STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

March 28, 1985

Mr. Steven D. Taylor
Division Environmental Engineer
Kennecott
Utah Copper Division
P. O. Box 31838
Salt Lake City, Utah 84131-0838

Dear Mr. Taylor:

RE: Geotechnical Evaluation Embankment Raising Activities for Evaporation Ponds, Bingham Canyon Mine, ACT/035/002, Salt Lake County, Utah

The Division has completed the review of the October 16, 1984 Dames and Moore report for elevating the dikes for two of the old Bingham Canyon evaporation ponds. The Division expresses its apology for the excessive delay in responding to the Company's submittal. Unfortunately, other priorities have prevented a more expeditious review.

Conceptually, the Division has no problems concerning the design parameters and conditions for construction of the dikes expansion. However, the report fails to indicate or provide specific information addressing the quality of water being evaporated in the ponds. No information or estimate was provided to ascertain how much of the water directed into the ponds is infiltrating into the ground water system. The ponds are located on top of an alluvial fan. This facies appears to be highly porous and permeable. Ground water most likely occurs below the test borings and may be readily recharged from the surface. Depending on the quantity of the water contained within the ponds, a potential for infiltration into and recharging the subsurface alluvial aquifer appears prevalent. A comparison of water quality from within the evaporation ponds with that obtained from the associated ground water alluvial aquifer, could provide information as to any potential ground water contamination problems.

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The Division requests that Kennecott provide copies of any available water quality analyses for water discharged into the evaporation ponds and any available analyses which would reflect the quality of the ground water in the alluvial aquifer beneath the ponds. Please include any records of water analysis of seepage from the evaporation ponds as well. If possible, please provide the Division with a response to the information requested above by April 22, 1985.

Thank you for your cooperation and attention to these concerns. Please contact me or D. Wayne Hedberg should you have any questions or concerns.

Sincerely,

Lowell P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program

DWH/btb
cc: Ron Daniels
Randy Harden
Sue Linner
Rick Smith
Tom Suchoski
John Whitehead
8992R-44 & 45

Kennecott
Utah Copper Division

P. O. Box 31838
Salt Lake City, Utah 84131-0838

DWH

April 26, 1985

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DIVISION OF OIL
GAS & MINING

Kennecott

Mr. Lowell P. Braxton , Administrator
Mineral Resource Development and
Reclamation Program
State of Utah Natural Resources
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180

Dear Mr. Braxton:

Kennecott is providing the following information in response to your letter dated March 28, 1985, concerning your approval for raising the dikes at Kennecott's evaporation pond located in South Jordan. This information is updated periodically and forwarded to several regulatory agencies and municipalities. We will provide you with future updates of this information:

1. Evaporation pond water levels.

2. Evaporation pond piezometer readings.

3. Water quality in adjacent private wells.

4. Water treatment data.

5. Bingham Creek Reservoir water level.

As you are aware, part of the extensive five year groundwater study being conducted by Kennecott in conjunction with the State of Utah Department of Health and Salt Lake County Flood Control is designed to address the impact of both historical and present use of the evaporation ponds on groundwater quality.

You will also recall from previous information submitted to your agency concerning the emergency control of excess storm water from the Bingham Canyon watershed, the emergency control was specifically designed to minimize any potential impact on groundwater quality.

Yours very truly,

S. D. Taylor
Division Environmental Engineer

/km
Attachment

cc: R. A. Malone, w/o att.
C. K. Vance, w/o att.
R. K. Davey, w/o att.

New Evaporation Pond Water Levels

Date (1984)	Pond No.* 1	2	3	4	5	6	7
January 1	7'	7'	7'	--	0	0	0
February 1	7'	7'	7'	--	0	0	0
March 1	7'	7'	7'	--	0	0	0
April 1	7'	7'	7'	--	0	0	0
May 1	7'	7'	7'	--	0	0	0
June 1	7'	7'	7'	7' (est.)	L 1'	6' (est.)	7' (est.)
July 1	7'	7'	7'	6' (est.)	L 1'	5' (est.)	7' (est.)
August 1	7'	7'	7'	5'	L 1'	4'	6'
September 1	7'	7'	7'	1'	L 1'	2'	2'
October 1	7'	7'	7'	3'	L 1'	3'	1'
November 1	7'	7'	7'	1'	L 1'	2'	1'
December 3	7'	7'	6'	L 1'	0	L 1'	0
(1985)							
January 10	7'	7'	6'	0	0	0	0
February 4	7'	7'	6'	0	0	0	0
March 4	7'	7'	5.5'	0	0	0	0

Maximum water level in each pond = 7 feet.

Note: L = Less Than

*See report titled, "Bingham Canyon Storm Water Management," for pond locations and respective numbers.

New Evaporation Pond Piezometer Water Levels

(Distance from Piezometer Casing Top to Water Level)

Date	Piezometer No.*														
(1984)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Aug. 31	Dry	Dry	Dry	14.5'	21.9'	Dry	Dry	5.5'	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Oct. 1	Dry	Dry	Dry	19.84'	26.67'	Dry	Dry	8.92'	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Nov. 1	Dry	Dry	Dry	19.10'	28.83'	Dry	Dry	10.91'	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Dec. 3	Dry	Dry	Dry	19.80'	30.10'	Dry	Dry	11.45'	Dry	Dry	Dry	Dry	Dry	Dry	Dry
(1985)															
Jan. 10	Dry	Dry	Dry	20.52'	30.52'	Dry	Dry	12.30'	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Feb. 4	Dry	Dry	Dry	20.60'	30.81'	Dry	Dry	12.30'	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Mar. 4	Dry	Dry	Dry	20.50'	30.40'	Dry	Dry	12.25'	Dry	Dry	Dry	Dry	Dry	Dry	Dry

*See report titled, "Bingham Canyon Storm Water Management," for piezometer locations and respective depths.

Bateman Private Well - W309

Date (1983)	pH	Cond	TDS	MPN-F	MPN-T	Phoh	Cu	Fe	Zn	Al	Mn	Mg	As	Pb	Se	Ni	SO_4
11/2	7.1	1250	1136	L 2	L 2	L .01	.05	L .01	.07	L .1	L .01	44	L .004	.01	L .004	.02	246
12/28	7.2		1220				.11	.61	.63	.6	.03	42	L .004	.03		.04	203
(1984)																	
1/24	7.1	1300	1010	L 2	L 2	L .01	.19	.02	.49	.2	L .01	52.5	L .004	.03	L .004	.13	
3/15	7.0	1175	1217	L 2	L 2	L .01	.09	.04	.52	L .1	L .01	54.8	L .004	.03	L .004	L .01	250
5/22	6.9	1350	956	L 2	L 2	L .01	.04	.15	.24	L .1	.02	51.0	L .004	L .01	L .004	.04	233
6/16	6.8	1350	1102	L 2	L 2	L .01	.07	.12	.47		.02	45.0	L .004	L .01	L .004	.02	219
8/30	7.2	1500	1037	L 2	L 2	L .01	.05	.15	.26	.6	.02	55.0	L .004	L .01	L .004	.10	236
9/25	6.8	1150	987	L 2	L 2	L .01	.05	.15	.67	L .1	.02	56.0	L .004	L .01	L .004	L .01	226
11/15	7.4	1200	1019	L 2	L 2	L .01	.32	.13	.63	L .1	.01	50.0	L .004	L .01	L .004	L .01	284
12/14	7.0	975	1072	L 2	L 2	L .01	.08	.23	.38	.5	.03	48.0	L .004	L .01	L .004	L .01	245
(1985)																	
1/8	7.0	1050	938			L .01	.06	.34	.48	L .1	.01	50.0	L .004	L .01	L .004	L .01	295
2/6	7.3	1100	987	L 2	L 2	L .01	.04	.21	.43	L .1	.04	51.0	L .004	L .01	L .004	.02	239
2/28	6.8	980	1024	L 2	L 2	L .01	.04	.13	.43	2.3	.03	57.0	L .004	L .01	L .004	L .01	222
3/28	7.1	1091	1022	L 2	L 2	L .01	.05	.32	.33	L .1	L .01	50.0	L .004	L .01	L .004	L .01	252

