0004

Document Information Form

Mine Number: C/007/018

File Name: Incoming

To: DOGM

From:

Person N/A

Company SOLDIER CREEK COAL COMPANY

Date Sent: JANUARY 27, 1989

Explanation:

HYDROLOGIC MONITORING PROGRAM

cc:

File in:
C/ 007, 018, **Incoming**
Refer to:
- ☐ **Confidential**
- ☐ **Shelf**
- ☐ **Expandable**

Date _____ For additional information

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

RECEIVED
JAN 27 1989
DIVISION OF
OIL, GAS & MINING

Sample Site ID: G-1 (Upper Soldier Creek)

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	02/26/88	05/19/88	08/18/88	11/27/88
Field Measurements				
Flow, gpm	N/A	431	67	N/A
pH, units	8.80	9.02	9.07	9.20
Conductivity, us/cm	849	744	881	1060
Temperature, Water°F	34.8	68.8	81.0	32.0
Temperature, Air °F	50.0	63.0	80.0	30.0
Dissolved Oxygen, ppm	6.5	6.0	5.0	5.2
Laboratory Analyses, mg/l				
Total Dissolved Solids	524	414	458	656
Total Suspended Solids	828	188	6	40
Total Settleable Solids/hr	1.3	-0.1	-0.4	-0.1
Total Hardness	267	284	228	346
Carbonate (CO_3^{-2})	0	0	0	0
Bicarbonate (HCO_3-)	388	308	354	478
Calcium (Ca)	41	43	24	48
Chloride (Cl-)	16	11	18	27
Iron-Dissolved (Fe)	0.02	0.08	.09	-0.02
Magnesium (Mg)	40	43	41	55
Manganese (Mn)	-0.01	0.01	0.01	-0.01
Potassium (k)	1	2	2	1
Sodium (Na)	110	56	111	146
Sulfate (SO_4^{-2}			51	138
Oil & Grease			-1	-1
Cations meq/l		9	9.50	13.36
Anions meq/l		7	8.66	13.21
Cation/Anion B		9	4.63	0.56

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

Refer to Record No 0004 Date
In C/ 007, 018, Incoming
For additional information

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

RECEIVED
JAN 27 1989
DIVISION OF
OIL, GAS & MINING

Sample Site ID: G-1 (Upper Soldier Creek)

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	02/26/88	05/19/88	08/18/88	11/27/88
Field Measurements				
Flow, gpm	N/A	431	67	N/A
pH, units	8.80	9.02	9.07	9.20
Conductivity, us/cm	849	744	881	1060
Temperature, Water°F	34.8	68.8	81.0	32.0
Temperature, Air °F	50.0	63.0	80.0	30.0
Dissolved Oxygen, ppm	6.5	6.0	5.0	5.2
Laboratory Analyses, mg/l				
Total Dissolved Solids	524	414	458	656
Total Suspended Solids	828	188	6	40
Total Settleable Solids/hr	1.3	-0.1	-0.4	-0.1
Total Hardness	267	284	228	346
Carbonate (CO_3^{-2})	0	0	0	0
Bicarbonate (HCO_3-)	388	308	354	478
Calcium (Ca)	41	43	24	48
Chloride (Cl-)	16	11	18	27
Iron-Dissolved (Fe)	0.02	0.08	.09	-0.02
Magnesium (Mg)	40	43	41	55
Manganese (Mn)	-0.01	0.01	0.01	-0.01
Potassium (k)	1	2	2	1
Sodium (Na)	110	56	111	146
Sulfate (SO_4^{-2})	60	86	51	138
Oil & Grease	-1	-1	-1	-1
Cations meq/l	10.20	8.19	9.50	13.36
Anions meq/l	9.47	8.27	8.66	13.21
Cation/Anion Balance (%)	3.71	-0.49	4.63	0.56

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: G-2 (Upper Pine Creek)

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	Site Not Accessible	05/19/88	08/17/88	Site Not Accessible
Field Measurements				
Flow, gpm		871	30	
pH, units		8.70	9.34	
Conductivity, us/cm		526	439	
Temperature, Water°F		48	67	
Temperature, Air °F		62	85	
Dissolved Oxygen, ppm		5.2	4.5	
Laboratory Analyses, mg/l				
Total Dissolved Solids		276	230	
Total Suspended Solids		94	-2	
Total Settleable Solids/hr		-0.1	-0.1	
Total Hardness		282	217	
Carbonate (CO_3^{-2})		0	0	
Bicarbonate (HCO_3-)		258	204	
Calcium (Ca)		67	41	
Chloride (Cl-)		2	3	
Iron-Dissolved (Fe)		0.06	-0.02	
Magnesium (Mg)		28	28	
Manganese (Mn)		0.01	-0.01	
Potassium (k)		1	2	
Sodium (Na)		12	14	
Sulfate (SO_4^{-2})		19	12	
Oil & Grease		-1	-1	
Cations meq/l		6.20	5.01	
Anions meq/l		5.61	4.42	
Cation/Anion Balance (%)		5.00	6.26	

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: G-5 (Lower Soldier Creek)

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	02/26/88	05/20/88	08/18/88	11/27/88
Field Measurements				
Flow, gpm	N/A	3,586	206	916
pH, units	8.75	8.86	8.91	9.30
Conductivity, us/cm	1429	702	1164	1125
Temperature, Water°F	46.6	43.5	58.0	43.5
Temperature, Air °F	50.0	43	72.0	35.0
Dissolved Oxygen, ppm	8.1	9.2	5.7	5.5
Laboratory Analyses, mg/l				
Total Dissolved Solids	826	364	692	666
Total Suspended Solids	118	70	16	8
Total Settleable Solids/hr	-0.2	-0.2	-0.1	-0.2
Total Hardness	295	275	195	217
Carbonate (CO_3^{-2})	0	0	0	0
Bicarbonate (HCO_3-)	412	288	500	460
Calcium (Ca)	36	46	19	26
Chloride (Cl-)	148	16	45	31
Iron-Dissolved (Fe)	0.07	0.04	.16	0.05
Magnesium (Mg)	50	39	36	37
Manganese (Mn)	0.01	0.01	-0.01	0.01
Potassium (k)	9	3	14	15
Sodium (Na)	218	46	222	199
Sulfate (SO_4^{-2})	117	62	88	105
Oil & Grease	-1	-1	-1	-1
Cations meq/l	15.73	7.60	14.03	13.48
Anions meq/l	14.84	7.51	13.11	12.27
Cation/Anion Balance (%)	2.91	0.60	3.39	4.70

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: Spring #3

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	Site Not Accessible	05/21/88	08/18/88	11/27/88
Field Measurements				
Flow, gpm		No Flow	No Flow	No Flow
pH, units				
Conductivity, us/cm				
Temperature, Water°F				
Temperature, Air °F				
Laboratory Analyses, mg/l				
Total Dissolved Solids				
Total Hardness				
Carbonate (CO_3^{-2})				
Bicarbonate (HCO_3-)				
Calcium (Ca)				
Chloride (Cl-)				
Iron-Dissolved (Fe)				
Magnesium (Mg)				
Manganese (Mn)				
Potassium (k)				
Sodium (Na)				
Sulfate (SO_4^{-2})				
Cations meq/l				
Anions meq/l				
Cation/Anion Balance (%)				

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: Spring #4

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	Site Not Accessible	05/21/88	08/17/88	Site Not Accessible
Field Measurements				
Flow, gpm		15.0	2.5	
pH, units		8.97	8.96	
Conductivity, us/cm		522	556	
Temperature, Water°F		43.1	64.0	
Temperature, Air °F		42.0	73.0	
Laboratory Analyses, mg/l				
Total Dissolved Solids		258	272	
Total Hardness		234	234	
Carbonate (CO_3^{-2})		0	0	
Bicarbonate (HCO_3-)		229	240	
Calcium (Ca)		41	41	
Chloride (Cl-)		3	5	
Iron-Dissolved (Fe)		0.04	0.06	
Magnesium (Mg)		32	32	
Manganese (Mn)		0.01	-0.01	
Potassium (k)		1	1	
Sodium (Na)		17	25	
Sulfate (SO_4^{-2})		16	16	
Cations meq/l		5.45	5.80	
Anions meq/l		5.00	5.28	
Cation/Anion Balance (%)		4.31	4.69	

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: Spring #5

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	Site Not Accessible	05/20/88	08/18/88	Site Not Accessible
Field Measurements				
Flow, gpm		265.0	15.0	
pH, units		8.80	8.55	
Conductivity, us/cm		578	549	
Temperature, Water°F		54.0	65.0	
Temperature, Air °F		59.0	80.0	
Laboratory Analyses, mg/l				
Total Dissolved Solids		308	346	
Total Hardness		299	304	
Carbonate (CO_3^{-2})		0	0	
Bicarbonate (HCO_3-)		260	274	
Calcium (Ca)		67	66	
Chloride (Cl-)		6	6	
Iron-Dissolved (Fe)		-0.02	0.02	
Magnesium (Mg)		32	34	
Manganese (Mn)		0.01	.01	
Potassium (k)		1	2	
Sodium (Na)		15	20	
Sulfate (SO_4^{-2})		35	37	
Cations meq/l		6.66	7.02	
Anions meq/l		6.10	6.43	
Cation/Anion Balance (%)		4.39	4.39	

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: Spring #8

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	Site Not Accessible	05/21/88	08/17/88	Site Not Accessible
Field Measurements				
Flow, gpm		18.3	3.7	
pH, units		9.17	8.75	
Conductivity, us/cm		570	563	
Temperature, Water°F		45.0	63.0	
Temperature, Air °F		43.0	73.0	
Laboratory Analyses, mg/l				
Total Dissolved Solids		322	304	
Total Hardness		241	237	
Carbonate (CO_3^{-2})		0	0	
Bicarbonate (HCO_3-)		265	266	
Calcium (Ca)		34	34	
Chloride (Cl-)		4	2	
Iron-Dissolved (Fe)		-0.02	0.10	
Magnesium (Mg)		38	37	
Manganese (Mn)		-0.01	-0.01	
Potassium (k)		1	1	
Sodium (Na)		33	34	
Sulfate (SO_4^{-2})		25	21	
Cations meq/l		6.29	6.26	
Anions meq/l		5.94	5.82	
Cation/Anion Balance (%)		2.86	3.64	

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: Spring #10

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	Site Not Accessible	05/21/88	08/18/88	11/27/88
Field Measurements				
Flow, gpm			3.0	1.0
pH, units			7.85	8.62
Conductivity, us/cm			888	1068
Temperature, Water°F			63.0	40.5
Temperature, Air °F			82.0	30.0
Laboratory Analyses, mg/l				
Total Dissolved Solids			648	646
Total Hardness			190	168
Carbonate (CO_3^{-2})			0	0
Bicarbonate (HCO_3-)			414	440
Calcium (Ca)			30	26
Chloride (Cl-)			9	11
Iron-Dissolved (Fe)			-0.02	-0.02
Magnesium (Mg)			28	25
Manganese (Mn)			-0.01	-0.01
Potassium (k)			3	3
Sodium (Na)			206	209
Sulfate (SO_4^{-2})			161	140
Cations meq/l			12.94	12.62
Anions meq/l			11.91	12.05
Cation/Anion Balance (%)			4.14	2.31

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: Spring #15

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	Site Not Accessible	05/21/88	08/17/88	Site Not Accessible
Field Measurements				
Flow, gpm		60.0	10.0	
pH, units		8.69	8.95	
Conductivity, us/cm		614	618	
Temperature, Water°F		50.0	63.0	
Temperature, Air °F		60.0	80.0	
Laboratory Analyses, mg/l				
Total Dissolved Solids		356	338	
Total Hardness		325	317	
Carbonate (CO_3^{-2})		0	0	
Bicarbonate (HCO_3-)		292	300	
Calcium (Ca)		71	61	
Chloride (Cl-)		3	3	
Iron-Dissolved (Fe)		-0.02	.10	
Magnesium (Mg)		36	40	
Manganese (Mn)		-0.01	-0.01	
Potassium (k)		1	2	
Sodium (Na)		16	16	
Sulfate (SO_4^{-2})		31	21	
Cations meq/l		7.23	7.09	
Anions meq/l		6.57	6.52	
Cation/Anion Balance (%)		4.78	4.19	

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: Spring #18

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	Site Not Accessible	05/21/88	08/17/88	Site Not Accessible

Field Measurements

Flow, gpm		60.0	No Flow	
pH, units		8.60		
Conductivity, us/cm		573		
Temperature, Water°F		62.5		
Temperature, Air °F		65.0		

Laboratory Analyses, mg/l

Total Dissolved Solids	324
Total Hardness	327
Carbonate (CO_3^{-2})	0
Bicarbonate (HCO_3-)	288
Calcium (Ca)	75
Chloride (Cl-)	3
Iron-Dissolved (Fe)	-0.02
Magnesium (Mg)	34
Manganese (Mn)	0.01
Potassium (k)	2
Sodium (Na)	9
Sulfate (SO_4^{-2})	16
Cations meq/l	6.99
Anions meq/l	6.38
Cation/Anion Balance (%)	4.56

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: Spring #21

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	Site Not Accessible	05/21/88	08/17/88	Site Not Accessible
Field Measurements				
Flow, gpm		100.0	11.5	
pH, units		8.79	8.70	
Conductivity, us/cm		562	495	
Temperature, Water°F		41.5	56.0	
Temperature, Air °F		49.0	75.0	
Laboratory Analyses, mg/l				
Total Dissolved Solids		286	264	
Total Hardness		241	250	
Carbonate (CO_3^{-2})		0	0	
Bicarbonate (HCO_3-)		219	246	
Calcium (Ca)		47	49	
Chloride (Cl-)		2	1	
Iron-Dissolved (Fe)		0.02	0.02	
Magnesium (Mg)		30	31	
Manganese (Mn)		-0.01	-0.01	
Potassium (k)		1	1	
Sodium (Na)		15	17	
Sulfate (SO_4^{-2})		8	12	
Cations meq/l		5.50	5.77	
Anions meq/l		5.60	5.20	
Cation/Anion Balance (%)		-0.90	5.20	

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: UG-2N (In-Mine Ground Water)

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	02/04/88	05/18/88	08/19/88	11/21/88
Field Measurements				
Flow, gpm	37.5	33.3	33.3	33.3
pH, units	7.11	7.09	7.50	7.50
Conductivity, us/cm	1424	1402	1348	1362
Temperature, Water°F	62.4	63.6	63.9	64.3
Temperature, Air °F	56.0	56.0	58.0	58.0

Laboratory Analyses, mg/l

Total Dissolved Solids	816
Total Hardness	374
Carbonate (CO_3^{-2})	0
Bicarbonate (HCO_3-)	642
Calcium (Ca)	71
Chloride (Cl-)	32
Iron-Dissolved (Fe)	.39
Magnesium (Mg)	48
Manganese (Mn)	.06
Potassium (k)	21
Sodium (Na)	190
Sulfate (SO_4^{-2})	84
Cations meq/l	16.39
Anions meq/l	15.50
Cation/Anion Balance (%)	2.79

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: UG-3N8E (In-Mine Ground Water)

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	02/04/88	05/18/88	08/19/88	11/21/88
Field Measurements				
Flow, gpm	50.0	5.2	7.4	8.9
pH, units	8.43	7.91	8.28	8.37
Conductivity, us/cm	1093	1141	1435	1189
Temperature, Water°F	51.3	54.2	55.4	53.0
Temperature, Air °F	54.0	57.0	57.0	55.0

Laboratory Analyses, mg/l

Total Dissolved Solids	870
Total Hardness	372
Carbonate (CO_3^{-2})	0
Bicarbonate (HCO_3-)	360
Calcium (Ca)	47
Chloride (Cl-)	143
Iron-Dissolved (Fe)	.16
Magnesium (Mg)	62
Manganese (Mn)	-0.01
Potassium (k)	16
Sodium (Na)	202
Sulfate (SO_4^{-2})	185
Cations meq/l	16.74
Anions meq/l	15.09
Cation/Anion Balance (%)	5.18

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: UG-Shaft (In-Mine Ground Water)

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Date	02/04/88	05/19/88	08/19/88	11/23/88
Field Measurements				
Flow, gpm	10.0	8.3	3.9	3.7
pH, units	6.88	6.83	6.82	6.97
Conductivity, us/cm	1566	1398	1156	1173
Temperature, Water°F	46.3	47.2	50.1	46.4
Temperature, Air °F	45.0	49.0	53.0	48.0

Laboratory Analyses, mg/l

Total Dissolved Solids	820
Total Hardness	616
Carbonate (CO_3^{-2})	0
Bicarbonate (HCO_3-)	370
Calcium (Ca)	120
Chloride (Cl-)	15
Iron-Dissolved (Fe)	.02
Magnesium (Mg)	77
Manganese (Mn)	.02
Potassium (k)	10
Sodium (Na)	73
Sulfate (SO_4^{-2})	321
Cations meq/l	15.79
Anions meq/l	14.56
Cation/Anion Balance (%)	4.05

Note: Negative Sign "-" denotes that value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Scheduled Sample Month	Feb	May	Aug	Nov
Sample Site ID: 5-1 (Well)				
Sample Date	Site Not Accessible	05/21/88	08/17/88	Site Not Accessible
Water Level Measurement, ft.		309.0	311.5	
Sample Site ID: 10-2 (Well)				
Sample Date	Site Not Accessible	05/21/88	08/17/88	Site Not Accessible
Water Level Measurement, ft.		715.9	717.7	

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: UG-10E (Water First Encountered on 04/11/88)

Scheduled Sample Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sample Date					05/18/88	06/22/88		08/14/88	09/03/88		11/21/88	
Field Measurements												
Flow, gpm					62.5	62.5		N/A	62.5		55.6	
pH, units					8.55	8.37		8.40			8.61	
Conductivity, us/cm					1464	1443		1496			1496	
Temperature, Water °F					62.2	62.8		60.7			63.3	
Temperature, Air °F					56.0	56.0		57.0			59.0	
Laboratory Analyses, mg/l												
Total Dissolved Solids					834			914				
Total Hardness					139			166				
Carbonate (CO)					46			0				
Bicarbonate (HCO)					663			720				
Calcium (Ca)					13			22				
Chloride (Cl-)					25			36				
Iron-Dissolved (Fe)					-0.02			.09				
Magnesium (Mg)					26			27				
Manganese (Mn)					-0.01			-0.01				
Potassium (k)					17			17				
Sodium (Na)					302			325				
Sulfate (SO)					39			60				
Cations meq/l					16.51			18.06				
Anions meq/l					15.70			16.67				
Cation/Anion Balance (%)					2.51			4.00				

Note: Negative sign "-" denotes that the value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: MW-2 (Mine Water Discharge)

Scheduled Sample Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sample Date	01/22/88	02/10/88	03/17/88	04/22/88	05/19/88	06/17/88	07/27/88	08/18/88	09/14/88	10/14/88	11/27/88	12/1[illegible]8
Field Measurements												
Flow, gpm	230	620	300	300	200	200	300	300	400	300	300	300
pH, units	8.42	8.70	8.75	8.70	8.45	8.85	8.90	8.88	8.92	8.95	8.90	8.75
Conductivity, us/cm	1434	1939	1725	1521	1690	1565	1479	1403	1208	1207	1161	1316
Temperature, Water °F	46.2	51.5	50.0	59.4	59.9	59.0	60.5	61.0	58.8	60.3	57.0	55.0
Temperature, Air °F	9.0	32.0	32.0	55.0	63.0	75.0	78.0	75.0	63.0	63.0	35.0	28.0
Laboratory Analyses, mg/l												
Total Dissolved Solids	832	1126	1552	1004	1002	976	896	860	766	740	710	768
Total Suspended Solids	2	2	42	4	2	6	6	2	-2	8	8	4
Total Settleable Solids/hr	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-.1	-0.1
Iron, Dissolved (Fe)	0.51	0.15	0.06	0.04	0.17	.11	.16	.17	.05	0.12	0.05	0.07
Iron, Total (Fe)	1.16	0.69	1.94	0.37	0.23	.13	.31	.27	.09	0.13	0.14	0.25
Manganese (Mn)	0.01	0.01	0.02	0.01	-0.01	-0.01	.01	.01	.01	-0.01	0.01	0.02
Oil & Grease	1	1	1	1	-1	-1	-1	1	2	1	1	-1

Note: Negative sign "-" denotes that the value is less than.

Soldier Creek Coal Company
Hydrologic Monitoring Program
Summarized Results for 1988

Sample Site ID: MW-1 (Mine Water Discharge)

Scheduled Sample Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sample Date	No Discharge	No Discharge	No Discharge	No Discharge	No Discharge	No Discharge	No Discharge	No Discharge	No Discharge	No Discharge	No Discharge	No Discharge
Field Measurements												
Flow, gpm												
pH, units												
Conductivity, us/cm												
Temperature, Water °F												
Temperature, Air °F												
Laboratory Analyses, mg/l												
Total Dissolved Solids												
Total Suspended Solids												
Total Settleable Solids/hr												
Iron, Dissolved (Fe)												
Iron, Total (Fe)												
Manganese (Mn)												
Oil & Grease												

Note: Negative sign "-" denotes that the value is less than.

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Dave Spillman
P.O. No.:

Sample ID: MW-2
Sample Date Time: 10/14/88 10:20

Lab No. : 88-W1/05917
Date Received: 10/18/88

Parameters			Analysis Date
Oil and Grease	1.	mg/l	10/27/88
Solids, total dissolved	740.	mg/l	10/25/88
Solids, total suspended	14.	mg/l	10/25/88
Solids, settleable	-.1	ml/l/hr	10/25/88
Iron, dissolved	.16	mg/l	10/24/88
Iron, total	.20	mg/l	10/24/88
Manganese, total	.01	mg/l	10/24/88

Remarks: Lab Filtering Required on "GREEN" Bottles #5917-18
Note: Negative sign "-" denotes that the value is less than "<"

Ralph V. Poulsen, Laboratory Director

Ralph V. Poulsen /S.H.

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Dave Spillman
P.O. No.:

Sample ID: SPRING #10
Sample Date Time: 11/27/88 17:25

Lab No. : 88-WI/06654
Date Received: 12/01/88

Parameters

Alkalinity as CaCO3	440.	mg/l
Bicarbonate as CaCO3	440	mg/l
Calcium, dissolved	26.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	11.	mg/l
Hardness as CaCO3	168.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	25.	mg/l
Potassium, dissolved	3.	mg/l
SAR in water	7.11	
Sodium, dissolved	209.	mg/l
Sulfate	140.	mg/l
Cations (sum)	12.62	meq/l
Anions (sum)	12.05	meq/l
Cation-Anion Balance	2.31	%
Solids, total dissolved	646.	mg/l
Iron, dissolved	-.02	mg/l
Manganese, dissolved	-.01	mg/l

Remarks:

Note: Negative sign "-" denotes that the value is less than "<"

Ralph V. Poulsen, Laboratory Director

Ralph V. Poulsen /S.H.

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Dave Spillman
P.O. No.:

Sample ID: MW-2
Sample Date Time: 11/27/88 16:45

Lab No. : 88-WI/06653
Date Received: 12/01/88

Parameters			Analysis Date
Oil and Grease	1.	mg/l	12/07/88
Solids, total dissolved	710.	mg/l	12/05/88
Solids, total suspended	8.	mg/l	12/05/88
Solids, settleable	-.1	ml/l/hr	12/05/88
Iron, dissolved	.05	mg/l	12/05/88
Iron, total	.14	mg/l	12/05/88
Manganese, total	.01	mg/l	12/05/88

Remarks:
Note: Negative sign "-" denotes that the value is less than "<"

Ralph V. Poulsen, Laboratory Director

Ralph V. Poulsen /S.H.

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Dave Spillman
P.O. No.:

Sample ID: G-1
Sample Date Time: 11/27/88 17:00

Lab No. : 88-WI/06652
Date Received: 12/01/88

Parameters

Alkalinity as CaCO3	478.	mg/l
Bicarbonate as CaCO3	478	mg/l
Calcium, dissolved	48.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	27.	mg/l
Hardness as CaCO3	346.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	55.	mg/l
Oil and Grease	-1.	mg/l
Potassium, dissolved	1.	mg/l
SAR in water	3.46	
Sodium, dissolved	146.	mg/l
Sulfate	138.	mg/l
Cations (sum)	13.36	meq/l
Anions (sum)	13.21	meq/l
Cation-Anion Balance	.56	%
Solids, total dissolved	656.	mg/l
Solids, total suspended	40.	mg/l
Solids, settleable	-.1	ml/l/hr
Iron, dissolved	-.02	mg/l
Manganese, dissolved	-.01	mg/l

Remarks:

Note: Negative sign "-" denotes that the value is less than "<"

Ralph V. Poulsen, Laboratory Director

Ralph V. Poulsen/S.H.

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Dave Spillman
P.O. No.:

Sample ID: G-5
Sample Date Time: 11/27/88 16:30

Lab No. : 88-WI/06651
Date Received: 12/01/88

Parameters

Alkalinity as CaCO3	460.	mg/l
Bicarbonate as CaCO3	460	mg/l
Calcium, dissolved	26.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	31.	mg/l
Hardness as CaCO3	217.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	37.	mg/l
Oil and Grease	-1.	mg/l
Potassium, dissolved	15.	mg/l
SAR in water	5.95	
Sodium, dissolved	199.	mg/l
Sulfate	105.	mg/l
Cations (sum)	13.48	meq/l
Anions (sum)	12.27	meq/l
Cation-Anion Balance	4.70	%
Solids, total dissolved	666.	mg/l
Solids, total suspended	8.	mg/l
Solids, settleable	-.2	ml/l/hr
Iron, dissolved	.05	mg/l
Manganese, dissolved	.01	mg/l

Remarks: Lab Filtering Required on "WHITE&GREEN" Bottles #6651-54

Note: Negative sign "-" denotes that the value is less than "<"

Ralph V. Poulsen, Laboratory Director

Ralph V. Poulsen/S.H.

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Dave Spillman
P.O. No.:

Sample ID: MW2
Sample Date Time: 12/16/88 09:30

Lab No. : 88-W1/06978
Date Received: 12/20/88

Parameters			Analysis Date
Oil and Grease	-1.	mg/l	12/29/88
Solids, total dissolved	768.	mg/l	12/27/88
Solids, total suspended	4.	mg/l	12/27/88
Solids, settleable	-.1	ml/l/hr	12/27/88
Iron, dissolved	.07	mg/l	12/21/88
Iron, total	.25	mg/l	12/27/88
Manganese, total	.02	mg/l	12/27/88

Remarks: Lab Filtering Required on "GREEN" Bottle
Note: Negative sign "-" denotes that the value is less than "<"

Ralph V. Poulsen, Laboratory Director

Ralph V. Poulsen /S.H.

PERMITTEE NAME/ADDRESS (*Include Facility Name/Location if different*)

NAME SOLDIER CREEK COAL COMPANY

ADDRESS P.O. BOX I
PRICE, UTAH 84501

FACILITY Soldier Canyon Mine

LOCATION Discharge Pipe (MW-2)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (*NPDES*)
DISCHARGE MONITORING REPORT (*DMR*)

Form Approved.
OMB No. 2040-0004
Approval expires 9-30-85

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
UT-0023680	003

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	88	10	01	TO	88	12	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
Flow	SAMPLE MEASUREMENT	0.270	0.270	MGD	*	*	*	MGD	0	1/30	Meter
	PERMIT REQUIREMENT	*	*		*	*	*			"	
Solids: Total Suspended	SAMPLE MEASUREMENT				4	7	8	MG/L	0	"	GR
	PERMIT REQUIREMENT				*	25	70			"	"
Solids: Total Dissolved	SAMPLE MEASUREMENT				710	739	768	MG/L	0	"	"
	PERMIT REQUIREMENT				*	*	1500			"	"
pH	SAMPLE MEASUREMENT				8.75	8.87	8.95	SU	0	"	"
	PERMIT REQUIREMENT				6.5	*	9.0			"	"
Oil & Grease	SAMPLE MEASUREMENT				1	1	1	MG/L	0	"	"
	PERMIT REQUIREMENT				*	*	10			"	"
Iron: Total	SAMPLE MEASUREMENT				0.13	0.17	0.25	MG/L	0	"	"
	PERMIT REQUIREMENT				*	*	2.0			"	"
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

David G. Spillman
Mine Engineer

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE ACCURATE AND COMPLETE I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 USC § 1001 AND 33 USC § 1319 (*Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.*)

David G. Spillman
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
801	637-6360	89	01	23
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (*Reference all attachments here*)

NOTE: There was no discharge from point source 001 (MW-1) and 002 (sediment pond)

Copy to Rick Summers
File 007/018 #7

RECEIVED
DEC 27 1988
DIVISION OF
OIL, GAS & MINING

MOUNTAIN STATES ANALYTICAL

ANALYTICAL REPORT

CLIENT: Oil, Gas, & Mining
3 Triad Center
Salt Lake City, UT 84180

ATTN: L. Kunzler

LAB NO: 6699
GROUP NO: 675
DATE SAMPLED: 12/07/88
TIME SAMPLED: 11:00
DATE RECEIVED: 12/08/88
DATE REPORTED: 12/23/88
DISPOSAL DATE: 01/22/89

SAMPLE ID: SOLDIER CANYON ACT/007/018

ANALYSIS	RESULT AS RECEIVED		
SOLIDS, T. DISSOLVED	648	mg/l	
NITROGEN, NITRITE (NO2)	<0.05	mg/l	N
NITROGEN, NITRATE (NO3)	<0.05	mg/l	N
NITROGEN, AMMONIA (NH4)	1.1	mg/l	N
NITROGEN, ORGANIC	<1.	mg/l	N
PHOSPHORUS, ORTHO	<0.05	mg/l	P
PHOSPHORUS, TOTAL	<0.05	mg/l	P

Respectfully submitted,

Warner Woolfenden

Warner R. Woolfenden, Ph.D.
Technical Director