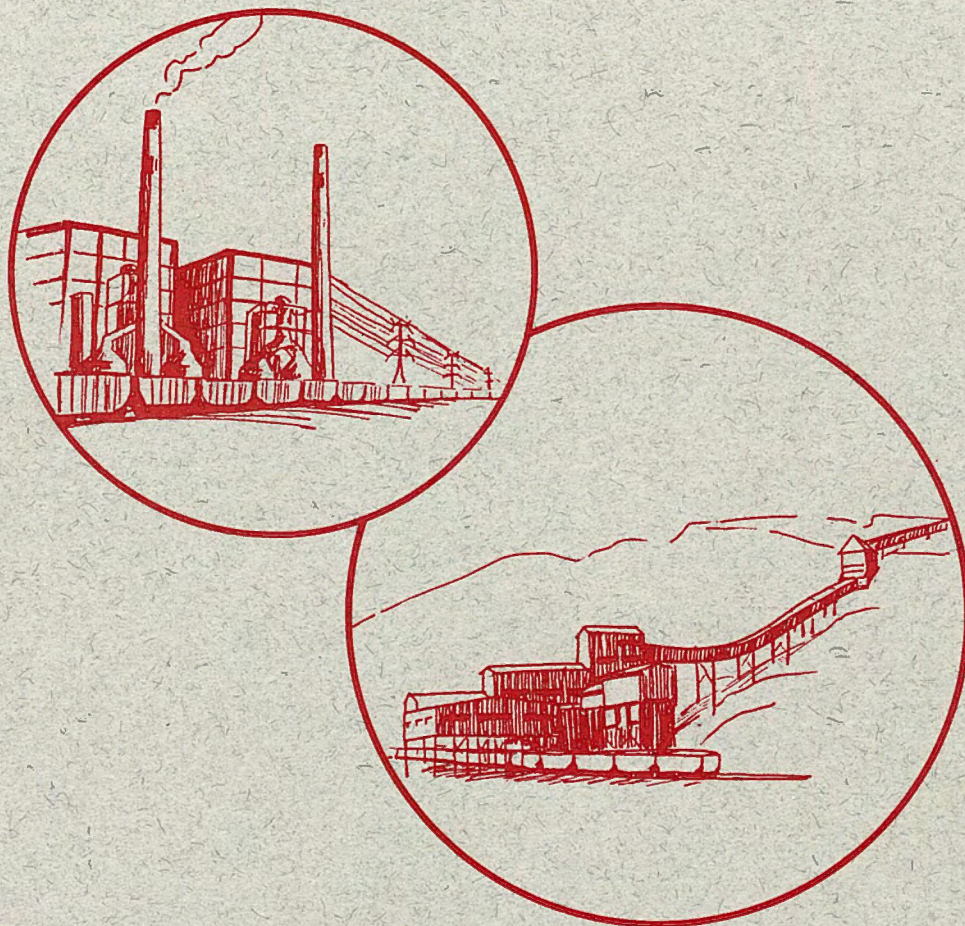


Resource Series 29

Directory and Statistics of Colorado Coal Mines with Distribution and Electric Generation Map, 1989

By Edwin A. Kuhn



**Colorado Geological Survey
Department of Natural Resources
Denver, Colorado/1990**

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**Colorado Geological Survey
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PREFACE

This directory is an update and revision of Map Series 23 published in 1981. The purpose of the publication is to provide insight into the Colorado coal industry. This report presents geologic, production and location data for permitted Colorado coal mines.

Data were compiled from previous Colorado Geological Survey publications and the following sources:

Office of Surface Mining, U.S. Department of the Interior
Division of Mines, Colorado Department of Natural Resources
Mined Land Reclamation Division, Colorado Department of Natural Resources
State Board of Land Commissioners, Colorado Department of Natural Resources
1989 Keystone Coal Industry Manual
Colorado Public Utilities Commission
Department of Energy/Energy Information Administration, U.S. Department of the Interior
Minerals Management Service, U.S. Department of the Interior

Additional information was obtained by contacting individual coal mine operators via mail, telephone, and fax. Mine information is presented for active, interim and reclamation permits. Exploration mines are not included due to restriction of access to these Mined Land Reclamation Division files. The accompanying map locates mines and lists them by county and coal mine name.

Production data is tabulated by portal by the Colorado Division of Mines. Mines are plotted on the map by common permit area, but split out by portal in the text. A permit area may contain more than one portal, however, a permit area is not necessarily contiguous.

The information contained in this report is the best available at the time of writing, July 1, 1990. Accuracy and completeness cannot be guaranteed. Neither the Colorado Geological Survey nor the author assume responsibility for incidental or consequential damages arising from use of information from this report.

Ed Kuhn

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PLATE

1	Coal production and distribution and electric generation map of Colorado	In Pocket
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ORCHARD VALLEY MINE

Map No. 1 M.L.R.D. Permit No. C-81-038
Previous Mine Names Colorado Westmoreland, Inc.

LOCATION INFORMATION

County Delta
Location (Sec., T., R.) 7, 12, 13, 18, 19, 24, 25, 29, 30, 31, 32, T. 13 S., R. 92 W.
Coal Region Uinta Field Somerset
Topographic Quadrangle Gray Reservoir

COMPANY INFORMATION

Mine Operator Cyprus Orchard Valley Coal Company
Address P. O. Box 1299, Paonia, CO 81428
Contacts Bradley J. Borquin Telephone (303) 527-4135
Parent Company Cyprus Minerals Company
Address P. O. Box 3299, Englewood, CO 80155
Contacts Donald P. Brown Telephone (303) 643-5000

GENERAL INFORMATION

Mine Type Underground Mining Method Continuous miners
Mine Status Producing Start-Up Date November 1976
No. of Employees 27 Union Affiliation Non-union
No. of Acres in Permit 1,240
Surface: Federal X State _____ Private X
Mineral: Federal X State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Mesaverde Group Geologic Age Cretaceous
Coal Zone(s) or Bed(s) D
Coal Thickness(es) 4-27 ft
Cleat Orientation and Spacing _____
Dip of Bedding 2°-5° NNE Strike of Bedding _____
Overburden Thickness(es) 450-1800 ft
Interburden Thickness _____

COAL QUALITY

Sample 1 Sample 2 Sample 3 Sample 4

Seam

D

Rank

Moisture (%)

9.5

Ash (%)

8.0

Fixed Carbon (%)

Volatile Matter (%)

Sulfur (%)

0.5

Heating Value (Btu/lb.)

11,000

Free Swelling Index

Hardgrove Grindability

Ash-Softening Temperature (°F)

Methane Characteristics

Reflectance Data

COAL PRODUCTION1989 Production 518,903 tonsCumulative Production Through 1989 9,099,727 tonsProjected Production (tpy) 1990 600,000 tonsRemaining Reserves/Life of Mine 30 years

Shifts Per Day _____

Production Per Shift _____

Equipment Continuous miners, shuttle cars, roof boltersHaulage ConveyorsPreparation Plant Crusher breaker

Tipple _____

SALES DATAPercent In-State 98Destination COUse SteamPercent Out-of-State 2Destination MOUse Steam

Percent Export _____

Destination _____

Use _____

Transportation Mode/Mixed Modes Railroad—D&RGW (Southern Pacific)**ADDITIONAL INFORMATION AND COMMENTS**

SOUTHFIELD MINE

Map No. 2 M.L.R.D. Permit No. C-81-014

Previous Mine Names Dorchester No. 1 (Dorchester Gas)

LOCATION INFORMATION

County Fremont

Location (Sec., T., R.,) 19, 30, T. 20 S., R. 69 W. and 25, 26, T. 20 S., R. 70 W.

Coal Region Canon City Field Canon City

Topographic Quadrangle Rockvale

COMPANY INFORMATION

Mine Operator Energy Fuels Coal, Inc. - Southfield Mine

Address P. O. Box 449, Florence, CO 81226

Contacts Randy Acre Telephone (719) 784-6395

Parent Company Energy Fuels Coal, Inc.

Address 1200 17th. Street Suite 2500, Denver, CO 80202

Contacts John R. Adams Telephone (303) 623-8317

GENERAL INFORMATION

Mine Type Underground Mining Method Continuous miners

Mine Status Producing Start-Up Date March 1985

No. of Employees 77 Union Affiliation Non-union

No. of Acres in Permit 1496

Surface: Federal _____ State _____ Private X

Mineral: Federal _____ State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Vermejo Formatoin Geologic Age Cretaceous

Coal Zone(s) or Bed(s) Manley, Vento, Pine Gulch, Dirty Jack O' Lantern, Red Arrow

Coal Thickness(es) Manly: 3-5 ft, Vento: 1-5 ft, Pine Gulch: 3-11 ft, *

Cleat Orientation and Spacing _____

Dip of Bedding 6° W Strike of Bedding N to N 25 E

Overburden Thickness(es) 0-1300 ft

Interburden Thickness Manley-Vento: 104 ft, Vento-Pine Gulch: 110 ft, Pine Gulch-Jack O' Lantern: 27 ft, Dirty Jack O' Lantern-Red Arrow: 29 ft

COAL QUALITY

Sample 1 Sample 2 Sample 3 Sample 4

Seam

Dirty Jack

Rank

Moisture (%)

10

Ash (%)

10

Fixed Carbon (%)

35

Volatile Matter (%)

44

Sulfur (%)

0.6

Heating Value (Btu/lb.)

11,000

Free Swelling Index

0.5

Hardgrove Grindability

45

Ash-Softening Temperature (°F)

2650

Methane Characteristics

Minimal

Reflectance Data

COAL PRODUCTION1989 Production *450,656 tons*Cumulative Production Through 1989 *3,422,660 tons*Projected Production (tpy) 1990 *500,000 tons*Remaining Reserves/Life of Mine *8 years*

Shifts Per Day

Production Per Shift

Equipment

Haulage

Preparation Plant

Tipple

SALES DATAPercent In-State *45*Destination *Canon City, Florence*Use *Steam, industrial*Percent Out-of-State *55*Destination *NM, TX*Use *Steam, industrial*

Percent Export

Destination

Use

Transportation Mode/Mixed Modes *Truck/rail***ADDITIONAL INFORMATION AND COMMENTS**** Dirty Jack O' Lantern: 1-6 ft, Red Arrow: 3-7 ft*

TWIN PINES MINE No. 2

Map No. 3 M.L.R.D. Permit No. C-83-058
Previous Mine Names _____

LOCATION INFORMATION

County Fremont
Location (Sec., T., R.,) 2, T. 20 S., R. 70 W.
Coal Region Canon City Field Canon City
Topographic Quadrangle Rockvale

COMPANY INFORMATION

Mine Operator Twin Pines Investment (Limited Partnership)
Address P. O. Box 187, Rockvale, CO 81244
Contacts Joseph Carpine Telephone (719) 784-6369
Parent Company _____
Address _____
Contacts _____ Telephone _____

GENERAL INFORMATION

Mine Type Underground Mining Method Conventional
Mine Status Producing Start-Up Date June 1985
No. of Employees 11 Union Affiliation Non-union
No. of Acres in Permit 120
Surface: Federal _____ State _____ Private X
Mineral: Federal _____ State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Vermejo Formation Geologic Age Cretaceous
Coal Zone(s) or Bed(s) Brookside
Coal Thickness(es) up to 6 ft
Cleat Orientation and Spacing _____
Dip of Bedding 9° Strike of Bedding N 40 E
Overburden Thickness(es) _____
Interburden Thickness _____

COAL QUALITY

Sample 1 Sample 2 Sample 3 Sample 4

Seam

Brookside

Rank

Moisture (%)

9.92

Ash (%)

10.11

Fixed Carbon (%)

45.61

Volatile Matter (%)

34.37

Sulfur (%)

0.49

Heating Value (Btu/lb.)

10,791

Free Swelling Index

Hardgrove Grindability

Ash-Softening Temperature (°F)

Methane Characteristics

Reflectance Data

COAL PRODUCTION1989 Production 26,823 tonsCumulative Production Through 1989 133,957 tonsProjected Production (tpy) 1990 30,000 tonsRemaining Reserves/Life of Mine 14 years

Shifts Per Day _____

Production Per Shift _____

Equipment _____

Haulage _____

Preparation Plant _____

Tipple _____

SALES DATA

Percent In-State _____

100

Destination _____

CO

Use _____

Domestic, ind.

Percent Out-of-State _____

Destination _____

Use _____

Percent Export _____

Destination _____

Use _____

Transportation Mode/Mixed Modes _____

ADDITIONAL INFORMATION AND COMMENTSMining is taking place in a syncline.

McCLANE CANYON MINE

Map No. 4 M.L.R.D. Permit No. C-80-004

Previous Mine Names _____

LOCATION INFORMATION

County Garfield

Location (Sec., T., R.) 15, 16, 21, 22, T. 7 S., R. 102 W.

Coal Region Uinta Field Book Cliffs

Topographic Quadrangle Howard Canyon

COMPANY INFORMATION

Mine Operator Salt Creek Mining Company

Address 751 Horizon Court, Grand Junction, CO 81402

Contacts Mark W. Wehmanen Telephone (303) 242-5120

Parent Company Colorado-Ute Electric Association, Inc.

Address P.O. Box 1149, Montrose, CO 81402

Contacts Kent E. Davenport Telephone (303) 249-4501

GENERAL INFORMATION

Mine Type Underground Mining Method Continuous miners

Mine Status Producing Start-Up Date 1977

No. of Employees 22 Union Affiliation Non-union

No. of Acres in Permit 248

Surface: Federal X State _____ Private _____

Mineral: Federal X State _____ Private _____

GEOLOGIC INFORMATION

Geologic Unit Mt. Garfield Formation Geologic Age Upper Cretaceous

Coal Zone(s) or Bed(s) Cameo

Coal Thickness(es) 17-22 ft

Cleat Orientation and Spacing _____

Dip of Bedding 3% NE Strike of Bedding _____

Overburden Thickness(es) 0-1000 ft

Interburden Thickness _____

COAL QUALITY**Sample 1 Sample 2 Sample 3 Sample 4**

Seam	<i>Cameo</i>			
Rank				
Moisture (%)	<i>9.9</i>			
Ash (%)	<i>16.1</i>			
Fixed Carbon (%)	<i>42.41</i>			
Volatile Matter (%)	<i>33.27</i>			
Sulfur (%)	<i>0.66</i>			
Heating Value (Btu/lb.)	<i>10,388</i>			
Free Swelling Index				
Hardgrove Grindability				
Ash-Softening Temperature (°F)				
Methane Characteristics				
Reflectance Data				

COAL PRODUCTION

1989 Production	<i>140,493 tons</i>
Cumulative Production Through 1989	<i>334,562 tons</i>
Projected Production (tpy) 1990	<i>200,000 tons</i>
Remaining Reserves/Life of Mine	<i>3 years</i>
Shifts Per Day	
Production Per Shift	
Equipment	
Haulage	
Preparation Plant	Tipple

SALES DATA

Percent In-State	<i>100</i>	Destination	<i>Nucla Power Plant</i>	Use	<i>Steam</i>
Percent Out-of-State		Destination		Use	
Percent Export		Destination		Use	
Transportation Mode/Mixed Modes					

ADDITIONAL INFORMATION AND COMMENTS*Coal is shipped to the Nucla Generating Station by truck.*

EASTSIDE MINE

Map No. 5 M.L.R.D. Permit No. C-84-063
Previous Mine Names Harvey Gap 1, 2, and 3 and NU Gap

LOCATION INFORMATION

County Garfield
Location (Sec., T., R.,) 24, T. 5 S., R. 92 W.
Coal Region Uinta Field Book Cliffs
Topographic Quadrangle Silt

COMPANY INFORMATION

Mine Operator Eastside Coal Company
Address P.O. Box 161, Silt, CO 81652
Contacts Stephen Self Telephone (303) 876-2944
Parent Company Abraxas Petroleum
Address P. O. Box 17485, San Antonio, Texas 78217
Contacts Robert Watson Telephone (512) 828-5354

GENERAL INFORMATION

Mine Type Underground Mining Method Conventional
Mine Status Producing Start-Up Date September 23, 1984
No. of Employees 8 Union Affiliation Non-union
No. of Acres in Permit 300
Surface: Federal _____ State _____ Private X
Mineral: Federal _____ State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Mt. Garfield Formation Geologic Age Upper Cretaceous
Coal Zone(s) or Bed(s) E Seam
Coal Thickness(es) 20 ft
Cleat Orientation and Spacing _____
Dip of Bedding 56° Strike of Bedding _____
Overburden Thickness(es) 800 ft
Interburden Thickness _____

COAL QUALITY

	Sample 1	Sample 2	Sample 3	Sample 4
Seam				
Rank				
Moisture (%)	5-6			
Ash (%)	10.0			
Fixed Carbon (%)	46.0			
Volatile Matter (%)	36.0			
Sulfur (%)	0.5			
Heating Value (Btu/lb.)	12,000			
Free Swelling Index				
Hardgrove Grindability				
Ash-Softening Temperature (°F)				
Methane Characteristics				
Reflectance Data				

COAL PRODUCTION1989 Production 2487 tonsCumulative Production Through 1989 16,459 tons (1984-1989)

Projected Production (tpy) 1990 _____

Remaining Reserves/Life of Mine 50,000,000 tons in place / 20 yearsShifts Per Day 1

Production Per Shift _____

Equipment Drilling and shootingHaulage DieselPreparation Plant Impact crusher and screening Tipple _____**SALES DATA**Percent In-State 100 Destination CO Use Domestic, ind.

Percent Out-of-State _____ Destination _____ Use _____

Percent Export _____ Destination _____ Use _____

Transportation Mode/Mixed Modes _____

ADDITIONAL INFORMATION AND COMMENTS

BEAR MINE No. 3

Map No. 6 M.L.R.D. Permit No. C-81-033
Previous Mine Names Bear No. 1 and Bear No. 2

LOCATION INFORMATION

County Gunnison
Location (Sec., T., R.,) 8, 17, T. 13 S., R. 90 W.

Coal Region Uinta Field Somerset
Topographic Quadrangle Somerset

COMPANY INFORMATION

Mine Operator Bear Coal Company, Inc.
Address P. O. Box 518, Somerset, CO 81434
Contacts William A. Bear Telephone (303) 929-5775
Parent Company _____
Address _____
Contacts _____ Telephone _____

GENERAL INFORMATION

Mine Type Underground Mining Method Continuous miners
Mine Status Producing Start-Up Date 1934
No. of Employees 44 Union Affiliation UMWA No. 6417, Dist. 15
No. of Acres in Permit 1652
Surface: Federal _____ State _____ Private X
Mineral: Federal _____ State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Mesaverde Group Geologic Age Upper Cretaceous
Coal Zone(s) or Bed(s) B, C, D, E, F

Coal Thickness(es) B: 10-20 ft; C: 6-9 ft; D: 0-7 ft; E: 4-8 ft; F: 2-10 ft
Cleat Orientation and Spacing _____
Dip of Bedding 3.5-6.25° NE Strike of Bedding _____
Overburden Thickness(es) 100-1400 ft

Interburden Thickness _____

COAL QUALITY

	Sample 1	Sample 2	Sample 3	Sample 4
Seam	C			
Rank				
Moisture (%)	8.5			
Ash (%)	8.0			
Fixed Carbon (%)	52.0			
Volatile Matter (%)	38.0			
Sulfur (%)	0.5			
Heating Value (Btu/lb.)	12,400			
Free Swelling Index	3.5			
Hardgrove Grindability	42			
Ash-Softening Temperature (°F)	2550			
Methane Characteristics				
Reflectance Data				

COAL PRODUCTION

1989 Production	294,736 tons		
Cumulative Production Through 1989	6,060,076 tons		
Projected Production (tpy) 1990	300,000 tons		
Remaining Reserves/Life of Mine	5 years		
Shifts Per Day	2		
Production Per Shift			
Equipment	Continuous miners, roof bolters, shuttle cars		
Haulage			
Preparation Plant			Tipple

SALES DATA

Percent In-State	11	Destination	Colorado	Use	Stm., ind., dom.
Percent Out-of-State	89	Destination	NB, AZ, CA, WA	Use	Steam, industrial
Percent Export		Destination		Use	
Transportation Mode/Mixed Modes	Railroad—D&RGW (Southern Pacific)				

ADDITIONAL INFORMATION AND COMMENTS

All coal is sold through an exclusive sales agreement with Pacific Basin Resources.

MT. GUNNISON MINE

Map No. 7 M.L.R.D. Permit No. C-80-007
Previous Mine Names _____

LOCATION INFORMATION

County Gunnison
Location (Sec., T., R.) 8, 9, 15, 16, 17, 18, 19, 20, 21, 27, 28, 29, 30, 31, 32, 33, T. 13 S.,
R. 90 W. and 3, 4, 5, 8, 9, 10, 15, 16, 21, 22, T. 14 S., R. 90 W.
Coal Region Uinta Field Somerset
Topographic Quadrangle Somerset and Minnesota Pass

COMPANY INFORMATION

Mine Operator West Elk Coal Company
Address P. O. Box 591, Somerset, CO 81434
Contacts Richard D. Pick Telephone (303) 929-5015
Parent Company Arco Coal Company
Address 555 Seventeenth St., Denver, CO 80202
Contacts Anthony G. Fernandez Telephone (303) 293-4000

GENERAL INFORMATION

Mine Type Underground Mining Method Continuous miners
Mine Status Producing Start-Up Date March 29, 1980
No. of Employees 59 Union Affiliation Non-union
No. of Acres in Permit 5847
Surface: Federal X State _____ Private X
Mineral: Federal X State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Mesaverde Geologic Age Cretaceous
Coal Zone(s) or Bed(s) F
Coal Thickness(es) 7 ft
Cleat Orientation and Spacing _____
Dip of Bedding 3-5° SW-NE Strike of Bedding _____
Overburden Thickness(es) 300-1200 ft
Interburden Thickness _____

COAL QUALITY

Sample 1 Sample 2 Sample 3 Sample 4

Seam

F

Rank

Moisture (%)

10

Ash (%)

9.7

Fixed Carbon (%)

47.7

Volatile Matter (%)

35.7

Sulfur (%)

0.45

Heating Value (Btu/lb.)

11,000–12,300

Free Swelling Index

Hardgrove Grindability

44–64

Ash-Softening Temperature (°F)

2350

Methane Characteristics

Reflectance Data

COAL PRODUCTION1989 Production *564,850 tons*Cumulative Production Through 1989 *3,600,726 tons*Projected Production (tpy) 1990 *600,000 tons*Remaining Reserves/Life of Mine *50 million tons / 40 years*

Shifts Per Day

Production Per Shift

Equipment

Haulage *Belt haulage out of mine*Preparation Plant *Crusher*Tipple *Silos***SALES DATA**Percent In-State *96*Destination *CO*Use *Steam*Percent Out-of-State *4*Destination *IL*Use *Steam*

Percent Export

Destination

Use

Transportation Mode/Mixed Modes *Railroad—D&RGW (Southern Pacific)***ADDITIONAL INFORMATION AND COMMENTS**

O. C. MINE No. 2

Map No. 8 M.L.R.D. Permit No. C-80-002
Previous Mine Names _____

LOCATION INFORMATION

County Gunnison
Location (Sec., T., R.,) 16, T. 15 S., R. 86 W.
Coal Region Uinta Field Crested Butte
Topographic Quadrangle Squirrel Creek

COMPANY INFORMATION

Mine Operator O. C. Coal Company
Address P.O. Box 1167, Gunnison, CO 81230
Contacts Robert Weaver Telephone (303) 641-1560
Parent Company _____
Address _____
Contacts _____ Telephone _____

GENERAL INFORMATION

Mine Type Underground Mining Method Conventional
Mine Status Producing Start-Up Date September 25, 1981
No. of Employees 6 Union Affiliation Non-union
No. of Acres in Permit 80
Surface: Federal _____ State _____ Private X
Mineral: Federal X State _____ Private _____

GEOLOGIC INFORMATION

Geologic Unit Mesaverde Geologic Age Cretaceous
Coal Zone(s) or Bed(s) C or No. 2 Bed
Coal Thickness(es) 4-7 ft
Cleat Orientation and Spacing _____
Dip of Bedding 3° NW Strike of Bedding _____
Overburden Thickness(es) 0-200 ft

Interburden Thickness _____

COAL QUALITY

	Sample 1	Sample 2	Sample 3	Sample 4
Seam	<i>C</i>			
Rank				
Moisture (%)	<i>12.3</i>			
Ash (%)	<i>5.6</i>			
Fixed Carbon (%)	<i>46.4</i>			
Volatile Matter (%)	<i>35.7</i>			
Sulfur (%)	<i>0.5</i>			
Heating Value (Btu/lb.)	<i>11,080</i>			
Free Swelling Index				
Hardgrove Grindability				
Ash-Softening Temperature (°F)				
Methane Characteristics				
Reflectance Data				

COAL PRODUCTION

1989 Production 4282 tons

Cumulative Production Through 1989 112,256 tons

Projected Production (tpy) 1990 4,000 tons

Remaining Reserves/Life of Mine 40 years

Shifts Per Day _____

Production Per Shift _____

Equipment _____

Haulage _____

Preparation Plant _____ Tipple _____

SALES DATA

Percent In-State 100 Destination CO Use Domestic, ind.

Percent Out-of-State _____ Destination _____ Use _____

Percent Export _____ Destination _____ Use _____

Transportation Mode/Mixed Modes _____

ADDITIONAL INFORMATION AND COMMENTS

MARR MINE

Map No. 9 M.L.R.D. Permit No. C-80-006
Previous Mine Names Kerr Strip

LOCATION INFORMATION

County Jackson
Location (Sec., T., R.,) 15, 22, 23, 25, 26, 35, T. 9 N., R. 78 W., and 2, T. 8 N., R. 78 W.

Coal Region North Park Field North Park
Topographic Quadrangle Johnny Moore Mountain

COMPANY INFORMATION

Mine Operator Kerr Coal Company
Address P. O. Box 487, Walden, CO 80480
Contacts David Gossett Telephone (303) 723-4721
Parent Company Energy Fuels Coal, Inc.
Address 1200 17th St., Suite 2500, Denver, CO 80202
Contacts John R. Adams Telephone (303) 623-8317

GENERAL INFORMATION

Mine Type Surface Mining Method Bulldozers and Scrapers
Mine Status Producing Start-Up Date 1974
No. of Employees 8 Union Affiliation Non-union
No. of Acres in Permit 2004
Surface: Federal _____ State _____ Private _____
Mineral: Federal X State X Private X

GEOLOGIC INFORMATION

Geologic Unit Coalmont Formation Geologic Age Early to Mid-Tertiary
Coal Zone(s) or Bed(s) Sudduth Bed

Coal Thickness(es) 36-75 ft range (average 50 ft)
Cleat Orientation and Spacing _____
Dip of Bedding _____ Strike of Bedding _____
Overburden Thickness(es) _____

Interburden Thickness _____

COAL QUALITY**Sample 1 Sample 2 Sample 3 Sample 4**

Seam	<i>Sudduth</i>
Rank	<i>Sub B</i>
Moisture (%)	<i>11.12</i>
Ash (%)	<i>10.64</i>
Fixed Carbon (%)	<i>42.06</i>
Volatile Matter (%)	<i>36.18</i>
Sulfur (%)	<i>0.20</i>
Heating Value (Btu/lb.)	<i>10,800</i>
Free Swelling Index	
Hardgrove Grindability	
Ash-Softening Temperature (°F)	
Methane Characteristics	
Reflectance Data	

COAL PRODUCTION

1989 Production	<i>32,956 tons</i>
Cumulative Production Through 1989	<i>3,730,826 tons</i>
Projected Production (tpy) 1990	<i>40,000 tons</i>
Remaining Reserves/Life of Mine	<i>10 years</i>
Shifts Per Day	
Production Per Shift	
Equipment	<i>Bulldozers and scrapers</i>
Haulage	
Preparation Plant	<i>Crusher and screens</i> <i>Tipple</i>

SALES DATA

Percent In-State	<i>62</i>	Destination	<i>*</i>	Use	<i>Stm, ind., dom.</i>
Percent Out-of-State	<i>38</i>	Destination	<i>TX, WY</i>	Use	<i>Industrial</i>
Percent Export		Destination		Use	
Transportation Mode/Mixed Modes	<i>Truck and Union Pacific Railroad</i>				

ADDITIONAL INFORMATION AND COMMENTS

* *Boulder, Fort Collins, & Walden*

KING COAL MINE

Map No. 10 M.L.R.D. Permit No. C-81-035

Previous Mine Names _____

LOCATION INFORMATION

County La Plata

Location (Sec., T., R.) 29, 31, 32, T. 35 N., R. 11 W.

Coal Region San Juan River Field Durango

Topographic Quadrangle Kline

COMPANY INFORMATION

Mine Operator National King Coal, Inc.

Address 4424 County Rd. 120, Hesperus, CO

Contacts Richard Farnsworth Telephone (303) 385-4528

Parent Company National King Coal, Inc.

Address P. O. Box 2905, Durango, CO 81031

Contacts _____ Telephone (303) 259-2416

GENERAL INFORMATION

Mine Type Underground Mining Method Conventional

Mine Status Producing Start-Up Date 1936

No. of Employees 36 Union Affiliation Non-union

No. of Acres in Permit _____

Surface: Federal _____ State _____ Private X

Mineral: Federal X State _____ Private _____

GEOLOGIC INFORMATION

Geologic Unit Upper Menefee Geologic Age Cretaceous

Coal Zone(s) or Bed(s) Upper

Coal Thickness(es) 5.5-6 ft

Cleat Orientation and Spacing _____

Dip of Bedding 3° S-SW Strike of Bedding _____

Overburden Thickness(es) 0-300 ft

Interburden Thickness _____

COAL QUALITY

	Sample 1	Sample 2	Sample 3	Sample 4
Seam	<i>Upper</i>			
Rank				
Moisture (%)	<i>3.5</i>			
Ash (%)	<i>5.8</i>			
Fixed Carbon (%)	<i>58.66</i>			
Volatile Matter (%)	<i>38.0</i>			
Sulfur (%)	<i>0.84</i>			
Heating Value (Btu/lb.)	<i>13,529</i>			
Free Swelling Index	<i>5</i>			
Hardgrove Grindability				
Ash-Softening Temperature (°F)				
Methane Characteristics				
Reflectance Data				

COAL PRODUCTION

1989 Production	<i>164,192 tons</i>
Cumulative Production Through 1989	<i>1,479,180 tons</i>
Projected Production (tpy) 1990	<i>160,000 tons</i>
Remaining Reserves/Life of Mine	<i>10 years</i>
Shifts Per Day	
Production Per Shift	
Equipment	
Haulage	
Preparation Plant	Tipple

SALES DATA

Percent In-State	<i>10</i>	Destination	<i>CO</i>	Use	<i>Domestic, ind.</i>
Percent Out-of-State	<i>90</i>	Destination	<i>AZ, NM, UT</i>	Use	<i>Industrial</i>
Percent Export		Destination		Use	
Transportation Mode/Mixed Modes	<i>Truck</i>				

ADDITIONAL INFORMATION AND COMMENTS

GOLDEN EAGLE MINE

Map No. 11 M.L.R.D. Permit No. C-81-013
Previous Mine Names Maxwell, (CF&I) "B"

LOCATION INFORMATION

County Las Animas
Location (Sec., T., R.) 29, T. 33 S., R. 67 W.

Coal Region Raton Mesa Region Field Trinidad
Topographic Quadrangle Vigil

COMPANY INFORMATION

Mine Operator Wyoming Fuel Company
Address 10250 Highway 12, Weston, CO 81091
Contacts Charles W. McGlothlin, Jr. Telephone (719) 868-2761
Parent Company KN Energy, Inc.
Address 12055 West 2nd Place, Lakewood, CO 80215
Contacts _____ Telephone (303) 989-1740

GENERAL INFORMATION

Mine Type Underground Mining Method Longwall
Mine Status Producing Start-Up Date January 25, 1984
No. of Employees 150 Union Affiliation UMWA No. 9856 Dist. 19
No. of Acres in Permit 6519
Surface: Federal _____ State _____ Private X
Mineral: Federal _____ State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Raton Formation (middle) Geologic Age Upper Cretaceous
Coal Zone(s) or Bed(s) _____

Coal Thickness(es) 4-7 ft
Cleat Orientation and Spacing _____
Dip of Bedding 1-3° NE Strike of Bedding N-N 35° W
Overburden Thickness(es) 400-1200 ft

Interburden Thickness _____

COAL QUALITY**Sample 1 Sample 2 Sample 3 Sample 4**

Seam

Maxwell (Raw) Maxwell (Washed)

Rank

Moisture (%)

6 7.0

Ash (%)

15-16 12.5

Fixed Carbon (%)

49-51 50-53

Volatile Matter (%)

30-31 31-33

Sulfur (%)

0.5 0.45

Heating Value (Btu/lb.)

11,400 12,300

Free Swelling Index

8-9

Hardgrove Grindability

65

Ash-Softening Temperature (°F)

2400

Methane Characteristics

Reflectance Data

COAL PRODUCTION1989 Production 901,963 tonsCumulative Production Through 1989 2,083,114 tons (1984-1989)Projected Production (tpy) 1990 1,800,000 raw tonsRemaining Reserves/Life of Mine 40 million tons / 20 yearsShifts Per Day 3Production Per Shift 3,000Equipment Gullick Dobson shields, Joy 3LS shearer, Joy 14CM continuous miners, *Haulage BeltPreparation Plant Roberts And Schaefer Tipple Silos**SALES DATA**

Percent In-State _____ Destination _____ Use _____

Percent Out-of-State 100 Destination AZ, TX Use Steam, industrial

Percent Export _____ Destination _____ Use _____

Transportation Mode/Mixed Modes Railroad—C & W Weston Loadout**ADDITIONAL INFORMATION AND COMMENTS**** and Joy 10SC shuttle cars*

RATON CREEK MINE No. 1

Map No. 12 M.L.R.D. Permit No. C-82-055
Previous Mine Names Helen

LOCATION INFORMATION

County Las Animas
Location (Sec., T., R.) 31, 32, 36, T. 33 S., R. 64 W.
Coal Region Raton Mesa Field Trinidad
Topographic Quadrangle Starkville

COMPANY INFORMATION

Mine Operator Energy Fuels Coal, Inc.
Address P. O. Box 449, Florence, CO 81226
Contacts Randy Acre Telephone (719) 784-6395
Parent Company Energy Fuels Coal, Inc.
Address 1200 17th. St., Suite 2500, Denver, CO 80202
Contacts John R. Adams Telephone (303) 623-8317

GENERAL INFORMATION

Mine Type Underground Mining Method Continuous miners
Mine Status Producing Start-Up Date 1987 site preparation
No. of Employees 20 Union Affiliation Non-union
No. of Acres in Permit 1333
Surface: Federal _____ State _____ Private X
Mineral: Federal _____ State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Vermejo & Raton Formations Geologic Age Upper Cretaceous
Coal Zone(s) or Bed(s) Upper Starkville
Coal Thickness(es) 4-8 ft
Cleat Orientation and Spacing _____
Dip of Bedding 3-4° W Strike of Bedding _____
Overburden Thickness(es) _____
Interburden Thickness _____

COAL QUALITY

Sample 1 Sample 2 Sample 3 Sample 4

Seam

Upper Starkville

Rank

Moisture (%)

3

Ash (%)

14

Fixed Carbon (%)

54

Volatile Matter (%)

33

Sulfur (%)

0.5

Heating Value (Btu/lb.)

12,500

Free Swelling Index

Hardgrove Grindability

Ash-Softening Temperature (°F)

Methane Characteristics

Reflectance Data

COAL PRODUCTION1989 Production 100,908 tonsCumulative Production Through 1989 126,851 tons (1988 & 1989)Projected Production (tpy) 1990 0Remaining Reserves/Life of Mine 5 years

Shifts Per Day _____

Production Per Shift _____

Equipment _____

Haulage _____

Preparation Plant _____

Tipple _____

SALES DATA

Percent In-State _____

Destination _____

Use _____

Percent Out-of-State 100Destination AZUse Industrial

Percent Export _____

Destination _____

Use _____

Transportation Mode/Mixed Modes _____

ADDITIONAL INFORMATION AND COMMENTSWill be idle in 1990. Under development—site preparation 1987.

ROADSIDE MINE

Map No. 13 M.L.R.D. Permit No. C-81-041

Previous Mine Names _____

LOCATION INFORMATION

County Mesa

Location (Sec., T., R.,) 20, 21, 22, 23, 26, 27, 28, 29, 34, 35, T. 10 S., R. 98 W. and 1, 2; T. 11 S., R. 98 W.

Coal Region Uinta Field Grand Mesa

Topographic Quadrangle Cameo

COMPANY INFORMATION

Mine Operator Powderhorn Coal Company

Address P. O. Box 1430, Palisade, CO 81526

Contacts James Diamanti Telephone (303) 464-7951

Parent Company Peabody Coal Company

Address 301 N. Memorial Drive, P. O. Box 373, St. Louis, Missouri 63166

Contacts James Campbell Telephone (314) 342-3400

GENERAL INFORMATION

Mine Type Underground Mining Method Continuous miners

Mine Status Producing Start-Up Date 1977

No. of Employees 28 Union Affiliation Non-union

No. of Acres in Permit 7693

Surface: Federal X State _____ Private X

Mineral: Federal X State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Mt. Garfield Formation Geologic Age Cretaceous

Coal Zone(s) or Bed(s) Cameo B Seam

Coal Thickness(es) 4.4-9.4 ft

Cleat Orientation and Spacing _____

Dip of Bedding 5% Strike of Bedding N 65 W

Overburden Thickness(es) 0-200 ft

Interburden Thickness Cameo B seam lies 400-450 ft above the Palisade Seam, which occurs at the base of the Mount Garfield Formation

COAL QUALITY

	Sample 1	Sample 2	Sample 3	Sample 4
Seam	<i>Cameo B (ROM)</i>		<i>Cameo B (Shipped)</i>	
Rank				
Moisture (%)	7.7		9.3	
Ash (%)	17.34		9.1	
Fixed Carbon (%)	41		47	
Volatile Matter (%)	34		35	
Sulfur (%)	0.84		0.57	
Heating Value (Btu/lb.)	10,344		11,800	
Free Swelling Index	2.5		0.5	
Hardgrove Grindability	47			
Ash-Softening Temperature (°F)				
Methane Characteristics				
Reflectance Data				

COAL PRODUCTION

1989 Production 133,768 tons

Cumulative Production Through 1989 6,478,103 tons

Projected Production (tpy) 1990 160,000 tons

Remaining Reserves/Life of Mine 50 years

Shifts Per Day _____

Production Per Shift _____

Equipment _____

Haulage _____

Preparation Plant Heavy media Tipple _____

SALES DATA

Percent In-State 94 Destination Palisade, & Denver Use Steam

Percent Out-of-State 6 Destination CA Use Industrial

Percent Export _____ Destination _____ Use _____

Transportation Mode/Mixed Modes Railroad—D&RGW (Southern Pacific)

ADDITIONAL INFORMATION AND COMMENTS

COLOWYO MINE

Map No. 14 M.L.R.D. Permit No. C-81-019

Previous Mine Names _____

LOCATION INFORMATION

County Moffat

Location (Sec., T., R.) 13, 22, 23, 24, 26, 27, 33, 34, T. 4 N., R. 93 W. and 2, 3, 4, 9, 10, T. 3 N., R. 93 W.

Coal Region Uinta Field Danforth Hills

Topographic Quadrangle Ninemile Gap, Axial

COMPANY INFORMATION

Mine Operator Colowyo Coal Company

Address 5731 State Highway 13, Meeker, CO 81641

Contacts Robert Bevill Telephone (303) 824-4451

Parent Company W. R. Grace & Company / Hanna Mining Company (Partnership)

Address _____

Contacts _____ Telephone _____

GENERAL INFORMATION

Mine Type Surface Mining Method Dragline, truck, & shovel

Mine Status Producing Start-Up Date 1976

No. of Employees 310 Union Affiliation Non-union

No. of Acres in Permit 5525

Surface: Federal X State _____ Private X

Mineral: Federal X State _____ Private _____

GEOLOGIC INFORMATION

Geologic Unit Williams Fork Geologic Age Upper Cretaceous

Coal Zone(s) or Bed(s) Y3 + Y2, X, A2+A3, B, C, D, E, F

Coal Thickness(es) 57.8 ft Total; Y3+Y2: 6.8 ft, X: 12.3 ft, A2+A3: 6.7 ft, B: 5.3 ft, *

Cleat Orientation and Spacing _____

Dip of Bedding 0-20° N Strike of Bedding E-W

Overburden Thickness(es) 400 ft total overburden and interburden

Interburden Thickness _____

COAL QUALITY

	Sample 1	Sample 2	Sample 3	Sample 4
Seam	<i>X</i>	<i>D</i>	<i>E</i>	<i>Composite</i>
Rank				<i>Sub A</i>
Moisture (%)	<i>14.3</i>			<i>14.81</i>
Ash (%)	<i>4.6</i>			<i>5.06</i>
Fixed Carbon (%)				<i>46.23</i>
Volatile Matter (%)				<i>33.90</i>
Sulfur (%)	<i>0.4</i>			<i>0.4</i>
Heating Value (Btu/lb.)	<i>10,553</i>	<i>10,626</i>	<i>10,984</i>	<i>10,728</i>
Free Swelling Index				
Hardgrove Grindability				
Ash-Softening Temperature (°F)				
Methane Characteristics				
Reflectance Data				

COAL PRODUCTION

1989 Production	<i>4,235,445 tons</i>
Cumulative Production Through 1989	<i>36,063,225 tons</i>
Projected Production (tpy) 1990	<i>4 million tons</i>
Remaining Reserves/Life of Mine	<i>100 million tons / 45 years</i>
Shifts Per Day	
Production Per Shift	
Equipment	<i>Shovels, draglines, overburden drills, bulldozers, front end loaders</i>
Haulage	<i>Haulage trucks out of pit to crusher and screens</i>
Preparation Plant	<i>Crusher and screens</i> Tipple <i>Yes</i>

SALES DATA

Percent In-State	<i>63</i>	Destination	<i>**</i>	Use	<i>Steam, Industrial</i>
Percent Out-of-State	<i>37</i>	Destination	<i>IA, MO, NB, TX</i>	Use	<i>Steam, Industrial</i>
Percent Export		Destination		Use	
Transportation Mode/Mixed Modes	<i>Railroad D&RGW (Southern Pacific)</i>				

ADDITIONAL INFORMATION AND COMMENTS

Colorado Consumers: City of Colorado Springs, Colorado Ute Craig Unit #3, Coors Brewery Golden, Colorado

** C: 6.0 ft, D: 10.1 ft, E: 6.8 ft, F: 5.4 ft*

*** Colorado Springs, Craig, & Golden*

EAGLE MINE No. 5 & 6

Map No. 15 M.L.R.D. Permit No. C-81-044
Previous Mine Names _____

LOCATION INFORMATION

County Moffat
Location (Sec., T., R.,) 31, 32, T. 6 N., R. 91 W. and 5, 6, T. 5 N., R. 91 W.
Coal Region Green River Field Yampa
Topographic Quadrangle Round Bottom & Caster Gulch

COMPANY INFORMATION

Mine Operator Cyprus Empire Corporation
Address P. O. Box 68, Craig, CO 81626
Contacts Bradley J. Borquin Telephone (303) 824-8246
Parent Company Cyprus Coal Company
Address 9100 E. Mineral Circle, Englewood, Co 80112
Contacts Donald P. Brown Telephone (303) 645-5100

GENERAL INFORMATION

Mine Type Underground Mining Method Longwall
Mine Status Producing Start-Up Date Early 1970's
No. of Employees 183 Union Affiliation UMWA
No. of Acres in Permit 6387
Surface: Federal X State X Private X
Mineral: Federal X State X Private X

GEOLOGIC INFORMATION

Geologic Unit Williams Fork Formation Geologic Age Cretaceous
Coal Zone(s) or Bed(s) F
Coal Thickness(es) 10.5-11.5 ft
Cleat Orientation and Spacing _____
Dip of Bedding 8-25% Strike of Bedding _____
Overburden Thickness(es) 0-900 ft
Interburden Thickness _____

COAL QUALITY

Sample 1 Sample 2 Sample 3 Sample 4

Seam

F

Rank

Sub B

Moisture (%)

8.93-12.84

Ash (%)

4.99-10.36

Fixed Carbon (%)

41.75-52.85

Volatile Matter (%)

35.43-38.83

Sulfur (%)

0.46-0.57

Heating Value (Btu/lb.)

10,377-11,567

Free Swelling Index

Hardgrove Grindability

Ash-Softening Temperature (°F)

Methane Characteristics

Reflectance Data

COAL PRODUCTION1989 Production 2,201,653 tonsCumulative Production Through 1989 12,841,846 tonsProjected Production (tpy) 1990 2,000,000 tonsRemaining Reserves/Life of Mine 25 years

Shifts Per Day _____

Production Per Shift _____

Equipment _____

Haulage Hemscheidt shields, Anderson Mavor shearer, Anderson Mavor haulage *Preparation Plant _____ Tipple Yes**SALES DATA**Percent In-State 94 Destination ** Use SteamPercent Out-of-State 6 Destination IN, TX Use Steam

Percent Export _____ Destination _____ Use _____

Transportation Mode/Mixed Modes Railroad-D&RGW (Southern Pacific)**ADDITIONAL INFORMATION AND COMMENTS*** Kloeckner Becorit face conveyor haulage** Boulder, Colorado Springs, Palisade, Craig

TRAPPER MINE

Map No. 16 M.L.R.D. Permit No. C-81-010
Previous Mine Names _____

LOCATION INFORMATION

County Moffat
Location (Sec., T., R.,) 5 & 6, T. 5 N., R. 90 W. and 1, 2, 3, 4, 5, T. 5 N., R. 91 W. and 30, 31, 32, T. 6 N., R. 90 W.
Coal Region Green River Field Yampa
Topographic Quadrangle Castor Gulch

COMPANY INFORMATION

Mine Operator Trapper Mining Inc.
Address P.O. Box 187, Craig, CO 81626
Contacts James D. Edgerley / President Telephone (303) 824-4401
Parent Company Colorado Ute, Saltriver, Tri-State, & Platte River Power Authority
Address P. O. Box 1149, Montrose, CO 81402
Contacts Kent E. Davenport Telephone (303) 249-4501

GENERAL INFORMATION

Mine Type Surface Mining Method Dragline
Mine Status Producing Start-Up Date 1977
No. of Employees 143 Union Affiliation Operating Engineers
No. of Acres in Permit 10,430
Surface: Federal X State X Private X
Mineral: Federal X State X Private X

GEOLOGIC INFORMATION

Geologic Unit Williams Fork Formation Geologic Age Cretaceous
Coal Zone(s) or Bed(s) H, I, Q, R

Coal Thickness(es) H: 4 ft, I: 9 ft, Q: 13 ft, R: 4 ft
Cleat Orientation and Spacing _____
Dip of Bedding 16% Strike of Bedding S-W
Overburden Thickness(es) 30-140 ft
Interburden Thickness 2-50 ft

COAL QUALITY

Sample 1 Sample 2 Sample 3 Sample 4

Seam

Average

Rank

Sub B

Moisture (%)

16

Ash (%)

8

Fixed Carbon (%)

48

Volatile Matter (%)

33

Sulfur (%)

0.45

Heating Value (Btu/lb.)

9,800

Free Swelling Index

Hardgrove Grindability

Ash-Softening Temperature (°F)

2,120

Methane Characteristics

Reflectance Data

COAL PRODUCTION1989 Production 2,196,623 tonsCumulative Production Through 1989 26,029,445 tonsProjected Production (tpy) 1990 2.3 million tonsRemaining Reserves/Life of Mine 60 million tons / 25 years

Shifts Per Day _____

Production Per Shift _____

Equipment Draglines, drills, bulldozers, front-end loadersHaulage Haul trucks from pit to power plant

Preparation Plant _____

Tipple _____

SALES DATAPercent In-State 100 Destination Craig Units 1 & 2 Use Steam

Percent Out-of-State _____ Destination _____ Use _____

Percent Export _____ Destination _____ Use _____

Transportation Mode/Mixed Modes _____

ADDITIONAL INFORMATION AND COMMENTSAll coal is burned at the Colorado Ute Craig Generating Station Units 1 & 2.

NUCLA MINE

Map No. 17 M.L.R.D. Permit No. C-81-008

Previous Mine Names _____

LOCATION INFORMATION

County Montrose

Location (Sec., T., R.) 25, 31, 36, T. 47 N., R. 61 W.

Coal Region San Juan River Field Nucla-Naturita

Topographic Quadrangle Nucla

COMPANY INFORMATION

Mine Operator Peabody Coal Company

Address P. O. Box 368, Nucla, CO 81424

Contacts C. N. "Bud" Benson Telephone (303) 864-7208

Parent Company Peabody Coal Company

Address 301 N. Memorial Dr., P. O. Box 373, St. Louis, Missouri 63166

Contacts James Campbell Telephone (314) 342-3400

GENERAL INFORMATION

Mine Type Surface Mining Method Dragline

Mine Status Producing Start-Up Date 1959

No. of Employees _____ Union Affiliation UMWA

No. of Acres in Permit 647

Surface: Federal _____ State _____ Private X

Mineral: Federal _____ State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Dakota Formation Geologic Age Cretaceous

Coal Zone(s) or Bed(s) 1 & 2

Coal Thickness(es) 1: 1.6-3.3 ft, 2: 5.9-7.9 ft

Cleat Orientation and Spacing _____

Dip of Bedding 1-2° SW Strike of Bedding N 25° W to N 45° W

Overburden Thickness(es) 0-100 ft

Interburden Thickness _____

COAL QUALITY

Sample 1 Sample 2 Sample 3 Sample 4

Seam

Dakota

Rank

Moisture (%)

6.7

Ash (%)

15.1

Fixed Carbon (%)

47.0

Volatile Matter (%)

30.7

Sulfur (%)

0.81

Heating Value (Btu/lb.)

11,680

Free Swelling Index

Hardgrove Grindability

Ash-Softening Temperature (°F)

2750

Methane Characteristics

Reflectance Data

COAL PRODUCTION1989 Production *42,301 tons*Cumulative Production Through 1989 *2,162,654 tons*Projected Production (tpy) 1990 *Minimal if any*Remaining Reserves/Life of Mine *7 years*

Shifts Per Day

Production Per Shift

Equipment *Dragline*

Haulage

Preparation Plant

Tipple

SALES DATAPercent In-State *100* Destination *Nucla Power Plant ** Use *Steam*

Percent Out-of-State Destination Use

Percent Export Destination Use

Transportation Mode/Mixed Modes *Trucks haul from pit to the power plant.***ADDITIONAL INFORMATION AND COMMENTS***Will be idle in 1990.*** Fluidized bed combustion unit. No capital production reported for 1984, 1985 and 1986.*

COAL BASIN MINE

Map No. 18 M.L.R.D. Permit No. C-81-017
Previous Mine Names Dutch Creek

LOCATION INFORMATION

County Pitkin
Location (Sec., T., R.,) 31, 32, T. 9 S., R. 89 W. and 4-11, 14-21, 28-30, T. 10 S., R. 89 W.;
and 1, 12, 13, 24, 25, T. 10 S., R. 90 W.
Coal Region Uinta Field Carbondale
Topographic Quadrangle Placita and Elk Knob

COMPANY INFORMATION

Mine Operator Mid-Continent Resources, Inc.
Address P. O. Box 500, Carbondale, CO 81623
Contacts John A. Reeves Telephone (303) 963-2583
Parent Company _____
Address _____
Contacts _____ Telephone _____

GENERAL INFORMATION

Mine Type Underground Mining Method Longwall
Mine Status Producing Start-Up Date 1956
No. of Employees 370 Union Affiliation Non-union
No. of Acres in Permit 11,385
Surface: Federal X State _____ Private X
Mineral: Federal X State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Lower Mesaverde Geologic Age Upper Cretaceous
Coal Zone(s) or Bed(s) B
Coal Thickness(es) 5.5-10.0 ft
Cleat Orientation and Spacing _____
Dip of Bedding 11-13° NW Strike of Bedding N-NE
Overburden Thickness(es) 100-3000 ft

Interburden Thickness _____

COAL QUALITY

	Sample 1	Sample 2	Sample 3	Sample 4
Seam	<i>B</i>			
Rank				
Moisture (%)	<i>0.8</i>			
Ash (%)	<i>7.5</i>			
Fixed Carbon (%)	<i>69.0</i>			
Volatile Matter (%)	<i>22.7</i>			
Sulfur (%)	<i>0.5</i>			
Heating Value (Btu/lb.)	<i>14,500</i>			
Free Swelling Index				
Hardgrove Grindability				
Ash-Softening Temperature (°F)				
Methane Characteristics				
Reflectance Data				

COAL PRODUCTION

1989 Production	<i>934,863 tons</i>
Cumulative Production Through 1989	<i>Cannot be determined at this time due to the *</i>
Projected Production (tpy) 1990	<i>1,000,000 tons</i>
Remaining Reserves/Life of Mine	<i>40 years</i>
Shifts Per Day	
Production Per Shift	
Equipment	<i>Hemscheidt shields, 300-Leickhoff shearer, Halbach & Braun face conveyor</i>
Haulage	<i>Eickhoff</i>
Preparation Plant	Tipple

SALES DATA

Percent In-State	Destination	Use
Percent Out-of-State <i>100</i>	Destination <i>B.M.T. Orem, Utah</i>	Use <i>Metallurgical</i>
Percent Export	Destination	Use
Transportation Mode/Mixed Modes	<i>Coal is trucked to a loadout at Carbondale on the **</i>	

ADDITIONAL INFORMATION AND COMMENTS

** five underground mines of the Coal Basin / Dutch Creek Mines, mining complex.*

*** D&RGW (Southern Pacific) Line.*

DESERADO MINE

Map No. 19 M.L.R.D. Permit No. C-81-018
Previous Mine Names _____

LOCATION INFORMATION

County Rio Blanco
Location (Sec., T., R.) 1-4, 10, 11, T. 2 N., R. 101 W. and 22, 23, 26, 27, 28, 33-36,
T. 3 N., R. 101 W.
Coal Region Uinta Field Lower White River
Topographic Quadrangle Rangely Northwest and Cactus Reservoir

COMPANY INFORMATION

Mine Operator Western Fuels-Utah, Inc.
Address P. O. Box 1067, Rangely, CO 81648
Contacts Michael Weigand Telephone (303) 675-8431
Parent Company Western Fuels Association, Inc.
Address 405 Urban Street Suite 305, Lakewood, CO 80228
Contacts Donald L. Deardorff Telephone (303) 988-9626

GENERAL INFORMATION

Mine Type Underground Mining Method Longwall
Mine Status Producing Start-Up Date 1982
No. of Employees 232 Union Affiliation UMWA No. 1984
No. of Acres in Permit 9496.7
Surface: Federal X State _____ Private X
Mineral: Federal X State _____ Private _____

GEOLOGIC INFORMATION

Geologic Unit Williams Fork Formation Geologic Age Upper Cretaceous
Coal Zone(s) or Bed(s) A/B, B/C, D

Coal Thickness(es) B: 6.4 ft, B/C: 6-12 ft, D: 4.5-10 ft, A/B/C: 4-17 ft
Cleat Orientation and Spacing _____
Dip of Bedding 3-7° Strike of Bedding N 46 W
Overburden Thickness(es) 0-1400 ft

Interburden Thickness 10-50 ft

COAL QUALITY

	Sample 1	Sample 2	Sample 3	Sample 4
Seam	A/B/C	D		
Rank	Sub A	Sub A		
Moisture (%)	12.0	11.3		
Ash (%)	16.1	13.1		
Fixed Carbon (%)				
Volatile Matter (%)				
Sulfur (%)	0.41	0.44		
Heating Value (Btu/lb.)	9,400	10,000		
Free Swelling Index				
Hardgrove Grindability				
Ash-Softening Temperature (°F)	2,550	2,600		
Methane Characteristics	Low	Low		
Reflectance Data				

COAL PRODUCTION

1989 Production 1,586,317 tons

Cumulative Production Through 1989 5,083,187 tons

Projected Production (tpy) 1990 1,600,000 tons

Remaining Reserves/Life of Mine 40 years

Shifts Per Day _____

Production Per Shift _____

Equipment Hemscheidt shields, 3LS Joy shearer, Halbach & Braun face conveyor

Haulage Halbach & Braun belt haulage underground

Preparation Plant Baum jig Tipple Silo

SALES DATA

Percent In-State _____ Destination _____ Use _____

Percent Out-of-State 100 Destination Utah Use Steam

Percent Export _____ Destination _____ Use _____

Transportation Mode/Mixed Modes Electric unit train

ADDITIONAL INFORMATION AND COMMENTS

Captive fuel supply for the Bonanza power plant in Utah. Coal is delivered by an electric railroad to the power plant. The "D" seam is currently being mined.

EDNA MINE

Map No. 20 M.L.R.D. Permit No. C-80-001
Previous Mine Names _____

LOCATION INFORMATION

County Routt
Location (Sec., T., R.,) 19, 30, 31, T. 5 N., R. 85 W. and 36, T. 5 W., R. 86 W. and 7, 18, 19, T. 4 N., R. 85 W.
Coal Region Green River Field Yampa
Topographic Quadrangle Oak Creek, Rattlesnake Butte, and Cow Creek

COMPANY INFORMATION

Mine Operator The Pittsburg And Midway Coal Mining Company
Address P. O. Box 176, Oak Creek, CO 80467
Contacts D. L. Long / Mine Manager Telephone (303) 629-8744
Parent Company The Pittsburg And Midway Coal Mining Company
Address 6400 S. Fiddlers Green Circle, Englewood, CO 80111
Contacts D.F. Gottron Telephone (303) 930-3600

GENERAL INFORMATION

Mine Type Surface Mining Method Dragline
Mine Status Producing Start-Up Date 1945
No. of Employees 27 Union Affiliation UMWA
No. of Acres in Permit 4360
Surface: Federal _____ State _____ Private X
Mineral: Federal X State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Williams Fork Formation Geologic Age Upper Cretaceous
Coal Zone(s) or Bed(s) Lennox, Wadge and Wolfcreek

Coal Thickness(es) Lennox: 3-4 ft, Wadge: 5-11 ft, Wolfcreek: 13.5 ft
Cleat Orientation and Spacing _____
Dip of Bedding 8-14° W-NW Strike of Bedding _____
Overburden Thickness(es) Lennox: 0-50 ft, Wadge: 0-90 ft, Wolfcreek: 0-200 ft

Interburden Thickness Lennox-Wadge: 35-40 ft, Wadge-Wolfcreek: Approximately 100 ft

COAL QUALITY

	Sample 1	Sample 2	Sample 3	Sample 4
Seam				
Rank				
Moisture (%)	10.5			
Ash (%)	10.0			
Fixed Carbon (%)	45			
Volatile Matter (%)	34.5			
Sulfur (%)	0.6			
Heating Value (Btu/lb.)	10,800			
Free Swelling Index				
Hardgrove Grindability				
Ash-Softening Temperature (°F)	2680			
Methane Characteristics				
Reflectance Data				

COAL PRODUCTION1989 Production 285,657 tonsCumulative Production Through 1989 22,367,088 tonsProjected Production (tpy) 1990 200,000 tonsRemaining Reserves/Life of Mine 5 yearsShifts Per Day 1Production Per Shift 5,000 tons per dayEquipment 1 dragline, 2 loading shovels, 2 overburden drills, 1 front end loader, *

Haulage _____

Preparation Plant 1 crusher, 2 screens Tipple Yes**SALES DATA**Percent In-State 70 Destination ** Use SteamPercent Out-of-State 30 Destination IA, NB Use Steam, industrial

Percent Export _____ Destination _____ Use _____

Transportation Mode/Mixed Modes Railroad—D&RGW (Southern Pacific)**ADDITIONAL INFORMATION AND COMMENTS**

* 5 haulage trucks, 6 bulldozers

** Boulder, Colorado Springs, Denver

ENERGY MINE No. 1 (YAMPA VALLEY)

Map No. 21 M.L.R.D. Permit No. C-81-071
Previous Mine Names Main

LOCATION INFORMATION

County Routt
Location (Sec., T., R.,) T. 4 N., R. 86 W. and T. 4 N., R. 87 W. and T. 5 N., R. 86 W., and T. 5 N., R. 87 W.
Coal Region Green River Field Yampa
Topographic Quadrangle Mount Harris, Milner, Dunckley, And Rattlesnake Butte

COMPANY INFORMATION

Mine Operator Cyprus Yampa Coal Corporation
Address 23385 Routt County Rd. 33, Oak Creek, CO 80467
Contacts Bradley J. Borquin Telephone (303) 879-3800
Parent Company Cyprus Coal Company
Address 9100 E. Mineral Circle, Englewood, CO 80112
Contacts Donald P. Brown / President Telephone (303) 643-5100

GENERAL INFORMATION

Mine Type Surface Mining Method Dragline
Mine Status Idle Start-Up Date 1962
No. of Employees 22 Union Affiliation UMWA
No. of Acres in Permit _____
Surface: Federal X State _____ Private X
Mineral: Federal X State _____ Private X

GEOLOGIC INFORMATION

Geologic Unit Williams Fork Formation Geologic Age Cretaceous
Coal Zone(s) or Bed(s) Wadge Seam
Coal Thickness(es) 7-11 ft
Cleat Orientation and Spacing _____
Dip of Bedding 5° Strike of Bedding N 5° W
Overburden Thickness(es) 0-140 ft
Interburden Thickness _____

COAL QUALITY

	Sample 1	Sample 2	Sample 3	Sample 4
Seam	<i>Wadge</i>			
Rank	<i>Sub B</i>			
Moisture (%)	<i>9.0</i>			
Ash (%)	<i>7.1</i>			
Fixed Carbon (%)	<i>46.5</i>			
Volatile Matter (%)	<i>37.2</i>			
Sulfur (%)	<i>0.41</i>			
Heating Value (Btu/lb.)	<i>11,321</i>			
Free Swelling Index				
Hardgrove Grindability				
Ash-Softening Temperature (°F)	<i>2,700</i>			
Methane Characteristics				
Reflectance Data				

COAL PRODUCTION1989 Production *282,858 tons*Cumulative Production Through 1989 *37,239,269 tons*Projected Production (tpy) 1990 *Minimal if any*

Remaining Reserves/Life of Mine _____

Shifts Per Day _____

Production Per Shift _____

Equipment *Dragline*

Haulage _____

Preparation Plant _____

Tipple _____

SALES DATAPercent In-State *100*Destination *Denver Metro area*Use *Steam*

Percent Out-of-State _____

Destination _____

Use _____

Percent Export _____

Destination _____

Use _____

Transportation Mode/Mixed Modes *Railroad—D&RGW (Southern Pacific)***ADDITIONAL INFORMATION AND COMMENTS***Will be idle in 1990.*

FOIDEL CREEK MINE

Map No. 22 M.L.R.D. Permit No. C-82-056
Previous Mine Names Main

LOCATION INFORMATION

County Routt
Location (Sec., T., R.,) 32, T. 5 N., R. 86 W.—(Portal)
Coal Region Green River Field Yampa
Topographic Quadrangle Mt. Harris and Dunckley

COMPANY INFORMATION

Mine Operator Cyprus Twentymile Coal Company
Address P. O. Box 897, Oak Creek, CO 80467
Contacts Bradley J. Borquin Telephone (303) 879-8050
Parent Company Cyprus Coal Company
Address 9100 E. Mineral Circle, Englewood, CO 80112
Contacts Donald P. Brown / President Telephone (303) 643-5100

GENERAL INFORMATION

Mine Type Underground Mining Method Longwall
Mine Status Producing Start-Up Date April 1983
No. of Employees 145 Union Affiliation UMWA
No. of Acres in Permit 13,277
Surface: Federal X State X Private X
Mineral: Federal X State X Private X

GEOLOGIC INFORMATION

Geologic Unit Williams Fork Formation Geologic Age Cretaceous
Coal Zone(s) or Bed(s) Wadge
Coal Thickness(es) 7-11 ft
Cleat Orientation and Spacing _____
Dip of Bedding 5° Strike of Bedding N 5° W
Overburden Thickness(es) _____
Interburden Thickness _____

COAL QUALITY

	Sample 1	Sample 2	Sample 3	Sample 4
Seam	<i>Wadge</i>			
Rank	<i>Sub B</i>			
Moisture (%)	<i>9.0</i>			
Ash (%)	<i>7.1</i>			
Fixed Carbon (%)	<i>46.5</i>			
Volatile Matter (%)	<i>37.2</i>			
Sulfur (%)	<i>0.41</i>			
Heating Value (Btu/lb.)	<i>11,321</i>			
Free Swelling Index				
Hardgrove Grindability				
Ash-Softening Temperature (°F)	<i>2700</i>			
Methane Characteristics				
Reflectance Data				

COAL PRODUCTION

1989 Production	<i>848,955 tons</i>
Cumulative Production Through 1989	<i>2,463,103 tons</i>
Projected Production (tpy) 1990	<i>2,700,000 tons</i>
Remaining Reserves/Life of Mine	
Shifts Per Day	
Production Per Shift	
Equipment	<i>Westfalia shields, Anderson Mavor 1000 shearer, Westfalia Lunen face conveyor</i>
Haulage	
Preparation Plant	
	<i>Tipple</i>

SALES DATA

Percent In-State	<i>26</i>	Destination	<i>Colo. Springs, Denver</i>	Use	<i>Steam</i>
Percent Out-of-State	<i>74</i>	Destination	<i>IL, IN, TX</i>	Use	<i>Steam, industrial</i>
Percent Export		Destination		Use	
Transportation Mode/Mixed Modes	<i>Railroad—D&RGW (Southern Pacific)</i>				

ADDITIONAL INFORMATION AND COMMENTS

Foidel Creek is the name of the underground longwall mining operation that went in from the highwall of the Energy Number 1 idle surface mine.

SENECA MINE

Map No. 23 M.L.R.D. Permit No. C-82-057

Previous Mine Names _____

LOCATION INFORMATION

County Routt

Location (Sec., T., R.,) 27, 34, 35, 36, T. 6 N., R. 87 W. and 1, 2, 3, 11, 12, 13, T. 5 N., R. 87W.

Coal Region Green River Field Yampa

Topographic Quadrangle Milner, Mt. Harris

COMPANY INFORMATION

Mine Operator Peabody Coal Company

Address P. O. Box Drawer D, Hayden, CO 81639

Contacts Scott Williams Telephone (303) 276-3707

Parent Company Peabody Coal Company

Address 301 N. Memorial Dr., P. O. Box 373, St. Louis, Missouri 63166

Contacts James Campbell Telephone (314) 342-3400

GENERAL INFORMATION

Mine Type Surface Mining Method Dragline

Mine Status Producing Start-Up Date 1968

No. of Employees 89 Union Affiliation UMWA

No. of Acres in Permit 1511

Surface: Federal X State X Private X

Mineral: Federal X State X Private X

GEOLOGIC INFORMATION

Geologic Unit Lower Williams Fork Formation Geologic Age Upper Cretaceous

Coal Zone(s) or Bed(s) Wolf Creek, Wadge, Lennox

Coal Thickness(es) Wolf Creek: 16 ft, Wadge: 9 ft, Lennox: 4 ft

Cleat Orientation and Spacing _____

Dip of Bedding 6-19° Strike of Bedding _____

Overburden Thickness(es) _____

Interburden Thickness _____

COAL QUALITY

	Sample 1	Sample 2	Sample 3	Sample 4
Seam	<i>Wolf Creek</i>	<i>Wadge</i>	<i>Lennox</i>	<i>Wadge</i>
Rank				
Moisture (%)		9.8		11.25
Ash (%)	10.3	9.5	13.6	10.1
Fixed Carbon (%)				45.4
Volatile Matter (%)				32.31
Sulfur (%)	0.52	0.53		0.5
Heating Value (Btu/lb.)	12,090	11,960	11,860	10,700
Free Swelling Index				
Hardgrove Grindability				
Ash-Softening Temperature (°F)				2620
Methane Characteristics				
Reflectance Data				

COAL PRODUCTION

1989 Production 1,476,200 tons

Cumulative Production Through 1989 24,579,017 tons

Projected Production (tpy) 1990 1,500,000 tons

Remaining Reserves/Life of Mine _____

Shifts Per Day _____

Production Per Shift _____

Equipment Draglines, overburden drills, coal drills, loaders, haul trucks

Haulage _____

Preparation Plant _____ Tipple _____

SALES DATA

Percent In-State 100 Destination Hayden Power Plant Use Steam

Percent Out-of-State _____ Destination _____ Use _____

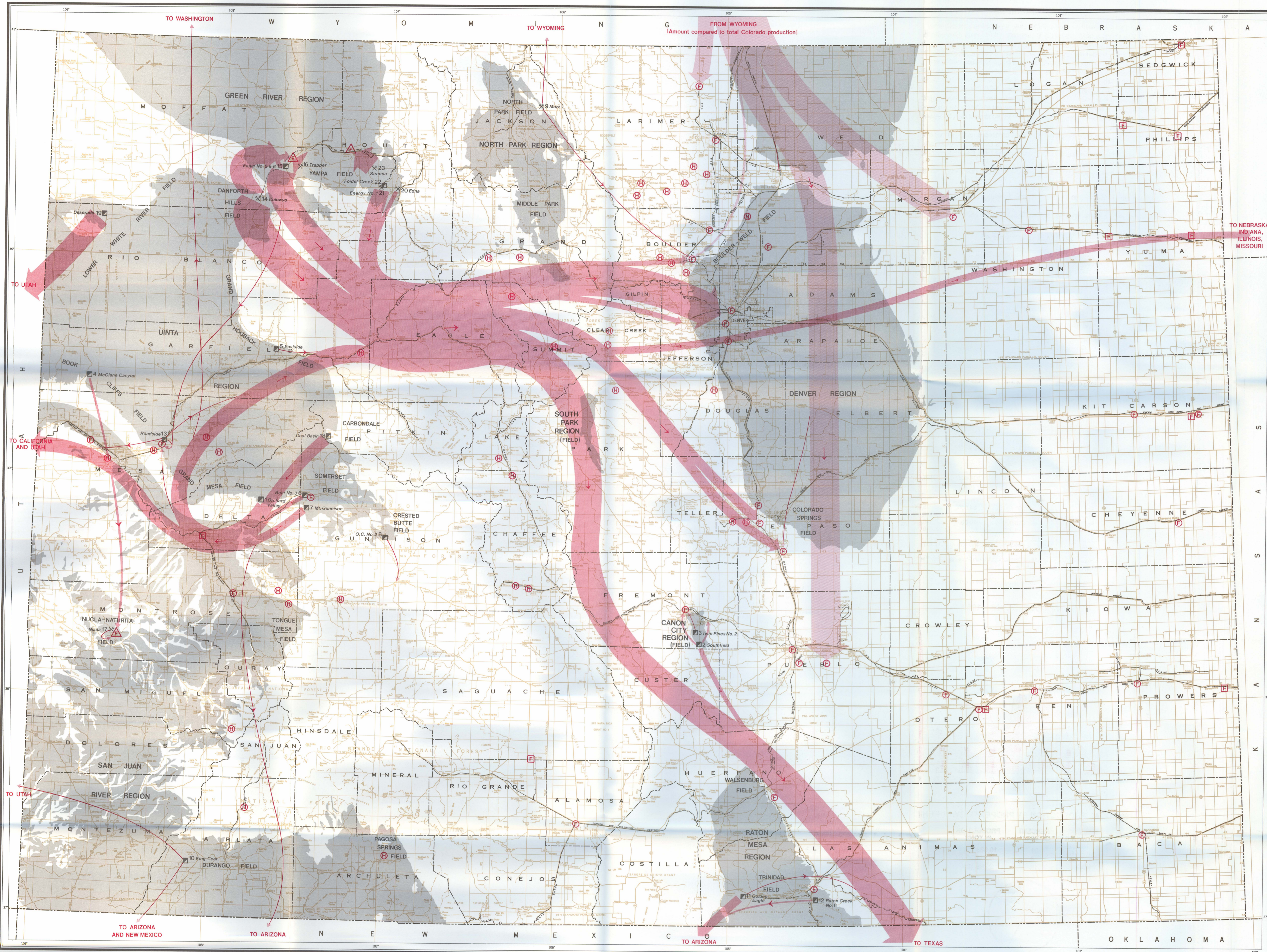
Percent Export _____ Destination _____ Use _____

Transportation Mode/Mixed Modes Haulage trucks from mine to power plant.

ADDITIONAL INFORMATION AND COMMENTS

Coal Production and Distribution and Electric Generation Map of Colorado, 1989

Compiled by Edwin A. Kuhn*



COAL RESOURCES

The eight coalbearing regions of Colorado encompass approximately 26,000 square miles, or 28 percent of the total area of Colorado. Over 434 billion tons of in-place coal resources are believed to remain in Colorado (Averitt, 1975, p. 14) above an overburden thickness of 6,000 feet, with nearly 129 billion tons above 3,000 feet. In terms of remaining identified bituminous coal resources, Colorado ranks second behind Illinois, but is first in terms of low-sulfur bituminous coal (Averitt, 1975, p. 22). The demonstrated reserve base of coal in Colorado on January 1, 1987 is estimated at 17.1 billion tons (DOE/EIA-0529(89)).

Colorado coals range in age from early Late Cretaceous to Eocene and ranks range from lignite to anthracite. Over 70 percent of Colorado's coal resources are bituminous—approximately 23 percent subbituminous, five percent lignite, and less than one percent anthracite.

Steam quality and metallurgical grade coal comprises nearly all current production. The Green River and Uinta Coal Regions furnish most of the bituminous steam coal, while the southeastern portion of the Uinta Region furnishes most of the metallurgical grade coal. Approximately four percent of coal consumption is industrial; approximately 96 percent is used for electrical generation.

REFERENCES

Averitt, Paul, 1975. Coal resources of the United States, January 1, 1974: U.S. Geological Survey Bulletin 412, 131 p.
Estimation of U.S. Coal Reserves By Coal Type DOE/EIA-0529(89).

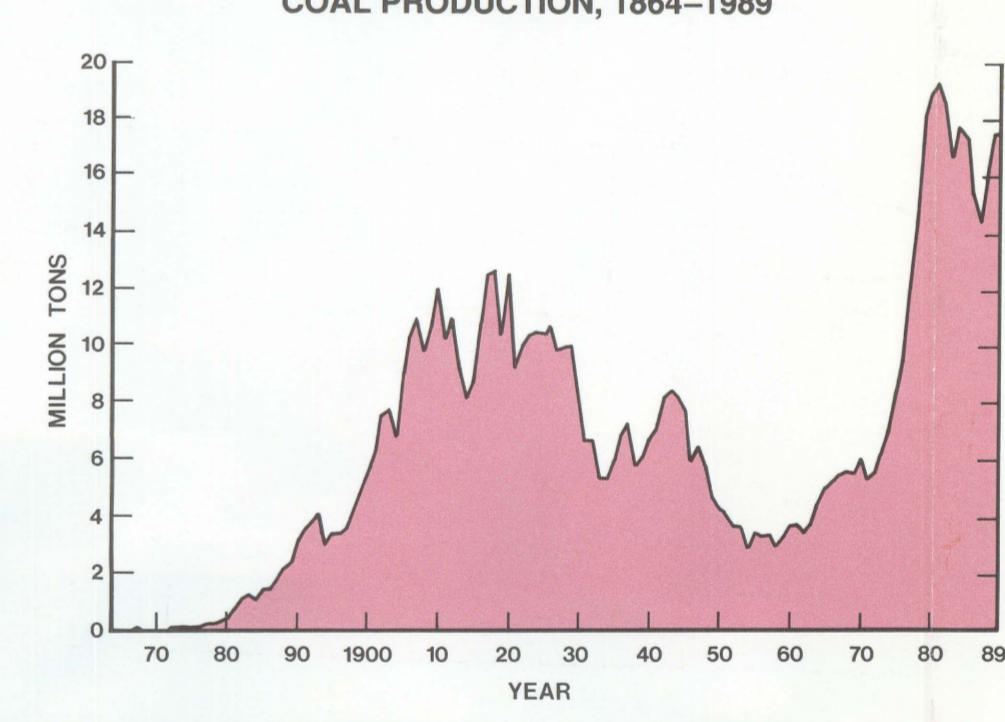
1989 COAL STATISTICS

COUNTY	MAP NO.	MINE	SHIPPED		TOTAL* PRODUCTION TONS
			IN-STATE	OUT-OF-STATE	
Delta	1	Orchard Valley	471,000	9,000	518,803
Fremont	2	Southfield	200,656	250,000	450,656
	3	Twin Pines No. 2	26,823		26,823
Garfield	4	McCane Canyon	140,493		140,493
	5	Eastside	2,487		2,487
Gunnison	6	Bear No. 3	33,000	261,736	294,736
	7	Mt. Gunnison	568,114	20,275	568,850
	8	O. C. Mine No. 2	4,282		4,282
Jackson	9	Marr	20,421	12,535	32,956
La Plata	10	King Coal	16,419	147,773	164,192
Las Animas	11	Golden Eagle	709,500	901,963	1,611,463
	12	Raton Creek No. 1	100,908	100,908	201,816
Mesa	13	Roadside	120,000	8,400	133,768
Moffat	14	Colowyo	2,646,479	1,562,884	4,235,445
	15	Eagle No. 5 & 6	2,123,000	140,000	2,263,000
	16	Trapper	2,196,623		2,196,623
Montrose	17	Nucla	42,301		42,301
Pitkin	18	Coal Basin		934,863	934,863
Routt	20	Edna	201,657	84,000	285,657
	21	Energy No. 1	283,000		283,000
	22	Fossil Creek	218,000	630,000	848,000
	23	Seneca	1,476,200		1,476,200
Total			10,790,955	6,458,191	17,427,889

Sources: Colorado Division of Mines, Coal Mine Operator's Annual Reports, 1989; Personal communication with coal mine operators.

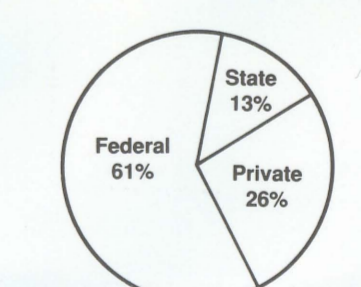
*Total production may differ from amount shipped due to stockpile inventory.

COAL PRODUCTION, 1864-1989



1989 COAL PRODUCTION BY PROPERTY OWNERSHIP

OWNER	PERCENT OF TOTAL	PRODUCTION IN TONS
Federal	61	10,583,253
Private	26	4,544,748
State	13	2,299,888



1989 INDUSTRIAL COAL CONSUMPTION

MAJOR CONSUMER	TONS	MINE, STATE
Coors	314,288	Colowyo, Colorado
	44,772	Keenesburg, Colorado
	17,722	Antelope, Wyoming
Subtotal	376,782	
Ideal Basic Industries	121,207	Southfield, Colorado
Fort Collins, Colorado	9,873	Marr, Colorado
Subtotal	131,080	
Western Sugar Company	55,140	Spring Creek, Montana
Fort Morgan, Colorado	40,018	Spring Creek, Montana
Subtotal	95,158	
Total	603,020	
Imports	112,880	
In-state	490,140	

*AEC estimations—actual amounts vary due to operator reports and withdrawal from stockpiles.

*Taken from 1988 production stockpile.

ELECTRICAL GENERATION

In 1989, a total of 32,164,691 kWh of electricity was produced within the state. This number represents net generation. Of this, an estimated 29,365,144 kWh was produced by coal-fired steam generation plants, 612,272 kWh by oil and/or gas in major coal-fired plants and assorted gas/oil-fired plants, 1,664,265 kWh by hydroelectric plants and 523,010 kWh by the nuclear-fueled plant.

Coal is the predominant fuel (91.3 percent of total generation), and of the total coal used, 65 percent is mined in-state while 35 percent is imported from out-of-state (mainly Wyoming). The construction of large coal-fired plants in recent years has caused numerous small city shutdown generation facilities, mainly located throughout eastern Colorado, to be out-of-service or placed on standby.

1989 MAJOR ELECTRIC UTILITY COAL CONSUMPTION

	TONS
Imports	5,442,249
In-State	10,244,442
Total	15,686,691

1989 STEAM ELECTRIC GENERATION AND CONSUMPTION

OWNER AND PLANT	NAME-PLATE RATING (MW)	NET GEN. KWH (x1000)	COAL TONS	FUEL CONSUMED NG (MCF)	OIL (BBL)	PRO-PANE (GALS)
W.N. Clark	30.0	106,083	—	1,898,305	445	—
Pueblo (IC)	10.0	1,895	—	339,423	3,300	—
Rocky Ford	7.5	18,173	—	—	—	—
Rocky Ford (IC)	10.0	1,706	—	—	2,986	—
Subtotal	96.0	353,219	129,737	2,392,840	6,731	—
City of Colorado Springs	62.6	34,387	—	518,645	—	—
George Birdsall	282.0	1,309,675	692,512	139,794	—	—
Martin Drake	207.0	1,340,572	629,900	—	4,448	—
Ray D. Nixon	551.6	2,684,634	1,322,412	658,439	4,448	—
Subtotal	1,193.2	5,668,673	1,322,412	658,439	4,448	—
Colorado Spings	190.0	1,389,990	661,249	14,497	—	—
Hayden No. 2 (JO)	275.4	1,935,487	936,597	—	4,134	—
Nucla	113.8	311,071	180,257	—	—	602,294
Craig No. 1 (JO)	446.4	2,975,043	1,532,680	41,847	46	—
Craig No. 2 (JO)	446.4	2,649,289	1,369,101	46,661	42	—
Craig No. 3	446.4	3,124,222	1,614,748	54,030	14	—
Subtotal	1,918.4	12,355,102	6,194,629	157,035	4,236	602,294
Platte River Power Authority	255.0	1,907,043	1,129,833	—	4,272	—
Rawhide	255.0	1,907,043	1,129,833	—	4,272	—
Public Service Co. of Colorado	232.0	1,009,487	526,561	75,211	—	—
Arapahoe	166.3	1,247,390	570,244	47,928	73	—
Cherokee (IC)	715.6	3,567,310	1,599,839	3,512,625	23	—
Zuni	101.0	10,325	—	215,624	1,112	—
Cameo	66.0	293,435	151,429	115,749	46	—
Comanche	700.0	3,751,373	2,289,187	11,557	10,658	—
Valmont (CT)	45.2	5,328	—	80,241	842	—
Fruita (CT)	18.7	1,863	—	40,330	8,705	—
Alamosa (CT)	33.2	2,000	—	23,220	2,011	—
Alamosa	18.0	—	—	—	—	—
Ft. Lupton (CT)	78.4	5,884	—	98,131	539	—
Alamosa	530.0	2,778,023	1,722,820	26,114	—	—
Subtotal	2,674.4	12,677,418	6,910,980	4,220,616	50,123	—
Ft. St. Vrain (NU)	336.0	523,010	—	—	—	—
Total	5831.4	30,500,426	15,686,691	7,426,930	69,610	602,294

MW—Megawatt
kWh—Kilowatt hour
MCF—Thousand cubic feet
BBL—Barrels
IC—Internal Combustion
CT—Combustion Turbine
NU—Nuclear (non-fossil fuel)
JO—Joint Ownership

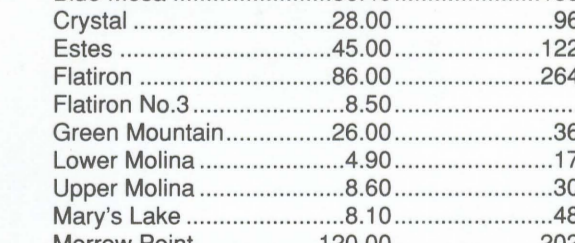
Source: Colorado Public Utilities Commission, DOE/EIA-005(88) Inventory of Power Plants in the United States.

1989 HYDROELECTRIC POWER GENERATION

OWNER	PLANT	NAME-PLATE RATING (MW)	KWH GENERATED (X 1000)
City of Boulder	Betasso	3.00	6,532
	Sunshine	0.70	3,755
	Orodel	0.22	218
	Kohler	0.15	89
	Maxwell	0.68	456
Subtotal		4.75	11,770
City of Colorado Springs	Manitou	5.00	24
	Ruxton	1.00	1
Subtotal		6.00	25
Colorado Ute Electric Association, Inc.	Ames	3.80	4,611
	Tacon	8.00	15,530
Subtotal		11.60	23,201
City of Denver	Dillon	1.80	12,244
	Foothills	3.10	10,900
	Roberts Tunnel	5.50	16,806
	Sironia Springs	1.00	7,433
	Williams Fort	3.00	5,627
Subtotal		14.40	53,010
City of Longmont	Longmont	0.50	81
Public Service Company of Colorado	Boulder	20.00	12,559
	Georgetown	1.44	6,572
	Palisade	3.00	17,379
	Salida	1.31	6,748
	Shoshone	14.40	100,957
	Cabin Creek	300.00	52,349
Subtotal		340.14	196,564
Redlands Water and Power Co.	Redlands	1.60	11,997
Bureau of Reclamation	Big Thompson	4.50	12,694
	Blue Mesa	85.00	155,528
	Crystal	28.00	96,264
	Estes	45.00	122,136
	Flatiron	86.00	264,150
	Flatiron No. 3	85.00	250,700
	Green Mountain	26.00	36,696
	Lower Molina	4.90	17,667
	Upper Molina	8.60	30,223
	Mary's Lake	8.10	46,641
	Morrow Point	120.00	202,357
	Mount Elbert	200.00	179,024
	Pole Hill	38.00	202,230
	Cabin Creek	300.00	1,367,617
Subtotal		1043.10	1,664,265

*Pump storage facility used 88,282,000 kWh for pumping

1989 ELECTRICAL OUTPUT BY ENERGY SOURCE



EDITED BY CAROL M. TREMAIN, Mineral Fuels Geologist, Colorado Geological Survey
DRAFTED BY CHERYL BRCHAN AND MARK MULCAHY

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This map is a revision of Plate 1 of Resources Series 26 (1983) by W. R. Taylor and L. R. Ladwig.

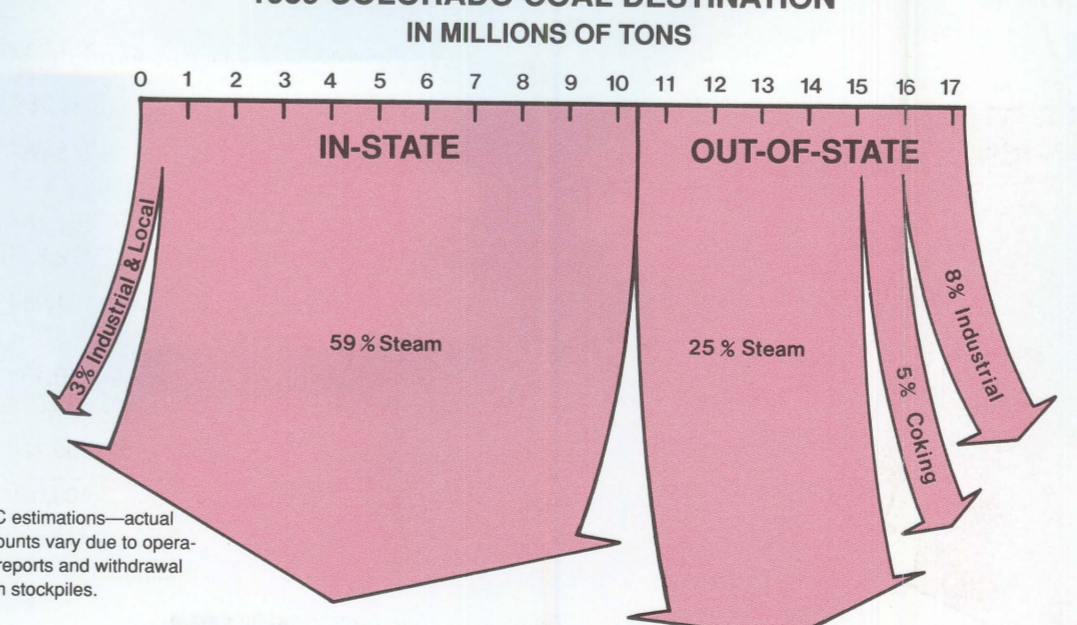
EXPLANATION

- Approximate coal region or field boundary
- DENVER REGION: Coal region name
- TRINIDAD FIELD: Coal field name
- X 9 Marr: Surface mine, number, and name (see Coal Statistics Table)
- 5 Eastside: Underground mine, number, and name (see Coal Statistics Table)
- Railroad
- Colorado coal movement direction
- Imported coal movement direction

ELECTRICAL GENERATION FACILITIES

- Coal/oil/gas fired (major facilities)
- Coal fired—mine mouth
- Hydroelectric
- Nuclear
- Standby (oil/gas)

1989 COLORADO COAL DESTINATION* IN MILLIONS OF TONS



*AEC estimations—actual amounts vary due to operator reports and withdrawal from stockpiles.