RECEIVED
SEP - 4 1990
BROHM MINING CO.

SURFACE WATER SAMPLING FORM

FIELD MEASUREMENTS

Date 2 / 14/18 91

Time

Sampler PJT
(Initials)

Sampling Station Number..... SW-5

Temperature (degrees C)..... 3

pH..... 8.8

Conductivity (umhos/cm)..... 190

Flow (gpm).....

Water Sample (Yes/No).....

Filtered Metals (Yes/No).....

Number/Type Bottles..... CN MIN Diss NUT TOT.

Comments.....

Snow + Ice

SURFACE WATER STREAM GAUGING - FIELD FORM

Date: 2-16-9

Meter Used:

Sampler:

Stream Width:

Station No.: SW-[illegible]

Total Flow:

Gauge Height:

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
0 - .5		.5	.8	.4	.2	.08
.5 - 1		.5	.9	.45	.25	.1125
1 - 1.5		.5	1	.5	.3	.15
1.5 - 2		.5	1	.5	.3	.15
2 - 2.5		.5	1.1	.55	.3	.165
2.5 - 3		.5	.9	.45	.25	.1125
3 - 3.5		.5	.9	.45	.2	.09
3.5 - 4		.5	1	.5	.21	.105
4 - 4.5		.5	.6	.35	.18	.063
					TOTAL	4.61.3

Comments:

SURFACE WATER STREAM GAUGING - FIELD FORM

Date: 4-22-91

Meter Used: Pygmy

Sampler: mt

Stream Width: 10'

Station No.. 2W-5

Total Flow: *

Gauge Height: _____

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
0-1	.5	1	.5	.5	.4	.2
1-2	1.5	1	.6	.6	.8	.48
2-3	2.5	1	.7	.7	.7	.49
3-4		1	.7	.7	.7	.49
4-5		1	1	1	1.1	1.1
5-6		1	.95	.95	1.2	1.14
6-7		1	1	1	1.4	1.44
7-8		1	.85	.85	1.4	1.19
8-9		1	.75	.75	1.4	1.05
9-10		1	.6	.6	1.1	.66
						8.2
					TOTAL	3680.16

Comments: _____

SURFACE WATER SAMPLING FORM

FIELD MEASUREMENTS

Date 4 / 23 / 8 91

Time _____

Sampler mt.
(Initials)

Sampling Station Number..... SW-5

Temperature (degrees C)..... 6

pH..... 8.5

Conductivity (umhos/cm)..... 180

Flow (gpm)..... _____

Water Sample (Yes/No)..... _____

Filtered Metals (Yes/No)..... _____

Number/Type Bottles..... _____

Comments..... _____

SURFACE WATER STREAM GAUGING - FIELD FORM

DATE:	5/29/91	METER USED:	Pygmy
SAMPLER:	MT · SC	STREAM WIDTH:	19'
STATION NO:	SW-5	TOTAL FLOW:	28.68
GAUGE HEIGHT:		WATER SAMPLE (Yes/No):	
TEMPERATURE (degrees C):	12°	FILTERED METALS (Yes/No):	
pH:	8.8	NUMBER/TYPE BOTTLES:	
CONDUCTIVITY (umhos/cm):	160	FLOW (gpm):	12871.584

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)		Qcfs
0-1	.5	1	.4'	.4	~~.8~~	.3	.12
1-2	1.5	1	.5'	.5	~~.8~~	.3	.15
2-3	2.5	1	.4'	.4	~~.5~~	.2	.08
3-4	3.5	1	.5'	.5	~~1.1~~	.1	.05
4-5	4.5	1	.6'	.6	~~1.1~~	.2	.12
5-6	5.5	1	.6'	.6	~~1.5~~	.5	.30
6-7	6.5	1	.7'	.7	~~1.9~~	1.0	.7
7-8	7.5	1	.9'	.9	~~2.2~~	1.0	.9
8-9	8.5	1	.9'	.9	1.4 ~~2.4~~	.8	1.26
9-10	9.5	1	1'	1	1.6 ~~2.5~~	1.4	1.6
10-11	10.5	1	1'	1	~~2.1~~	2.0	2.0
11-12	11.5	1	1.2'	1.2	~~2.8~~	2.1	2.52
12-13	12.5	1	1.1'	1.1	~~2.4~~	2.8	3.08
13-14	13.5	1	1.1'	1.1	~~2.3~~	2.8	3.08
14-15	14.5	1	1.2'	1.2	~~2.2~~	2.7	3.24
15-16	15.5	1	1.2'	1.2	~~1.0~~	2.5	3
16-17	16.5	1	1.2'	1.2		2.4	2.88
17-18	17.5	1	1.2'	1.2	1.5	TOTAL	28.68
18-19	18.5	1	1.2	1.2	.5		

1.8
1.8

COMMENTS:

SURFACE WATER STREAM GAUGING - FIELD FORM

DATE:	8-19-91	METER USED:	[illegible]
SAMPLER:	mt JC	STREAM WIDTH:	
STATION NO:	SW-5	TOTAL FLOW:	2.248
GAUGE HEIGHT:		WATER SAMPLE (Yes/No):	
TEMPERATURE (degrees C):	19	FILTERED METALS (Yes/No):	
pH:	8.8	NUMBER/TYPE BOTTLES:	CN min dia not 7nt
CONDUCTIVITY (umhos/cm):	240	FLOW (gpm):	1009.35

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
0-1	.5	1	.3	.3	—	
1-2	1.5	1	.33	.33	—	
2-3	2.5	1	.15	.15	.2	.03
3-4	3.5	1	.28	.28	.3	.084
4-5	4.5	1	.28	.28	.3	.084
5-6	5.5	1	.22	.22	.2	.044
6-7	6.5	1	.35	.35	.1	.035
7-8	7.5	1	.5	.5	.4	.2
8-9	8.5	1	.36	.36	.8	.288
9-10	9.5	1	.45	.45	.5	.225
10-11	10.5	1	.44	.44	.6	.264
11 12	11.5	1	.43	.43	.6	.258
12 13	12.5	1	.46	.46	.5	.23
13 14	13.5	1	.40	.40	.6	.24
14 15	14.5	1	.5	.5	.4	.2
15 16	15.5	1	.3	.3	.1	.03
16 17	16.5	1	.37	.37	.1	.037
17 18	17.5	1	.29	.29	—	TOTAL 2.249
18 19.	18.5	1	.25	.25	—	1009.35

COMMENTS:

MID-CONTINENT
TESTING LABORATORIES, INC.
HIGH TECHNOLOGY OIL ANALYSIS
AND ENVIRONMENTAL TESTING

2100 S. 7th, Suite 211 • P.O. Box 3388 • Rapid City, SD 57709
(605) 348-0111

SAMPLE NAME: SW-5
DESCRITPION:
SAMPLE DATE: 04/23/91
SAMPLE TIME:
SAMPLED BY:

MYRON ANDERSEN
BROHM MINING CORP.
P.O. BOX 485
DEADWOOD, SD 57732

ACCOUNT NUMBER: W1000
LAB NUMBER: 19910424107
DATE RECEIVED: 04/24/91
TIME RECEIVED: 01:00 PM
REPORT DATE: 04/25/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	243.
Hardness	.
PH	7.48
Solids, Dissolved, mg/l	158.
Solids, Suspended, mg/l	<5.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	.
Bicarbonate	65.9
Carbonate, mg/l	0.0
Chloride, mg/l	7.0
Cyanide, Total, mg/l	<.010
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Flouride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	.067
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	54.2

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	.002	.002
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	.001	.002
Calcium	23.2	.
Chromium	.	.
Cobalt	.	.
Copper	.019	.028
Gold	<.001	.002
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	6.97	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	1.96	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	3.95	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	.068

APPROVED BY: Dean Durand

DATE: 4/25/91

MID-CONTINENT TESTING LABORATORIES, INC.
HIGH TECHNOLOGY OIL ANALYSIS AND ENVIRONMENTAL TESTING

2100 S. 7th, Suite 211 • P.O. Box 3388 • Rapid City, SD 57709
(605) 348-0111

SAMPLE NAME: SW-5
DESCRITPION:
SAMPLE DATE: 02/14/91
SAMPLE TIME:
SAMPLED BY:

MYRON ANDERSEN
BROHM MINING CORP.
P.O. BOX 485
DEADWOOD, SD 57732

ACCOUNT NUMBER: W1000
LAB NUMBER: 19910215202
DATE RECEIVED: 02/15/91
TIME RECEIVED: 12:45 PM
REPORT DATE: 02/18/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	288.
Hardness	.
PH	7.69
Solids, Dissolved, mg/l	190.
Solids, Suspended, mg/l	2.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	.
Bicarbonate	96.0
Carbonate, mg/l	0.0
Chloride, mg/l	6.0
Cyanide, Total, mg/l	<.010
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Flouride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	.050
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	30.0

QUALITY CONTROL	VALUE
Major Anion Sum, meq/L	2.37
Major Cation Sum, meq/L	2.46
Anion-Cation Balance, %	1.81

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	<.001	<.001
Calcium	27.8	.
Chromium	.	.
Cobalt	.	.
Copper	.002	.003
Gold	<.001	<.001
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	9.97	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	2.13	.
Selenium	<.001	.001
Silicon	.	.
Silver	.	.
Sodium	4.54	.
Strontium	.	.
Vanadium	.	.
Zinc	.010	.019

APPROVED BY: Alex M. Pongo
DATE: 02-18-91

MID-CONTINENT TESTING LABORATORIES, INC.
HIGH TECHNOLOGY OIL ANALYSIS AND ENVIRONMENTAL TESTING

2100 S. 7th, Suite 211 • P.O. Box 3388 • Rapid City, SD 57709
(605) 348-0111

SAMPLE NAME: SW-5
DESCRITPION:
SAMPLE DATE: 02/14/91
SAMPLE TIME:
SAMPLED BY:

MYRON ANDERSEN
BROHM MINING CORP.
P.O. BOX 485
DEADWOOD, SD 57732

ACCOUNT NUMBER: W1000
LAB NUMBER: 19910215202
DATE RECEIVED: 02/15/91
TIME RECEIVED: 12:45 PM
REPORT DATE: 02/18/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	288.
Hardness	.
PH	7.69
Solids, Dissolved, mg/l	190.
Solids, Suspended, mg/l	2.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	.
Bicarbonate	96.0
Carbonate, mg/l	0.0
Chloride, mg/l	6.0
Cyanide, Total, mg/l	<.010
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Flouride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	.050
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	30.0

QUALITY CONTROL	VALUE
Major Anion Sum, meq/L	2.37
Major Cation Sum, meq/L	2.46
Anion-Cation Balance, %	1.81

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	<.001	<.001
Calcium	27.8	.
Chromium	.	.
Cobalt	.	.
Copper	.002	.003
Gold	<.001	<.001
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	9.97	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	2.13	.
Selenium	<.001	.001
Silicon	.	.
Silver	.	.
Sodium	4.54	.
Strontium	.	.
Vanadium	.	.
Zinc	.010	.019

APPROVED BY: [signature]

DATE: 02-18-91

MID-CONTINENT TESTING LABORATORIES, INC.
HIGH TECHNOLOGY OIL ANALYSIS AND ENVIRONMENTAL TESTING

2100 S. 7th, Suite 211 • P.O. Box 3388 • Rapid City, SD 57709
(605) 348-0111

SAMPLE NAME: SW-5
DESCRITPION:
SAMPLE DATE: 05/29/91
SAMPLE TIME:
SAMPLED BY:

MYRON ANDERSEN
BROHM MINING CORP.
P.O. BOX 485
DEADWOOD, SD 57732

ACCOUNT NUMBER: W1000
LAB NUMBER: 19910530202
DATE RECEIVED: 05/30/91
TIME RECEIVED: 01:00 PM
REPORT DATE: 06/03/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	204.
Hardness	.
PH	7.39
Solids, Dissolved, mg/l	135.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	.
Bicarbonate	46.4
Carbonate, mg/l	0.0
Chloride, mg/l	5.5
Cyanide, Total, mg/l	<.010
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Flouride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	.080
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	17.

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	.002	.003
Calcium	19.2	.
Chromium	.	.
Cobalt	.	.
Copper	.019	.019
Gold	<.001	<.001
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	5.34	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	1.35	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	3.76	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	<.050

APPROVED BY: Mary M. Pagel

DATE: 06-03-91

MID-CONTINENT
TESTING LABORATORIES, INC.
HIGH TECHNOLOGY OIL ANALYSIS
AND ENVIRONMENTAL TESTING

2100 S. 7th, Suite 211 • P.O. Box 3388 • Rapid City, SD 57709
(605) 348-0111

SAMPLE NAME: SW-5
DESCRITPION:
SAMPLE DATE: 05/29/91
SAMPLE TIME:
SAMPLED BY:

MYRON ANDERSEN
BROHM MINING CORP.
P.O. BOX 485
DEADWOOD, SD 57732

ACCOUNT NUMBER: W1000
LAB NUMBER: 19910530202
DATE RECEIVED: 05/30/91
TIME RECEIVED: 01:00 PM
REPORT DATE: 06/03/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	204.
Hardness	.
PH	7.39
Solids, Dissolved, mg/l	135.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	.
Bicarbonate	46.4
Carbonate, mg/l	0.0
Chloride, mg/l	5.5
Cyanide, Total, mg/l	<.010
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Flouride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	.080
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	17.

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	.002	.003
Calcium	19.2	.
Chromium	.	.
Cobalt	.	.
Copper	.019	.019
Gold	<.001	<.001
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	5.34	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	1.35	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	3.76	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	<.050

RECEIVED
JUN - 4 1991
BROHM MINING CO.

APPROVED BY: Mary M. Pagel

DATE: 06-03-91

RECEIVED
JUN - 1991
BROHM MINING CO.

MID-CONTINENT
TESTING LABORATORIES, INC.
HIGH TECHNOLOGY OIL ANALYSIS
AND ENVIRONMENTAL TESTING

2100 S. 7th, Suite 211 • P.O. Box 3388 • Rapid City, SD 57709
(605) 348-0111

SAMPLE NAME: SW-5
DESCRITPION:
SAMPLE DATE: 08/19/91
SAMPLE TIME:
SAMPLED BY:

MYRON ANDERSEN
BROHM MINING CORP.
P.O. BOX 485
DEADWOOD, SD 57732

ACCOUNT NUMBER: W1000
LAB NUMBER: 19910821117
DATE RECEIVED: 08/20/91
TIME RECEIVED: 04:30 PM
REPORT DATE: 08/22/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	350.
Hardness	.
PH	8.05
Solids, Dissolved, mg/l	233.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	.
Bicarbonate	112.
Carbonate, mg/l	0.0
Chloride, mg/l	7.5
Cyanide, Total, mg/l	<.010
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Flouride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	<.050
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	78.3

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	.004	.004
Calcium	38.2	.
Chromium	.	.
Cobalt	.	.
Copper	.003	.060
Gold	<.001	<.001
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	12.8	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	2.51	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	4.27	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	.082

APPROVED BY: Mary M. Powell

DATE: 08-22-91

MID-CONTINENT
TESTING LABORATORIES, INC.
HIGH TECHNOLOGY OIL ANALYSIS
AND ENVIRONMENTAL TESTING

2100 S. 7th, Suite 211 • P.O. Box 3388 • Rapid City, SD 57709
(605) 348-0111

SAMPLE NAME: SW-5
DESCRITPION:
SAMPLE DATE: 08/19/91
SAMPLE TIME:
SAMPLED BY:

MYRON ANDERSEN
BROHM MINING CORP.
P.O. BOX 485
DEADWOOD, SD 57732

ACCOUNT NUMBER: W1000
LAB NUMBER: 19910821117
DATE RECEIVED: 08/20/91
TIME RECEIVED: 04:30 PM
REPORT DATE: 08/22/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	350.
Hardness	.
PH	8.05
Solids, Dissolved, mg/l	233.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	.
Bicarbonate	112.
Carbonate, mg/l	0.0
Chloride, mg/l	7.5
Cyanide, Total, mg/l	<.010
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Flouride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	<.050
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	78.3

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	.004	.004
Calcium	38.2	.
Chromium	.	.
Cobalt	.	.
Copper	.003	.060
Gold	<.001	<.001
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	12.8	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	2.51	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	4.27	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	.082

APPROVED BY: Mary M. Payne

DATE: 08-22-91

SURFACE WATER STREAM GAUGING - FIELD FORM

DATE:	4-14-92	METER USED:	Pygmy
SAMPLER:	SM	STREAM WIDTH:	8-8
STATION NO:	SW-5	TOTAL FLOW:	
GAUGE HEIGHT:	–	WATER SAMPLE (Yes/No):	YES
TEMPERATURE (degrees C):	~~8.2~~ 9.4	FILTERED METALS (Yes/No):	YES
pH:	8.2	NUMBER/TYPE BOTTLES:	1cn, 1Nut, 1Mg, 2Nut
CONDUCTIVITY (umhos/cm):	210	FLOW (gpm):	5578.6

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs	
~~0~~					X		
0-1	.5	1	.4	.4	1.1	4.4	.56
1-2	1.5	1	.4	.4	1.3	5.2	.52
2-3	2.5	1	.45	.45	2.2	.99	.99
3-4	3.5	1	.35	.35	3	1.05	1.05
4-5	4.5	1	.175	.175	.6	.1	.105
5-6	5.5	1	.2	.2	.6	.12	.12
6-7	6.5	1	.125	.125	.6	.075	.075
7-8	7.5	1	.15	.15	.9	.135	.135
8-8.8	8.5	.8	.75	.6	.6	.36	.36
						12.43	3.915
						x448.8	
							1754
					TOTAL	1754	

COMMENTS: