

Sunnyside Cogeneration Associates

P.O. Box 10, East Carbon, Utah 84520 • (801) 888-4476 • Fax (801) 888-2538

May 15, 1996

PFO

Mr. Randy Harden
STATE OF UTAH
Division of Oil, Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180

RE: Permit No. ACT/007/035: Sunnyside Cogeneration Associates
Water Monitoring

Dear Randy:

As you have requested per the draft TA (May 1, 1996), SCA has enclosed a modified Appendix 7-8 which adds the monitoring well B-6 to the operational monitoring schedule and adds several parameters to the post mining monitoring schedule.

Please call me at (801) 888-4476, if you have any questions regarding information in this submittal.

Sincerely,

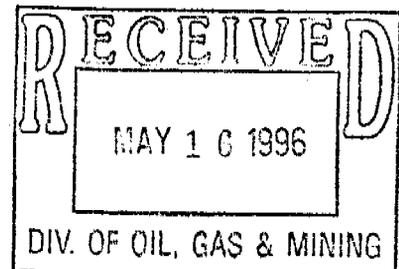
SUNNYSIDE COGENERATION ASSOCIATES

Danny Mattingly
Danny Mattingly
General Manager

DM/lls

Enclosure

c.c. Bob Evans, NRG
Tom Smith, NRG
Doug Burnham, B&W
Walt Strotz, B&W
Alane E. Boyd, EWP
Brian Burnett, CNM
Bill Malencik, DOGM



TRACKING FORM

I. KEY FEATURES OF PERMITTEE'S AMENDMENT APPLICATION

Permittee <i>Sunnyside Coeur</i>	Mine Name <i>Sunnyside Refuse</i>	Amendment # <i>ACT 1007/035-96B</i>	Date Received / By Whom <i>5-22-96</i>
Proposal: <i>Water Monitoring</i>			
Description: <i>Adding monitoring well B-6 to operational monitoring schedule - adds several parameters to the post mining monitoring schedule.</i>			

II. AMENDMENT CLASSIFICATION

<input checked="" type="checkbox"/> Major Amendment	Public Notice Required	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<input checked="" type="checkbox"/> Minor Amendment	Outside of Permit Area	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	Outside of Disturbed Area	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

III. SUMMARY OF DOGM PROCESSING DATES

Reviews Completed	<i>7/8/96</i>	FOLLOWUP REQUIREMENTS	
Approved Effective	<i>7/9/96</i>	MRP "After Const" Documents	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Disapproved		TA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Mailed	<i>7/9/96</i>	CHIA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Filed MRP - SLO		Responds Within 15 days of Receipt? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, explain below. <i>Reason: Operator sent amendment to SLC</i>	

IV. COORDINATED REVIEWS

EXTERNAL AGENCIES (Mine Specific) <small>(Adverse Comments, if Any, include in Item V)</small>	DOGM REVIEWS/DISCIPLINES		
	COPY SENT	CONTACTED	
OSM	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> C <input checked="" type="checkbox"/> N/A	Generalists <i>Walt</i> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
BLM	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> C <input checked="" type="checkbox"/> N/A	INTERDISCIPLINARY APPROACH
US Forest Service	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> C <input checked="" type="checkbox"/> N/A	- Administrative <input type="checkbox"/> Yes <input type="checkbox"/> N/A
US Fish & Wildlife	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> C <input checked="" type="checkbox"/> N/A	- Biology <input type="checkbox"/> Yes <input type="checkbox"/> N/A
US National Parks	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> C <input checked="" type="checkbox"/> N/A	- Engineering <input type="checkbox"/> Yes <input type="checkbox"/> N/A
UT Environmental Quality	<input type="checkbox"/> Y <input type="checkbox"/> N	<input checked="" type="checkbox"/> C <input type="checkbox"/> N/A	- Geology <input type="checkbox"/> Yes <input type="checkbox"/> N/A
UT Wildlife Resources	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> C <input checked="" type="checkbox"/> N/A	- Hydrology <i>Ken</i> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A
UT State History	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> C <input checked="" type="checkbox"/> N/A	- Soils <input type="checkbox"/> Yes <input type="checkbox"/> N/A
UT Water Rights	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> C <input checked="" type="checkbox"/> N/A	- Permitting <input type="checkbox"/> Yes <input type="checkbox"/> N/A
UT SITLA	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> C <input checked="" type="checkbox"/> N/A	- Other <input type="checkbox"/> Yes <input type="checkbox"/> N/A
Other	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> C <input type="checkbox"/> N/A	

V. FOOTNOTES/ADDITIONAL EXPLANATION AS NECESSARY

7/9/96 This amendment was generated by the Division to get Co-Gen monitoring plan in line with current guidelines. The main changes concern monitoring the same parameters for base line and operational. Review coordinated with Ken. **(B)**
8/5/96 Followup documents received and approved.

CHAPTER ONE
100 GENERAL CONTENTS

112 IDENTIFICATION OF INTERESTS

112.100 Statement as to Type of Entity

The Applicant, Sunnyside Cogeneration Associates (SCA), is a Utah joint venture between NRG Sunnyside Inc. ("NRG Sunnyside"), and B&W Sunnyside L.P. ("B&W Sunnyside"), a Delaware limited partnership. Information regarding these entities and other parent or controlling corporations appears in the Corporate Structure exhibit attached hereto. The relevant corporate relationships are also described in the sections that follow.

112.210 Information Regarding Applicant

Additional information regarding the applicant may be obtained by contacting:

<u>Local</u>	<u>NRG Sunnyside Venture Partner</u>	<u>B&W Sunnyside Venture Partner</u>
Sunnyside Cogeneration Associates Attn: Plant Manager P. O. Box 10 Sunnyside, UT 83539 EIN: 84-1027564	c/o NRG Energy, Inc. Attn: James J. Bender, Esq. 1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445 EIN: (Requested)	c/o Babcock & Wilcox Attn: Jack M. Arnold, Esq. 20 S. Van Buren Ave. P. O. Box 351 Barberton, OH 44203 EIN: (Requested)

Utah Counsel

Craig V. Wentz
Christensen & Jensen, P.C.
175 South West Temple
Suite 510
Salt Lake City, UT 84101

Environmental/Technical Contacts:

112.220 Information Regarding Resident Agent

Christensen & Jensen, P.C.
Attn: Craig V. Wentz
175 South West Temple
Suite 510
Salt Lake City, UT 84101
Telephone: (801) 355-3431
EIN: 87-0438249

112.230 Information Regarding Abandoned Mine Land Reclamation Fee:

On July 27, 1994, the Office of Surface Mining found that the waste material located with the SCA Permit Area has no value and is not subject to reclamation fees. Correspondence relating to this matter is included in Appendix 1-1. OSM-1 to be filed.

112.300-330 Information Regarding "Owners" and "Controllers"

The Applicant, SCA, is a Utah joint venture. SCA holds the contracts, property, and permits for the project in its name. Because the joint venture is essentially a partnership between NRG Sunnyside and B&W Sunnyside, SCA has no corporate information of its own. Therefore, the information required under §330 is provided for the joint venture partners, NRG Sunnyside and B&W Sunnyside, and their parent or controlling corporations. The information relevant to B&W Sunnyside traces to the parentage of the McDermott and Parsons entities. The information relevant to NRG Sunnyside traces to the parentage of the Northern States Power entities. Please, therefore, note the following:

THE MCDERMOTT ENTITIES

1. MCDERMOTT INTERNATIONAL, INC.

McDermott International is a Panama Corporation and publicly traded company. It's Employer identification number is 72-0593134. The officer and director information required under §330 is as follows:

Name	Date Position Assumed	SSN	Title	Address
R. E. Howson	8/88	[REDACTED]	Chairman of the Board and Chief Executive Officer	P. O. Box 61961 New Orleans, LA 70161
R. E. Howson	3/81	[REDACTED]	Director	P. O. Box 61961 New Orleans, LA 70161
B. A. Hattox	2/95	[REDACTED]	Executive Vice President and Chief Financial Officer	P. O. Box 61961 New Orleans, LA 70161
B. A. Hattox	6/93	[REDACTED]	Director	P. O. Box 61961 New Orleans, LA 70161
W. E. Boomer	2/95	[REDACTED]	Executive Vice President	1450 Poydras Street New Orleans, LA 70112
J. J. Stewart	2/95	[REDACTED]	Executive Vice President	P. O. Box 11165 Lynchburg, VA 24506
R. E. Woolbert	2/95	[REDACTED]	Executive Vice President and Chief Administrative Officer	P. O. Box 61961 New Orleans, LA 70161
R. J. Machen	11/94	[REDACTED]	Senior Vice President, China Marketing	Holiday Inn Lido Beijing, Rm. 418 Jichang Rd., Jiang Tai Rd. Beijing, China 100004
L. R. Purtell	5/93	[REDACTED]	Senior Vice President and General Counsel, Corporate Secretary, Director	P. O. Box 61961 New Orleans, LA 70161

Name	Date Position Assumed	SSN	Title	Address
E. A. Womack, Jr.	2/93	[REDACTED]	Senior Vice President and Chief Technical Officer	P. O. Box 61961 New Orleans, LA 70161
D. R. Gaubert	2/95	[REDACTED]	Vice President, Finance and Controller	P. O. Box 61961 New Orleans, LA 70161
G. W. Drinkwater	2/93	[REDACTED]	Vice President and General Manager, Washington Operations	1525 Wilson Blvd. Suite 100 Arlington, VA 22209
F. C. Allen, Jr.	5/93	[REDACTED]	Vice President, Environ- mental Affairs, Safety and Health, Risk Management	P. O. Box 61961 New Orleans, LA 70161
T. A. Henzler	9/89	[REDACTED]	Vice President- Tax Adminis- tration	P. O. Box 61961 New Orleans, LA 70161
J. D. Krueger	6/93	[REDACTED]	Vice President, Planning and Business Develop- ment	P. O. Box 61961 New Orleans, LA 70161
J. Ruckert	6/93	[REDACTED]	Vice President, McDermott Informa- tion Technology	P. O. Box 61961 New Orleans, LA 70161
F. J. San Miquel	6/93	[REDACTED]	Vice President- Marketing, Former Soviet Union and Eastern Europe	Albemarle House 1 Albemarle Street London W1X 3HF England

Name	Date Position Assumed	SSN	Title	Address
G. A. Stoddart	3/91	[REDACTED]	Vice President-Corporate Communications	245 Fifth Avenue Suite 502 New York, NY 10016
R. A. Jolliff	7/74	[REDACTED]	Treasurer	P. O. Box 61961 New Orleans, LA 70161
J. W. Brombacher	8/87	[REDACTED]	Assistant Treasurer	P. O. Box 61961 New Orleans, LA 70161
J. M. Arnold	8/92	[REDACTED]	Assistant Secretary	P. O. Box 61961 New Orleans, LA 70161
P. R. Buchler	8/90	[REDACTED]	Assistant Secretary	P. O. Box 61961 New Orleans, LA 70161
Y. de Hernandez	8/87	N/A Panamanian	Assistant Secretary	Domiciliary Office Edificio Vallarino 8vo Piso, Calle 52 y Elviro Mendez Apartado Postal 6-3053 Panama 6, Panama
S. W. Murphy	8/87	[REDACTED]	Assistant Secretary	P. O. Box 61961 New Orleans, LA 70161
R. J. Robicheaux	8/90	[REDACTED]	Assistant Secretary	P. O. Box 61961 New Orleans, LA 70161
R. E. Stumpf	8/87	[REDACTED]	Assistant Secretary	P. O. Box 61961 New Orleans, LA 70161
J. S. Tsai	11/94	[REDACTED]	Assistant Secretary	P. O. Box 61961 New Orleans, LA 70161
J. Tusa	11/94	[REDACTED]	Assistant Controller	P. O. Box 61961 New Orleans, LA 70161
T. D. Barrow	6/85	[REDACTED]	Director	5847 San Filipe Suite 3830 Houston, TX 77057
T. H. Black	6/93	[REDACTED]	Director	200 Chestnut Ridge Rd. Woodcliff Lake, NJ 07675
J. F. Bookout	11/88	[REDACTED]	Director	910 Louisiana Street Suite 5050 Houston, TX 77002
P.J. Burguiers	2/90	[REDACTED]	Director	1360 Post Oak Blvd. Suite 1000 Houston, TX 77056
J. L. Dutt	2/83	[REDACTED]	Director	10309 Ben Franklin Ct. Charlotte, NC 28277

Name	Date Position Assumed	SSN	Title	Address
J. A. Hunt	2/83	[REDACTED]	Director	R.D. #2, Box 534A Pleasant Valley, NY 12569
J. H. MacDonald	11/85	N/A (British)	Director	#18 Fairbourne Cobham Surrey KT22 2B5 England
W. McCollam, Jr.	11/90	[REDACTED]	Director	701 Pennsylvania Ave., N.W., 4th Floor Washington, D.C. 20004-2696
J. A. Morgan	2/83	[REDACTED]	Director	767 Fifth Avenue 8th Floor New York, NY 10153
J. N. Turner	6/93	N/A Canadian	Director	20 Queen Street West Box 27, Suite 2700 Toronto, Canada M5H 3S1

2. McDERMOTT INCORPORATED

McDermott Incorporated is a Delaware corporation. McDermott International, Inc owns 92% of its stock. The remaining 8% of McDermott Incorporated stock is publicly traded. Its employer identification number is 74-1032246. The officer and director information required under §330 is as follows:

Name	Date Position Assumed	SSN	Title	Address
R. E. Howson	8/88	[REDACTED]	Chairman of the Board and Chief Executive Officer	P. O. Box 60035 New Orleans, LA 70160
R. E. Howson	3/81	[REDACTED]	Director	P. O. Box 60035 New Orleans, LA 70160
B. A. Hattox	2/95	[REDACTED]	Executive Vice President and Chief Financial Officer, President Engineering and Industrial Group	P. O. Box 60035 New Orleans, LA 70160
B. A. Hattox	6/93	[REDACTED]	Director	P. O. Box 60035 New Orleans, LA 70160

Name	Date Position Assumed	SSN	Title	Address
R. E. Woolbert	2/95	[REDACTED]	Executive Vice President and Chief Administrative Officer	P. O. Box 60035 New Orleans, LA 70160
W.L. Higgins, III	2/93	[REDACTED]	Executive Vice President and Group Executive, Engineering and Industrial Group	801 N. Eldridge Houston, TX 77079
L. R. Purtell	5/93	[REDACTED]	Senior Vice President and General Counsel, Corporate Secretary, Director	P. O. Box 60035 New Orleans, LA 70160
E. A. Womack, Jr.	2/93	[REDACTED]	Senior Vice President and Chief Technical Officer	P. O. Box 60035 New Orleans, LA 70160
D. R. Gaubert	2/95	[REDACTED]	Vice President, Finance and Controller	P. O. Box 60035 New Orleans, LA 70160
G. W. Drinkwater	5/89	[REDACTED]	Vice President and General Manager, Washington Operations	1525 Wilson Blvd. Suite 100 Arlington, VA 22209
J. M. Pearson	8/94	[REDACTED]	Vice President and General Manager, McDermott International Shipbuilding	801 N. Eldridge Houston, TX 77079

Name	Date Position Assumed	SSN	Title	Address
F. C. Allen, Jr.	5/93	[REDACTED]	Vice President, Environmental Affairs, Safety and Health, Risk Management	P. O. Box 60035 New Orleans, LA 70160
T. A. Henzler	9/89	[REDACTED]	Vice President-Tax Administration	P. O. Box 60035 New Orleans, LA 70160
J. D. Krueger	6/93	[REDACTED]	Vice President, Planning and Business Development	P. O. Box 60035 New Orleans, LA 70160
J. Ruckert	6/93	[REDACTED]	Vice President, McDermott Information Technology	P. O. Box 60035 New Orleans, LA 70160
G. A. Stoddart	3/91	[REDACTED]	Vice President-Corporate Communications	245 Fifth Avenue Suite 502 New York, NY 10016
R. A. Jolliff	7/74	[REDACTED]	Treasurer	P. O. Box 60035 New Orleans, LA 70160
J. W. Brombacher	8/87	[REDACTED]	Assistant Treasurer	P. O. Box 60035 New Orleans, LA 70160
J. M. Arnold	8/92	[REDACTED]	Assistant Secretary	P. O. Box 60035 New Orleans, LA 70160
P. R. Buchler	8/90	[REDACTED]	Assistant Secretary	P. O. Box 60035 New Orleans, LA 70160
S. W. Murphy	8/87	[REDACTED]	Assistant Secretary	P. O. Box 60035 New Orleans, LA 70160
R. E. Stumpf	8/87	[REDACTED]	Assistant Secretary	P. O. Box 60035 New Orleans, LA 70160
J. S. Tsai	11/94	[REDACTED]	Assistant Secretary	P. O. Box 60035 New Orleans, LA 70160
D. L. Ward	12/94	[REDACTED]	Assistant Secretary	801 N. Eldridge Houston, TX 77079

Name	Date Position Assumed	SSN	Title	Address
J. Tusa	11/94	██████████	Assistant Controller	P. O. Box 60035 New Orleans, LA 70160

3. BABCOCK & WILCOX INVESTMENT COMPANY

Babcock & Wilcox Investment Company is a Delaware corporation and is a wholly owned subsidiary of McDermott Incorporated. Its employer identification number is 72-1172705. The officer and director information required under §330 is as follows:

Title	Name	Address	SSN	Date Position Assumed
Chairman	Robert E. Howson	One River Place Suite 10C/D 3 Poydras Street New Orleans, LA 70112	██████████	7-90
Director	Brock A. Hattox	30 Lakewood Estates New Orleans, LA 70112	██████████	10-93
Director	Lawrence R. Purtell	13 Rosedown Ct. New Orleans, LA 70131	██████████	5-93
Chief Executive Officer	Robert E. Howson	One River Place Suite 10C/D 3 Poydras Street New Orleans, LA 70112	██████████	8-90
President, Babcock & Wilcox Government Group	Joe J. Stewart	137 E. Fairlawn Blvd. Akron, OH 44313	██████████	2-95
President, Babcock & Wilcox Power Generation Group	Walter E. Boomer	1450 Poydras Street New Orleans, LA 70112	██████████	2-95
Executive Vice President & Chief Financial Officer	Brock A. Hattox	30 lakewood Estates New Orleans, LA 70131	██████████	2-95
Senior Vice President & Group Executive, Government Group	Elbert O. Hooker	P. O. Box 11963 Lynchburg, VA 24506-1963	██████████	2-95
Senior Vice President & Group Executive, Power Generation Group	Paul P. Koenderman	3734 Northshore Dr. Akron, OH 44333	██████████	6-93

Title	Name	Address	SSN	Date Position Assumed
Senior Vice President & General Counsel and Secretary	Lawrence R. Purtell	13 Rosedown Ct. New Orleans, LA 70131	[REDACTED]	5-93
Senior Vice President & Chief Technical Officer	Edgar A. Womack, Jr.	7412 Jade St. New Orleans, LA 70124	[REDACTED]	2-93
Executive Vice President and Group Executive Engineering and Industrial Group	W. L. Higgins III	15430 Walkwood Drive Houston, TX 77079	[REDACTED]	2-93
Executive Vice President & Chief Administrative Officer	Richard E. Woolbert	7466 Jade St. New Orleans, LA 70124	[REDACTED]	2-95
Vice President & Group Executive, International	Paul E. Ralston	934 Stonebrook Rd. Ontario, CANADA N1T-1H5	[REDACTED]	6-94
Vice President & Controller	Daniel R. Gaubert	18 Muirfield New Orleans, LA 70131	[REDACTED]	2-95
Vice President & General Manager	James A. Conner, Jr.	Route 2, Box 484 Appomattox, VA 24522	[REDACTED]	8-91
Vice President & General Manager	William M. Farrell	5400 Winthrop Ct. Evansville, IN 47715	[REDACTED]	7-90
Vice President & General Manager	James S. Kulig	441 Buckingham Lane Lancaster, OH 43130	[REDACTED]	8-9-94
Vice President & General Manager	John R. Woolsey	413 Church Street Doylestown, OH 44230	[REDACTED]	2-91

Title	Name	Address	SSN	Date Position Assumed
Vice President, Environmental Health and Safety and Risk Management	Frank C. Allen, Jr.	855 E. Scenic Dr. Pass Christian, MS 39571	[REDACTED]	5-93
Vice President, Marketing, Eastern Europe	George J. Clessuras	30 Wellgate Drive Hudson, OH 44236	[REDACTED]	8-9-94
Vice President, Tax Administration	Thomas H. Henzler	26 Belle Grove Dr. Destrehan, LA 70047	[REDACTED]	8-91
Vice President, Planning	John D. Kreuger	2409 Chelsea Dr. New Orleans, LA 70131	[REDACTED]	6-93
Vice President, Power Generation, Sales & Service	John E. Pollock	1721 Rock Hill Lane Akron, OH 44313	[REDACTED]	7-90
Vice President, Operations Fossil Power Division	Richard D. Pummel	4845 Earls court Circle, NW Canton, OH 44718	[REDACTED]	3-93
Vice President, Research & Development	John M. Rackley	2174 Sunray Circle Alliance, OH 44601	[REDACTED]	4-93
Vice President, Information Technology	John Ruckert, Jr.	6215 Clara Street New Orleans, LA 70118	[REDACTED]	6/93
Treasurer	Robert A. Jolliff	3 Patricia Court Luling, LA 70070	[REDACTED]	7-90
Assistant Treasurer	John W. Brombacher	121 N. Livingston Pl. Metairie, LA 70005	[REDACTED]	7-90
Assistant Secretary	Jack M. Arnold	2709 Comet Street New Orleans, LA 70131	[REDACTED]	9-91
Assistant Secretary	S. Wayne Murphy	201 Nicholson Ave. Waveland, MS 39576	[REDACTED]	7-90
Assistant Secretary	Robert E. Stumpf	2710 Valentine Court New Orleans, LA 70131	[REDACTED]	7-90
Assistant Secretary	John S. Tsai	6477 Louis XIV Street New Orleans, LA 70124	[REDACTED]	9-94

Title	Name	Address	SSN	Date Position Assumed
Assistant Controller	J. Tusa	1450 Poydras Street New Orleans, LA 70112	435-56-2846	11-94

4. THE BABCOCK & WILCOX COMPANY

Babcock & Wilcox Company is a Delaware corporation and is a wholly owned subsidiary of Babcock & Wilcox Investment Company. Its employer identification number is 13-2933685. The officer and director information required under §330 is as follows:

Name	Date Position Assumed	SSN	Title	Address
R. E. Howson	8/90	[REDACTED]	Chairman of the Board and Chief Executive Officer	One River Place Suite 10C/D 3 Poydras Street New Orleans, LA 70130
R. E. Howson	3/81	[REDACTED]	Director	One River Place Suite 10C/D 3 Poydras Street New Orleans, LA 70130
W. E. Boomer	2/95	[REDACTED]	President, Babcock & Wilcox, Power Generation Group	1450 Poydras Street New Orleans, LA 70112
J. J. Stewart	2/95	[REDACTED]	President, Babcock & Wilcox, Government Group	137 E. Fairlawn Blvd. Akron, OH 44313
R. E. Woolbert	2/95	[REDACTED]	Executive Vice President and Chief Administrative Officer	7466 Jade Street New Orleans, LA 70124
W.L. Higgins, III	2/93	[REDACTED]	Executive Vice President and Group Executive, Engineering and Industrial Group	15430 Walkwood Drive Houston, TX 77079

Name	Date Position Assumed	SSN	Title	Address
E. O. Hooker	8/92	██████████	Senior Vice President and Group Executive, Government Group	P. O. Box 11963 Lynchburg, VA 24506- 1963
P. P. Koenderman	6/93	██████████	Senior Vice President and Group Executive, Power Generation Group	3734 Northshore Drive Akron, OH 44333
L. R. Purtell	5/93	██████████	Senior Vice President and General Counsel, Corporate Secretary, Director	13 Rosedown Ct. New Orleans, LA 70131
E. A. Womack, Jr.	2/93	██████████	Senior Vice President and Chief Technical Officer	7412 Jade Street New Orleans, LA 70124
P. E. Ralston	6/94	██████████	Vice President and Group Executive B&W Internat- ional Group	934 Stonebrook Road Ontario, Canada N1T 1H5
D. R. Gaubert	2/95	██████████	Vice President, Finance and Controller	18 Muirfield New Orleans, LA 70131
J. A. Conner	8/91	██████████	Vice President and General Manager, Naval Nuclear Fuel Division	Rt. 2, Box 484 Appomattox, VA 24522

Name	Date Position Assumed	SSN	Title	Address
W. M. Farrell	8/90	[REDACTED]	Vice President and General manager, Energy Services Division and Vice President, Fossil Manufacturing	5400 Winthrop Ct. Evansville, IN 47715
J. S. Kulig	8/94	[REDACTED]	Vice President and General manager B&W International Fossil Operations and Environmental Equipment Division	441 Buckingham Lane Lancaster, OH 43130
J. R. Woolsey	2/91	[REDACTED]	Vice President and General Manager Nuclear Equipment Division	413 Church Street Doylestown, OH 44230
F. C. Allen, Jr.	5/93	[REDACTED]	Vice President, Environmental Affairs, Safety and Health, Risk Management	855 E. Scenic Drive Pass Christian, MS 39571
G. J. Clessuras	8/94	[REDACTED]	Vice President, Marketing, Eastern Europe	30 Wellgate Drive Hudson OH 44236
T. A. Henzler	9/89	[REDACTED]	Vice President-Tax Administration	26 Belle Grove Drive Destrehan, LA 70047

Name	Date Position Assumed	SSN	Title	Address
J. D. Krueger	6/93	[REDACTED]	Vice President, Planning and Business Develop- ment	2409 Chelsea Drive New Orleans, LA 70131
J. E. Pollack	8/90	[REDACTED]	Vice President, Power Generation Sales & Service	1721 Rock Hill Lane Akron, OH 44313
R. D. Pummell	3/93	[REDACTED]	Vice President, Operations Fossil Powre Division - Operations	4845 Earls court Circle, NW Canton, OH 44718
J. M. Rackley	4/93	[REDACTED]	Vice President, Research and De- velopment Division	2174 Sunray Circle Alliance, OH 44601
J. Ruckert	6/93	[REDACTED]	Vice President, McDermott Informa- tion Technology	6215 Clara Street New Orleans, LA 70118
R. A. Jolliff	7/74	[REDACTED]	Treasurer	3 Patricia Ct. Luling, LA 70070
J. W. Brombacher	8/87	[REDACTED]	Assistant Treasurer	121 N. Livingston Place Metairie, LA 70005
J. M. Arnold	9/91	[REDACTED]	Assistant Secretary	2709 Comet Street New Orleans, LA 70131
S. W. Murphy	8/87	[REDACTED]	Assistant Secretary	201 Nicholson Avenue Waveland, MS 39576
R. E. Stumpf	8/87	[REDACTED]	Assistant Secretary	2710 Valentine Ct. New Orleans, LA 70131
J. S. Tsai	9/94	[REDACTED]	Assistant Secretary	6477 Louis XIV Street New Orleans, LA 70124
J. Tusa	12/94	[REDACTED]	Assistant Controller	1450 Poydras Street New Orleans, LA 70160

5. BABCOCK & WILCOX EQUITY INVESTMENTS, INC.

Babcock & Wilcox Equity Investments, Inc. is a Delaware corporation and is a wholly owned subsidiary of Babcock & Wilcox Company. Its employer identification number is 72-1037733. The officer and director information required under §330 is as follows:

Name	Date Position Assumed	SSN	Title	Address
Brock A. Hattox	10/93	[REDACTED]	Director	30 Lakewood Estates New Orleans, LA 70131
Robert E. Howson	7/90	[REDACTED]	Director	3 Poydras Street New Orleans, LA 70112
Lawrence R. Purtell	5/93	[REDACTED]	Director	13 Rosedown Ct. New Orleans, LA 70131
Walter E. Boomer	2/95	[REDACTED]	Director	1450 Poydras Street New Orleans, LA 70112
Walter E. Boomer	2/95	[REDACTED]	President and Chief Operating Officer	1450 Poydras Street New Orleans, LA 70112
Brock A. Hattox	2/95	[REDACTED]	Senior Vice President and Chief Financial Officer	30 Lakewood Estates New Orleans, LA 70131
Paul P. Koenderman	6/93	[REDACTED]	Senior Vice President and Group Executive	3734 Northshore Dr. Akron, OH 44333
Lawrence R. Purtell	5/93	[REDACTED]	Senior Vice President and General Counsel	13 Rosedown Ct. New Orleans, LA 70131
Thomas A. Henzler	12/10/84	[REDACTED]	Vice President, Tax Administration	26 Belle Grove Dr. Destrehan, LA 70047
Robert A. Jolliff	12/10/84	[REDACTED]	Treasurer	3 Patricia Ct. Luling, LA 70070
John S. Tsai	9/94	[REDACTED]	Secretary	6477 Louis XIV St. New Orleans, LA 70124
Robert E. Stumpf	12/10/84	[REDACTED]	Assistant Secretary	2710 Valentine Ct. New Orleans, LA 70131

6. B&W SUNNYSIDE INC.

B&W Sunnyside Inc. is a Delaware corporation and is a wholly owned subsidiary of Babcock & Wilcox Equity Investments, Inc. Its employer identification number has been requested. The officer and director data required under §330 is as follows:

Directors:

Brock A. Hattox	12-20-94	[REDACTED]	Director	1450 Poydras Street New Orleans, LA 70112
Robert E. Howson	12-20-94	[REDACTED]	Chairman	1450 Poydras Street New Orleans, LA 70112
Paul P. Koenderman	12-20-94	[REDACTED]	Director	20 South Van Buren Ave. Barberton, OH 44203
Lawrence R. Purtell	12-20-94	[REDACTED]	Director	1450 Poydras Street New Orleans, LA 70112

Officers:

Name	Date Position Assumed	SSN	Title	Address
Michael Antopolski	12-20-94	[REDACTED]	President	20 South Van Buren Ave. Barberton, OH 44203
Brock A. Hattox	12-20-94	[REDACTED]	Senior Vice President and Chief Financial Officer	1450 Poydras Street New Orleans, LA 70112
Lawrence R. Purtell	12-20-94	[REDACTED]	Senior Vice President and General Counsel	1450 Poydras Street New Orleans, LA 70112
Stephanie A. Baronak	12-20-94	[REDACTED]	Vice President, Operations	20 South Van Buren Ave. Barberton, OH 44203
Thomas A. Henzler	12-20-94	[REDACTED]	Vice President, Tax Adminis- tration	1450 Poydras Street New Orleans, LA 70112
Mahadeva Ramnath	12-20-94	[REDACTED]	Vice President	20 South Van Buren Ave. Barberton, OH 44203
Robert E. Wascher	12-20-94	[REDACTED]	Vice President	20 South Van Buren Ave. Barberton, OH 44203
Robert A. Jolliff	12-20-94	[REDACTED]	Treasurer	1450 Poydras Street New Orleans, LA 70112
Jack M. Arnold	12-20-94	[REDACTED]	Secretary	1450 Poydras Street New Orleans, LA 70112
Robert E. Stumpf	12-20-94	[REDACTED]	Assistant Secretary	1450 Poydras Street New Orleans, LA 70112

THE PARSONS ENTITIES

1. THE PARSONS CORPORATION

The Parsons Corporation is an employee owned Massachusetts corporation. Its employer identification number is 95-3232481. The officer and director information required under §330 is as follows:

Leonard J. Pieroni	5/15/90	[REDACTED]	Chairman	100 W. Walnut St. Pasadena, CA 91124
Howard P. Allen	5/28/91	[REDACTED]	Director	S/Calif. Edison Co. 2244 Walnut Grove Ave. No. 428 P. O. Box 800 Rosemead, CA 91770
Fred H. Felberg	3/6/78	[REDACTED]	Director	Jet Propulsion Lab Calif. Inst. Tech. 4800 Oak Grove Drive Pasadena, CA 91109
Jack D. Kuehler	5/24/94	[REDACTED]	Director	P. O. Box 11130 Telluride, CO 81435
Thomas L. Langford	5/16/89	[REDACTED]	Director	100 West Walnut St. Pasadena, CA 91124
Lawrence R. Tollenaere	5/26/92	[REDACTED]	Director	Ameron, Inc. 245 South Las Robles Pasadena, CA 91101- 2894
Earle C. Williams	5/26/92	[REDACTED]	Director	715 Potomac Knolls Dr. McClain, VA 22102
Leonard J. Pieroni	5/15/90	[REDACTED]	Chief Executive Officer	100 West Walnut St. Pasadena, CA 91124
Thomas L. Langford	10/1/91	[REDACTED]	President	100 West Walnut St. Pasadena, CA 91124
Curtis A. Bower	1/1/91	[REDACTED]	Senior Vice President, Chief Financial Officer and Treasurer	100 West Walnut St. Pasadena, CA 91124
Ralph R. DiSibio	9/27/94	[REDACTED]	Vice President	Ralph M. Parsons Co. 1133 15th Street, NW Washington, DC 20005
Gary L. Stone	1/1/84	[REDACTED]	Vice President & Secretary	100 West Walnut St. Pasadena, CA 91124
William Jack Hargett	7/17/90	[REDACTED]	Vice President	Ralph M. Parsons Co. 1133 15th Street NW Washington, DC 20005
Patrick G. Woosley	1/28/85	[REDACTED]	Vice President	100 West Walnut St. Pasadena, CA 91124

Susan Cole	5/16/89; 5/26/92	[REDACTED]	Vice President; Assistant Secretary	100 West Walnut St. Pasadena, CA 91124
Graydon A. Thayer	1/1/92	[REDACTED]	Vice President	100 West Walnut St. Pasadena, CA 91124
P. Roger Fetterolf	5/16/89	[REDACTED]	Assistant Secretary	100 West Walnut St. Pasadena, CA 91124
Lawrence D. Mitchell, Jr.	10/28/94	[REDACTED]	Assistant Secretary	Parsons Financial Service Company 12621 Featherwood Houston, TX 77034

2. MAIN SUNNYSIDE, INC.

Main Sunnyside, Inc. is a Massachusetts corporation and is a wholly owned subsidiary of the Parsons Corporation. Its employer identification number is 87-0483152. The officer and director information required under §330 is as follows:

James T. Callahan	11/28/90	[REDACTED]	Director	Parsons Main, Inc. Prudential Center SE Tower Boston, MA 02199
Sidney B. Barnes, Jr.	11/28/90	[REDACTED]	Director	Parsons Main, Inc. Prudential Center SE Tower Boston, MA 02199
Curtis A. Bower	4/15/92	[REDACTED]	Director	100 West Walnut St. Pasadena, CA 91124
James T. Callahan	12/10/90	[REDACTED]	President	Parsons Main, Inc. Prudential Center SE Tower Boston, MA 02199
Curtis A. Bower	4/15/92	[REDACTED]	Senior Vice President and Treasurer	100 West Walnut St. Pasadena, CA 91124
Sidney B. Barnes, Jr.	12/10/90	[REDACTED]	Senior Vice President	Parsons Main, Inc. Prudential Center SE Tower Boston, MA 02199
Gary L. Stone	12/10/90	[REDACTED]	Vice President and Secretary	100 West Walnut St. Pasadena, CA 91124
Susan Cole	4/15/92	[REDACTED]	Vice President and Assistant Secretary	100 West Walnut St. Pasadena, CA 91124

John R. Del Checcolo	4/15/92	██████████	Assistant Secretary	Parsons Main, Inc. Prudential Center SE Tower Boston, MA 02199
P. Roger Fetterolf	12/10/90	██████████	Assistant Secretary	100 West Walnut St. Pasadena, CA 91124

**B&W SUNNYSIDE L.P., one of the Joint
Venture Partners of SCA.**

B&W Sunnyside L.P. is a Delaware limited partnership. The sole general partner, which holds a 50% interest in the partnership is B&W Sunnyside Inc. The sole limited partner, which holds a 50% interest in the partnership, is Main Sunnyside, Inc. B&W Sunnyside L.P. is the successor to the joint venture interest of Kaiser Power of Sunnyside, Inc. Its employer identification number has been requested. The officer and director information required under §330 has been set forth above with respect to the McDermott and the Parsons entities.

NORTHERN STATES POWER ENTITIES

1. NORTHERN STATES POWER COMPANY

Northern States Power Company is a Minnesota Corporation and publicly traded utility. Its employer identification number is 41-0448030. The officer and director information required under §330 is as follows:

Title	Name	Address	SSN	Date Position Assumed
Corporate Officer and President	Edwin M. Theisen	414 Nicollet Mall Minneapolis, MN 55401	██████████	11-30-94
Executive Vice President	Craig J. Blair	414 Nicollet Mall Minneapolis, MN 55401	██████████	12-1-92
Corporate Officer and Executive Vice President	James T. Doudiet	414 Nicollet Mall Minneapolis, MN 55401	██████████	12-1-92
President and Executive Vice President	Roland J. Jensen	414 Nicollet Mall Minneapolis, MN 55401	██████████	2-7-92
Executive Vice President	Hazel R. O'Leary	414 Nicollet Mall Minneapolis, MN 55401	██████████	12-16-92
President	Hazel R. O'Leary	414 Nicollet Mall Minneapolis, MN 55401	██████████	1-10-93
Senior Vice President	Vincent E. Beacom	414 Nicollet Mall Minneapolis, MN 55401	██████████	12-16-92

Title	Name	Address	SSN	Date Position Assumed
Vice President	Vincent E. Beacom	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	7-31-94
Senior Vice President	Charles E. Larson	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	12-16-92
Vice President	Ronald H. Clough	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	12-16-92
Vice President	Leon R. Eliason	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	12-16-92
President	Leon R. Eliason	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	9-7-94
Vice President	John A. Noer	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	2-29-92
Vice President	David H. Peterson	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	2-7-92
Vice President	Robert H. Schulte	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	1-1-93
Vice President	James R. Tacheny	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	8-31-92
Secretary	Hollies M. Winston	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	8-15-93
Vice President	Arland D. Brusven	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	7/1/94
Vice President, General Counsel, Corporate Secretary	Gary R. Johnson	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	4/1/94
President	Loren L. Taylor	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	11/1/94
President	Keith H. Wieteci	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	1/13/93
Controller, Vice President	Roger D. Sandeen	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	5/1/92

Title	Name	Address	SSN	Date Position Assumed
Vice President	Joseph L. Wolf	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	5-10-93
Director	H. Lyman Bretting	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	3/90
Director	David A. Christensen	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	12/76
Director	W. John Driscoll	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	11/74
Director	Dale L. Haakenstad	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	2/78
Chairman of the Board	James J. Howard	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	1/87
Chief Executive Officer	James J. Howard	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	12/1/94
Director	Allen F. Jacobson	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	1/83
Director	Richard M. Kovacevich	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	4/90
Director	Douglas W. Leatherdale	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	4/91
Director	John E. Pearson	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	12/83
Director	G. M. Pieschel	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	2/78
Director	Dr. Margaret R. Preska	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	1/80
Director	A. Patricia Sampson	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	1/85
Director	Edwin M. Theisen	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	1/90

2. NRG ENERGY, INC.

NRG Energy, Inc. is a Delaware corporation and is a wholly owned subsidiary of Northern States Power Company. Its employer identification number is 41-1724239. The officer and director information required under §330 is as follows:

Title	Name	Address	SSN	Date Position Assumed
Assistant General Counsel & Corporate Secretary	James J. Bender	1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445	[REDACTED]	12-6-94
Vice President and Chief Financial Officer	Leonard A. Bluhm	1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445	[REDACTED]	5-19-93
Controller	Valorie A. Bornetun	1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445	[REDACTED]	8-5-93
Treasurer	Lee R. Carlson	1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445	[REDACTED]	9-30-92
Vice President, International Business Development & Marketing	Carl A. Carreca	1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445	[REDACTED]	12-6-94
Vice President & General Counsel	Julie A. Jorgensen	1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445	[REDACTED]	12-6-94
Vice President, U.S. Business Development	Craig A. Mataczynski	1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445	[REDACTED]	12-6-94
Chairman, President & CEO	David H. Peterson	1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445	[REDACTED]	1-31-94
Vice President, Human Resources & Administration	Louise T. Routhe	1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445	[REDACTED]	4-29-92

Title	Name	Address	SSN	Date Position Assumed
Vice President, Operations & Engineering	Ronald J. Will	1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445	[REDACTED]	5-11-94
Director	Jackie A. Currier	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	1-21-93
Director	Gary R. Johnson	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	2-1-93
Director	Edward J. McIntyre	414 Nicollet Mall Minneapolis, MN 55401	[REDACTED]	5-27-92
Director	David H. Peterson	1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445	[REDACTED]	7-10-89

**3. NRG SUNNYSIDE INC., also a Joint
Venture Partner of SCA.**

NRG Sunnyside, Inc. is a Delaware corporation and is a wholly owned subsidiary of NRG Energy, Inc. Its employer identification number has been requested. NRG Sunnyside, Inc. is a successor to the joint venture interest of Kaiser Systems, Inc. The officer and director information required under §330 is as follows:

Officers:

Name	Date Position Assumed	SSN	Title	Address
David H. Peterson	12-29-94	[REDACTED]	President	NRG Energy, Inc. 1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445
James J. Bender	12-29-94	[REDACTED]	Secretary	same as above
LouAnn Bohn	12-29-94	[REDACTED]	Vice President	same as above
Lee R. Carlson	12-29-94	[REDACTED]	Treasurer	same as above

Directors:

David H. Peterson	1-11-95	[REDACTED]	Director	NRG Energy, Inc. 1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445
James J. Bender*	12-28-94	[REDACTED]	Director	same as above
LouAnn Bohn	12-28-94	[REDACTED]	Director	same as above

*Resigned 1-11-95

THE OPERATIONAL ENTITY

SUNNYSIDE OPERATIONS ASSOCIATES, L.P.

Sunnyside Operations Associates is a Delaware limited partnership formed to operate SCA. As heretofore mentioned, SCA's joint venture partners are NRG Sunnyside Inc. and B&W Sunnyside Inc.

Management Committee Members from NRG Sunnyside Inc. are identified as follows:

LouAnn Bohn	[REDACTED]	NRG Energy, Inc. 1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445
Ronald J. Will	[REDACTED]	NRG Energy, Inc. 1221 Nicollet Mall Suite 700 Minneapolis, MN 55403-2445

Management Committee Members from B&W Sunnyside L.P. are identified as follows:

Mahadeva Ramnath	[REDACTED]	20 South Van Buren Ave. Barberton, OH 44203
Robert E. Wascher	[REDACTED]	20 South Van Buren Ave. Barberton, OH 44203

112.340-420 Further Information Regarding Owners and Controllers

Neither B&W Sunnyside L.P., nor NRG Sunnyside Inc., nor their owners or controllers, has owned or controlled a coal mining and reclamation operation in the United States within five years preceding the date of this Application, nor do they have interests in any pending coal mine operation permit applications except for the following:

B & W Sunnyside L.P.

ESI Ebensburg, Inc., an unaffiliated third party, and Babcock & Wilcox Ebensburg Power, Inc., a wholly owned subsidiary of Babcock & Wilcox Equity Investments Inc. (see Project Company Structure Chart) respectively own a 99% (limited partnership) and a 1% (general partnership) interest in the Ebensburg Investors Limited Partnership ("Partnership"). The Partnership and Babcock & Wilcox Ebensburg Power, Inc. respectively own 50.5% and 49.5% general partnership interests in the Ebensburg Power Company, a Pennsylvania Partnership. Ebensburg Power Company holds easement and option rights which entitle it to use waste coal generated by a third party coal mining and reclamation operation located in the State of Pennsylvania.

NRG Sunnyside Inc.

NRG Energy Jackson Valley Energy I, Inc. and NRG Energy Jackson Valley II, Inc., wholly owned subsidiaries of NRG Energy, Inc. (see Project Company Structure Chart) respectively own a 2% (general partnership) and a 48% (limited partnership) interest in Jackson Valley Energy Partners, L.P. ("Partnership"). Power Partners and Volkar/Coombs Partners, unaffiliated third parties, respectively own a 2% (general partnership) and a 48% (limited partnership) interest in the Partnership. The Partnership owns and controls a cogeneration facility and a lignite mining and reclamation operation located in the State of California.

* * *

Savage Industries is presently contracted to SCA to remove coal from the coarse refuse pile. Sunnyside Coal Company operates on the site under another coal mine permit and has entered into an operating agreement with SCA for overlapping permit areas. Information regarding Savage Industries and Sunnyside Coal Company follows:

Sunnyside Coal Company
(unverified)

The names and addresses of the officers and directors of Sunnyside Coal Company are as follows:

Officers

Robert M. Burnham	President	The Registry 1113 Spruce Street Boulder, CO 80302
Ceanne R. Mayo	Secretary	P. O. Box 99 Sunnyside, UT 84539

Directors

Robert M. Burnham		The Registry 1113 Spruce Street Boulder, CO 80302
Ceanne R. Mayo		P. O. Box 99 Sunnyside, UT 84539

All common stock of Sunnyside Coal Company is owned and/or controlled by Sunnyside Mines, Inc. ("SMI").

Sunnyside Mines, Inc. EIN: 84-112047
The Registry
1113 Spruce Street
Boulder, CO 80302

Telephone: (303)-938-1506
Fax: (303) 449-0281

Officers of SMI

Robert M. Burnham	President	The Registry 1113 Spruce Street Boulder, CO 80302
Joseph R. Fielder	Vice President	P. O. Box 99 Sunnyside, UT 84539
Tawmie Hintze	Secretary	P. O. Box 99 Sunnyside, UT 84539

Savage Industries, Inc.
(unverified)

Directors

Neal Savage
Allen B. Alexander
H. Benson Lewis

Officers

Neal Savage	Chairman of the Board
Allen B. Alexander	President
H. Benson Lewis	Executive Vice President, Chief Financial Officer and Assistant Secretary
David G. Wolach	Executive Vice President, Business Development
James T. Jensen	Executive Vice President, General Counsel and Secretary
L. Dean Rees	Vice President and Treasurer
Howard F. Goodman	Vice President and Controller
Rodger P. Fordham	Regional Vice President
John K. Savage	Regional Vice President
James Mecham	Regional Vice President
Donald Alexander	Regional Vice President
Eric B. Adamson	Vice President
Gary R. Norman	Vice President
C. Fred Busch	Vice President
Richard L. Biddinger	Vice President
Ronald J. Konnick	Vice President
Raymond Alt	Vice President
Arthur D. Johnson	Vice President

112.500 Surface and Mineral Property

There are no legal or equitable owners of the surface or mineral property to be mined other than the Applicant. Additionally, there are no holders of any leasehold interest nor any purchasers of record under a real estate contract for the property to be mined. [Confirmation required.]

112.600 Contiguous Property

The name and address of each owner of record of all property (surface and subsurface) contiguous to any part of the proposed permit area:

United States of America
Department of the Interior
Bureau of Land Management
Utah State Offices
324 South State Street
Salt Lake City, UT 84101

East Carbon City
L. Paul Clark, Mayor
East Main
East Carbon City, UT 84520

Sunnyside Coal Company
The Registry
1113 Spruce Street
Boulder, CO 80302
Telephone: (303) 938-1506

State : UT	Permit No : ACT007035	SeqNo : 2
	Appl No : ACT007035	
Permittee : 128991(SUNNYSIDE COGENERATION ASSOCIATES)		

Permit Data			
Issue Date	: 06/05/95	Previous Permit No	: ACT007035
Expiration Date	: 02/04/1998	Total Acres Permitted	: 202.00
Bond Status	: A		
Bond Forfeiture Date	:	MSHA IDs	4201813
Bond Forfeiture Amount	: \$0.00	(1)	

Desc	Entity (OPR, B6, CON, ...)	Beg Date	End Date	Source
B6	120377(NORTHERN STATES POWER CO)	03/20/95		srout069
B6	120419(NRG ENERGY INC)	03/20/95		srout069
AGT	129758(FINLINSON, FRED W)		06/09/95	srout069
AGT	138410(WENTZ, CRAIG V)	06/09/95		

SAVE(F5) DELETE(F8) INS_ENT(F6) DEL_ENT(F7)
 ENTITY(F2) PRV_SCR(F3) QUIT(F4) APPL(F9) CHOICES(F10)

■ avsdg

APPENDIX 7-8

SURFACE AND GROUNDWATER MONITORING SCHEDULES

UPDES AND BASELINE, OPERATIONAL, & POST MINING

SURFACE AND GROUNDWATER MONITORING SCHEDULES

This Appendix section outlines the surface and groundwater monitoring schedules for the SCA Permit Site. The schedules outline both UPDES Requirements and Baseline, Operational and Post Mining Monitoring locations and parameters along with the corresponding measuring frequency for each parameter.

UPDES REQUIREMENTS

Discharge locations subject to the UPDES Permit regulations under Permit Number UT0024759 are listed in Table 7-1A below. Plate 7-3 shows the approximate locations of the UPDES monitoring sites and the sediment pond record drawings show the specific monitoring locations. Discharge from outfalls 004, 007, 008, 009, 012, 014, and 016 will be monitored as specified in the current UPDES Permit which is included in Appendix 7-1 and summarized in TABLE 7-1B:

TABLE 7-1A. UPDES DISCHARGE MONITORING LOCATIONS

SITE	LOCATION	OUTFALL
Clear Water Pond	Lat: 39° 32' 52" Long: 110° 23' 11"	4
Rail Cut Pond	Lat: 39° 32' 14" Long: 110° 23' 48"	7
Old Coarse Refuse Road Pond	Lat: 39° 32' 20" Long: 110° 23' 03"	8
Pasture Sediment Pond	Lat: 39° 32' 36" Long: 110° 23' 29"	9
Coarse Refuse Toe Pond	Lat: 39° 32' 28" Long: 110° 23' 58"	12
Coal Pile Sediment Pond	Lat: 39° 32' 45" Long: 110° 23' 26"	14
Borrow Area Pond	Lat 39° 32' 25" Long: 110° 23' 45"	16

TABLE 7-1B. UPDES WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement Frequency	Sample Type
Flow	gpm	Twice/Month	Field Measurement
pH	standard	Monthly	Field Measurement
Dissolved Oxygen	ppm	Monthly	Field Measurement
Iron (total)	mg/L	Monthly	Grab Sample
Oil and Grease	mg/L	Monthly	Grab Sample
Total Suspended Solids	mg/L	Twice/Monthly	Grab Sample
Total Dissolved Solids	mg/L	Monthly	Grab Sample
Total Settleable Solids	mg/L	Weekly during storms	Grab Sample
Floating Solids, Foam	n/a	Monthly	Visual Check
Sanitary Wastes	n/a	Monthly	Visual Check

Notes: No sampling or analysis is required if discharge from the sediment ponds does not occur during the month
 Total Settleable Solids is analyzed when discharge has occurred due to runoff from storm events or snowmelt
 The Hexane method is recommended by DWQ for Oil and Grease analysis instead of the Freon method.

Surface water monitoring for the UPDES sites will be continued through the end of the operations relating to the Coarse Refuse Pile and each year through the reclamation process until the UPDES permit is no longer required by the Utah Department of Environmental Quality, Division of Water Quality (DWQ). This monitoring will always be performed in accordance with the requirements of the DWQ via the UPDES permits.

There are four operational discharge locations that are not regulated by DOGM, but are included in the UPDES permit #UT0024759. They are: discharge point 001, Deep water well; discharge point 002, Water supply pipeline; discharge point 013, Facility Sediment Pond; and discharge point 015, Landfill Sediment Pond. These discharge locations are regulated by the Department of Environmental Quality (DEQ) and are included in the power plant facility. All water monitoring information for these discharge points is kept in a separate file from those regulated by the DOGM.

It should be noted that discharge points 001, 002, 013, and 015 are not subject to the water monitoring plan regulated by DOGM. These discharge points will be monitored separately under regulations set forth by the DWQ.

SURFACE AND GROUNDWATER MONITORING

In addition to the UPDES requirements for the sediment ponds listed above, SCA will monitor the surface and groundwater quality at the locations listed in Table 7-2A according to the parameters listed in Table 7-2B or Table 7-2C. These surface and groundwater monitoring sites are shown on Plate 7-2. The surface or groundwater monitoring data will be submitted to the DOGM quarterly for each monitoring location.

BASELINE REQUIREMENTS

At a meeting on December 18, 1992 at DOGM, SCA proposed two water quality monitoring sites for which there was no available background data. These two sites were the Icelander Columbia Dugway Spring 1350 and the East Carbon City Well. Both sites occur downstream from the SCA Permit Area. The Icelander Columbia Dugway Spring 1350 (Whitmore Springs) should provide indication as to whether the activities within the Permit Site are impacting the water resources in the area and although the city well may not show impacts from the SCA facility, it will provide a good source of groundwater data.

SCA contacted Sunnyside Coal Company, the State Division of Water Quality, the State Division of Drinking Water, and East Carbon City to obtain the background data which was available for the other sites. Due to the limited amount of data available, baseline data was gathered from all of the sites listed on Table 7-2A for two years (June 1993-1995). Table 7-2B was developed in 1993 based on DOGM's *Baseline Water Quality Parameter List*.

Once every five years (prior to each application for permit renewal) one sample from each of the monitoring sites listed in Table 7-2A will be sampled and analyzed for the parameters listed in Table 7-2B.

Additional data was gathered weekly and monthly from the Coarse Refuse Seep at the source, culvert, and boundary sites for one year (May 1994-1995) under the direction of DWQ.

The baseline data was analyzed and incorporated into the permit in Appendix 7-4.

OPERATIONAL REQUIREMENTS

After the two year period of baseline data collection, operational data will be collected quarterly at the sites listed on Table 7-2A and in accordance with the parameters listed on Table 7-2C throughout the life of the mine until two years after surface reclamation activities have ceased.

The sampling schedule listed in Table 7-2C for Operational Water Quality Monitoring was developed based on DOGM's Technical Directive 004 signed May 23, 1995, and titled *Water Monitoring Programs for Coal Mines*.

The directive 004 was under additional discussion and review at the time that SCA prepared Table 7-2C. Some revisions may be needed based on the outcome of the discussions.

POST MINING MONITORING REQUIREMENTS

The post mining monitoring will continue every year following completion of Operational Monitoring until termination of bonding to provide information relevant to potential impacts due to the mining and reclamation activity. Water monitoring information will also be used to determine that the reclaimed areas are not contributing additional contributions of Suspended Solids to stream flow outside the permit area and that the water quality is meeting all State and Federal water quality requirements. Technical Directive 004 (May 23, 1995) did not specifically list parameters required for post mining monitoring. The Division indicated an intent to modify the Directive requiring post-mining parameters to be the same as operational parameters. SCA proposes that the sites listed in Table 7-2A will be monitored as listed in Table 7-2D.

The DWQ administers the Nonpoint Source Program. Regulations under this program focus on storm water runoff and management. When the sediment ponds are removed during reclamation, the DWQ will determine if specific monitoring is required beyond the items listed in Table 7-2D in order to replace the point source monitoring associated with the sediment pond outfalls listed in the UPDES permit.

TABLE 7-2A SURFACE AND GROUNDWATER MONITORING LOCATIONS

LOCATION	TYPE	LOCATION ID
Coarse Refuse Seep at Source	Spring	CRS
Coarse Refuse Seep at Boundary	Springs	CRB
Icelanders Columbia Dugway Spring 1350	Spring	F-2
Icelanders Creek	Surface Water	ICE-1
East Carbon City Well (Dragerton Well)	Ground Water	Well
Monitor Well B-6 (near base of Refuse Pile)	Ground Water	B-6

Note: B-6 was added to the list of Monitoring locations for Operational Parameters in May 1996 at the request of the Division. No baseline data has been collected for this site. When the monitor well was installed in 1995, the hole was dry and no sample was taken. B-6 is located within the refuse area anticipated for excavation. At the time when the B-6 well head interferes with the operations of SCA, it will be removed and monitoring will cease.

TABLE 7-2B BASELINE WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement	Sample Type
Flow	gpm	Monthly	Field Measurement
pH	standard	Monthly	Field Measurement
Temp	degrees C	Monthly	Field Measurement
Specific Conductivity	umhos/cm	Monthly	Field Measurement
Dissolved Oxygen	mg/L	Monthly	Field Measurement
Aluminum (dissolved)	mg/L	Quarterly	Laboratory Measurement
Arsenic (dissolved)	mg/L	Quarterly	Laboratory Measurement
Boron (dissolved)	mg/L	Quarterly	Laboratory Measurement
Bicarbonate	mg/L	Quarterly	Laboratory Measurement
Carbonate	mg/L	Quarterly	Laboratory Measurement
Cadmium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Calcium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Chloride	mg/L	Quarterly	Laboratory Measurement
Copper (dissolved)	mg/L	Quarterly	Laboratory Measurement
Lead (dissolved)	mg/L	Quarterly	Laboratory Measurement
Total Hardness	mg/L	Quarterly	Laboratory Measurement
Iron (total & dissolved)	mg/L	Quarterly	Laboratory Measurement
Magnesium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Manganese (total & dissolved)	mg/L	Quarterly	Laboratory Measurement
Molybdenum (dissolved)	mg/L	Quarterly	Laboratory Measurement
Nitrogen: Ammonia (NH ₃)	mg/L	Quarterly	Laboratory Measurement
Nitrite	mg/L	Quarterly	Laboratory Measurement
Nitrate	mg/L	Quarterly	Laboratory Measurement
Potassium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Phosphate (ortho)	mg/L	Quarterly	Laboratory Measurement
Selenium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sodium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sulfate	mg/L	Quarterly	Laboratory Measurement
Zinc (dissolved)	mg/L	Quarterly	Laboratory Measurement
C-A Balance	meq/L	Quarterly	Laboratory Measurement
Oil and Grease	mg/L	Quarterly	Laboratory Measurement
Total Suspended Solids	mg/L	Quarterly	Laboratory Measurement
Total Dissolved Solids	mg/L	Quarterly	Laboratory Measurement
Total Settleable Solids	mg/L	Quarterly	Laboratory Measurement

Note: 1) Because the East Carbon City Well is a groundwater source, it will not be analyzed for Total Suspended Solids or Total Settleable Solids.

2) Once every five years (prior to each application for permit renewal) one sample from each of the monitoring sites listed in Table 7-2A will be sampled and analyzed for the parameters listed in Table 7-2B.

TABLE 7-2C OPERATIONAL WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement	Sample Type
Flow	gpm	Quarterly	Field Measurement
pH	standard	Quarterly	Field Measurement
Temp	degrees C	Quarterly	Field Measurement
Specific Conductivity	umhos/cm	Quarterly	Field Measurement
Dissolved Oxygen	mg/L	Quarterly	Field Measurement
Total Alkalinity	mg/L	Quarterly	Laboratory Measurement
Total Hardness (CaCO ₃)	mg/L	Quarterly	Laboratory Measurement
Bicarbonate	mg/L	Quarterly	Laboratory Measurement
Carbonate	mg/L	Quarterly	Laboratory Measurement
Calcium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Chloride	mg/L	Quarterly	Laboratory Measurement
Iron (total)	mg/L	Quarterly	Laboratory Measurement
Iron (dissolved)	mg/L	Quarterly	Laboratory Measurement
Magnesium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Manganese (total)	mg/L	Quarterly	Laboratory Measurement
Manganese (dissolved)	mg/L	Quarterly	Laboratory Measurement
Potassium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sodium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sulfate	mg/L	Quarterly	Laboratory Measurement
C-A Balance	meq/L	Quarterly	Laboratory Measurement
Oil and Grease	mg/L	Quarterly	Laboratory Measurement
Total Suspended Solids	mg/L	Quarterly	Laboratory Measurement
Total Dissolved Solids	mg/L	Quarterly	Laboratory Measurement
Total Settleable Solids	mg/L	Quarterly	Laboratory Measurement

Note: 1) Because the East Carbon City Well and Monitor Well B-6 are groundwater sources, they will not be analyzed for Total Suspended Solids or Total Settleable Solids. However, if no flow is occurring at the time of sampling, the water level will still be measured.

TABLE 7-2D POST MINING WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement	Sample Type
Flow	gpm	Twice/Annum	Field Measurement
pH	standard	Twice/Annum	Field Measurement
Temp	degrees C	Twice/Annum	Field Measurement
Specific Conductivity	umhos/cm	Twice/Annum	Field Measurement
Dissolved Oxygen	mg/L	Twice/Annum	Field Measurement
Total Alkalinity	mg/L	Twice/Annum	Laboratory Measurement
Total Hardness (CaCO ₃)	mg/L	Twice/Annum	Laboratory Measurement
Bicarbonate	mg/L	Twice/Annum	Laboratory Measurement
Carbonate	mg/L	Twice/Annum	Laboratory Measurement
Calcium (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Chloride	mg/L	Twice/Annum	Laboratory Measurement
Iron (total)	mg/L	Twice/Annum	Laboratory Measurement
Iron (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Magnesium (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Manganese (total)	mg/L	Twice/Annum	Laboratory Measurement
Manganese (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Potassium (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Sodium (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Sulfate	mg/L	Twice/Annum	Laboratory Measurement
C-A Balance	meq/L	Twice/Annum	Laboratory Measurement
Oil and Grease	mg/L	Twice/Annum	Laboratory Measurement
Total Suspended Solids	mg/L	Twice/Annum	Laboratory Measurement
Total Dissolved Solids	mg/L	Twice/Annum	Laboratory Measurement
Total Settleable Solids	mg/L	Twice/Annum	Laboratory Measurement

Note: 1) Because the East Carbon City Well is a groundwater source, it will not be analyzed for Total Suspended Solids or Total Settleable Solids. However, if no flow is occurring at the time of sampling, the water level will still be measured.

2) Monitoring will be conducted during snowmelt and rainfall events for intermittent streams.

APPLICATION FOR PERMIT CHANGE

Title of Change: SUNNYSIDE COGENERATION ASSOCIATES	Permit Number: ACT/007/035
Permit submittal per Draft TA (May 1, 1996) addressing requested Water Monitoring Modifications	Mine: Sunnyside Cogen. Assoc.
	Permittee: Sunnyside Cogen. Assoc.

Description - include reason for change and timing required to implement: **Permit submittal per Draft TA (May 1, 1996) addressing requested Water Monitoring Modifications**

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	1. Change in the size of the Permit Area? _____ acres <input type="checkbox"/> increase <input type="checkbox"/> decrease.
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	2. Change in the size of the Disturbed Area? _____ acres <input type="checkbox"/> increase <input type="checkbox"/> decrease.
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	3. Will permit change include operations outside the Cumulative Hydrologic Impact Area?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	4. Will permit change include operations in hydrologic basins other than currently approved?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	5. Does permit change result from cancellation, reduction or increase of insurance or reclamation bond?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	6. Does permit change require or include public notice publication?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	7. Permit change as a result of a Violation? Violation # 93-13-2-1
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	8. Permit change as a result of a Division Order? D.O. # _____
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	9. Permit change as a result of other laws or regulations? Explain: _____
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	10. Does permit change require or include ownership, control, right-of-entry, or compliance information?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	11. Does the permit change affect the surface landowner or change the post mining land use?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	12. Does permit change require or include collection and reporting of any baseline information?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	13. Could the permit change have any effect on wildlife or vegetation outside the current disturbed area?
<input type="checkbox"/> Yes	<input type="checkbox"/> No	14. Does permit change require or include soil removal, storage or placement?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	15. Does permit change require or include vegetation monitoring, removal or revegetation activities?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	16. Does permit change require or include construction, modification, or removal of surface facilities?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	17. Does permit change require or include water monitoring, sediment or drainage control measures?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	18. Does permit change require or include certified designs, maps, or calculations?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	19. Does permit change require or include underground design or mine sequence and timing?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	20. Does permit change require or include subsidence control or monitoring?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	21. Have reclamation costs for bonding been provided or revised for any change in the reclamation plan?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	22. Is permit change within 100 feet of a public road or perennial stream or 500 feet of an occupied dwelling?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	23. Is this permit change coal exploration activity <input type="checkbox"/> inside <input type="checkbox"/> outside of the permit area? N/A

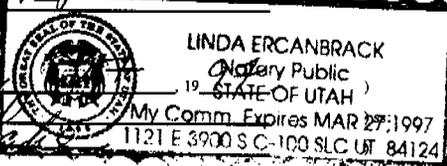
Attached 3 complete copies of proposed permit change as it would be incorporated into the Mining and Reclamation Plan.

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all aspects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

S. Scott Carlson, PE **15 May 96**
 Signed - Name - Position - Date

Subscribed and sworn to before me this **15th** day of **May**, 19**96**.
Linda Ercanbrack
 Notary Public

My Commission Expires: **March**
 Attest: **STATE OF**
COUNTY OF *Salt Lake*



Received by Oil, Gas & Mining

MAY 13 1996

DIV. OF OIL, GAS & MINING

ASSIGNED PERMIT CHANGE NUMBER

APPENDIX 7-8

SURFACE AND GROUNDWATER MONITORING SCHEDULES

UPDES AND BASELINE, OPERATIONAL, & POST MINING

SURFACE AND GROUNDWATER MONITORING SCHEDULES

This Appendix section outlines the surface and groundwater monitoring schedules for the SCA Permit Site. The schedules outline both UPDES Requirements and Baseline, Operational and Post Mining Monitoring locations and parameters along with the corresponding measuring frequency for each parameter.

UPDES REQUIREMENTS

Discharge locations subject to the UPDES Permit regulations under Permit Number UT0024759 are listed in Table 7-1A below. Plate 7-3 shows the approximate locations of the UPDES monitoring sites and the sediment pond record drawings show the specific monitoring locations. Discharge from outfalls 004, 007, 008, 009, 012, 014, and 016 will be monitored as specified in the current UPDES Permit which is included in Appendix 7-1 and summarized in TABLE 7-1B:

TABLE 7-1A. UPDES DISCHARGE MONITORING LOCATIONS

SITE	LOCATION	OUTFALL
Clear Water Pond	Lat: 39° 32' 52" Long: 110° 23' 11"	4
Rail Cut Pond	Lat: 39° 32' 14" Long: 110° 23' 48"	7
Old Coarse Refuse Road Pond	Lat: 39° 32' 20" Long: 110° 23' 03"	8
Pasture Sediment Pond	Lat: 39° 32' 36" Long: 110° 23' 29"	9
Coarse Refuse Toe Pond	Lat: 39° 32' 28" Long: 110° 23' 58"	12
Coal Pile Sediment Pond	Lat: 39° 32' 45" Long: 110° 23' 26"	14
Borrow Area Pond	Lat 39° 32' 25" Long: 110° 23' 45"	16

TABLE 7-1B. UPDES WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement Frequency	Sample Type
Flow	gpm	Twice/Month	Field Measurement
pH	standard	Monthly	Field Measurement
Dissolved Oxygen	ppm	Monthly	Field Measurement
Iron (total)	mg/L	Monthly	Grab Sample
Oil and Grease	mg/L	Monthly	Grab Sample
Total Suspended Solids	mg/L	Twice/Monthly	Grab Sample
Total Dissolved Solids	mg/L	Monthly	Grab Sample
Total Settleable Solids	mg/L	Weekly during storms	Grab Sample
Floating Solids, Foam	n/a	Monthly	Visual Check
Sanitary Wastes	n/a	Monthly	Visual Check

Notes: No sampling or analysis is required if discharge from the sediment ponds does not occur during the month
 Total Settleable Solids is analyzed when discharge has occurred due to runoff from storm events or snowmelt
 The Hexane method is recommended by DWQ for Oil and Grease analysis instead of the Freon method.

Surface water monitoring for the UPDES sites will be continued through the end of the operations relating to the Coarse Refuse Pile and each year through the reclamation process until the UPDES permit is no longer required by the Utah Department of Environmental Quality, Division of Water Quality (DWQ). This monitoring will always be performed in accordance with the requirements of the DWQ via the UPDES permits.

There are four operational discharge locations that are not regulated by DOGM, but are included in the UPDES permit #UT0024759. They are: discharge point 001, Deep water well; discharge point 002, Water supply pipeline; discharge point 013, Facility Sediment Pond; and discharge point 015, Landfill Sediment Pond. These discharge locations are regulated by the Department of Environmental Quality (DEQ) and are included in the power plant facility. All water monitoring information for these discharge points is kept in a separate file from those regulated by the DOGM.

It should be noted that discharge points 001, 002, 013, and 015 are not subject to the water monitoring plan regulated by DOGM. These discharge points will be monitored separately under regulations set forth by the DWQ.

SURFACE AND GROUNDWATER MONITORING

In addition to the UPDES requirements for the sediment ponds listed above, SCA will monitor the surface and groundwater quality at the locations listed in Table 7-2A according to the parameters listed in Table 7-2B or Table 7-2C. These surface and groundwater monitoring sites are shown on Plate 7-2. The surface or groundwater monitoring data will be submitted to the DOGM quarterly for each monitoring location.

BASELINE REQUIREMENTS

At a meeting on December 18, 1992 at DOGM, SCA proposed two water quality monitoring sites for which there was no available background data. These two sites were the Icelander Columbia Dugway Spring 1350 and the East Carbon City Well. Both sites occur downstream from the SCA Permit Area. The Icelander Columbia Dugway Spring 1350 (Whitmore Springs) should provide indication as to whether the activities within the Permit Site are impacting the water resources in the area and although the city well may not show impacts from the SCA facility, it will provide a good source of groundwater data.

SCA contacted Sunnyside Coal Company, the State Division of Water Quality, the State Division of Drinking Water, and East Carbon City to obtain the background data which was available for the other sites. Due to the limited amount of data available, baseline data was gathered from all of the sites listed on Table 7-2A for two years (June 1993-1995). Table 7-2B was developed in 1993 based on DOGM's *Baseline Water Quality Parameter List*.

Once every five years (prior to each application for permit renewal) one sample from each of the monitoring sites listed in Table 7-2A will be sampled and analyzed for the parameters listed in Table 7-2B.

Additional data was gathered weekly and monthly from the Coarse Refuse Seep at the source, culvert, and boundary sites for one year (May 1994-1995) under the direction of DWQ.

The baseline data was analyzed and incorporated into the permit in Appendix 7-4.

OPERATIONAL REQUIREMENTS

After the two year period of baseline data collection, operational data will be collected quarterly at the sites listed on Table 7-2A and in accordance with the parameters listed on Table 7-2C throughout the life of the mine until two years after surface reclamation activities have ceased.

The sampling schedule listed in Table 7-2C for Operational Water Quality Monitoring was developed based on DOGM's Technical Directive 004 signed May 23, 1995, and titled *Water Monitoring Programs for Coal Mines*.

The directive 004 was under additional discussion and review at the time that SCA prepared Table 7-2C. Some revisions may be needed based on the outcome of the discussions.

POST MINING MONITORING REQUIREMENTS

The post mining monitoring will continue every year following completion of Operational Monitoring until termination of bonding to provide information relevant to potential impacts due to the mining and reclamation activity. Water monitoring information will also be used to determine that the reclaimed areas are not contributing additional contributions of Suspended Solids to stream flow outside the permit area and that the water quality is meeting all State and Federal water quality requirements. Technical Directive 004 (May 23, 1995) did not specifically list parameters required for post mining monitoring. The Division indicated an intent to modify the Directive requiring post-mining parameters to be the same as operational parameters. SCA proposes that the sites listed in Table 7-2A will be monitored as listed in Table 7-2D.

The DWQ administers the Nonpoint Source Program. Regulations under this program focus on storm water runoff and management. When the sediment ponds are removed during reclamation, the DWQ will determine if specific monitoring is required beyond the items listed in Table 7-2D in order to replace the point source monitoring associated with the sediment pond outfalls listed in the UPDES permit.

TABLE 7-2A SURFACE AND GROUNDWATER MONITORING LOCATIONS

LOCATION	TYPE	LOCATION ID
Coarse Refuse Seep at Source	Spring	CRS
Coarse Refuse Seep at Boundary	Springs	CRB
Icelander Columbia Dugway Spring 1350	Spring	F-2
Icelander Creek	Surface Water	ICE-1
East Carbon City Well (Dragerton Well)	Ground Water	Well
Monitor Well B-6 (near base of Refuse Pile)	Ground Water	B-6

Note - B-6 was added to the list of Monitoring locations for Operational Parameters in May 1996 at the request of the Division. No baseline data has been collected for this site. When the monitor well was installed in 1995, the hole was dry and no sample was taken. B-6 is located within the refuse area anticipated for excavation. At the time when the B-6 well head interferes with the operations of SCA, it will be removed and monitoring will cease.

TABLE 7-2B BASELINE WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement	Sample Type
Flow	gpm	Monthly	Field Measurement
pH	standard	Monthly	Field Measurement
Temp	degrees C	Monthly	Field Measurement
Specific Conductivity	umhos/cm	Monthly	Field Measurement
Dissolved Oxygen	mg/L	Monthly	Field Measurement
Aluminum (dissolved)	mg/L	Quarterly	Laboratory Measurement
Arsenic (dissolved)	mg/L	Quarterly	Laboratory Measurement
Boron (dissolved)	mg/L	Quarterly	Laboratory Measurement
Bicarbonate	mg/L	Quarterly	Laboratory Measurement
Carbonate	mg/L	Quarterly	Laboratory Measurement
Cadmium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Calcium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Chloride	mg/L	Quarterly	Laboratory Measurement
Copper (dissolved)	mg/L	Quarterly	Laboratory Measurement
Lead (dissolved)	mg/L	Quarterly	Laboratory Measurement
Total Hardness	mg/L	Quarterly	Laboratory Measurement
Iron (total & dissolved)	mg/L	Quarterly	Laboratory Measurement
Magnesium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Manganese (total & dissolved)	mg/L	Quarterly	Laboratory Measurement
Molybdenum (dissolved)	mg/L	Quarterly	Laboratory Measurement
Nitrogen: Ammonia (NH ₃)	mg/L	Quarterly	Laboratory Measurement
Nitrite	mg/L	Quarterly	Laboratory Measurement
Nitrate	mg/L	Quarterly	Laboratory Measurement
Potassium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Phosphate (ortho)	mg/L	Quarterly	Laboratory Measurement
Selenium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sodium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sulfate	mg/L	Quarterly	Laboratory Measurement
Zinc (dissolved)	mg/L	Quarterly	Laboratory Measurement
C-A Balance	meq/L	Quarterly	Laboratory Measurement
Oil and Grease	mg/L	Quarterly	Laboratory Measurement
Total Suspended Solids	mg/L	Quarterly	Laboratory Measurement
Total Dissolved Solids	mg/L	Quarterly	Laboratory Measurement
Total Settleable Solids	mg/L	Quarterly	Laboratory Measurement

Note: 1) Because the East Carbon City Well is a groundwater source, it will not be analyzed for Total Suspended Solids or Total Settleable Solids.

2) Once every five years (prior to each application for permit renewal) one sample from each of the monitoring sites listed in Table 7-2A will be sampled and analyzed for the parameters listed in Table 7-2B.

TABLE 7-2C OPERATIONAL WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement	Sample Type
Flow	gpm	Quarterly	Field Measurement
pH	standard	Quarterly	Field Measurement
Temp	degrees C	Quarterly	Field Measurement
Specific Conductivity	umhos/cm	Quarterly	Field Measurement
Dissolved Oxygen	mg/L	Quarterly	Field Measurement
Total Alkalinity	mg/L	Quarterly	Laboratory Measurement
Total Hardness (CaCO ₃)	mg/L	Quarterly	Laboratory Measurement
Bicarbonate	mg/L	Quarterly	Laboratory Measurement
Carbonate	mg/L	Quarterly	Laboratory Measurement
Calcium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Chloride	mg/L	Quarterly	Laboratory Measurement
Iron (total)	mg/L	Quarterly	Laboratory Measurement
Iron (dissolved)	mg/L	Quarterly	Laboratory Measurement
Magnesium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Manganese (total)	mg/L	Quarterly	Laboratory Measurement
Manganese (dissolved)	mg/L	Quarterly	Laboratory Measurement
Potassium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sodium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sulfate	mg/L	Quarterly	Laboratory Measurement
C-A Balance	meq/L	Quarterly	Laboratory Measurement
Oil and Grease	mg/L	Quarterly	Laboratory Measurement
Total Suspended Solids	mg/L	Quarterly	Laboratory Measurement
Total Dissolved Solids	mg/L	Quarterly	Laboratory Measurement
Total Settleable Solids	mg/L	Quarterly	Laboratory Measurement

Note: 1) Because the East Carbon City Well and Monitor Well B-6 are groundwater sources, they will not be analyzed for Total Suspended Solids or Total Settleable Solids. However, if no flow is occurring at the time of sampling, the water level will still be measured.

TABLE 7-2D POST MINING WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement	Sample Type
Flow	gpm	Twice/Annum	Field Measurement
pH	standard	Twice/Annum	Field Measurement
Temp	degrees C	Twice/Annum	Field Measurement
Specific Conductivity	umhos/cm	Twice/Annum	Field Measurement
Dissolved Oxygen	mg/L	Twice/Annum	Field Measurement
Total Alkalinity	mg/L	Twice/Annum	Laboratory Measurement
Total Hardness (CaCO ₃)	mg/L	Twice/Annum	Laboratory Measurement
Bicarbonate	mg/L	Twice/Annum	Laboratory Measurement
Carbonate	mg/L	Twice/Annum	Laboratory Measurement
Calcium (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Chloride	mg/L	Twice/Annum	Laboratory Measurement
Iron (total)	mg/L	Twice/Annum	Laboratory Measurement
Iron (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Magnesium (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Manganese (total)	mg/L	Twice/Annum	Laboratory Measurement
Manganese (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Potassium (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Sodium (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Sulfate	mg/L	Twice/Annum	Laboratory Measurement
C-A Balance	meq/L	Twice/Annum	Laboratory Measurement
Oil and Grease	mg/L	Twice/Annum	Laboratory Measurement
Total Suspended Solids	mg/L	Twice/Annum	Laboratory Measurement
Total Dissolved Solids	mg/L	Twice/Annum	Laboratory Measurement
Total Settleable Solids	mg/L	Twice/Annum	Laboratory Measurement

Note: 1) Because the East Carbon City Well is a groundwater source, it will not be analyzed for Total Suspended Solids or Total Settleable Solids. However, if no flow is occurring at the time of sampling, the water level will still be measured.

2) Monitoring will be conducted during snowmelt and rainfall events for intermittent streams.

SURFACE AND GROUNDWATER MONITORING SCHEDULES

This Appendix section outlines the surface and groundwater monitoring schedules for the SCA Permit Site. The schedules outline both UPDES Requirements and Baseline, Operational and Post Mining Monitoring locations and parameters along with the corresponding measuring frequency for each parameter.

UPDES REQUIREMENTS

Discharge locations subject to the UPDES Permit regulations under Permit Number UT0024759 are listed in Table 7-1A below. Plate 7-3 shows the approximate locations of the UPDES monitoring sites and the sediment pond record drawings show the specific monitoring locations. Discharge from outfalls 004, 007, 008, 009, 012, 014, and 016 will be monitored as specified in the current UPDES Permit which is included in Appendix 7-1 and summarized in TABLE 7-1B:

TABLE 7-1A. UPDES DISCHARGE MONITORING LOCATIONS

SITE	LOCATION	OUTFALL
Clear Water Pond	Lat: 39° 32' 52" Long: 110° 23' 11"	4
Rail Cut Pond	Lat: 39° 32' 14" Long: 110° 23' 48"	7
Old Coarse Refuse Road Pond	Lat: 39° 32' 20" Long: 110° 23' 03"	8
Pasture Sediment Pond	Lat: 39° 32' 36" Long: 110° 23' 29"	9
Coarse Refuse Toe Pond	Lat: 39° 32' 28" Long: 110° 23' 58"	12
Coal Pile Sediment Pond	Lat: 39° 32' 45" Long: 110° 23' 26"	14
Borrow Area Pond	Lat 39° 32' 25" Long: 110° 23' 45"	16

TABLE 7-1B. UPDES WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement Frequency	Sample Type
Flow	gpm	Twice/Month	Field Measurement
pH	standard	Monthly	Field Measurement
Dissolved Oxygen	ppm	Monthly	Field Measurement
Iron (total)	mg/L	Monthly	Grab Sample
Oil and Grease	mg/L	Monthly	Grab Sample
Total Suspended Solids	mg/L	Twice/Monthly	Grab Sample
Total Dissolved Solids	mg/L	Monthly	Grab Sample
Total Settleable Solids	mg/L	Weekly during storms	Grab Sample
Floating Solids, Foam	n/a	Monthly	Visual Check
Sanitary Wastes	n/a	Monthly	Visual Check

Notes: No sampling or analysis is required if discharge from the sediment ponds does not occur during the month
 Total Settleable Solids is analyzed when discharge has occurred due to runoff from storm events or snow melt
 The Hexane method is recommended by DWQ for Oil and Grease analysis instead of the Freon method.

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Surface water monitoring for the UPDES sites will be continued through the end of the operations relating to the Coarse Refuse Pile and each year through the reclamation process until the UPDES permit is no longer required by the Utah Department of Environmental Quality, Division of Water Quality (DWQ). This monitoring will always be performed in accordance with the requirements of the DWQ via the UPDES permits.

There are four operational discharge locations that are not regulated by DOGM, but are included in the UPDES permit #UT0024759. They are: discharge point 001, Deep water well; discharge point 002, Water supply pipeline; discharge point 013, Facility Sediment Pond; and discharge point 015, Landfill Sediment Pond. These discharge locations are regulated by the Department of Environmental Quality (DEQ) and are included in the power plant facility. All water monitoring information for these discharge points is kept in a separate file from those regulated by the DOGM.

It should be noted that discharge points 001, 002, 013, and 015 are not subject to the water monitoring plan regulated by DOGM. These discharge points will be monitored separately under regulations set forth by the DWQ.

SURFACE AND GROUNDWATER MONITORING

In addition to the UPDES requirements for the sediment ponds listed above, SCA will monitor the surface and groundwater quality at the locations listed in Table 7-2A according to the parameters listed in Table 7-2B or Table 7-2C. These surface and groundwater monitoring sites are shown on Plate 7-2. The surface or groundwater monitoring data will be submitted to the DOGM quarterly for each monitoring location.

BASELINE REQUIREMENTS

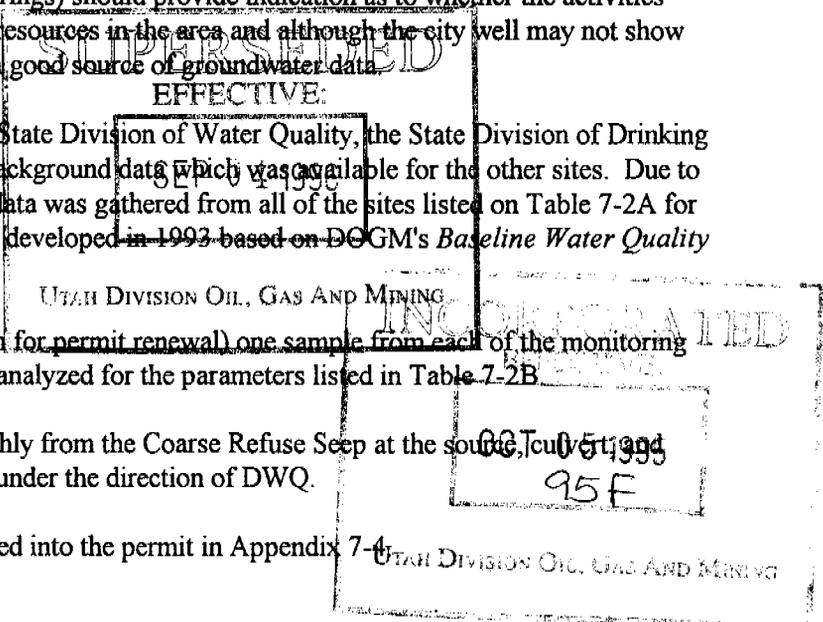
At a meeting on December 18, 1992 at DOGM, SCA proposed two water quality monitoring sites for which there was no available background data. These two sites were the Icelander Columbia Dugway Spring 1350 and the East Carbon City Well. Both sites occur downstream from the SCA Permit Area. The Icelander Columbia Dugway Spring 1350 (Whitmore Springs) should provide indication as to whether the activities within the Permit Site are impacting the water resources in the area and although the city well may not show impacts from the SCA facility, it will provide a good source of groundwater data.

SCA contacted Sunnyside Coal Company, the State Division of Water Quality, the State Division of Drinking Water, and East Carbon City to obtain the background data which was available for the other sites. Due to the limited amount of data available, baseline data was gathered from all of the sites listed on Table 7-2A for two years (June 1993-1995). Table 7-2B was developed in 1993 based on DOGM's *Baseline Water Quality Parameter List*.

Once every five years (prior to each application for permit renewal) one sample from each of the monitoring sites listed in Table 7-2A will be sampled and analyzed for the parameters listed in Table 7-2B.

Additional data was gathered weekly and monthly from the Coarse Refuse Seep at the source, boundary sites for one year (May 1994-1995) under the direction of DWQ.

The baseline data was analyzed and incorporated into the permit in Appendix 7-4.



OPERATIONAL REQUIREMENTS

After the two year period of baseline data collection, operational data will be collected quarterly at the sites listed on Table 7-2A and in accordance with the parameters listed on Table 7-2C throughout the life of the mine until two years after surface reclamation activities have ceased.

The sampling schedule listed in Table 7-2C for Operational Water Quality Monitoring was developed based on DOGM's Technical Directive 004 signed May 23, 1995, and titled *Water Monitoring Programs for Coal Mines*.

The directive 004 was under additional discussion and review at the time that SCA prepared Table 7-2C. Some revisions may be needed based on the outcome of the discussions.

POST MINING MONITORING REQUIREMENTS

The post mining monitoring will continue every year following completion of Operational Monitoring until termination of bonding to provide information relevant to potential impacts due to the mining and reclamation activity. Water monitoring information will also be used to determine that the reclaimed areas are not contributing additional contributions of Suspended Solids to stream flow outside the permit area and that the water quality is meeting all State and Federal water quality requirements. Technical Directive 004 does not specifically list parameters required for post mining monitoring. SCA proposes that the sites listed in Table 7-2A will be monitored as listed in Table 7-2D.

The DWQ administers the Nonpoint Source Program. Regulations under this program focus on storm water runoff and management. When the sediment ponds are removed during reclamation, the DWQ will determine if specific monitoring is required beyond the items listed in Table 7-2D in order to replace the point source monitoring associated with the sediment pond outfalls listed in the UPDES permit.

TABLE 7-2A SURFACE AND GROUNDWATER MONITORING LOCATIONS

LOCATION	TYPE	LOCATION ID
Coarse Refuse Seep at Source	Spring	CRS
Coarse Refuse Seep at Boundary	Springs	CRB
Icelanders Columbia Dugway Spring 1350	Spring	F-2
Icelanders Creek	Surface Water	ICE-1
East Carbon City Well (Dragerton Well)	Ground Water	Well

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UTAH DIVISION OIL, GAS AND MINING
Page 3

August 7, 1995

TABLE 7-2B BASELINE WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement	Sample Type
Flow	gpm	Monthly	Field Measurement
pH	standard	Monthly	Field Measurement
Temp	degrees C	Monthly	Field Measurement
Specific Conductivity	umhos/cm	Monthly	Field Measurement
Dissolved Oxygen	mg/L	Monthly	Field Measurement
Aluminum (dissolved)	mg/L	Quarterly	Laboratory Measurement
Arsenic (dissolved)	mg/L	Quarterly	Laboratory Measurement
Boron (dissolved)	mg/L	Quarterly	Laboratory Measurement
Bicarbonate	mg/L	Quarterly	Laboratory Measurement
Carbonate	mg/L	Quarterly	Laboratory Measurement
Cadmium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Calcium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Chloride	mg/L	Quarterly	Laboratory Measurement
Copper (dissolved)	mg/L	Quarterly	Laboratory Measurement
Lead (dissolved)	mg/L	Quarterly	Laboratory Measurement
Total Hardness	mg/L	Quarterly	Laboratory Measurement
Iron (total & dissolved)	mg/L	Quarterly	Laboratory Measurement
Magnesium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Manganese (total & dissolved)	mg/L	Quarterly	Laboratory Measurement
Molybdenum (dissolved)	mg/L	Quarterly	Laboratory Measurement
Nitrogen: Ammonia (NH ₃)	mg/L	Quarterly	Laboratory Measurement
Nitrite	mg/L	Quarterly	Laboratory Measurement
Nitrate	mg/L	Quarterly	Laboratory Measurement
Potassium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Phosphate (ortho)	mg/L	Quarterly	Laboratory Measurement
Selenium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sodium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sulfate	mg/L	Quarterly	Laboratory Measurement
Zinc (dissolved)	mg/L	Quarterly	Laboratory Measurement
C-A Balance	meq/L	Quarterly	Laboratory Measurement
Oil and Grease	mg/L	Quarterly	Laboratory Measurement
Total Suspended Solids	mg/L	Quarterly	Laboratory Measurement
Total Dissolved Solids	mg/L	Quarterly	Laboratory Measurement
Total Settleable Solids	mg/L	Quarterly	Laboratory Measurement

- Note: 1) Because the East Carbon City Well is a groundwater source, it will not be analyzed for Total Suspended Solids or Total Settleable Solids.
- 2) Once every five years (prior to each application for permit renewal) one sample from each of the monitoring sites listed in Table 7-2A will be sampled and analyzed for the parameters listed in Table 7-2B.

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TABLE 7-2C OPERATIONAL WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement	Sample Type
Flow	gpm	Quarterly	Field Measurement
pH	standard	Quarterly	Field Measurement
Temp	degrees C	Quarterly	Field Measurement
Specific Conductivity	umhos/cm	Quarterly	Field Measurement
Dissolved Oxygen	mg/L	Quarterly	Field Measurement
Total Alkalinity	mg/L	Quarterly	Laboratory Measurement
Total Hardness (CaCO ₃)	mg/L	Quarterly	Laboratory Measurement
Bicarbonate	mg/L	Quarterly	Laboratory Measurement
Carbonate	mg/L	Quarterly	Laboratory Measurement
Calcium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Chloride	mg/L	Quarterly	Laboratory Measurement
Iron (total)	mg/L	Quarterly	Laboratory Measurement
Iron (dissolved)	mg/L	Quarterly	Laboratory Measurement
Magnesium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Manganese (total)	mg/L	Quarterly	Laboratory Measurement
Manganese (dissolved)	mg/L	Quarterly	Laboratory Measurement
Potassium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sodium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sulfate	mg/L	Quarterly	Laboratory Measurement
C-A Balance	meq/L	Quarterly	Laboratory Measurement
Oil and Grease	mg/L	Quarterly	Laboratory Measurement
Total Suspended Solids	mg/L	Quarterly	Laboratory Measurement
Total Dissolved Solids	mg/L	Quarterly	Laboratory Measurement
Total Settleable Solids	mg/L	Quarterly	Laboratory Measurement

Note: 1) Because the East Carbon City Well is a groundwater source, it will not be analyzed for Total Suspended Solids or Total Settleable Solids. However, if no flow is occurring at the time of sampling, the water level will still be measured.

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TABLE 7-2D POST MINING WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement	Sample Type
Flow	gpm	Twice / Annum	Field Measurement
pH	standard	Twice / Annum	Field Measurement
Specific Conductivity	umhos/cm	Twice / Annum	Field Measurement
Dissolved Oxygen	mg/L	Twice / Annum	Field Measurement
Total Suspended Solids	mg/L	Twice / Annum	Laboratory Measurement
Total Dissolved Solids	mg/L	Twice / Annum	Laboratory Measurement
Total Settleable Solids	mg/L	Twice / Annum	Laboratory Measurement
Total Iron	mg/L	Twice / Annum	Laboratory Measurement
Total Manganese	mg/L	Twice / Annum	Laboratory Measurement

- Note: 1) Because the East Carbon City Well is a groundwater source, it will not be analyzed for Total Suspended Solids or Total Settleable Solids. However, if no flow is occurring at the time of sampling, the water level will be measured.
- 2) Monitoring will be conducted during snowmelt and rainfall events for intermittent streams.

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APPENDIX 7-8

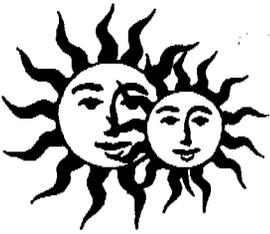
SURFACE AND GROUNDWATER MONITORING SCHEDULES

UPDES AND BASELINE, OPERATIONAL, & POST MINING

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EFFECTIVE:
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UTAH DIVISION OIL, GAS AND MINING



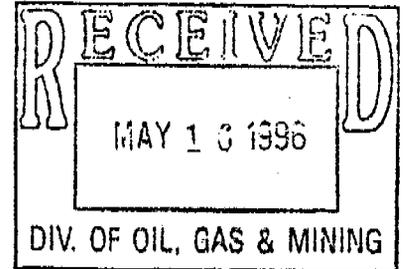
Sunnyside Cogeneration Associates

P.O. Box 10, East Carbon, Utah 84520 • (801) 888-4476 • Fax (801) 888-2538

May 15, 1996

Mr. Randy Harden
STATE OF UTAH
Division of Oil, Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah ~~84180~~

quebr
#2



RE: Permit No. ACT/007/035: Sunnyside Cogeneration Associates
Water Monitoring

Dear Randy:

As you have requested per the draft TA (May 1, 1996), SCA has enclosed a modified Appendix 7-8 which adds the monitoring well B-6 to the operational monitoring schedule and adds several parameters to the post mining monitoring schedule.

Please call me at (801) 888-4476, if you have any questions regarding information in this submittal.

Sincerely,

SUNNYSIDE COGENERATION ASSOCIATES

Danny Mattingly
Danny Mattingly
General Manager

DM/lls

Enclosure

c.c. Bob Evans, NRG
Tom Smith, NRG
Doug Burnham, B&W
Walt Strotz, B&W
Alane E. Boyd, EWP
Brian Burnett, CNM
Bill Malencik, DOGM

APPLICATION FOR PERMIT CHANGE

Title of Change: **SUNNYSIDE COGENERATION ASSOCIATES**

Permit Number: ACT/007/035 *96B*

Permit submittal per Draft TA (May 1, 1996) addressing requested Water Monitoring Modifications

Mine: **Sunnyside Cogen. Assoc.**

Permittee: **Sunnyside Cogen. Assoc.**

Description - include reason for change and timing required to implement: **Permit submittal per Draft TA (May 1, 1996) addressing requested Water Monitoring Modifications**

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	1. Change in the size of the Permit Area? _____ acres <input type="checkbox"/> increase <input type="checkbox"/> decrease.
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	2. Change in the size of the Disturbed Area? _____ acres <input type="checkbox"/> increase <input type="checkbox"/> decrease.
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<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	4. Will permit change include operations in hydrologic basins other than currently approved?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	5. Does permit change result from cancellation, reduction or increase of insurance or reclamation bond?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	6. Does permit change require or include public notice publication?
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	7. Permit change as a result of a Violation? Violation # 93-13-2-1
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	8. Permit change as a result of a Division Order? D.O. #
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	9. Permit change as a result of other laws or regulations? Explain:
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	10. Does permit change require or include ownership, control, right-of-entry, or compliance information?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	11. Does the permit change affect the surface landowner or change the post mining land use?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	12. Does permit change require or include collection and reporting of any baseline information?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	13. Could the permit change have any effect on wildlife or vegetation outside the current disturbed area?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	14. Does permit change require or include soil removal, storage or placement?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	15. Does permit change require or include vegetation monitoring, removal or revegetation activities?
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<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	19. Does permit change require or include underground design or mine sequence and timing?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	20. Does permit change require or include subsidence control or monitoring?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	21. Have reclamation costs for bonding been provided or revised for any change in the reclamation plan?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	22. Is permit change within 100 feet of a public road or perennial stream or 500 feet of an occupied dwelling?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	23. Is this permit change coal exploration activity <input type="checkbox"/> inside <input type="checkbox"/> outside of the permit area? N/A

Attached 3 complete copies of proposed permit change as it would be incorporated into the Mining and Reclamation Plan

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all aspects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

S. Scott Carlson, PE 15 May 96
Signed - Name - Position - Date

Subscribed and sworn to before me this 15th day of May, 1996

Jandra Carlson
Notary Public

My Commission Expires:
Attest: STATE OF
COUNTY OF

March
Utah
Salt Lake



LINDA ERCANBRACK
Notary Public
STATE OF UTAH
My Comm. Expires MAR 29 1997
1121 E 3900 S C-100 SLC UT 84124

RECEIVED

Received by Oil, Gas & Mining

MAY 16 1996

DIV. OF OIL, GAS & MINING

ASSIGNED PERMIT CHANGE NUMBER



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

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

August 7, 1996

Rusty Netz
Sunnyside Cogeneration Associates
P.O. Box 10
East Carbon, Utah 84520

RE: Water Monitoring, Sunnyside Cogeneration Associates, Sunnyside Refuse & Slurry, ACT/007/035-96B, Folder #3, Carbon County, Utah

Dear Mr. Netz:

Appreciate your quick follow-up response and your submitting three unshaded copies of your water monitoring plan that was approved on July 9, 1996.

The enclosed copy now carries the incorporated stamp and must be inserted into your mine MRP. We are also sending a stamped copy to SLC.

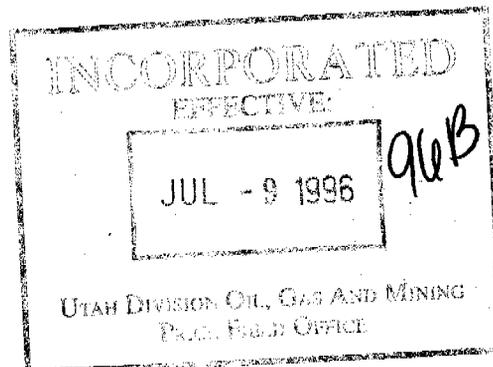
Sincerely,

Wm. J. Malencik
Reclamation Specialist

sd

enclosure

cc: Joe Helfrich, DOGM, SLC





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

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

July 9, 1996

Danny Mattingly
Sunnyside Cogeneration Associates
PO Box 10
East Carbon, Utah 84520

RE: Water Monitoring, Sunnyside Cogeneration Associates, Sunnyside Refuse & Slurry, ACT/007/035-96B, Folder #3, Carbon County, Utah

Dear Mr. Mattingly:

Your amendment to change the water monitoring program is hereby approved effective July 9, 1996. The approval is based on your application. Furthermore, the record shows that the changes for the most part were made at the request of DOGM.

The Division request for the change is based on the recently approved water monitoring guidelines. Also, as an item requiring follow-up in the draft Technical Analysis.

Follow-up Action

Please submit three unshaded copies of Appendix 7-8. Upon receipt, review, and approval of these unshaded documents, we shall close the case file on this amendment.

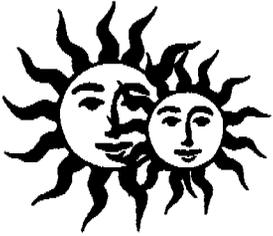
Sincerely,

Wm. J. Malencik
Reclamation Specialist

sd

enclosures

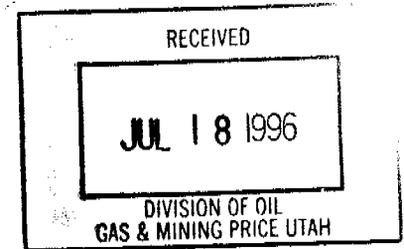
cc: Mark Page, State Eng, Price, w/o enc
Dave Ariotti, DEQ, Price, w/o enc
Bill Bates, DWR, Price, w/o enc
Joe Helfrich, DOGM, SLC
Pam Grubaugh-Littig, DOGM, SLC, w/o enc



Sunnyside Cogeneration Associates

P.O. Box 10, East Carbon, Utah 84520 • (801) 888-4476 • Fax (801) 888-2538

July 16, 1996



Mr. Bill Malencik
STATE OF UTAH
Division of Oil, Gas and Mining
c/o College of Eastern Utah
451 East 400 North
Price, Utah 84501

RE: Water Monitoring, Sunnyside Cogeneration Associates,
Sunnyside Refuse & Slurry,
ACT/007/035-96B, Folder #3
Carbon County, Utah

Dear Mr. Malencik:

Thank you for your response to our water monitoring amendment. Enclosed are the three copies of Appendix 7-8 you requested. I will also update the site permit books and the permit which is located at the Carbon County Court Building.

Sincerely,

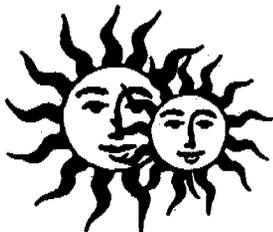
SUNNYSIDE COGENERATION ASSOCIATES

Rusty Netz

Rusty Netz
Environmental Technician

RN/l1s

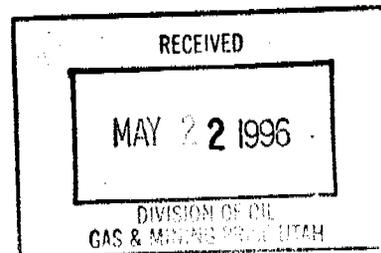
c.c. Robert Evans, NRG Energy, Inc.
Douglas Burnham, Babcock & Wilcox
SCA Plant file



Sunnyside Cogeneration Associates

P.O. Box 10, East Carbon, Utah 84520 • (801) 888-4476 • Fax (801) 888-2538

May 15, 1996



Mr. Randy Harden
STATE OF UTAH
Division of Oil, Gas and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180

RE: Permit No. ACT/007/035: Sunnyside Cogeneration Associates
Water Monitoring

Dear Randy:

As you have requested per the draft TA (May 1, 1996), SCA has enclosed a modified Appendix 7-8 which adds the monitoring well B-6 to the operational monitoring schedule and adds several parameters to the post mining monitoring schedule.

Please call me at (801) 888-4476, if you have any questions regarding information in this submittal.

Sincerely,

SUNNYSIDE COGENERATION ASSOCIATES

Danny Mattingly
Danny Mattingly
General Manager

DM/lis

Enclosure

c.c. Bob Evans, NRG
Tom Smith, NRG
Doug Burnham, B&W
Walt Strotz, B&W
Alane E. Boyd, EWP
Brian Burnett, CNM
Bill Malencik, DOGM

APPLICATION FOR PERMIT CHANGE

Title of Change: **SUNNYSIDE COGENERATION ASSOCIATES**

Permit Number: **ACT/007/035**

Permit submittal per Draft TA (May 1, 1996) addressing requested Water Monitoring Modifications

Mine: **Sunnyside Cogen. Assoc.**

Permittee: **Sunnyside Cogen. Assoc.**

Description - include reason for change and timing required to implement: **Permit submittal per Draft TA (May 1, 1996) addressing requested Water Monitoring Modifications**

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	1. Change in the size of the Permit Area? _____ acres <input type="checkbox"/> increase <input type="checkbox"/> decrease.
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<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	21. Have reclamation costs for bonding been provided or revised for any change in the reclamation plan?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	22. Is permit change within 100 feet of a public road or perennial stream or 500 feet of an occupied dwelling?
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	23. Is this permit change coal exploration activity <input type="checkbox"/> inside <input type="checkbox"/> outside of the permit area? N/A

Attached 3 complete copies of proposed permit change as it would be incorporated into the Mining and Reclamation Plan.

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all aspects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

S. Scott Carlson, PE 15 May 96
Signed - Name - Position - Date

Subscribed and sworn to before me this 15th day of May, 1996.

Linda Ercanbrack
Notary Public

My Commission Expires: _____

Attest: STATE OF _____
COUNTY OF _____

MARCH 27 1997
LINDA ERCANBRACK
Notary Public
STATE OF UTAH
My Comm. Expires MAR 27, 1997
1121 E 3900 S C-100 SLC UT 84124

Received by Oil, Gas & Mining

ASSIGNED PERMIT CHANGE NUMBER

APPENDIX 7-8

SURFACE AND GROUNDWATER MONITORING SCHEDULES

UPDES AND BASELINE, OPERATIONAL, & POST MINING

SURFACE AND GROUNDWATER MONITORING SCHEDULES

This Appendix section outlines the surface and groundwater monitoring schedules for the SCA Permit Site. The schedules outline both UPDES Requirements and Baseline, Operational and Post Mining Monitoring locations and parameters along with the corresponding measuring frequency for each parameter.

UPDES REQUIREMENTS

Discharge locations subject to the UPDES Permit regulations under Permit Number UT0024759 are listed in Table 7-1A below. Plate 7-3 shows the approximate locations of the UPDES monitoring sites and the sediment pond record drawings show the specific monitoring locations. Discharge from outfalls 004, 007, 008, 009, 012, 014, and 016 will be monitored as specified in the current UPDES Permit which is included in Appendix 7-1 and summarized in TABLE 7-1B:

TABLE 7-1A. UPDES DISCHARGE MONITORING LOCATIONS

SITE	LOCATION	OUTFALL
Clear Water Pond	Lat: 39° 32' 52" Long: 110° 23' 11"	4
Rail Cut Pond	Lat: 39° 32' 14" Long: 110° 23' 48"	7
Old Coarse Refuse Road Pond	Lat: 39° 32' 20" Long: 110° 23' 03"	8
Pasture Sediment Pond	Lat: 39° 32' 36" Long: 110° 23' 29"	9
Coarse Refuse Toe Pond	Lat: 39° 32' 28" Long: 110° 23' 58"	12
Coal Pile Sediment Pond	Lat: 39° 32' 45" Long: 110° 23' 26"	14
Borrow Area Pond	Lat 39° 32' 25" Long: 110° 23' 45"	16

TABLE 7-1B. UPDES WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement Frequency	Sample Type
Flow	gpm	Twice/Month	Field Measurement
pH	standard	Monthly	Field Measurement
Dissolved Oxygen	ppm	Monthly	Field Measurement
Iron (total)	mg/L	Monthly	Grab Sample
Oil and Grease	mg/L	Monthly	Grab Sample
Total Suspended Solids	mg/L	Twice/Monthly	Grab Sample
Total Dissolved Solids	mg/L	Monthly	Grab Sample
Total Settleable Solids	mg/L	Weekly during storms	Grab Sample
Floating Solids, Foam	n/a	Monthly	Visual Check
Sanitary Wastes	n/a	Monthly	Visual Check

Notes: No sampling or analysis is required if discharge from the sediment ponds does not occur during the month
 Total Settleable Solids is analyzed when discharge has occurred due to runoff from storm events or snowmelt
 The Hexane method is recommended by DWQ for Oil and Grease analysis instead of the Freon method.

Surface water monitoring for the UPDES sites will be continued through the end of the operations relating to the Coarse Refuse Pile and each year through the reclamation process until the UPDES permit is no longer required by the Utah Department of Environmental Quality, Division of Water Quality (DWQ). This monitoring will always be performed in accordance with the requirements of the DWQ via the UPDES permits.

There are four operational discharge locations that are not regulated by DOGM, but are included in the UPDES permit #UT0024759. They are: discharge point 001, Deep water well; discharge point 002, Water supply pipeline; discharge point 013, Facility Sediment Pond; and discharge point 015, Landfill Sediment Pond. These discharge locations are regulated by the Department of Environmental Quality (DEQ) and are included in the power plant facility. All water monitoring information for these discharge points is kept in a separate file from those regulated by the DOGM.

It should be noted that discharge points 001, 002, 013, and 015 are not subject to the water monitoring plan regulated by DOGM. These discharge points will be monitored separately under regulations set forth by the DWQ.

SURFACE AND GROUNDWATER MONITORING

In addition to the UPDES requirements for the sediment ponds listed above, SCA will monitor the surface and groundwater quality at the locations listed in Table 7-2A according to the parameters listed in Table 7-2B or Table 7-2C. These surface and groundwater monitoring sites are shown on Plate 7-2. The surface or groundwater monitoring data will be submitted to the DOGM quarterly for each monitoring location.

BASELINE REQUIREMENTS

At a meeting on December 18, 1992 at DOGM, SCA proposed two water quality monitoring sites for which there was no available background data. These two sites were the Icelander Columbia Dugway Spring 1350 and the East Carbon City Well. Both sites occur downstream from the SCA Permit Area. The Icelander Columbia Dugway Spring 1350 (Whitmore Springs) should provide indication as to whether the activities within the Permit Site are impacting the water resources in the area and although the city well may not show impacts from the SCA facility, it will provide a good source of groundwater data.

SCA contacted Sunnyside Coal Company, the State Division of Water Quality, the State Division of Drinking Water, and East Carbon City to obtain the background data which was available for the other sites. Due to the limited amount of data available, baseline data was gathered from all of the sites listed on Table 7-2A for two years (June 1993-1995). Table 7-2B was developed in 1993 based on DOGM's *Baseline Water Quality Parameter List*.

Once every five years (prior to each application for permit renewal) one sample from each of the monitoring sites listed in Table 7-2A will be sampled and analyzed for the parameters listed in Table 7-2B.

Additional data was gathered weekly and monthly from the Coarse Refuse Seep at the source, culvert, and boundary sites for one year (May 1994-1995) under the direction of DWQ.

The baseline data was analyzed and incorporated into the permit in Appendix 7-4.

OPERATIONAL REQUIREMENTS

After the two year period of baseline data collection, operational data will be collected quarterly at the sites listed on Table 7-2A and in accordance with the parameters listed on Table 7-2C throughout the life of the mine until two years after surface reclamation activities have ceased.

The sampling schedule listed in Table 7-2C for Operational Water Quality Monitoring was developed based on DOGM's Technical Directive 004 signed May 23, 1995, and titled *Water Monitoring Programs for Coal Mines*.

The directive 004 was under additional discussion and review at the time that SCA prepared Table 7-2C. Some revisions may be needed based on the outcome of the discussions.

POST MINING MONITORING REQUIREMENTS

The post mining monitoring will continue every year following completion of Operational Monitoring until termination of bonding to provide information relevant to potential impacts due to the mining and reclamation activity. Water monitoring information will also be used to determine that the reclaimed areas are not contributing additional contributions of Suspended Solids to stream flow outside the permit area and that the water quality is meeting all State and Federal water quality requirements. Technical Directive 004 (May 23, 1995) did not specifically list parameters required for post mining monitoring. The Division indicated an intent to modify the Directive requiring post-mining parameters to be the same as operational parameters. SCA proposes that the sites listed in Table 7-2A will be monitored as listed in Table 7-2D.

The DWQ administers the Nonpoint Source Program. Regulations under this program focus on storm water runoff and management. When the sediment ponds are removed during reclamation, the DWQ will determine if specific monitoring is required beyond the items listed in Table 7-2D in order to replace the point source monitoring associated with the sediment pond outfalls listed in the UPDES permit.

TABLE 7-2A SURFACE AND GROUNDWATER MONITORING LOCATIONS

LOCATION	TYPE	LOCATION ID
Coarse Refuse Seep at Source	Spring	CRS
Coarse Refuse Seep at Boundary	Springs	CRB
Icelanders Columbia Dugway Spring 1350	Spring	F-2
Icelanders Creek	Surface Water	ICE-1
East Carbon City Well (Dragerton Well)	Ground Water	Well
Monitor Well B-6 (near base of Refuse Pile)	Ground Water	B-6

Note - B-6 was added to the list of Monitoring locations for Operational Parameters in May 1996 at the request of the Division. No baseline data has been collected for this site. When the monitor well was installed in 1995, the hole was dry and no sample was taken. B-6 is located within the refuse area anticipated for excavation. At the time when the B-6 well head interferes with the operations of SCA, it will be removed and monitoring will cease.

TABLE 7-2B BASELINE WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement	Sample Type
Flow	gpm	Monthly	Field Measurement
pH	standard	Monthly	Field Measurement
Temp	degrees C	Monthly	Field Measurement
Specific Conductivity	umhos/cm	Monthly	Field Measurement
Dissolved Oxygen	mg/L	Monthly	Field Measurement
Aluminum (dissolved)	mg/L	Quarterly	Laboratory Measurement
Arsenic (dissolved)	mg/L	Quarterly	Laboratory Measurement
Boron (dissolved)	mg/L	Quarterly	Laboratory Measurement
Bicarbonate	mg/L	Quarterly	Laboratory Measurement
Carbonate	mg/L	Quarterly	Laboratory Measurement
Cadmium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Calcium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Chloride	mg/L	Quarterly	Laboratory Measurement
Copper (dissolved)	mg/L	Quarterly	Laboratory Measurement
Lead (dissolved)	mg/L	Quarterly	Laboratory Measurement
Total Hardness	mg/L	Quarterly	Laboratory Measurement
Iron (total & dissolved)	mg/L	Quarterly	Laboratory Measurement
Magnesium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Manganese (total & dissolved)	mg/L	Quarterly	Laboratory Measurement
Molybdenum (dissolved)	mg/L	Quarterly	Laboratory Measurement
Nitrogen: Ammonia (NH ₃)	mg/L	Quarterly	Laboratory Measurement
Nitrite	mg/L	Quarterly	Laboratory Measurement
Nitrate	mg/L	Quarterly	Laboratory Measurement
Potassium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Phosphate (ortho)	mg/L	Quarterly	Laboratory Measurement
Selenium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sodium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sulfate	mg/L	Quarterly	Laboratory Measurement
Zinc (dissolved)	mg/L	Quarterly	Laboratory Measurement
C-A Balance	meq/L	Quarterly	Laboratory Measurement
Oil and Grease	mg/L	Quarterly	Laboratory Measurement
Total Suspended Solids	mg/L	Quarterly	Laboratory Measurement
Total Dissolved Solids	mg/L	Quarterly	Laboratory Measurement
Total Settleable Solids	mg/L	Quarterly	Laboratory Measurement

Note: 1) Because the East Carbon City Well is a groundwater source, it will not be analyzed for Total Suspended Solids or Total Settleable Solids.

2) Once every five years (prior to each application for permit renewal) one sample from each of the monitoring sites listed in Table 7-2A will be sampled and analyzed for the parameters listed in Table 7-2B.

TABLE 7-2C OPERATIONAL WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement	Sample Type
Flow	gpm	Quarterly	Field Measurement
pH	standard	Quarterly	Field Measurement
Temp	degrees C	Quarterly	Field Measurement
Specific Conductivity	umhos/cm	Quarterly	Field Measurement
Dissolved Oxygen	mg/L	Quarterly	Field Measurement
Total Alkalinity	mg/L	Quarterly	Laboratory Measurement
Total Hardness (CaCO ₃)	mg/L	Quarterly	Laboratory Measurement
Bicarbonate	mg/L	Quarterly	Laboratory Measurement
Carbonate	mg/L	Quarterly	Laboratory Measurement
Calcium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Chloride	mg/L	Quarterly	Laboratory Measurement
Iron (total)	mg/L	Quarterly	Laboratory Measurement
Iron (dissolved)	mg/L	Quarterly	Laboratory Measurement
Magnesium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Manganese (total)	mg/L	Quarterly	Laboratory Measurement
Manganese (dissolved)	mg/L	Quarterly	Laboratory Measurement
Potassium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sodium (dissolved)	mg/L	Quarterly	Laboratory Measurement
Sulfate	mg/L	Quarterly	Laboratory Measurement
C-A Balance	meq/L	Quarterly	Laboratory Measurement
Oil and Grease	mg/L	Quarterly	Laboratory Measurement
Total Suspended Solids	mg/L	Quarterly	Laboratory Measurement
Total Dissolved Solids	mg/L	Quarterly	Laboratory Measurement
Total Settleable Solids	mg/L	Quarterly	Laboratory Measurement

Note: 1) Because the East Carbon City Well and Monitor Well B-6 are groundwater sources, they will not be analyzed for Total Suspended Solids or Total Settleable Solids. However, if no flow is occurring at the time of sampling, the water level will still be measured.

TABLE 7-2D POST MINING WATER QUALITY MONITORING PARAMETERS

Parameter	Units	Measurement	Sample Type
Flow	gpm	Twice/Annum	Field Measurement
pH	standard	Twice/Annum	Field Measurement
Temp	degrees C	Twice/Annum	Field Measurement
Specific Conductivity	umhos/cm	Twice/Annum	Field Measurement
Dissolved Oxygen	mg/L	Twice/Annum	Field Measurement
Total Alkalinity	mg/L	Twice/Annum	Laboratory Measurement
Total Hardness (CaCO ₃)	mg/L	Twice/Annum	Laboratory Measurement
Bicarbonate	mg/L	Twice/Annum	Laboratory Measurement
Carbonate	mg/L	Twice/Annum	Laboratory Measurement
Calcium (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Chloride	mg/L	Twice/Annum	Laboratory Measurement
Iron (total)	mg/L	Twice/Annum	Laboratory Measurement
Iron (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Magnesium (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Manganese (total)	mg/L	Twice/Annum	Laboratory Measurement
Manganese (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Potassium (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Sodium (dissolved)	mg/L	Twice/Annum	Laboratory Measurement
Sulfate	mg/L	Twice/Annum	Laboratory Measurement
C-A Balance	meq/L	Twice/Annum	Laboratory Measurement
Oil and Grease	mg/L	Twice/Annum	Laboratory Measurement
Total Suspended Solids	mg/L	Twice/Annum	Laboratory Measurement
Total Dissolved Solids	mg/L	Twice/Annum	Laboratory Measurement
Total Settleable Solids	mg/L	Twice/Annum	Laboratory Measurement

- Note: 1) Because the East Carbon City Well is a groundwater source, it will not be analyzed for Total Suspended Solids or Total Settleable Solids. However, if no flow is occurring at the time of sampling, the water level will still be measured.
- 2) Monitoring will be conducted during snowmelt and rainfall events for intermittent streams.