Note: L = Less Than

Bowles Private Well - W310

Date (1983)	pH	Cond	TDS	MPN-F	MPN-T	Phoh	Cu	Fe	Zn	Al	Mn	Mg	As	Pb	Se	Ni	SO_4
11/2	6.9	1190	1583			L .01	.10	L .01	.80	L .1	L .01	77	L .004	.02	L .004	.03	545
12/28	7.0		1700	L 2	L 2	L .01	.10	.64	1.60	.3	.01	80	L .004	.04	L .004	.05	432
(1984)																	
1/24	6.8	1650	1460	L 2	L 2	L .01	.12	.08	.65	.3	L .01	84.5	L .004	.04	L .004	.13	
3/15	6.8	1550	1550	L 2	L 2	L .01	.09	.05	.80	L .01	L .01	92.1	L .004	L .01	L .004	L .01	599
4/5	6.7	1550	1750	L 2	L 2	L .01	.05	.05	1.16	1.00	.10	89.0	L .004	.02	L .004	.05	536
5/22	6.8	1600	1406	L 2	L 2	L .01	.02	.27	.25	L .1	L .01	84.0	L .004	L .01	L .004	.02	536
6/14	6.7	1700	1478	L 2	L 2	L .01	.11	.28	1.38		.02	71.0	L .004	L .01	L .004	.03	533
7/26	6.8	1500	1498			L .01	.03	.10	.34	L .1	.01	85.0	L .004	L .01	L .004	.03	512
8/23	7.0	1700	1488	L 2	L 2	L .01	.10	.47	1.23	.3	.05	105.0	L .004	L .01	L .004	.14	532
9/25	6.8	1575	1444	L 2	L 2	L .01	.07	.45	1.03	L .1	.03	87.0	L .004	L .01	L .004	L .01	539
11/13	6.8	1650	1543	L 2	L 2	L .01	.13	.36	.64	L .1	.01	80.0	L .004	L .01	L .004	L .01	548
12/14	7.0	1350	1559	L 2	L 2	L .01	.04	.33	.47	.5	.01	77.0	L .004	L .01	L .004	L .01	572
(1985)																	
1/8	7.1	1500	1480			L .01	.12	.94	.61	L .1	L .01	82.0	L .004	L .01	L .004	L .01	594
1/31	7.2	1375	1454	L 2	L 2	L .01	.02	.07	.57	L .1	.02	93.0	L .004	L .01	L .004	.01	576
2/28	6.8	1500	1484	L 2	L 2	L .01	.05	.28	.75	2.3	.03	92.0	L .004	L .01	L .004	L .01	520
3/28	7.0	1400	1510	L 2	L 2	L .01	.05	.20	.38	L .1	L .01	80.0	L .004	L .01	L .004	L .01	588

Note: L = Less Than

Schouten Private Well - #311

Date (1983)	pH	Cond	TDS	MPN-F	MPN-T	Phoh	Cu	Fe	Zn	Al	Mn	Mg	As	Pb	Se	Ni	SO_4
11/4	6.7	1650	1575			L .01	.07	.01	.26	L .1	L .01	85	L .004	.06	L .004	.01	577
12/28	6.8		1780				.06	L .01	.27	.4	.01	82	L .004	.03	L .004	.05	461
(1984)																	
1/24	6.8	1575	1550	L 2	L 2	L .01	.08	L .01	.28	.1	.01	92.5	L .004	.01	L .004	.03	
3/15	6.9	1450	1755	L 2	L 2	L .01	.10	.06	.42	L .1	L .01	102.0	L .004	L .01	L .004	L .01	533
4/4	6.7	1550	1900	L 2	L 2	L .01	.06	.05	.23	.1	.03	106.0	L .004	.01	L .004	.04	629
5/22	6.8	1350	1583	L 2	L 2	L .01	.02	.36	.05	L .1	.01	99.0	L .004	L .01	L .004	.03	726
6/14	6.7	1900	1632	L 2	L 2	L .01	.05	1.19	.48		.02	78.0	L .004	L .01	L .004	.01	644
7/27	6.7	1700	1647			L .01	.02	.31	.22	L .1	.02	95.0	L .004	L .01	L .004	.01	616
8/23	7.0	1900	1619	L 2	L 2	L .01	.04	2.29	.41	.3	.06	116.0	.005	L .01	L .004	.10	628
9/25	6.9	1450	1573	L 2	L 2	L .01	.03	.12	.78	L .1	.02	100.0	L .004	L .01	L .004	L .01	634
11/15	7.0	1450	1495	L 2	L 2	L .01	.10	5.80	1.52	L .1	.02	89.0	L .004	L .01	L .004	L .01	616
12/14	6.9	1350	1635	L 2	L 2	L .01	.06	.34	.19	.4	.02	82.0	L .004	L .01	L .004	L .01	618
(1985)																	
1/8	7.1	1500	1670			L .01	.06	.31	.18	L .1	L .01	91.0	L .004	L .01	L .004	L .01	676
1/31	6.8		1629	L 2	L 2	L .01	.02	.24	.19	L .1	.03	104.0	L .004	L .01	L .004	.03	657
2/28	6.7	1380	1758	L 2	L 2	L .01	.09	.29	.19	.3	.04	115.0	L .004	L .01	L .004	L .01	625
3/28	6.7	1725	1890	L 2	L 2	L .01	.03	.43	.11	L .1	L .01	109.0	L .004	L .01	L .004	L .01	708

