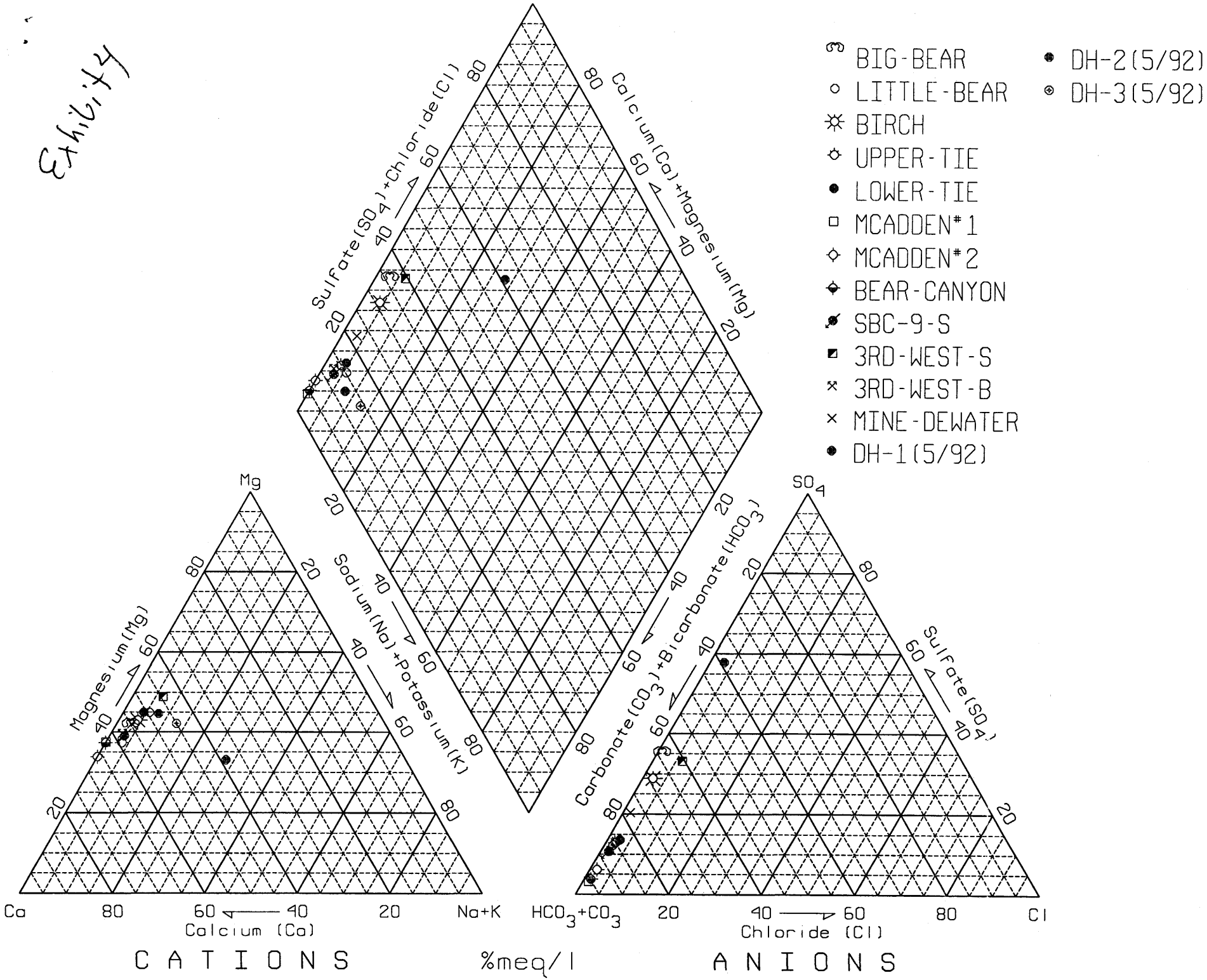
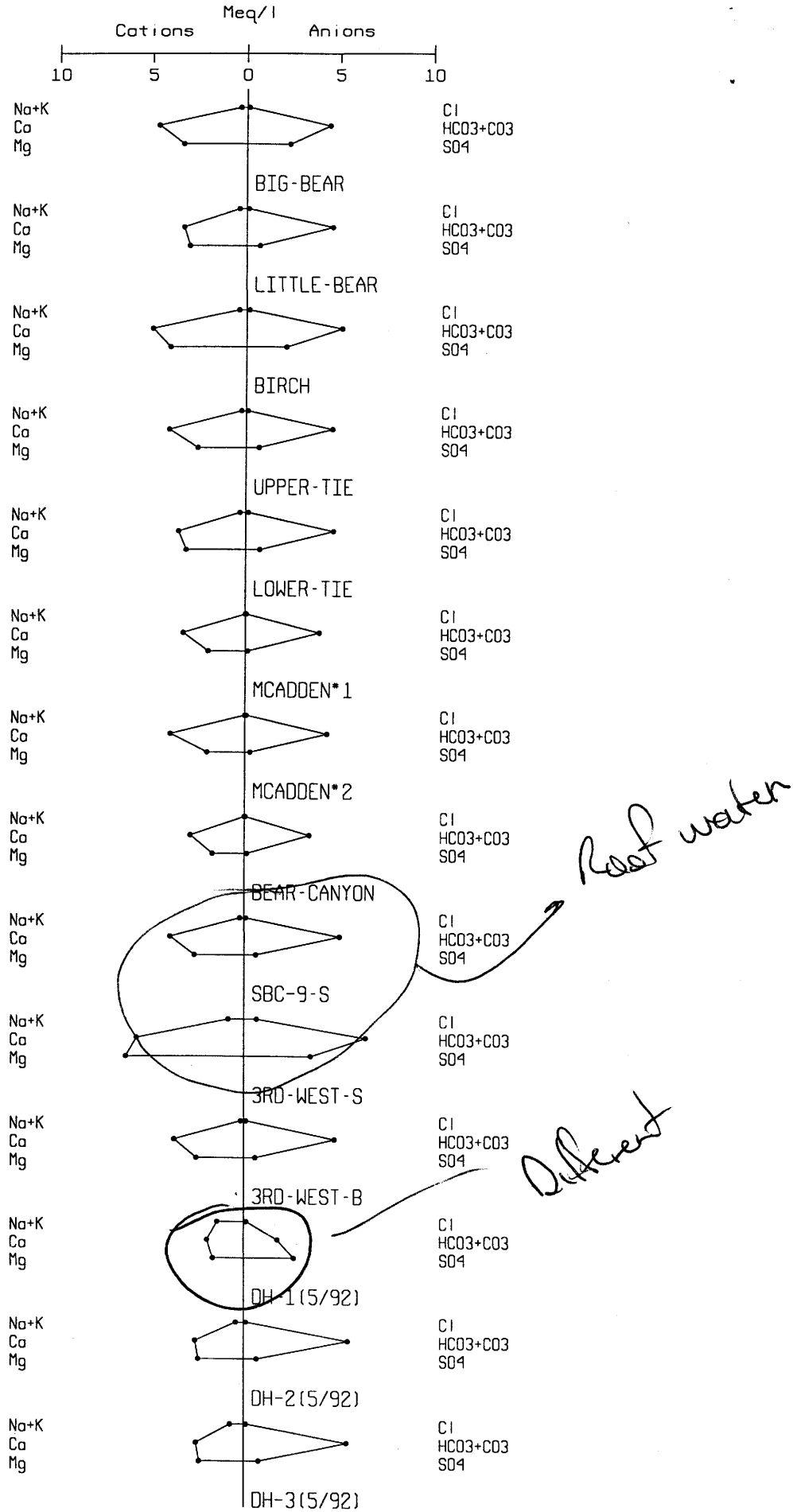
Exhibit 4


BIG-BEAR
LITTLE-BEAR
BIRCH
UPPER-TIE
LOWER-TIE
MCADDEN#1
MCADDEN#2
BEAR-CANYON
SBC-9-S
3RD-WEST-S
3RD-WEST-B
MINE-DEWATER
DH-1(5/92)
DH-2(5/92)
DH-3(5/92)
Sulfate(SO4)+Chloride(Cl)
Calcium(Ca)+Magnesium(Mg)
Sodium(Na)+Potassium(K)
Carbonate(CO3)+Bicarbonate(HCO3)
Magnesium(Mg)
Sulfate(SO4)
Mg
SO4
Ca
Na+K
HCO3+CO3
Cl
Calcium (Ca)
Chloride (Cl)
CATIONS
%meq/l
ANIONS


Meq/l
Cations
Anions
10
5
0
5
10
Na+K
Ca
Mg
Cl
HCO3+CO3
SO4
BIG-BEAR
LITTLE-BEAR
BIRCH
UPPER-TIE
LOWER-TIE
MCADDEN*1
MCADDEN*2
BEAR-CANYON
SBC-9-S
3RD-WEST-S
3RD-WEST-B
DH-1(5/92)
DH-2(5/92)
DH-3(5/92)
Roof water
Different

Deuterium

Tritium

Table 1
Major-Ion and Isotopic Concentrations

Spring or Site	Sa mple Date	Temp. (C)	pH	Field Conductivity (uS/cm)	Na	K	Ca	Mg	Cl	HCO3	SO4	TDS	NO3	PO4	O&G	d-18O	d-2H	3H	d-13C	d-34S	14-C Activity (pmc)	14-C Age (years bp)
Gentry Mountains Samples																						
Big Bear Spring	Oct-95	10.5	7.95	599	6.2	2.2	93.4	40.8	4.4	272	111	389	0.14	0	ND	-16.5	-123	15.8	-9.7	5	na	na
	Sep-96	10.4	6.7	607	5.4	1.9	89	37	2.6	329	53	270	na	na	na	na	na	na	na	na	56.76	modern
Little Bear Spring	Oct-95	8.4	7.7	490	7.7	1.8	66.6	36.7	4.2	282	34.2	261	0	0	ND	-16.4	-125	22	-9.7	7		
	Sep-96	8.3	7.06	248	7.8	1.9	72	39	5.1	329	32	270	na	na	na	na	na	na	na	na	71.12	modern
Birch Spring	Oct-95	12	7.6	641	7.3	2.6	99.5	49	5.8	313	103	433	0	0	ND	-16.6	-125	0.73	-10.4	5.5	na	na
	Sep-96	13.5	7.24	915	7.2	2.8	100	50	2.6	390	83	430	na	na	na	na	na	na	na	na	45.3	750 to 1800
Upper Tie Fork Spring	Oct-95	8.8	7.58	495	4.4	1.9	81.6	31.2	3.7	283	34	316	0	0	ND	-16.9	-128	10.1	-11	13	na	na
	Sep-96	9.5	7.43	581	3.9	1.9	87	33	1	341	31	290	na	na	na	na	na	na	na	na	56.18	modern
Lower Tie Fork Spring	Oct-95	7.5	7.83	474	5.6	2.5	71.4	38.4	5.3	287	36.9	315	0	0	ND	-16.6	-125	9.6	-10.5	11.2	na	na
	Sep-96	7.1	7.73	576	5.4	2	76	40	2.6	341	34	290	na	na	na	na	na	na	na	na	72.22	modern
MCADDEN #1 Spring	Jun-96	3.8	*	*	0	0	66.3	24.1	1.7	241	6.3	254	0	0.38	na	-16.2	-122.5	19.8	-11.6	4.5	na	na
MCADDEN #2 Spring	Jun-96	3.8	*	*	0	0	79.1	24.5	2.6	268	13.9	300	0.17	0.41	na	-16.1	-119	20.4	-12.5	1.9	na	na
Bear Canyon Spring	Jun-96	5.8	*	*	0	0	57.6	20.8	1.8	211	6.5	227	0.35	0.24	na	-16.3	-122	36.7	-11.1	2.7	na	na
COOP Bear Canyon Mine Groundwater Inflow Samples																						
SBC-9 Source	May-96	10.5	8.8	307	4.2	1.3	78.7	32.2	3.4	311	29.9	357	0	0	na	-17.1	-125	0.4	-12.1	11.4	na	na
3rd West South	May-96	10.5	8.54	556	16.9	4	114	76.1	24.3	397	171	672	0	0	na	-17	-123	2.22	-12	10.8	na	na
3rd West Bleeder	May-96	11.1	8.64	300	2.9	1.1	74	30.7	3.9	296	29.6	346	0	0	na	-16.8	-122	-0.05	-12.3	-0.6	na	na
MINE DEWATER	May-96	14.3	11	1136	4.2	1.8	76.2	35.4	3.5	294	60.3	383	0	0	na	na	na	na	na	na	na	na

mostly modern

on Trail Canyon fault

mostly modern

Notes: * indicates that measurment was not collected due to equipment failure.
ND indicates that analytie was not detected at method detection limit.
NA indicates that analyte was not analyzed.

Pre-Bomb water

Peter said he thought these would have been consistent with Birch

Plate 1
Birch Spring Flow and TDS, Sulfate Concentration

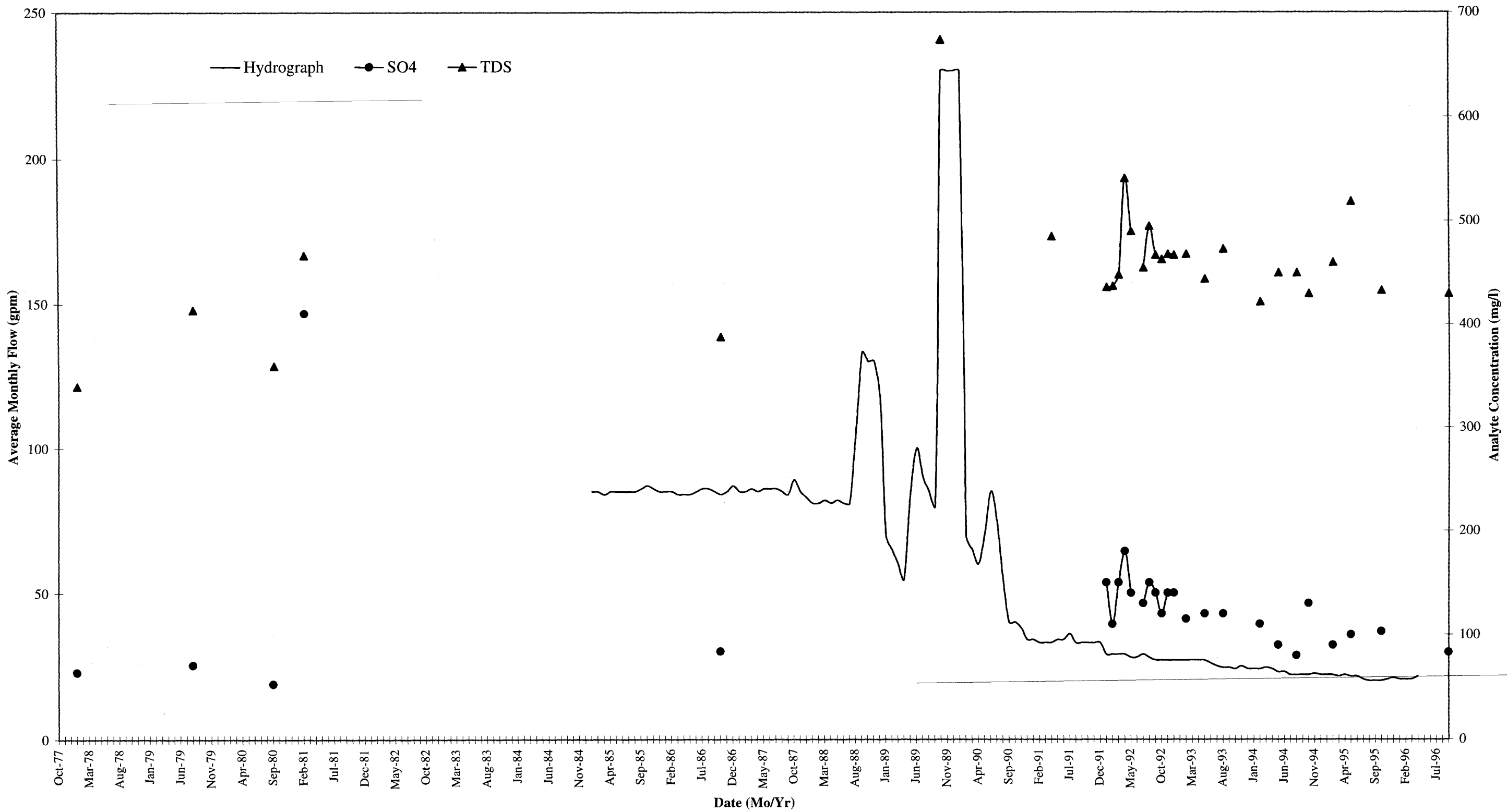


PLate 2
Big Bear Spring Hydrograph, TDS, and Sulfate Concentrations

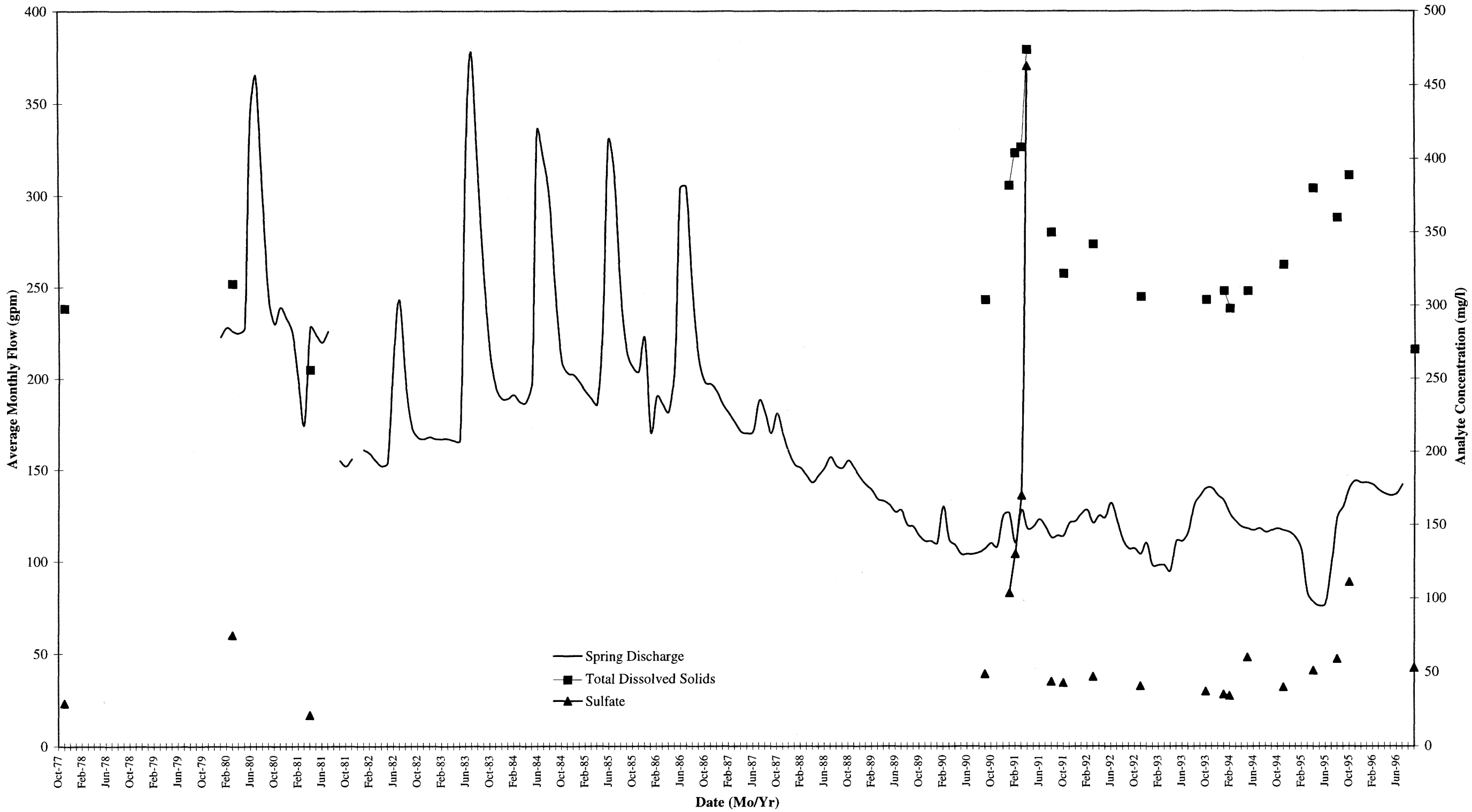


Plate 3
Little Bear Spring Hydrograph

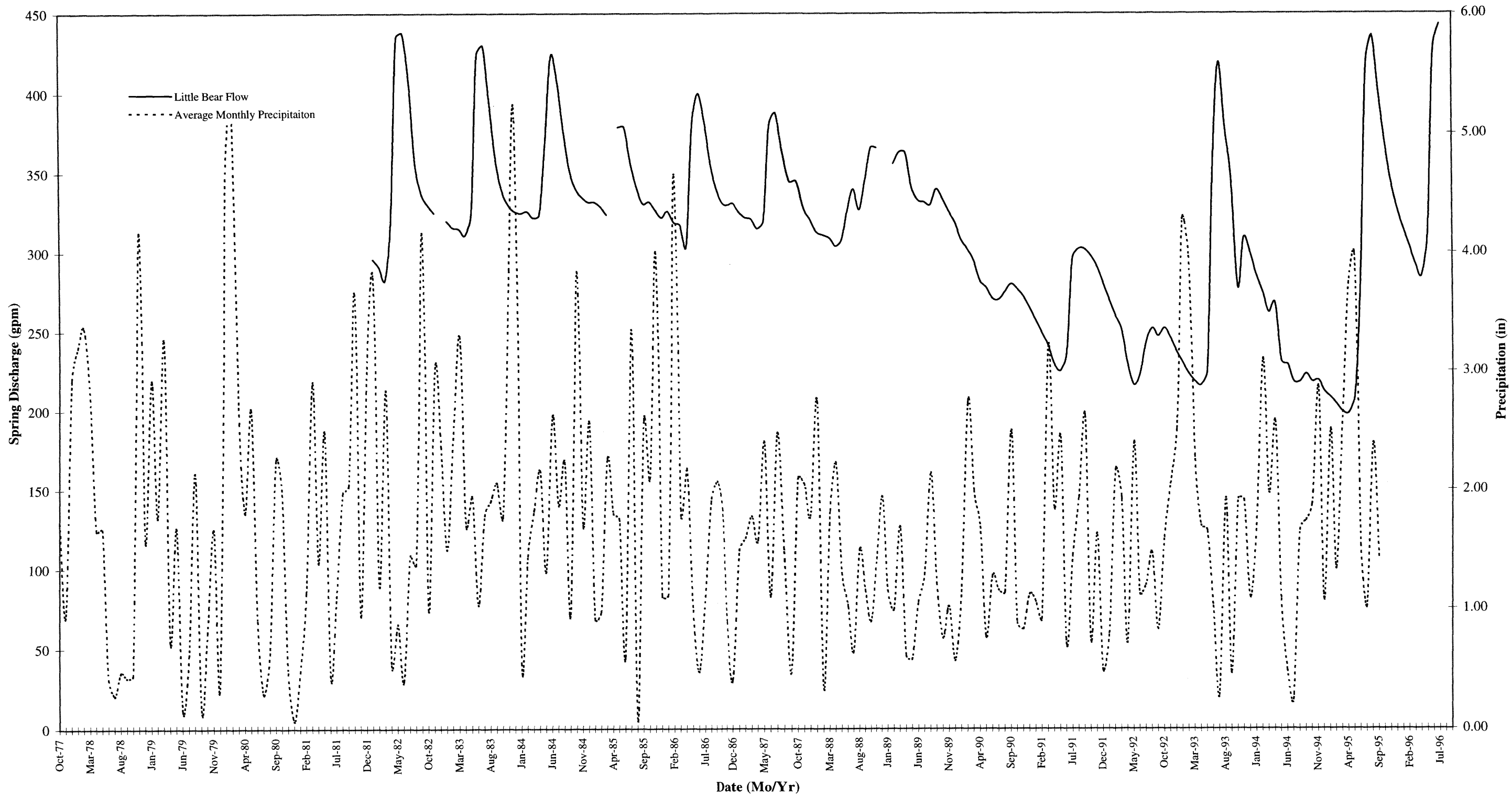


Plate 4
Upper Tie Fork Spring Hydrograph

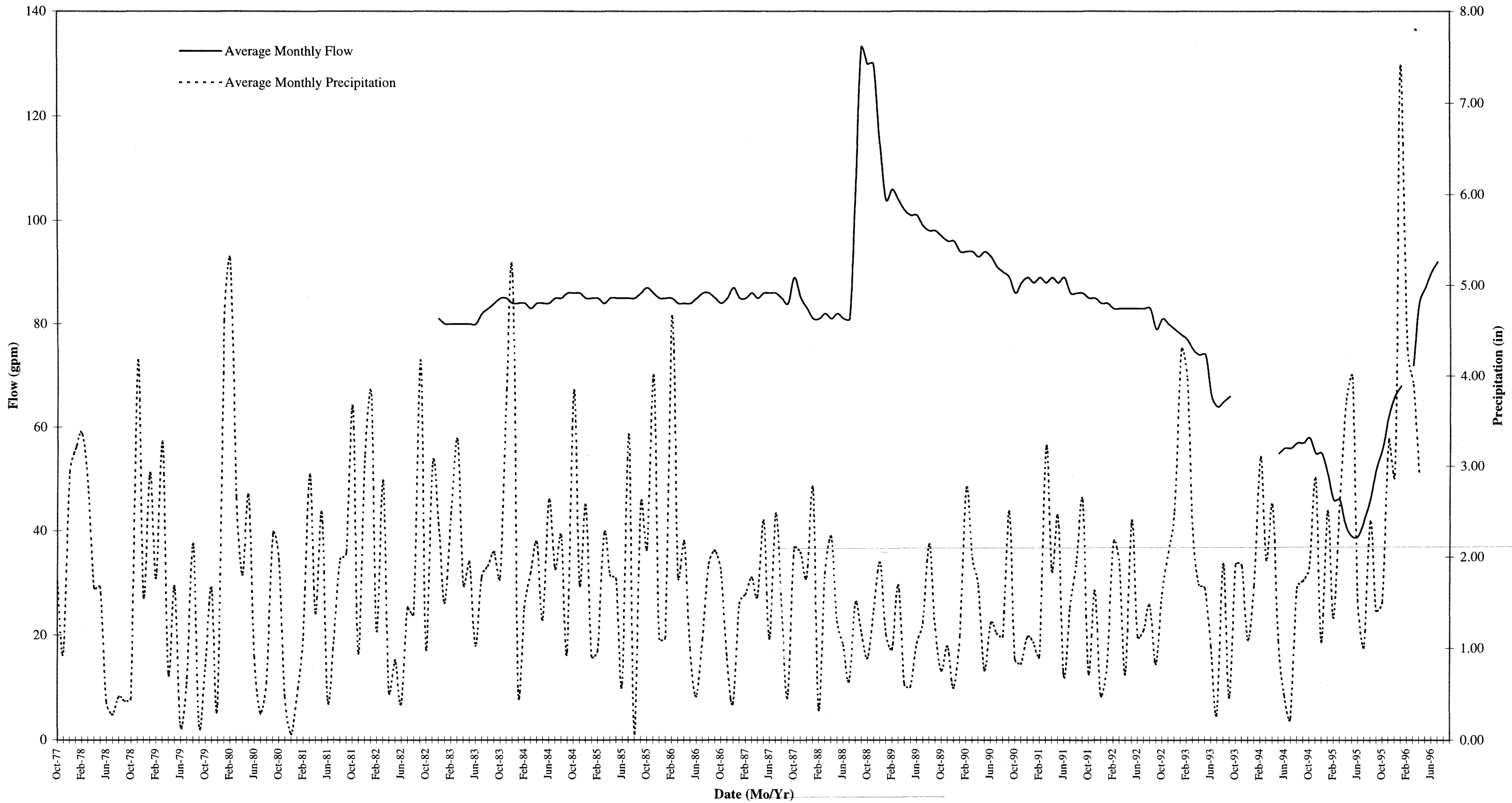


Plate 5
Bear Canyon Mine Discharge

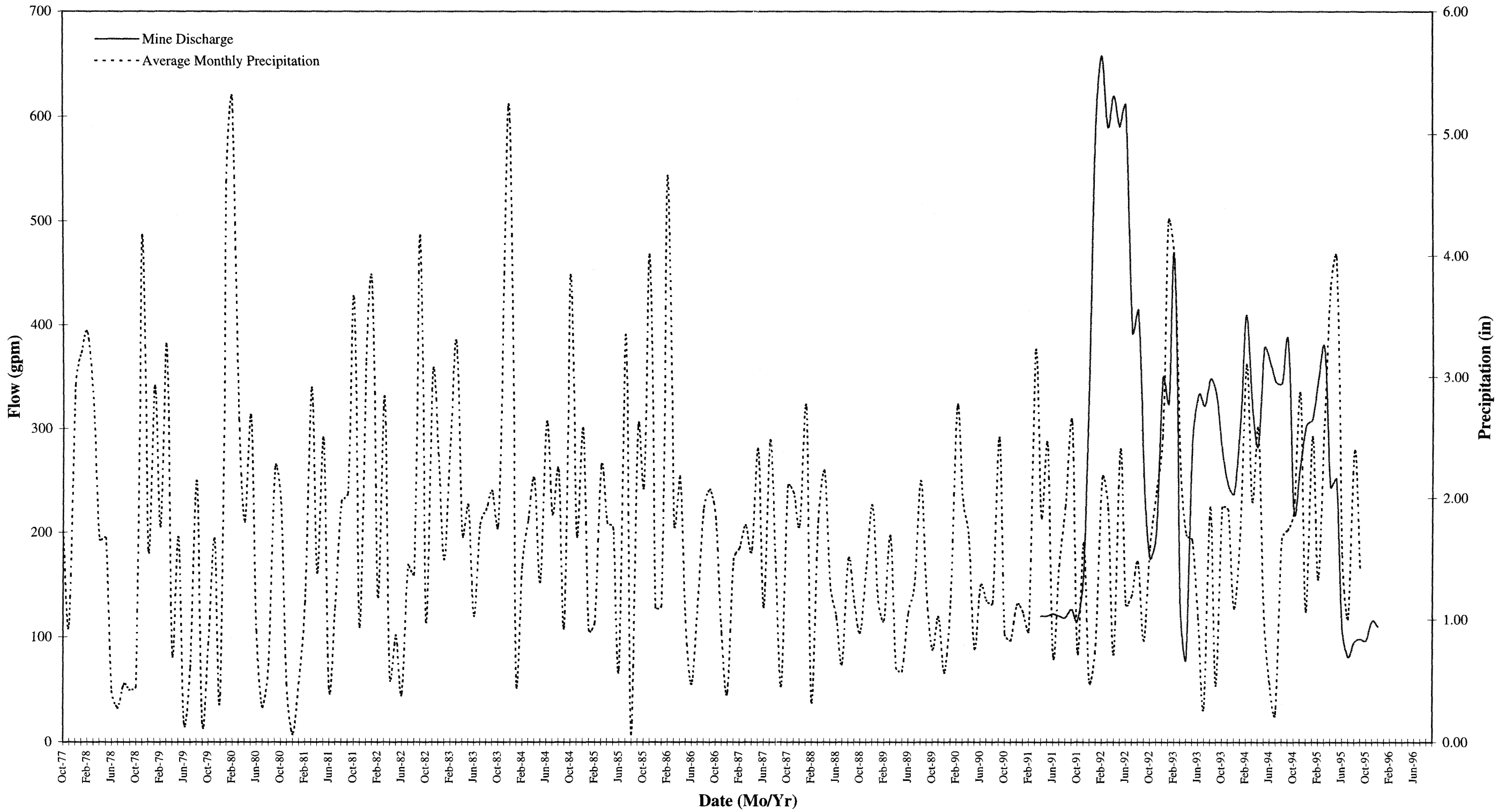


Plate 6

Average Monthly Precipitation and Huntington Creek Stream Flow

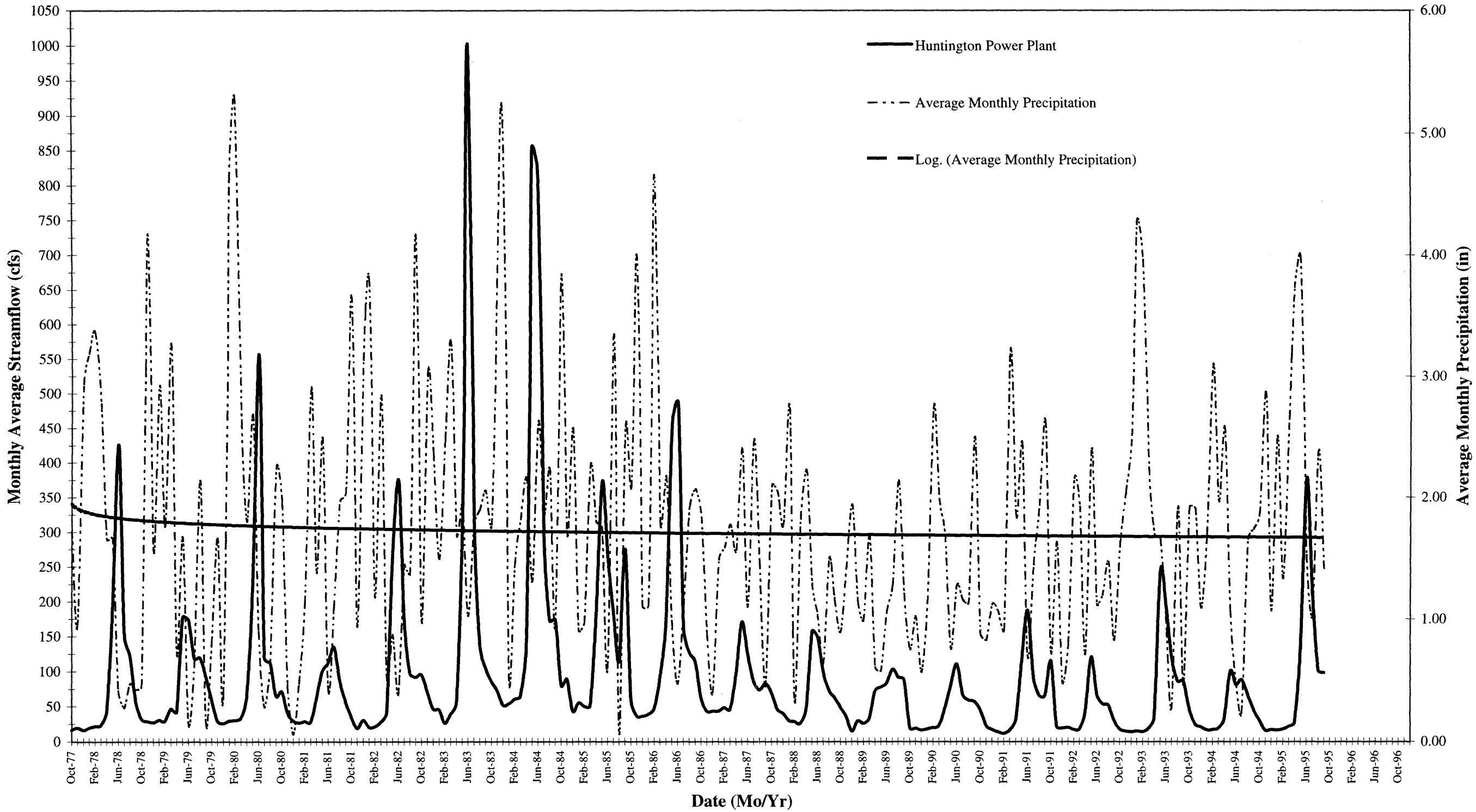
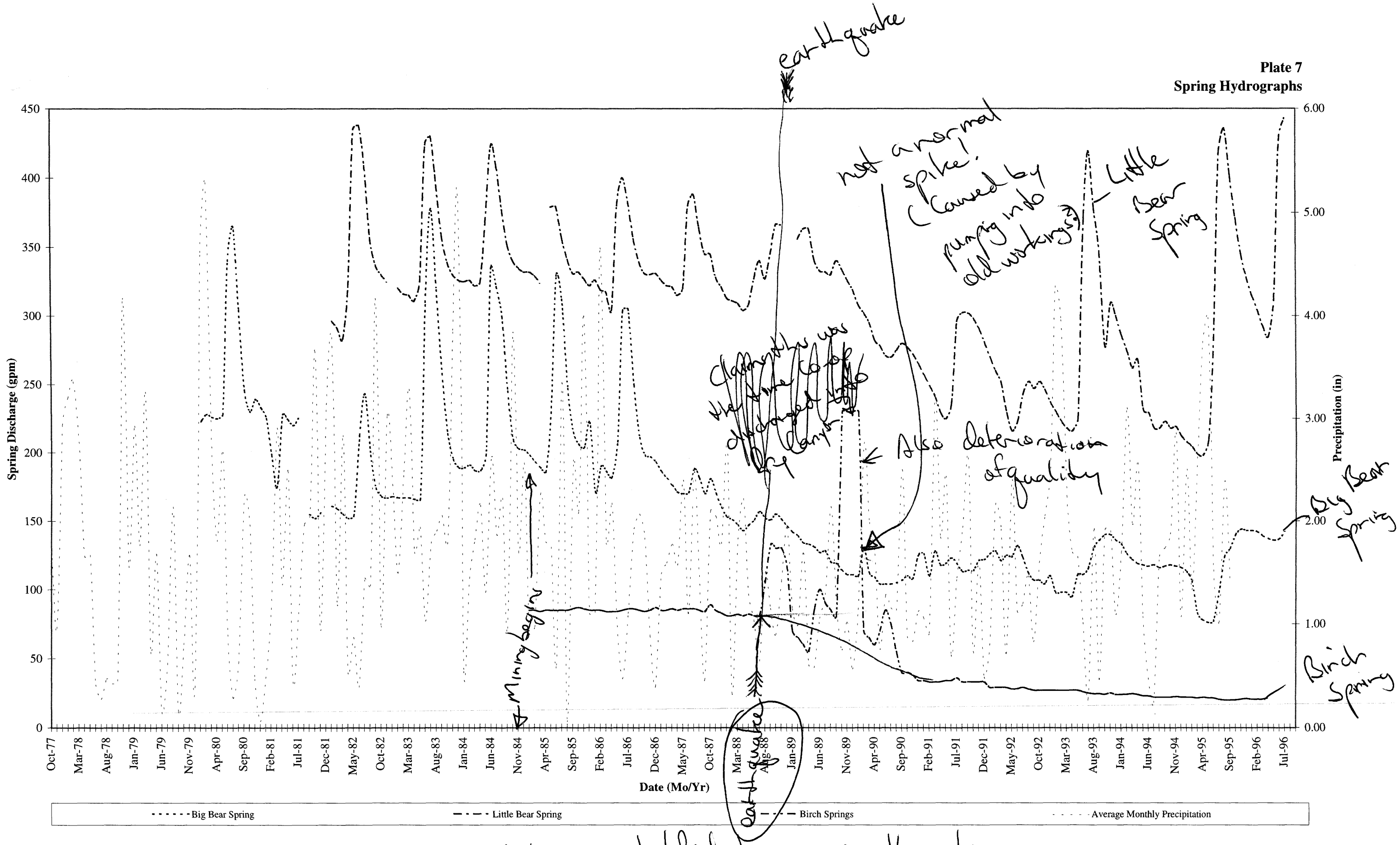
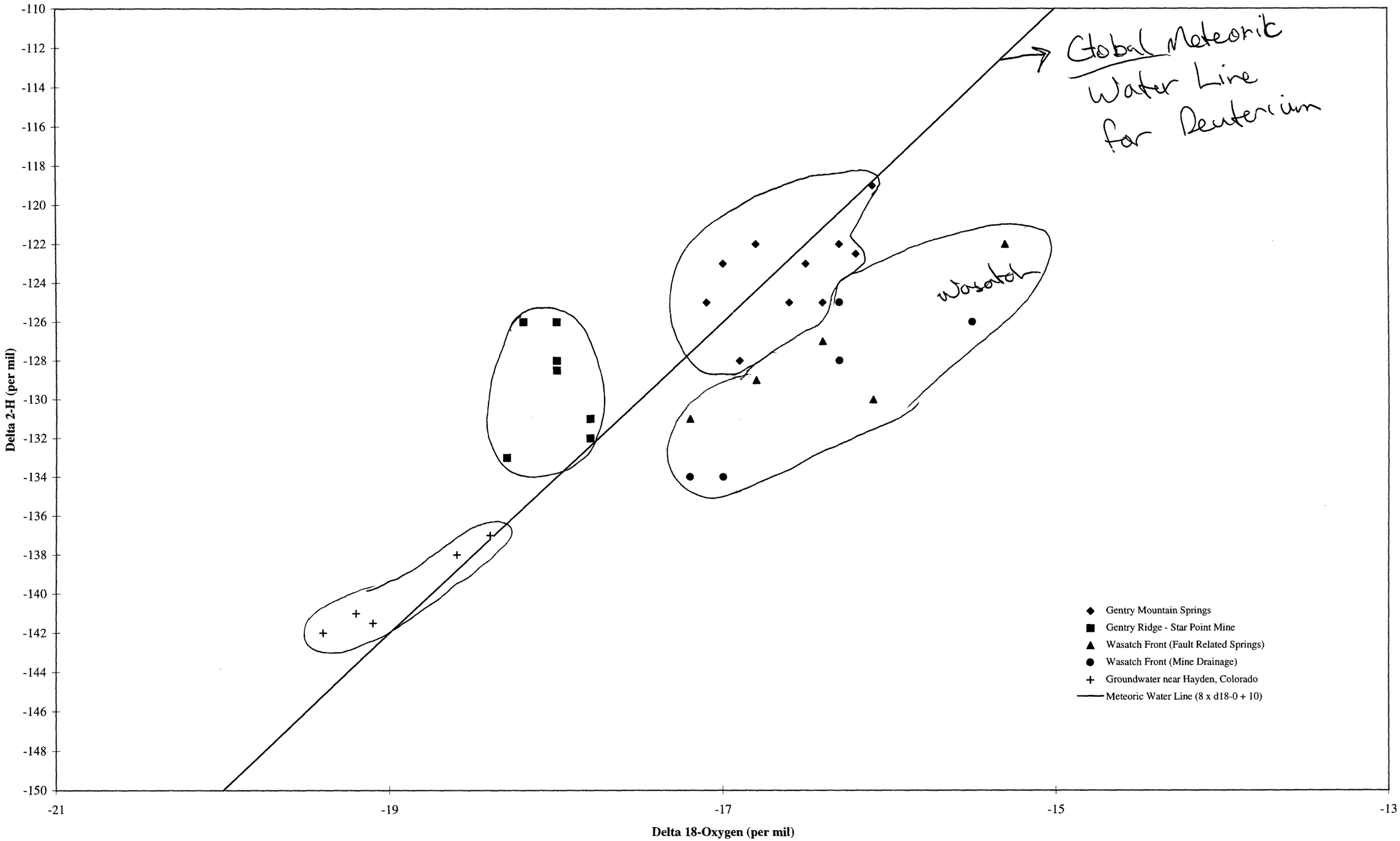


Plate 7
Spring Hydrographs



Water users testified to an earthquake which "precipitously" diminished Birch Spring

Plate 8
Delta 18-O - Delta 2-H



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	Sep-96	10.4	6.7	607	5.4	1.9	89	37	2.6	329	53	270	na	na	na	na	na	na	na	na	56.76	modern
Little Bear Spring	Oct-95	8.4	7.7	490	7.7	1.8	66.6	36.7	4.2	282	34.2	261	0	0	ND	-16.4	-125	22	-9.7	7		
	Sep-96	8.3	7.06	248	7.8	1.9	72	39	5.1	329	32	270	na	na	na	na	na	na	na	na	71.12	modern
Birch Spring	Oct-95	12	7.6	641	7.3	2.6	99.5	49	5.8	313	103	433	0	0	ND	-16.6	-125	0.73	-10.4	5.5	na	na
	Sep-96	13.5	7.24	915	7.2	2.8	100	50	2.6	390	83	430	na	na	na	na	na	na	na	na	45.3	750 to 1800
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	Sep-96	7.1	7.73	576	5.4	2	76	40	2.6	341	34	290	na	na	na	na	na	na	na	na	72.22	modern
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Bear Canyon Spring	Jun-96	5.8	*	*	0	0	57.6	20.8	1.8	211	6.5	227	0.35	0.24	na	-16.3	-122	36.7	-11.1	2.7	na	na
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3rd West South	May-96	10.5	8.54	556	16.9	4	114	76.1	24.3	397	171	672	0	0	na	-17	-123	2.22	-12	10.8	na	na
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MINE DEWATER	May-96	14.3	11	1136	4.2	1.8	76.2	35.4	3.5	294	60.3	383	0	0	na	na	na	na	na	na	na	na

Notes: * indicates that measurment was not collected due to equipment failure.
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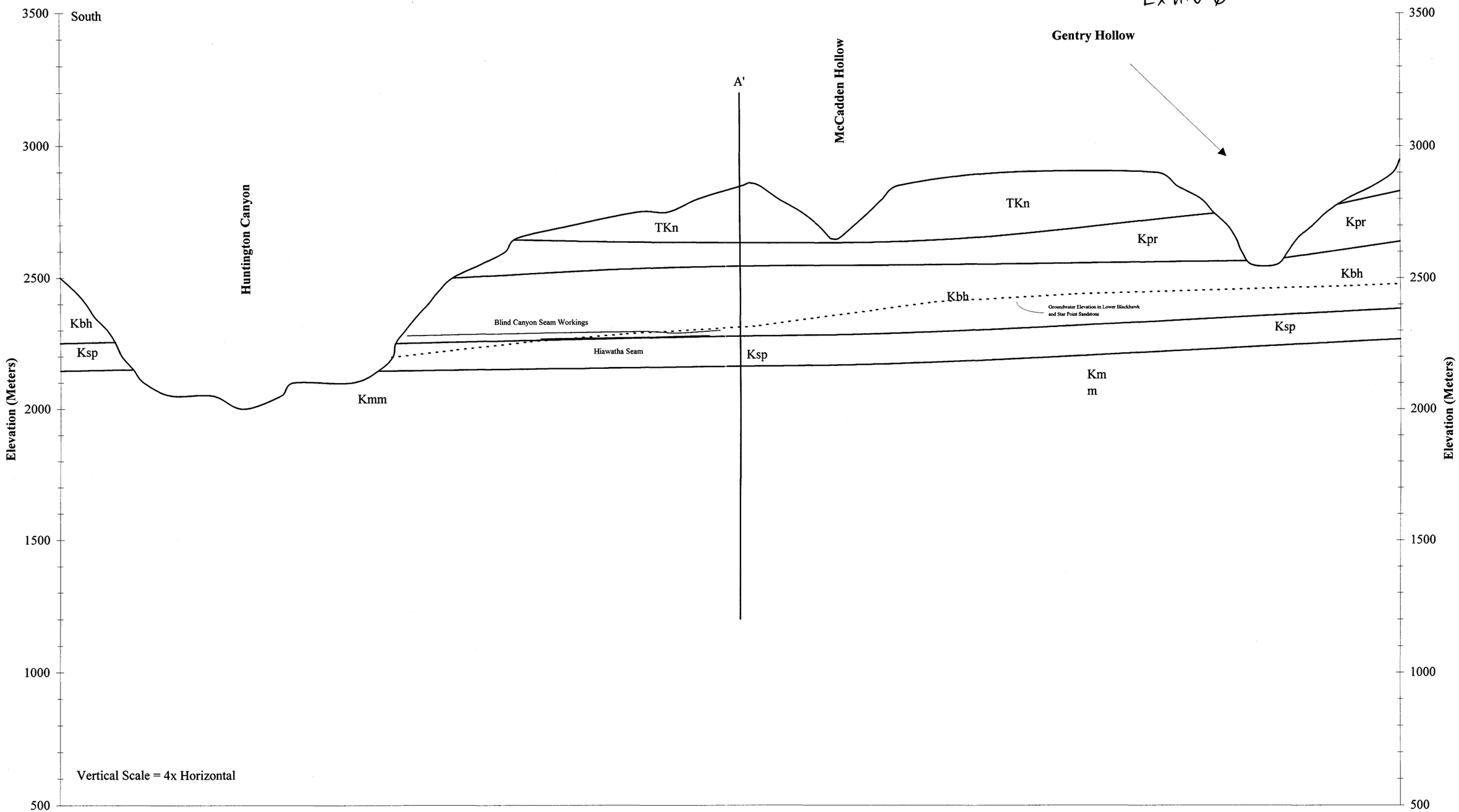
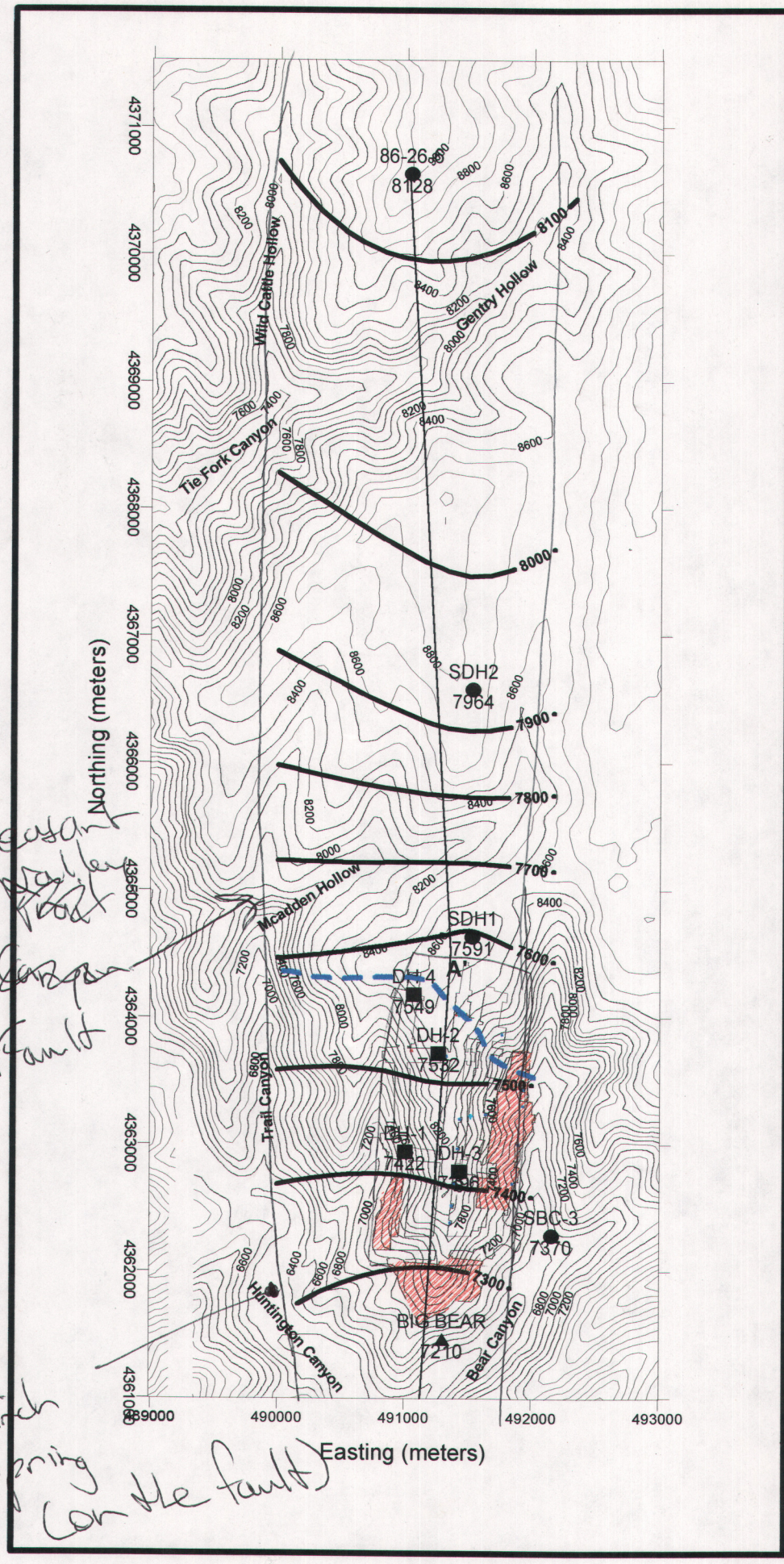
Gentry Mountain Cross Section Looking West

Exhib 6





Pleasant Valley Fault

Birch Spring (on the fault)

NIELSEN
Hydrogeologic Services

7600
Groundwater Elevation Contour

Intercept of Groundwater Surface with Floor of Blind Canyon Seam

Blind Canyon Seam Mine Workings

Area of Removed Pillars

Surface Monitoring Well with Identification and Groundwater Elevation

Underground Monitoring Well with Identification and Groundwater Elevation

Spring Discharge Location with Identification and Elevation

Line of Cross Section - A' Indicates Bend in Section

A'

Exhibit 5

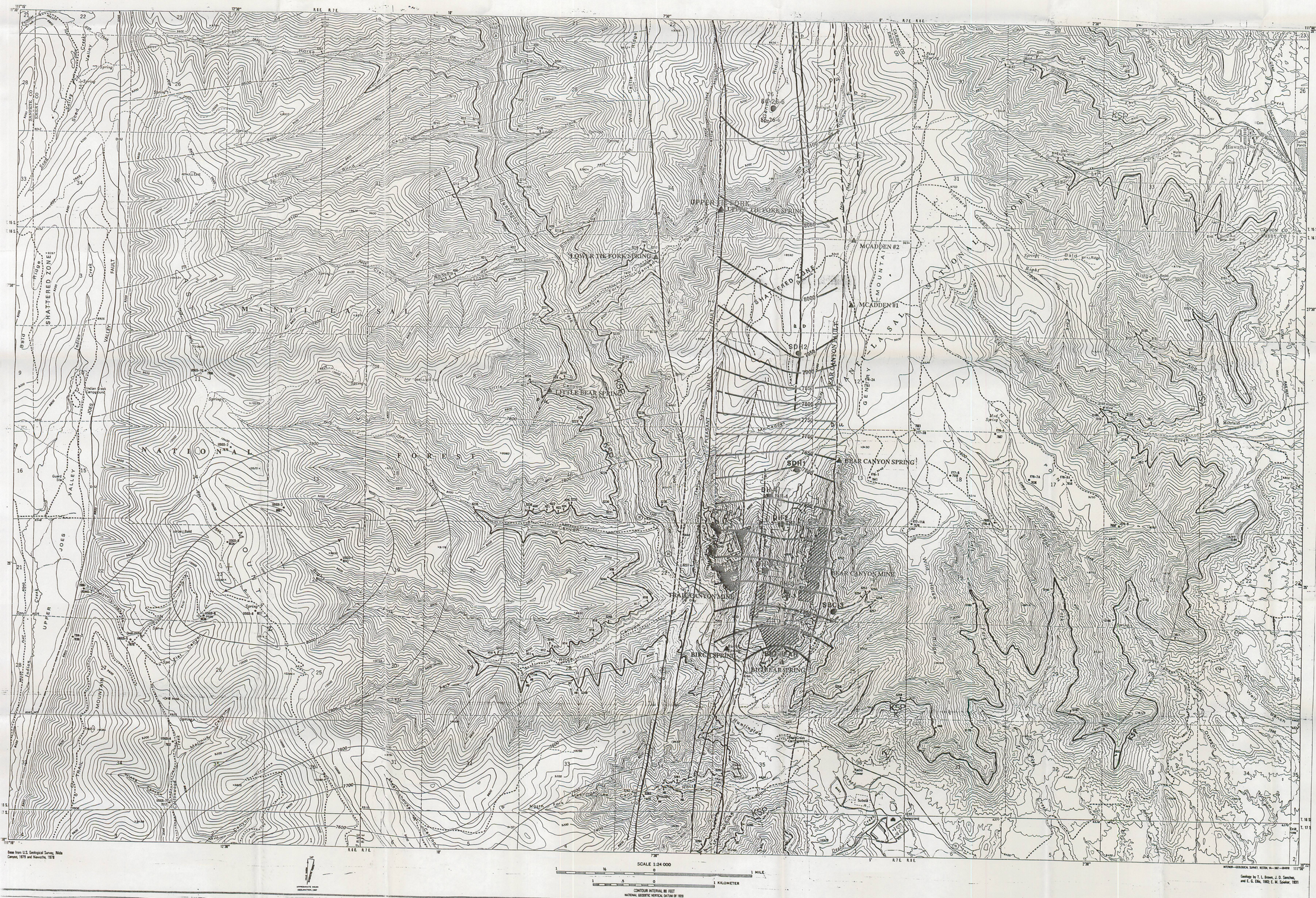
1994 Groundwater Elevations of Star Point Sandstone and Lower Blackhawk Aquifer

Job #	DRN by	Date:
T0005-001-01	PJN	10-23-96

SCALE

0 4000 8000

1 inch = 4000 feet



Base from U.S. Geological Survey, Wilde Canyon, 1978 and Nawatha, 1978

Geology by T. L. Brown, J. D. Sanchez, and E. G. Ellis, 1982; E. M. Spieker, 1931

LEGEND

- ● Underground Monitoring Well
- ⊙ Surface Monitoring Well
- ▲ Spring
- KSP Top of Star Point Sandstone

—7500— GROUNDWATER ELEVATIONS

PLATE 2

SIGNATURE	DATE
REVIEW ENGR.	
PROJECT ENGR.	
PROJECT MGR.	
CLIENT	

SECOR INTERNATIONAL INCORPORATED

SECOR

4001 SOUTH 700 EAST
SUITE 250
SALT LAKE CITY, UT 84107

EXHIBIT C-11

BIRCH SPRINGS FLOW AND AREA MONTHLY PRECIPITATION

RECEIVED
APR 04 1997
DIV. OF OIL, GAS & MINING

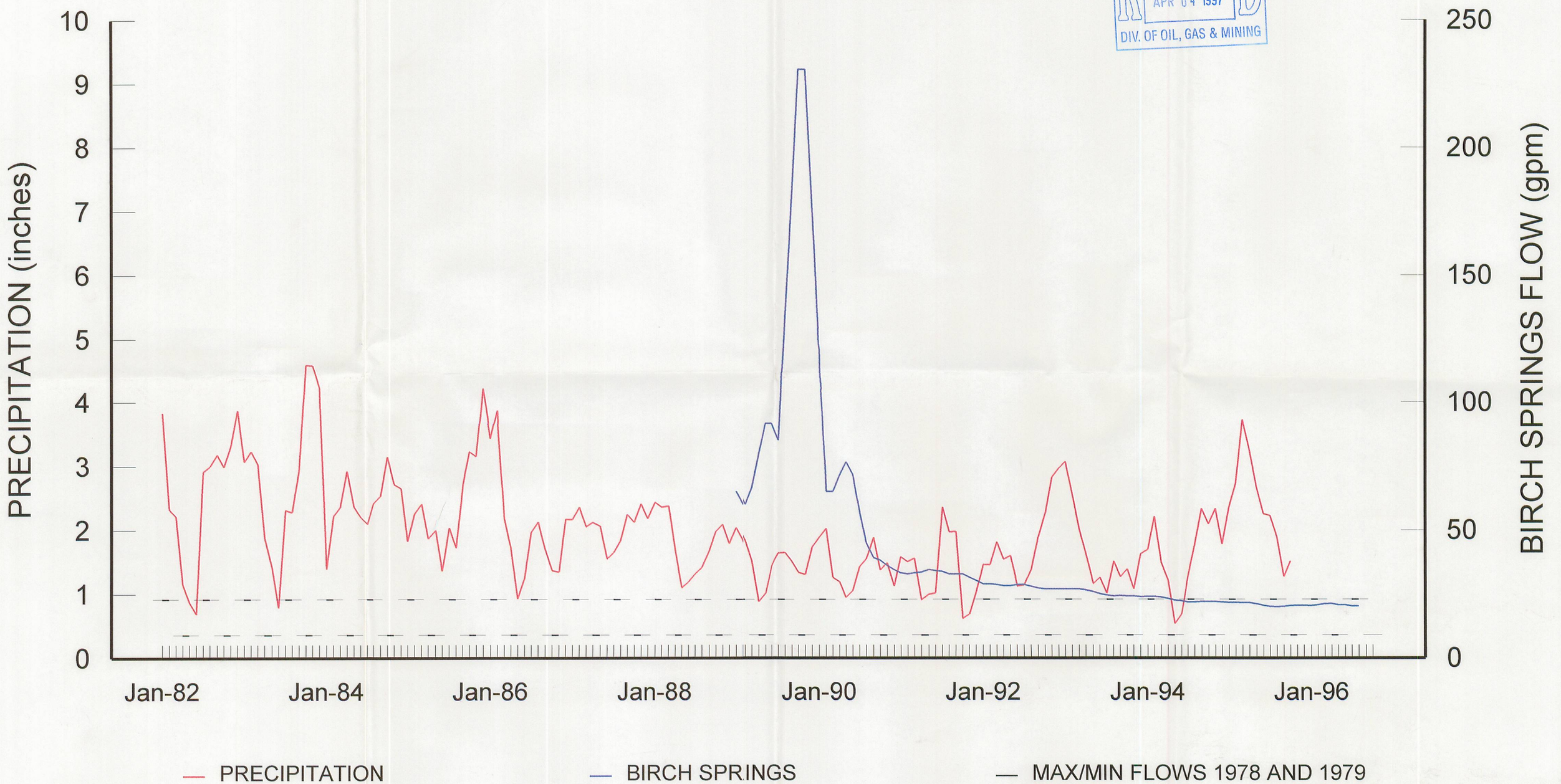


EXHIBIT C-10

BIG BEAR SPRING FLOW AND AREA MONTHLY PRECIPITATION

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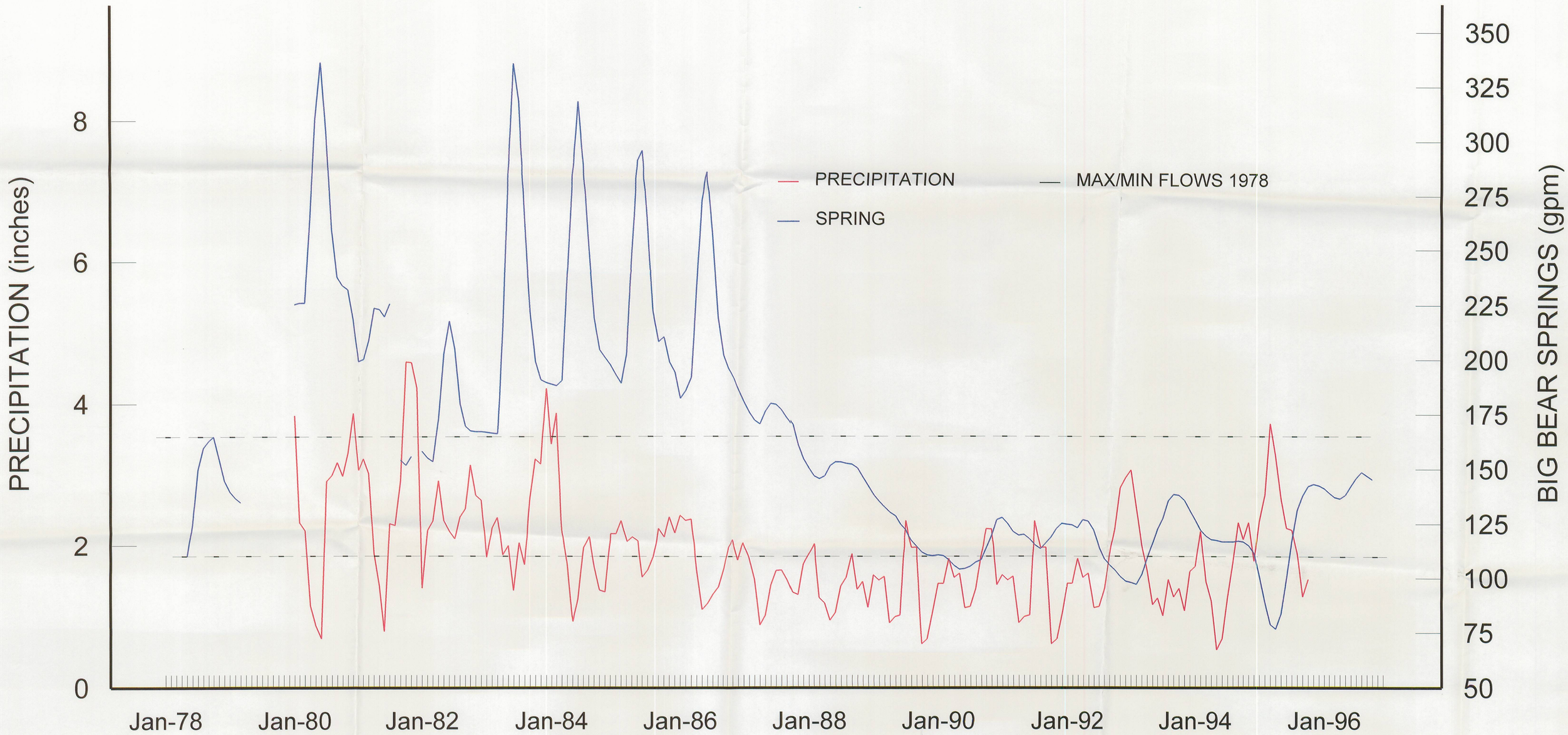


GEOLOGY OF THE BEAR CANYON MINE AREA

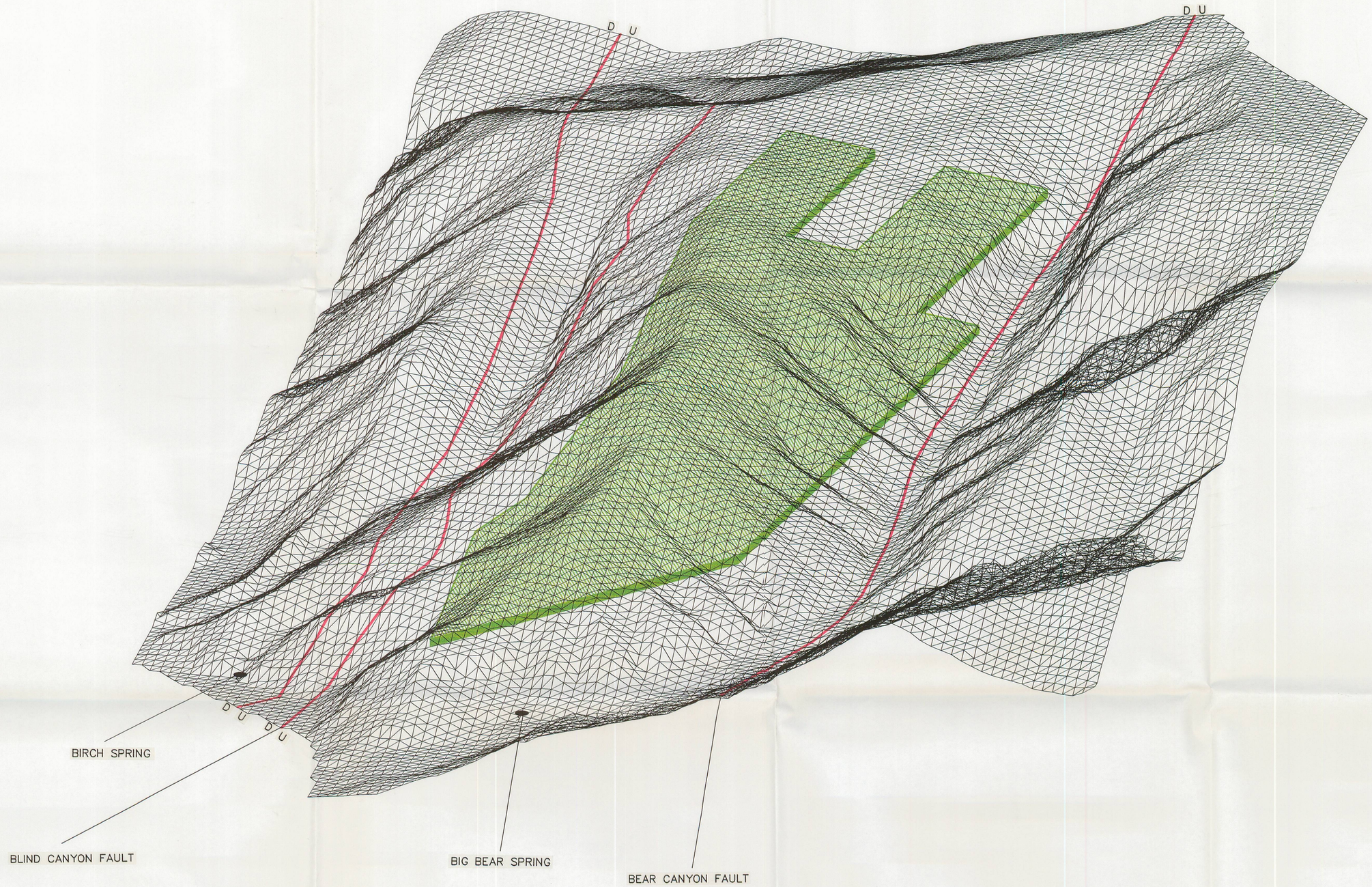
EXHIBIT C-9

RECEIVED
APR 04 1997
DIV. OF OIL, GAS & MINING

Exhibit 9

EXHIBIT C-8

RECEIVED
APR 04 1997
DIV. OF OIL, GAS & MINING



BEAR CANYON MINE

BLIND CANYON SEAM

EXHIBIT C-7

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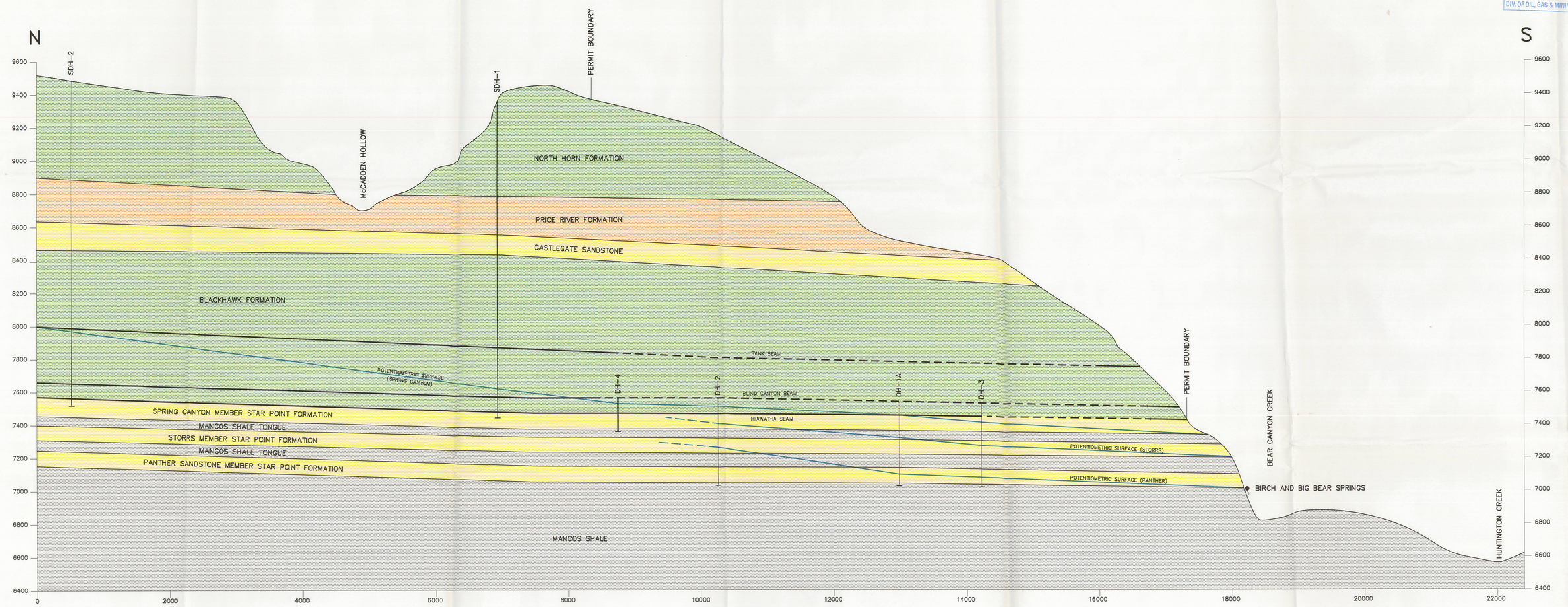

NORTH-SOUTH CROSS SECTION
BEAR CANYON MINE AREA

EXHIBIT C-1

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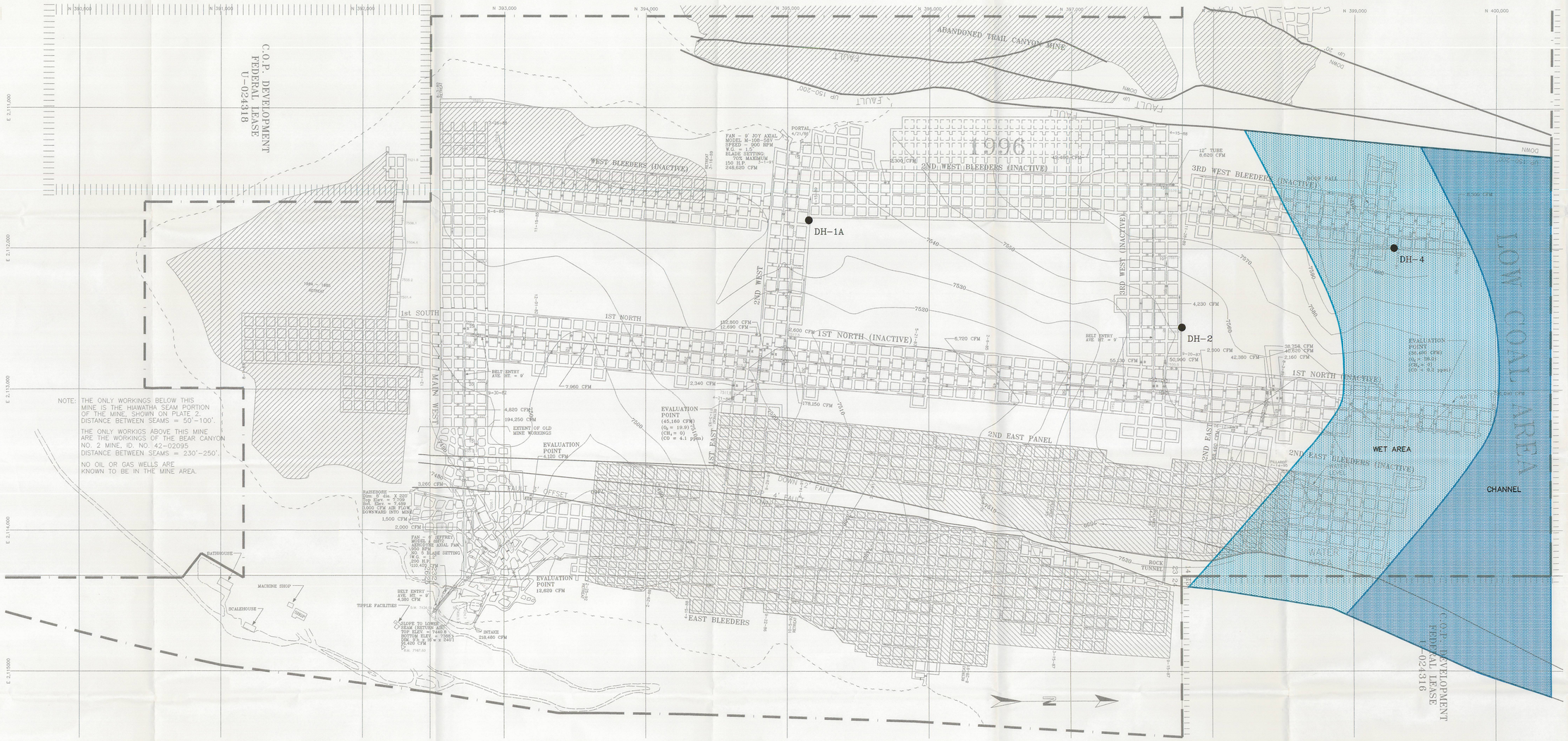
DIV. OF OIL, GAS & MINING



BLIND CANYON SEAM

Base from U.S. Geological Survey, Nibs Canyon, 1979 and Nokeetla, 1978

Geology by T. L. Brown, J. S. Sanchez, and E. C. Ellis, 1982; E. M. Spencer, 1981

LEGEND

- Underground Monitoring Well
- Surface Monitoring Well
- Spring
- KSP — Top of Star Point Sandstone

Permit Boundary

Rose Diagram (Frequency) of Fracture Orientation Measurments At Location of Diagram or as Indicated by Arrow

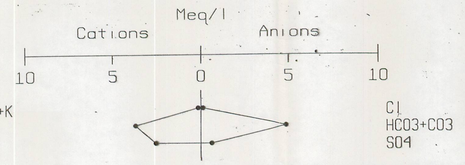


PLATE 1	
SIGNATURE	DATE
REVIEW ENGR.	
PROJECT ENGR.	
PROJECT MGR.	
CLIENT	

SECOR INTERNATIONAL INCORPORATED

SECOR

4001 SOUTH 700 EAST
SUITE 250
SALT LAKE CITY, UT 84107