sheridan, Wyoming 82801

Tel. (307) 672-8945

ENERGY WEST  
HUNTINGTON, UTAH  
MINE: COTTONWOOD

Page 1 of 2

No. Location

Depth	pH	EC micro/cm @ 25°C	Calcium mg/l	Magnesium mg/l	Sodium mg/l	SAR	Sand %	Silt %	Clay %	Texture	Carbonate %	Total Organic Carbon %	
105834	CTW0594	3.0	4.57	17.7	28.8	13.6	2.83	45.8	35.2	18.0	LOAM	35.9	18.4
105835	CTW0694	3.6 ≈	6.25 ≈	22.5	25.0	21.5	4.41	43.6	36.4	20.0	LOAM	32.0	35.1
105836	CTW0794	3.2	0.45	2.00	1.83	0.87	0.63					38.8	5.5
105837	CTW0894	7.5	0.45	1.86	0.92	1.53	1.30	90.6	6.4	3.0	SAND	0.9	91.6
105838	CTW0994	7.5	0.54	0.99	0.82	1.97	2.07	35.6	7.4	3.0	SAND	< 0.1	0.4
105839	DC0594	7.6	5.25 ≈	22.7	51.7	4.06	0.67	70.8	22.2	7.0	SANDY LOAM	33.8	3.9
105840	DC0694	7.1	1.34	5.62	5.90	2.51	1.05	54.8	16.2	29.0	SANDY CLAY LOAM	2.7	24.9
105841	DC0794	7.1	0.59	2.87	1.18	1.50	1.05	90.8	5.2	4.0	SAND	0.4	93.7

1993 MINE WORKING SAMPLES  
CTW0794 - CTW0994  
DC0594 - DC0794  
COLLECTED 1/13/94

cellareus. Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage, Exch= Exchangeable, Avail= Available

EC  
>15

Poor  
8-15

ACID/TOXIC

S 0.1 ~~0.1~~

P.04  
10:01AM  
APR 8, 1994



Inter-Mountain Laboratories, Inc.

1633 Terra Avenue

Sheridan, Wyoming 82801

Tel. (307) 672-8945

ENERGY WEST  
HUNTINGTON, UTAH  
MINE: COTTONWOOD

APR 8, 1994

Page 2 of 2

TO: 801 653 2479

FROM: KONICA FAX

No.	Loc.	Depth	Total Sulfur %	T.S. AB t/100Gt	Neut. Pot. t/100Gt	T.S. ASP t/100Gt	Sulfate Sulfur %	Pyritic Sulfur %	Organic Sulfur %	Py:S AB t/100Gt	Py:S ASP t/100Gt	Boron ppm	Selenium ppm
834	CTM	14	0.14	4.37	369.	365.						0.80	0.02
835	CTM	14	0.26	8.12	283.	275.						0.93	0.02
836	CTM	14	0.01	0.31	432.	432.						0.51	0.02
837	CTM	14	0.52	15.2	6.81	-5.44	0.06	0.04	0.42	1.25	5.55	0.83	<0.02
838	CTM	14	0.01	0.31	-2.49	-2.60	<0.01	<0.01	0.02	0.00	-2.49	0.12	<0.02
839	OCG	1	0.08	2.50	370.	368.						0.23	0.04
840	OCG	1	0.30	9.37	23.4	14.0						0.76	0.24
841	OCG	1	0.82	25.6	4.97	-20.6	0.11	<0.01	0.72	0.00	4.97	0.70	0.92

acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ASP= Acid Base Potential, Py:S= Pyritic Sulfur, Py:Org= Pyritic Sulfur + Organic Sulfur, Neut. Pot= Neutralization Potential

P.05  
10:01AM  
APR 8, 1994



Inter-Mountain Laboratories, Inc.

1633 Terra Avenue

Sheridan, Wyoming 82801

Tel. (307) 672-8945

ENERGY WEST  
HUNTINGTON, UTAH  
MINE: COTTONWOOD

APR 8, 1994

Page 1 of 2

001 653 2479

No.	Location	Depth	pH	EC µmhos/cm @ 25°C	Calcium mg/l	Magnesium mg/l	Sodium mg/l	SAR	Sand %	Silt %	Clay %	Texture	Carbonate %	Total Organic Carbon %
835	(TMD694		8.6	5.25	22.6	25.0	21.5	4.41	43.6	36.4	20.0	LOM*	32.0	36.1
842	(06935(IMP)		8.5	5.40	22.0	26.3	22.0	4.47	44.8	36.2	19.0	LOM*	33.2	37.0

TO:

FROM: KONICA FAX

Common Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage, Exch= Exchangeable, Avail= Available

P.06  
10:02AM  
APR 8, 1994



InterMountain Laboratories, Inc.  
Sheridan, Wyoming 82801

1633 Terra Avenue

Tel. (307) 672-8945

ENERGY WEST  
HUNTINGTON, UTAH  
WELL: COITONWOOD

APR 8, 1994

Page 2 of 2

No.	Location	Depth	Total Sulfur %	T.S. AB t/1000t	Neut. Pot. t/1000t	T.S. ABP t/1000t	Sulfate Sulfur %	Pyritic Sulfur %	Organic Sulfur %	PyrS AB t/1000t	PyrS ABP t/1000t	Baron ppm	Selenium ppm
835	CTN0694		0.26	8.12	283.	275.						0.53	0.02
843	105835(DHP)		0.28	8.75	302.	293.						0.94	0.02

801 653 2479

TO:

FROM: KONICA FAX

revisions used in acid base accounting: T.S. = Total Sulfur, AB = Acid Base, ABP = Acid Base Potential, PyrS = Pyritic Sulfur, Pyr+Org = Pyritic Sulfur + Organic Sulfur, Neut. Pot. = Neutralization Potential

**Energy West  
Munsell Color**

<u>Lab No.</u>	<u>Location</u>	<u>Color</u>
105834	CTW0594	2.5Y 5/2 Grayish Brown
105835	CTW0694	2.5Y 4/2 Dark Grayish Brown
105836	CTW0794	10YR 5/1 Gray
105837	CTW0894	Gley 2.5/1 Black
105838	CTW0994	10YR 3/2 V. Dk Grayish Brown
105839	DC0594	10YR 5/1 Gray
105840	DC0694	10YR 4.5/1 Dark Gray
105841	DC0794	2.5Y 2.5/1 Black



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ENERGY WEST MINING COMPANY  
HUNTINGTON, UTAH  
MINE: COTTONWOOD

July 28, 1993

Page 1 of 4

Lab No.	Location	Depths	pH	EC mmhos/cm @ 25°C	Satur- ation %	Calcium meq/l	Magnesium meq/l	Sodium meq/l	SAR	Sand %	Silt %	Clay %	Texture
89768	CTW1		7.5	10.9	45.1	20.0	9.42	79.0	20.6	67.1	23.3	9.6	SANDY LOAM

COTTONWOOD NORTH SED. POND SEDIMENT  
SAMPLED 6/9/93 AT 0900



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 MINE: COTTONWOOD

July 28, 1993

Page 2 of 4

Lab No.	Location	Depths	Total Organic Carbon %	Total Sulfur %	T.S. AB t/1000t	Neut. Pot. t/1000t	T.S. ABP t/1000t	P ppm	Boron ppm	Avail Na meq/100g	Exch Na meq/100g	CEC meq/100g	ESP	Chloride PE meq/l
89768	CTW1		58.8	0.92	28.7	104.	74.8	0.02	0.90	4.03	0.47	5.28	8.94	92.6

Abbreviations for extractants: PE= Saturated Paste Extract, H2Osol= water soluble, AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate  
 Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur,  
 Neut. Pot.= Neutralization Potential  
 Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage, Exch= Exchangeable, Avail= Available



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HUNTINGTON, UTAH  
MINE: COTTONWOOD

July 28, 1993

Page 3 of 4

Lab No.	Location	Depths	Total Cadmium ppm	Total Copper ppm	Total Chromium ppm	Total Lead ppm	Total Molybdenum ppm	Total Nickel ppm	Total Selenium ppm	Total Iron ppm	Total Manganese ppm
89768	CTW1		<0.5	8.5	17.0	5.0	<1.0	13.0	1.40	8150.	51.5



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MINE: COTTONWOOD

July 28, 1993

Page 4 of 4

Lab No.	Location	Depths	Total Calcium ppm	Total Zinc ppm	Total Potassium ppm	Total Cobolt ppm	Total Sodium ppm	Total Kjeldahl Nitrogen %
89768	CTW1		20,700.	28.5	2000.	2.0	2950.	0.50

**CASE NARRATIVE**

On June 16, 1993, one sample was received for analysis at Inter-Mountain Labs, Bozeman, Montana. The chain of custody form requested analysis for Toxicity Characteristic Leaching Procedure Parameters, metals only. Client name/Project name was listed as Energy West Mining / Cottonwood Mine.

No detectable amounts of targeted compounds were present in the sample.

The Toxicity Characteristic Leaching Procedure methodology used is outlined in the Federal Register, 40 CFR 261, Vol. 55, No. 126, June 29, 1990. Results are reported in mass per unit volume of leachate (mg/L).

Limits of detection for each instrument/analysis are determined by sample matrix effects, instrument performance under standard conditions, and dilution requirements to maintain chromatography output within calibration ranges.

  
Wynn Sudtelgte  
IML-Bozeman

TOXICITY CHARACTERISTIC LEACHING PROCEDURE  
TRACE METAL CONCENTRATION

Client:	ENERGY WEST MINING	Date Reported:	06/30/93
Sample ID:	CTW1	Date Sampled:	06/09/93
Project ID:	Cottonwood Mine	Date Received:	06/16/93
Lab ID:	B935335	Date Extracted:	06/18/93
Matrix:	Soil	Date Analyzed:	06/28/93
Preservation:	None		

Parameter	Result	PQL	Regulatory Level	Units
Arsenic	ND	0.2	5.0	mg/L
Barium	ND	5	100.0	mg/L
Cadmium	ND	0.05	1.0	mg/L
Chromium	ND	0.05	5.0	mg/L
Lead	ND	0.2	5.0	mg/L
Mercury	ND	0.02	0.2	mg/L
Selenium	ND	0.2	1.0	mg/L
Silver	ND	0.05	1.0	mg/L

ND - Not detected at stated Practical Quantitation Limit (PQL).

Reference: Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302. Part V, EPA Vol 55, No. 126, June 29, 1990

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September, 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September, 1986.

Method 7470: Mercury in Liquid Waste (Manual Cold-Vapor Technique), SW-846, September, 1986.

Analyst SA

Reviewed US

## **QUALITY ASSURANCE / QUALITY CONTROL**

TOXICITY CHARACTERISTIC LEACHING PROCEDURE  
METHOD BLANK

Client: **ENERGY WEST MINING**  
Sample ID: Method Blank  
Project ID: Cottonwood Mine  
Lab ID: MB-032

Date Reported: 06/30/93  
Date Sampled: NA  
Date Received: NA  
Date Extracted: 06/18/93  
Date Analyzed: 06/28/93

Parameter	Sample Result	PQL	Regulatory Level	Units
Arsenic	ND	0.2	5.0	mg/L
Barium	ND	5	100.0	mg/L
Cadmium	ND	0.05	1.0	mg/L
Chromium	ND	0.05	5.0	mg/L
Lead	ND	0.2	5.0	mg/L
Selenium	ND	0.2	1.0	mg/L
Silver	ND	0.05	1.0	mg/L

ND - Not detected at stated Practical Quantitation Limit (PQL).

Reference: Toxicity Characteristic Leaching Procedure , Final Rule, Federal Register, 40 CFR 261-302. Part V, EPA Vol 55, No. 126, June 29, 1990

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September, 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September, 1986.

Method 7470: Mercury in Liquid Waste (Manual Cold-Vapor Technique), SW-846, September, 1986.

Analyst SK

Reviewed us

TOXICITY CHARACTERISTIC LEACHING PROCEDURE  
MATRIX SPIKE

Client:	ENERGY WEST MINING	Date Reported:	06/30/93
Sample ID:	CTW1	Date Sampled:	06/09/93
Project ID:	Cottonwood Mine	Date Received:	06/16/93
Lab ID:	B935335	Date Extracted:	06/18/93
Matrix:	Soil	Date Analyzed:	06/28/93
Preservation:	None		

## Spike SPK1

Parameter	Spike Added	Sample Result	Spiked Result	MS % Recovery	PQL	Units
Arsenic	2.5	ND	2.5	99	0.2	mg/L
Barium	20.0	ND	21	95	5	mg/L
Cadmium	0.5	ND	0.46	90	0.05	mg/L
Chromium	2.0	ND	1.81	90	0.05	mg/L
Lead	2.0	ND	1.9	92	0.2	mg/L
Mercury	0.2	ND	0.20	102	0.02	mg/L
Selenium	2.5	ND	2.7	104	0.2	mg/L
Silver	0.5	ND	0.47	92	0.05	mg/L

ND - Not detected at stated Practical Quantitation Limit (PQL).

**Reference:** Toxicity Characteristic Leaching Procedure, Final Rule, Federal Register, 40 CFR 261-302. Part V, EPA Vol 55, No. 126, June 29, 1990

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September, 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September, 1986.

Method 7470: Mercury in Liquid Waste (Manual Cold-Vapor Technique), SW-846, September, 1986.

Analyst

SA

Reviewed

WS

**TOXICITY CHARACTERISTIC LEACHING PROCEDURE  
DUPLICATE SUMMARY**

Client:	<b>ENERGY WEST MINING</b>	Date Reported:	06/30/93
Sample ID:	CTW1	Date Sampled:	06/09/93
Project ID:	Cottonwood Mine	Date Received:	06/16/93
Lab ID:	B935335	Date Extracted:	06/18/93
Matrix:	Soil	Date Analyzed:	06/28/93
Preservation:	None		

Duplicate DUP1

Parameter	Sample Result	Duplicate Result	RPD %	PQL	Units
Arsenic	ND	ND	NA	0.2	mg/L
Barium	ND	ND	NA	5	mg/L
Cadmium	ND	ND	NA	0.05	mg/L
Chromium	ND	ND	NA	0.05	mg/L
Lead	ND	ND	NA	0.2	mg/L
Mercury	ND	ND	NA	0.02	mg/L
Selenium	ND	ND	NA	0.2	mg/L
Silver	ND	ND	NA	0.05	mg/L

ND - Not detected at stated Practical Quantitation Limit (PQL).

Reference: Toxicity Characteristic Leaching Procedure , Final Rule, Federal Register, 40 CFR 261-302. Part V, EPA Vol 55, No. 126, June 29, 1990

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September, 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September, 1986.

Method 7470: Mercury in Liquid Waste (Manual Cold-Vapor Technique), SW-846, September, 1986.

Analyst SA

Reviewed WS

# **SECTION G**

## **REPORT OF OFFICERS**

## PACIFICORP OFFICERS

### NAME

### ADDRESS AND TELEPHONE NUMBER

**A.M. Gleason**  
**Date Position Resigned 2-1-94**

**President and Chief Executive Officer**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**  
**(503) 731-2111**

**Fredrick W. Buckman**  
**Date Position Assumed 2-1-94**

**President and Chief Executive Officer**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**

**Gerard K. Drummond**  
**Date Position Resigned 6-30-93**

**Executive Vice President**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**  
**(503) 731-2120**

**Charles C. Adams**  
**Date Position Resigned 5-18-93**

**Senior Vice President**  
**One Utah Center**  
**201 South Main, Suite 2100**  
**Salt Lake City, UT 84140**

**John A. Bohling**  
**Date Position Assumed 2-17-93**

**Senior Vice President**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**

**William J. Glasgow**  
**Date Position Assumed 2-1-92**

**Senior Vice President**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**

**Harry A. Haycock**  
**Date Position Assumed 5-16-90**

**Senior Vice President**  
**PacifiCorp**  
**One Utah Center**  
**201 South Main, Suite 2300**  
**Salt Lake City, Utah 84140-0021**  
**(801) 220-4603**

**Robert F. Lanz**  
**Date Position Assumed 10-78**

**Vice President**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**  
**(503) 731-2110**

**William E. Peressini**  
**Date Position Assumed 1-1-94**

**Treasurer**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**

**Daniel L. Spalding**  
**Date Position Assumed 10-14-87**

**Senior Vice President**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**  
**(503) 731-2133**

**Sally A. Nofziger**  
**Date Position Assumed 5-1-80**

**Vice President and Corporate Secretary**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**  
**(503) 731-2144**

**Stan M. Marks**  
**Date Position Assumed 7-9-86**

**Vice President**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**  
**(503) 731-2115**

**William C. Brauer**  
**Date Position Assumed 2-19-92**

**Vice President**  
**PacifiCorp**  
**One Utah Center**  
**201 South Main, Suite 2100**  
**Salt Lake City, Utah 84180-0021**  
**(801) 220-4604**

**Michael C. Henderson**  
**Date Position Resigned 5-18-93**

**Vice President**  
**851 SW Sixth Avenue, Suite 430**  
**Portland, Oregon 97204**

**Thomas J. Imeson**  
**Date Position Assumed 11-28-90**

**Vice President**  
**700 NE Multnomah, Suite 1600**  
**Portland, Oregon 97232-4116**

**Dennis P. Steinberg**  
**Date Position Assumed 8-15-90**

**Vice President**  
**700 NE Multnomah, Suite 1600**  
**Portland, Oregon 97232-4116**

**Shelly R. Faigle**  
**Date Position Assumed 2-19-92**

**Senior Vice President**  
**920 SW Sixth Avenue, Suite 1000**  
**Portland, OR 97204**

**Lee D. Weislogel**  
**Date Position Resigned 4-23-93**

**Vice President**  
**920 SW Sixth Avenue, Suite 1000**  
**Portland, OR 97204**

**Richard T. O'Brien**  
**Date Position Assumed 8-18-93**

**Vice President**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**

**Michael J. Pittman**  
**Date Position Assumed 5-19-93**

**Vice President**  
**920 SW Sixth Avenue, Suite 1100**  
**Portland, OR 97204**

**Ernest E. Wessman**  
**Date Position Assumed 5-19-93**

**Vice President**  
**201 South Main, 2300 OUC**  
**Salt Lake City, UT 84140**

**Jacqueline S. Bell**  
**Date Position Assumed 5-17-89**

**Controller**  
**700 NE Multnomah, Suite 700**  
**Portland, OR 97232-4116**  
**(503) 731-2053**

**Lenore M. Martin**  
**Date Position Assumed 7-8-87**

**Assistant Secretary**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**  
**(503) 731-2132**

**Marsha E. Carroll**  
**Date Position Assumed 8-19-92**

**Assistant Secretary**  
**700 NE Multnomah, Suite 700**  
**Portland, OR 97232-4116**

**Gary R. Barnum**  
**Date Position Resigned 5-18-93**

**Stoel Rives Boley Jones & Grey**  
**950 POP**  
**700 NE Multnomah**  
**Portland, OR 97232**

**John Detjens III**  
**Date Position Assumed 7-10-85**

**Stoel Rives Boley Jones & Grey**  
**950 POP**  
**700 NE Multnomah**  
**Portland, OR 97232**  
**(503) 294-9100**

**John M. Schweitzer**  
**Date Position Assumed 6-13-84**

**Donald A. Bloodworth**  
**Date Position Resigned 5-18-93**

**John R. Stageberg**  
**Date Position Assumed 8-15-90**

**Bruce N. Williams**  
**Date Position Assumed 8-15-90**

**Assistant Treasurers**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**  
**(503) 731-2064, 731-2074**  
**731-2124**

## **UTAH POWER & LIGHT COMPANY DIVISION OFFICERS**

<b><u>NAME</u></b>	<b><u>ADDRESS AND TELEPHONE NUMBER</u></b>
<b>Verl R. Topham</b> <b>Date Position Assumed 2-1-90</b>	<b>President and Chief Executive Officer</b> <b>Utah Power &amp; Light Company</b> <b>201 South Main, Suite 2300</b> <b>Salt Lake City, UT 84140</b> <b>(801) 220-4200</b>
<b>John E. Mooney</b> <b>Date Position Assumed 9-1-91</b>	<b>Executive Vice President</b> <b>Utah Power &amp; Light Company</b> <b>201 South Main, Suite 2300</b> <b>Salt Lake City, Utah 84140</b>
<b>Thomas W. Forsgren</b> <b>Date Position Assumed 1-9-89</b>	<b>Vice President</b> <b>Utah Power &amp; Light Company</b> <b>40 East 100 South</b> <b>Salt Lake City, UT 84111</b> <b>(801) 220-6800</b>
<b>Thomas A. Lockhart</b> <b>Date Position Assumed 2-19-92</b>	<b>Vice President</b> <b>1607 Cy Avenue, 82604</b> <b>PO Box 720</b> <b>Casper, WY 82602</b>
<b>Richard D. Westerberg</b> <b>Date Position Assumed 2-21-90</b>	<b>Vice President</b> <b>Utah Power &amp; Light Company</b> <b>2484 Washington Blvd, Suite 400</b> <b>Ogden, UT 84401</b>
<b>H. Arnold Wagner</b> <b>Date Position Assumed 8-19-92</b>	<b>Controller</b> <b>Utah Power &amp; Light Company</b> <b>201 South Main, Suite 700</b> <b>Salt Lake City, UT 84140</b> <b>(801) 220-4043</b>

**PACIFIC POWER & LIGHT COMPANY DIVISION OFFICERS**

**Paul G. Lorenzini**  
**Date Position Assumed 2-1-92**

**President**  
**920 SW Sixth Avenue**  
**Portland, OR 97204**  
**(503) 464-6304**

**Thomas A. Lockhart**  
**Date Position Assumed 2-15-89**

**Vice President**  
**1607 Cy Avenue, 82604**  
**PO Box 720**  
**Casper, WY 82602**

**Diana E. Snowden**  
**Date Position Assumed 1-8-86**

**Vice President**  
**920 SW Sixth Avenue**  
**Portland, OR 97204**

**C.K. Ferguson**  
**Date Position Assumed 6-9-82**

**Assistant Secretary**  
**920 SW Sixth Avenue, Mezz-PSB**  
**Portland, Oregon 97204**

**DIRECTORS OF PACIFICORP**  
**AN OREGON CORPORATION**

**Fredrick W. Buckman**  
**President and Chief Executive Officer**  
**700 NE Multnomah, Suite 1600**  
**Portland, OR 97232-4116**  
**Date Position Assumed 2-1-94**

**John C. Hampton**  
**Hampton Resources, Inc.**  
**Suite 400**  
**9400 SW Barnes Road**  
**Portland, OR 97225**  
**Date Position Assumed 4-8-83**

**Keith R. McKennon**  
**Chairman of the Board**  
**825 NE Multnomah, Suite 1055**  
**Portland, OR 97232**  
**Date Position Assumed 2-9-94**

**Stanley K. Hathaway**  
**Hathaway, Speight, Kunz, & Trautwein**  
**PO Box 1208**  
**Cheyenne, WY 82003-1208**  
**Date Position Assumed 12-10-75**

**C.M. Bishop, Jr.**  
**Pendleton Woolen Mills**  
**PO Box 3030**  
**Portland, OR 97208**  
**Date Position Assumed 3-11-70**

**C. Todd Conover**  
**3 Polo Field Land**  
**Denver, Colorado 80202**  
**Date Position Assumed 8-21-91**

**Gerard K. Drummond**  
**Executive Vice President**  
**700 N.E. Multnomah**  
**Suite 1600**  
**Portland, OR 97232-4116**  
**Date Position Resigned 6-30-93**

**A.M. Gleason**  
**President and Chief**  
**Executive Officer**  
**700 NE Multnomah, Suite 1600**  
**Portland, Oregon 97232-4116**  
**Date Position Resigned 2-1-94**

**Richard C. Edgley**  
**Church of Jesus Christ of Latter-Day**  
**Saints**  
**50 East North Temple**  
**Salt Lake City, UT 84150**  
**Date Position Assumed 10-14-87**

**Don C. Frisbee**  
**Chairman of the Board**  
**825 NE Multnomah**  
**Lloyd Tower, Suite 1055**  
**Portland, Oregon 97232**  
**Date Position Resigned 2-9-94**

**Nancy Wilgenbusch**  
**President**  
**Marylhurst College**  
**Marylhurst, OR 97036**  
**Date Position Assumed 10-8-86**

**Don M. Wheeler**  
**President**  
**Wheeler Machinery**  
**4901 West 2100 South**  
**Salt Lake City, UT 84120**  
**Date Position Assumed 1-11-89**

**Nolan E. Karras**  
**Investment Management & Research,**  
**Inc.**  
**4695 South 1900 West #3**  
**Roy, UT 84067**  
**Date Position Assumed 2-17-93**