Note: L = Less Than

Tidwell Private Well - #312

Date (1983)	pH	Cond	TDS	MPN-F	MPN-T	Phoh	Cu	Fe	Zn	Al	Mn	Mg	As	Pb	Se	Ni	SO_4
11/2	6.9	1500	1423	L 2	L 2	L .01	.05	L .01	.04	L .1	L .01	70	L .004	.01	L .004	.02	478
12/28	7.0		1680				.06	.01	.27	.4	.01	70	L .004	.03	L .004	.05	396
(1984)																	
1/24	7.1	1800	1250	L 2	L 2	L .01	.19	.06	.33	.2	.03	96.5	L .004	.01	L .004	.10	469
3/15	6.8	1425	1529	L 2	L 2	L .01	.20	.08	.24	L .1	L .01	88.0	L .004	L .01	L .004	L .01	491
4/5	6.9	1425	1630	L 2	L 2	L .01	.05	.04	.17	L .1	.03	87.0	L .004	L .01	L .004	.03	478
5/22	6.8	1750	1321	L 2	L 2	L .01	.04	.30	.09	L .1	L .01	80.0	L .004	L .01	L .004	.04	448
6/22	6.8	1700	1349	L 2	L 2	L .01	.08	.69	.20		.02	67.0	L .004	L .01	L .004	L .01	446
7/27	6.8	1850	1390			L .01	.02	.11	.11	L .1	.01	80.0	L .004	L .01	L .004	.01	471
8/23	6.9	1850	1349	L 2	L 2	L .01	.02	.17	.06	.1	.04	96.0	L .004	L .01	L .004	.10	475
9/25	6.9	1500	1332	L 2	L 2	L .01	.02	.11	.20	L .1	.02	85.0	L .004	L .01	L .004	L .01	464
11/15	7.0	1250	1293	L 2	L 2	L .01	.07	.34	.08	L .1	.02	77.0	L .004	L .01	L .004	L .01	489
12/14	7.0	1200	1417	L 2	L 2	L .01	.71	1.96	.71	.4	.04	83.0	.010	L .01	L .004	L .01	518
(1985)																	
1/8	7.3	1250	1410			L .01	.06	.49	.08	L .1	.02	77.0	L .004	L .01	L .004	L .01	520
1/31	7.2	1080	1300	L 2	L 2	L .01	.01	.23	.09	L .1	.05	80.0	L .004	L .01	L .004	.02	476
2/28	6.7	1200	1323	L 2	L 2	L .01	.05	.13	.12	.2	.03	85.0	L .004	L .01	L .004	L .01	444
3/28	6.8	1300	1337	L 2	L 2	L .01	.03	.20	.12	L .1	L .01	73.0	L .004	L .01	L .004	L .01	482

Note: L = Less Than

Ham Private Well - #337

Date (1984)	pH	Cond	TDS	MPN-F	MPN-T	Phoh	Cu	Fe	Zn	Al	Mn	Mg	As	Pb	Se	Ni	SO_4
3/15	6.85	1425	1514	L 2	L 2	L .01	L .01	.25	.22	.2	L .01	79	L .004	L .01	L .004	L .01	589
4/5	6.85	1500	1570	L 2	L 2	L .01	.02	.19	.19	L .1	.01	75	L .004	L .01	L .004	.02	593
5/22	6.9	1550	1530	L 2	L 2	L .01	.03	.54	.18	L .1	.01	76	L .004	L .01	L .004	.03	596
6/14	6.8	1450	1497	L 2	L 2	L .01	.07	.28	.33		.03	54	L .004	L .01	L .004	.01	593
7/26	6.8	1200	1218			L .01	.01	.26	.27	L .1	L .01	54	L .004	L .01	L .004	.01	456
8/23	7.1	1400	1238	L 2	L 2	L .01	.02	.15	.09	L .1	.03	74	L .004	L .01	L .004	.19	495
9/25	7.0	1190	1261	L 2	L 2	L .01	.02	.16	.14	L .1	.01	62	L .004	L .01	L .004	L .01	495
11/15	6.9	1150	1456	L 2	L 2	L .01	.04	2.18	.25	L .1	.01	65	L .004	L .01	L .004	L .01	638
12/14	7.0	1250	1664	L 2	L 2	L .01	.05	5.32	.78	.5	.05	78	.016	L .01	L .004	L .01	784
(1985)																	
1/8	7.1	1450	1810			L .01	.04	.70	.45	L .1	L .01	81	L .004	L .01	L .004	L .01	935
1/31	7.0	1600	1931	L 2	L 2	L .01	L .01	.68	.18	L .1	.01	85	L .004	L .01	L .004	.02	991
2/28	6.8	1700	2141	L 2	L 2	L .01	.03	1.31	.11	L .1	.03	105	L .004	L .01	L .004	L .01	1050
3/28	6.8	1600	2265	L 2	L 2	L .01	.02	.27	.20	L .1	L .01	101	L .004	L .01	L .004	L .01	1200

Note: L = Less Than

Wells Private Well - #338

Date (1984)	pH	Cond	TDS	MPN-F	MPN-T	Phoh	Cu	Fe	Zn	Al	Mn	Mg	As	Pb	Se	Ni	SO_4
6/14	6.8	1400	1252	L 2	L 2	L .01	.07	.23	.38		.04	53	L .004	L .01	L .004	.01	369
7/26	6.8	1350	1305	L 2	L 2	L .01	.03	.32	.26	L .1	L .01	64	L .004	L .01	L .004	.03	399
8/23	6.9	1500	1212	L 2	L 2	L .01	.02	.08	.18	.1	.01	76	L .004	L .01	L .004	.15	404
9/25	6.9	1275	1277	L 2	L 2	L .01	.05	.13	1.00	L .1	.04	66	L .004	L .01	L .004	L .01	227
11/15	7.0	1300	1559	L 2	L 2	L .01	.07	.65	.43	L .1	.02	77	L .004	L .01	L .004	L .01	773
12/14	6.9	1200	1692	L 2	L 2	L .01	.03	.20	.31	.6	.04	84	L .004	L .01	L .004	L .01	727
(1985)																	
1/8	7.2	1275	1870			L .01	.06	.31	.18	L .1	L .01	91	L .004	L .01	L .004	L .01	899
2/6	6.9	1420	1998	L 2	L 2	L .01	.23	.44	.17	L .1	.04	105	L .004	L .01	.006	.04	940
2/20	6.9	1650	2027			L .01	.10	.31	.66	.8	.04	110	L .004	.01	.010	L .01	964
2/28	6.9	1750	2081	L 2	L 2	L .01	.11	.32	.28	.1	.04	113	L .004	L .01	L .004	L .01	940
3/28	6.8	1600	2079	L 2	L 2		.05	.65	.19	L .1	L .01	100	L .004	L .01	L .004	L .01	999

Note: L = Less Than

East Side Seepage - VW S-351

Date (1985)	pH	Cond	TDS	MPN-F	MPN-T	Phoh	Cu	Fe	Zn	Al	Mn	Mg	As	Pb	Se	Ni	SO_4
1/7	4.8	3700	8,988	L 3	L 3		8.10	.31	13.3		35	1160	L .004	.44	L .004	2.05	6830
1/15	4.9	3650	8,770			L .01	7.70	.26	12.2	96	34	930	L .004	.43	L .004	2.00	5980
1/22	4.9	3500	8,521	L 3	L 3	L .01	7.60	.25	11.8		23	860	L .004	.48	L .004	1.85	6180
1/29	5.0	3750	8,899	L 3	L 3	L .01	7.20	.24	12.5	90	30	913	L .004	.67	L .004	1.88	6440
2/5	4.7	3400	8,162	L 3	L 3	L .01	6.69	.47	12.0	77	34	1100	L .004	.42	L .004	1.87	6700
2/13	4.9	3425	8,699	L 3	L 3	L .01	7.13	.28	13.2	72	30	1100	L .004	.38	L .004	2.87	6170
2/19	4.9	3310	7,852	L 3	L 3	L .01	6.06	.29	11.6	66	26	1000	L .004	.36	L .004	2.33	5580
2/27	4.6	3500	7,363	L 3	L 3	L .01	5.75	.22	9.7	60	23	1000	L .004	.05	L .004	2.00	5090
3/5	4.8	3200	7,433	L 3	L 3	L .01	5.37	.34	8.2	35	24	715	L .004	.28	L .004	1.38	5280
3/11	4.9	2800	4,006	L 3	L 3	L .01	3.00	.12	4.7	20	14	400	L .004	.20	L .004	.68	3320
3/19	4.3	4800	7,803	L 3	L 3	L .01	6.03	.86	10.4	30	27	65	L .004	.34	L .004	1.50	5680
3/26	5.0	4400	8,215	L 3	L 3	L .01	5.63	.39	7.7	60	25	920	L .004	.27	L .004	1.42	6010

Note: L = Less Than

Evaporation Pond #3 - VW S-352

Date (1985)	pH	Cond	TDS	MPN-F	MPN-T	Phoh	Cu	Fe	Zn	Al	Mn	Mg	As	Pb	Se	Ni	SO_4
1/11	6.9	2,000	3,558			L .01	.39	.18	1.1	.8	6.5	380	.012	.13	L .004	.23	2,340
1/15	6.8	2,350	4,891			L .01	.47	.89	1.2	1.3	7.0	470	L .004	.11	L .004	.24	3,250
1/22	7.3	2,300	4,748	L 3	L 3	L .01	.36	.13	1.0	.8	6.2	460	L .004	.17	L .004	.19	3,300
1/29	6.6	2,100	4,568	L 3	L 3	L .01	.37	.27	1.0	1.0	6.3	430	L .004	.18	L .004	.23	3,110
2/5	6.2	2,500	4,952	L 3	L 3	L .01	1.61	3.91	2.8	6.2	9.0	630	L .004	.17	L .004	.35	3,810
2/12	6.8	2,800	4,940	L 3	L 3	L .01	.51	.17	1.6	1.6	8.0	600	L .004	L .01	L .004	.32	3,470
2/19	6.4	2,400	4,529	L 3	L 3	L .01	.29	.10	1.2	3.7	5.5	540	L .004	.10	L .004	.08	3,100
2/28	6.4	1,950	3,405	L 3	L 3	L .01	.24	.27	.92	2.5	4.0	380	L .004	L .01	L .004	.13	2,030
3/5	6.6	1,900	3,622	L 3	L 3	L .01	.18	.33	.90	L .1	4.0	300	L .004	L .01	L .004	.18	2,390
3/11	6.7	2,550	3,816	L 3	L 3	L .01	.33	.36	.83	1.1	4.0	300	L .004	L .01	L .004	.19	2,560
3/19	7.0	2,810	4,122	L 3	L 3	L .01	.21	.15	.80	L .1	7.0	330	L .004	.10	L .004	.16	2,810
3/25	6.7	3,120	4,630	L 3	L 3	L .01	.16	.28	.88	L .1	2.0	490	L .004	L .01	L .004	.07	3,210

Note: L = Less Than

Untreated Mine Water - VW S-353

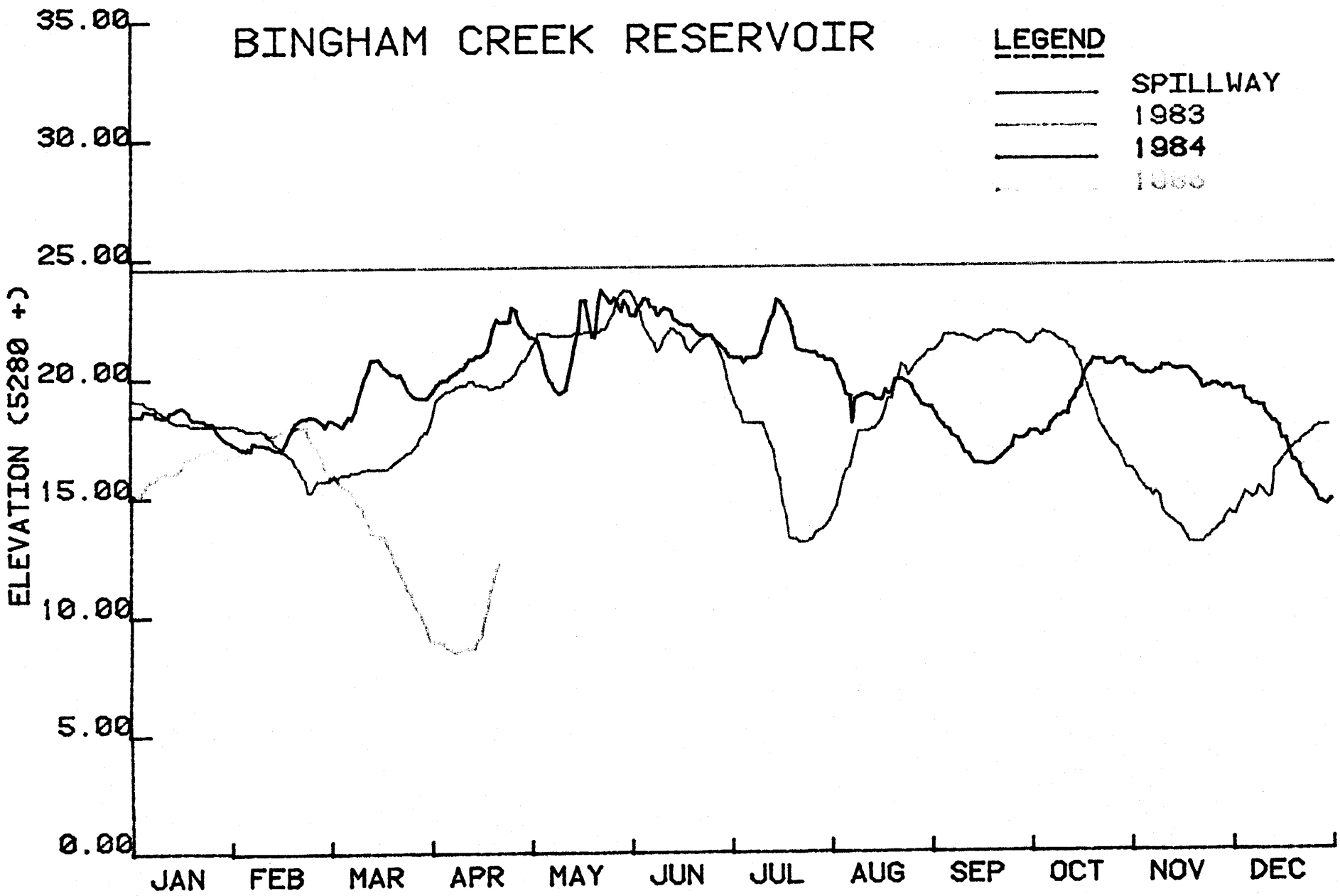
Date (1985)	pH	Cond	TDS	MPN-F	MPN-T	Phoh	Cu	Fe	Zn	Al	Mn	Mg	As	Pb	Se	Ni	SO_4
1/3	4.5	10,500	40,236	L 3	L 3	L .01	5.7	1030	79	1400	160	3100	.077	.55	L .004	15.1	31,800
1/9	3.9	13,900	52,341	L 3	L 3	L .01	24.0	1100	102	1800	210	4200	.32	.65	.016	22.1	41,600
1/16	4.2	9,100	40,756			L .01	14.1	800	68	1325	118	2300	.026	.54	.025	16.0	29,400
1/22	3.9	11,500	40,935	L 3	L 3	L .01	15.0	800	70	1500	130	2550	.086	1.27	.060	14.6	30,700
1/30	4.1	11,750	49,414	L 3	L 3	L .01	22.5	800	82	1700	148	3200	.072	.73	L .004	17.0	40,400
2/7	3.9	12,250	55,977	L 3	L 3	L .01	32.0	1088	117	1800	260	4300	.30	.61	L .004	29.0	39,000
2/14	4.2	11,000	42,555	L 3	L 3	L .01	8.4	790	100	1290	145	3420	.33	.01	.068	27.0	35,100
2/19	4.3	11,500	42,906	L 3	L 3	L .01	6.8	680	90	1230	135	3200	.15	.51	.092	28.0	31,100
2/27	3.9	13,000	56,687	L 3	L 3	L .01	62.0	710	120	1520	180	3900	.16	.02	.16	22.0	39,400
3/5	3.4	15,000	56,436	L 3	L 3	L .01	51.4	455	109	1340	215	3500	.019	.70	L .004	25.0	41,700
3/11	3.8	16,000	56,955	L 3	L 3	L .01	52.0	560	112	1300	205	3800	.24	.63	L .004	24.0	43,700
3/19	3.8	18,100	55,276	L 3	L 3	L .01	37.0	600	100	1250	200	3300	.015	.55	L .004	22.0	36,900
3/26	4.3	14,000	48,130	L 3	L 3	.012	56.0	577	70	1200	130	2800	.004	.39	.10	22.0	33,000

Note: L = Less Than

Treated Combined Stream - VW S-354

Date (1985)	pH	Cond	TDS	MPN-F	MPN-T	Phoh	Cu	Fe	Zn	Al	Mn	Mg	As	Pb	Se	Ni	SO_4
1/3	10.0	1700	2,209	L 3	L 3	L .01	.05	.28	.03	1.9	.09	4.4	L .004	.12	L .004	.09	1,210
1/9	11.8	3300	2,810	L 3	L 3	L .01	.05	.39	.07	.7	.08	1.4	L .004	.11	L .004	.09	1,380
1/16	8.5	3500	5,143			1 .01	.03	.40	.07	1.2	.91	548	L .004	.08	L .004	.07	3,750
1/22	12.1	2000	3,470	L 3	L 3	.04	.10	.38	.13	1.3	.11	2.0	L .004	.23	L .004	.08	1,350
2/1	7.1	5000	8,290	L 3	4	L .01	.05	3.98	.47	.4	30.00	1500	L .004	.24	L .004	.90	8,290
2/7	11.4	2450	2,588	L 3	L 3	.025	.06	.46	.07	2.9	.13	2.0	L .004	L .01	L .004	.04	860
2/14	9.2	1775	2,527	L 3	L 3	L .01	.02	.24	.13	1.4	.11	94.5	L .004	L .01	L .004	L .01	2,120
2/21	11.1		3,163	L 3	L 3	.096	.05	.09	.08	1.2	.04	.9	L .004	.15	L .004	L .01	1,190
2/27	8.0	7500	15,267	L 3	L 3	L .01	.07	.28	.08	2.4	5.00	1810	L .004	L .01	L .004	L .01	10,200
3/5	7.2	9000	19,349	L 3	L 3	L .01	.07	.25	.08	L .1	14.00	2300	L .004	.48	L .004	.14	14,500
3/11	7.7	9000	19,193	L 3	L 3	L .01	.13	.82	.41	.8	63.00	2100	L .004	.38	L .004	.60	13,500
3/19	8.2	6500	10,317	L 3	L 3	L .01	.15	.17	.11	.2	3.60	1290	L .004	.21	L .004	.11	8,030
3/26	8.1	7500	13,127	L 3	L 3	L .01	.09	.24	.07	L .1	4.70	1160	.11	.18	L .004	L .01	10,800

Note: L = Less Than


BINGHAM CREEK RESERVOIR
LEGEND
SPILLWAY
1983
1984
ELEVATION (5280 +)
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC