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UTAH POWER & LIGHT COMPANY
HYDROLOGIC MONITORING PROGRAM
ANNUAL REPORT FOR 1985

MARCH 1986

Submitted to: United States Department of the Interior
Office of Surface Mining
Minerals Management Service
Utah Division of Oil, Gas and Mining

Prepared and submitted for Utah Power & Light Company by:

Hydrologic Section of the Power Operation Department

and

Mining and Exploration Department

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I. INTRODUCTION

This 1985 Water Monitoring Report is hereby submitted in accordance with the U. S. Department of Interior, Office of Surface Mining requirements for hydrologic monitoring in areas of and adjacent to coal mining operations.

This report is the eighth annual hydrologic report submitted by Utah Power & Light Company since the report entitled "Monitoring of the Water Resources in the Mining Areas of East Mountain, Emery County, Utah" was submitted to the U. S. Geological Survey and the Utah Division of Oil, Gas and Mining in December 1977. This report addresses flow observations and water quality characteristics of the water resources on and adjacent to Utah Power & Light Company (UP&L) mining areas in Emery County (see Figures 1a and 1b).

Information was compiled the past year from in-house as well as from state and federal agencies and private sources as follows:

U. S. Geological Survey
U. S. Forest Service
U. S. Department of Commerce, National Weather Service
Utah Division of Oil, Gas and Mining
Utah Division of Environmental Health
Huntington-Cleveland Irrigation Company
Emery Water Conservancy District
Cottonwood Creek Consolidated Irrigation Company

Information from outside agencies will continue to be utilized each year for as long as their data gathering programs continue. By using this outside information, a cooperative effort is realized and duplication of effort and expense is substantially reduced.

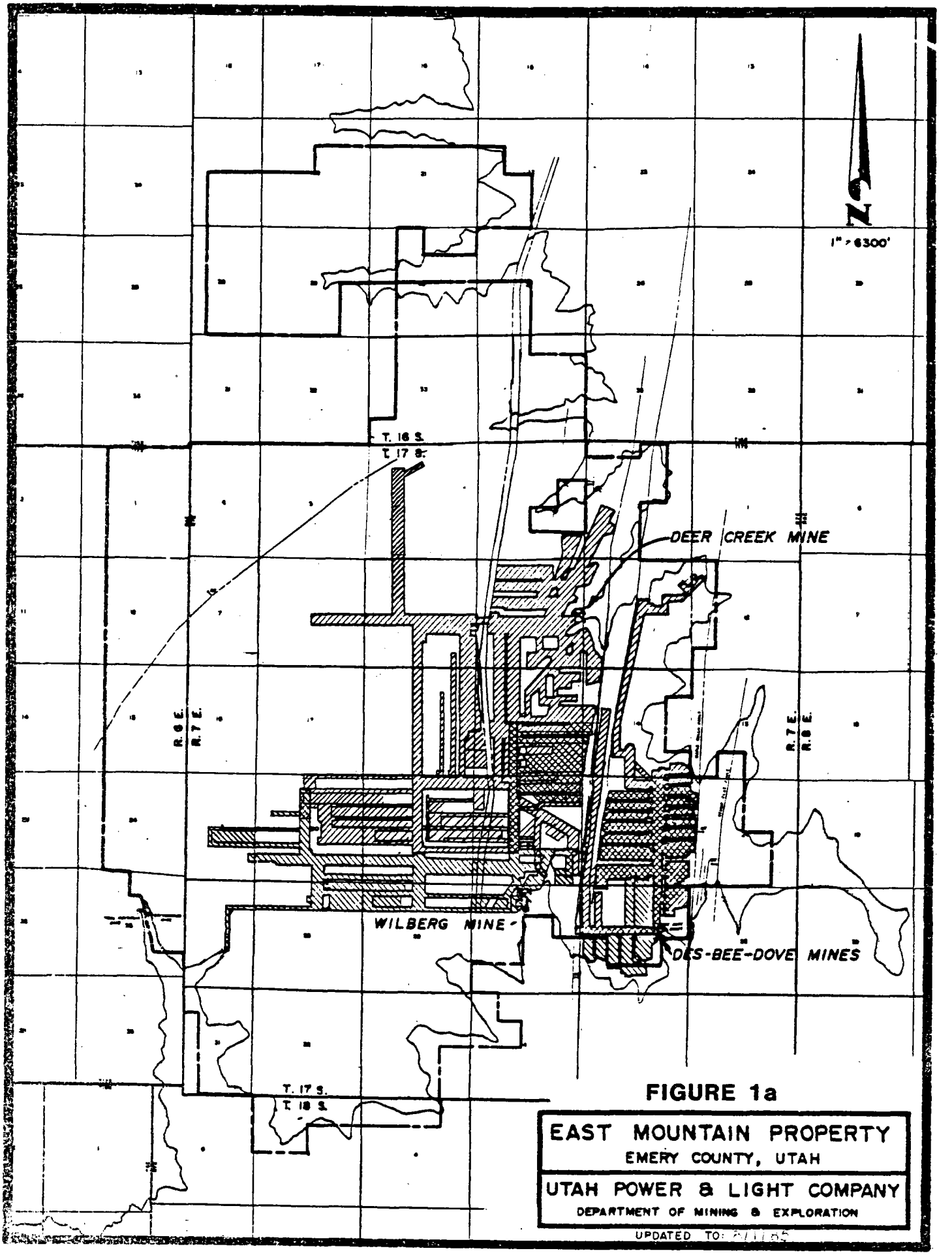
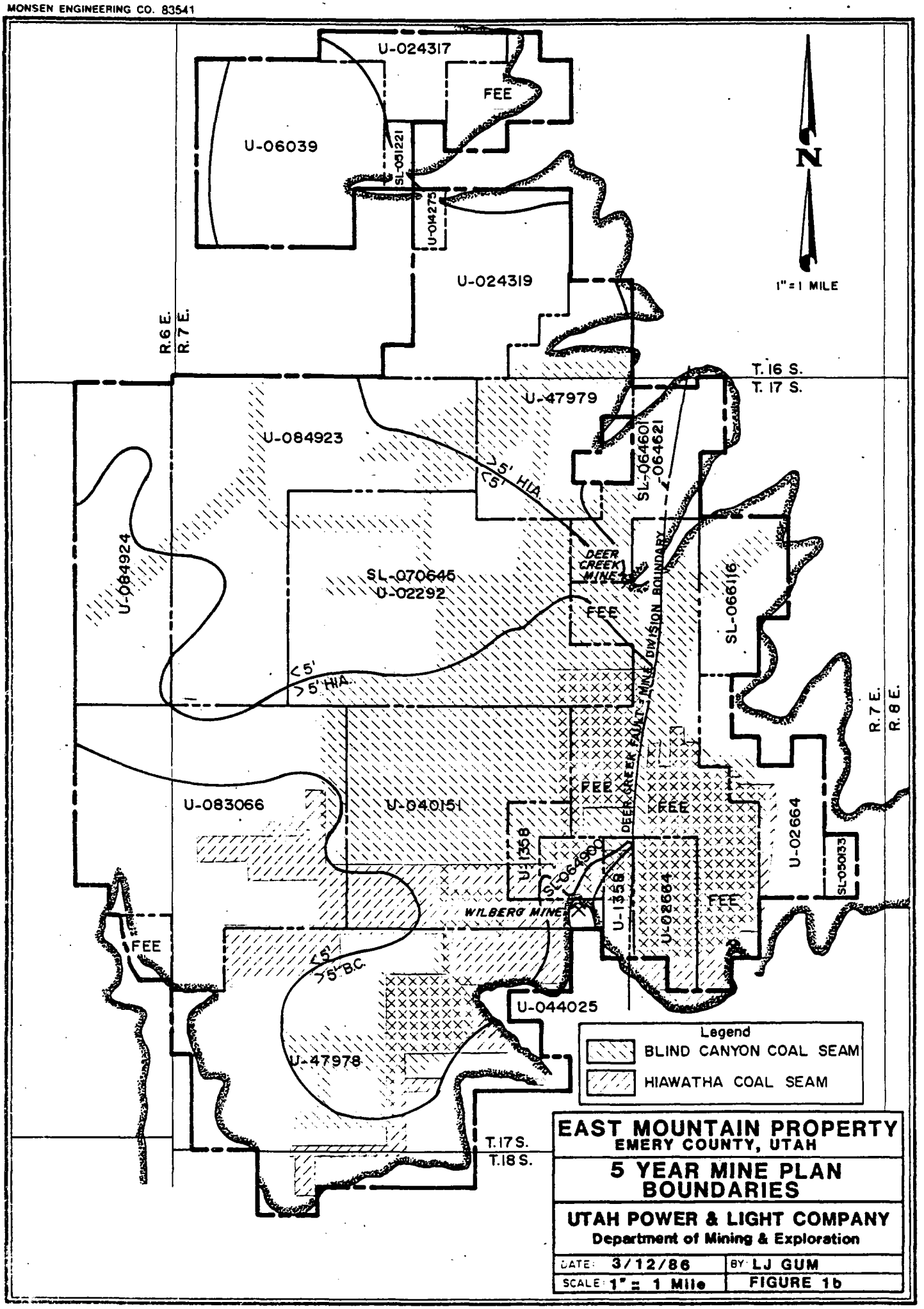


FIGURE 1a

EAST MOUNTAIN PROPERTY
EMERY COUNTY, UTAH

UTAH POWER & LIGHT COMPANY
DEPARTMENT OF MINING & EXPLORATION

UPDATED TO: 2/1/85



EAST MOUNTAIN PROPERTY
EMERY COUNTY, UTAH

5 YEAR MINE PLAN BOUNDARIES

UTAH POWER & LIGHT COMPANY
Department of Mining & Exploration

DATE: 3/12/86	BY: LJ GUM
SCALE: 1" = 1 Mile	FIGURE 1b

II. CLIMATIC OBSERVATIONS

In general, runoff and subsequent water supplies are a direct function of the climatic conditions in any given area. Furthermore, the significance of the weather affecting the flow characteristics of the East Mountain springs cannot be overemphasized.

Most of the water supply in the Western United States originates in the high mountain ranges as snowfall during winter periods. Snowmelt augmented by spring precipitation produces runoff which is utilized downstream. Fall precipitation influences soil moisture conditions prior to snowpack accumulation and has a bearing upon runoff the following year.

A. Regional Climatology

Since 1982 the Western United States, and especially Utah, has undergone an unprecedented wet cycle of precipitation. This pattern changed in 1985 with conditions returning to slightly above normal. During the 1985 water year in Utah, the southern regions of the state experienced slightly less than average precipitation. However, the northern mountains received up to 180% of normal.

Winter snowpack within Utah was slightly above normal. But, in general, peak runoffs were mild due to an early, but gradual, warming trend in the spring.

Temperatures throughout the intermountain west were near or slightly above average during the spring and early summer of 1985.

B. Local Climatology

1. Precipitation. Precipitation reading in Emery County during 1985 were above average at all four stations (133% normal). The mountains in the San Rafael Basin received heavy snowfall during the 1984-85 winter. Warm temperatures in March had caused significant snow melt so that by April 1,

surveys indicated snow cover at 102% of normal. May 1 snow cover was 78% of average. The resulting 1985 runoff was approximately 160% of normal.

Precipitation amounts recorded at the Hunter Plant, Huntington Plant, Electric Lake and East Mountain for the 1985 water year (October 1984 to September 1985) will be presented since these sites include low elevation, intermediate elevation and two high elevation observation sites in the immediate vicinity of mining activities. The values are shown in Table 1 on the following page.

A comparison of precipitation for 1984 and 1985 merits consideration in this study. The intent is to develop a correlation between yearly precipitation and spring discharges on East Mountain. Table 2 is a comparison of the 1984-1985 precipitation levels recorded at the four locations.

Table 2: Comparison of 1984 and 1985 Precipitation (inches)

	1984		1985		1985 As
Station	Amount	% of Normal	Amount	% of Normal	% of 1984
Hunter Plant	10.55	152	9.11	131	86
Huntington Plant	9.60	128	11.44	153	119
Electric Lake	34.64	177	26.41	135	76
East Mountain	14.50	95	17.02	111	116
Average %		138		133	99

Table 2 indicates that 1985 precipitation was slightly lower than 1984 at the Hunter and Electric Lake stations and slightly higher at the Huntington Plant and East Mountain stations. The overall precipitation at the four stations averaged 1% lower in 1985 than 1984.

Tables 3, 4, 5 and 6 indicate monthly precipitation values at Hunter, Huntington, Electric Lake, and East Mountain from the beginning of operation at each site. These tables indicate monthly trends as well as the

TABLE 1: PRECIPITATION IN EMERY COUNTY, UTAH (1985 Water Year)

Month	Hunter Plant (Elev. 5800') Precip. (in.)	% Of Normal	Huntington Plant (Elev. 6500') Precip. (in.)	% Of Normal	Electric Lake (Elev. 8350') Precip. (in.)	% Of Normal	East Mountain (Elev. 8985') Precip. (in.)	% Of Normal
1984								
Oct.	1.69	217	2.07	166	2.92	138	3.27	215
Nov.	.06	12	.34	58	2.63	141	0.97	67
Dec.	1.24	230	1.74	370	3.24	112	1.67	128
1985								
Jan.	.20	47	.49	92	1.54	76	0.49	44
Feb.	.95	232	.27	79	1.09	63	0.59	80
Mar.	1.01	240	.53	85	3.54	185	1.77	94
Apr.	.67	156	.44	80	1.95	116	1.35	198
May	.64	108	1.08	189	1.19	80	1.73	216
June	.26	57	.42	102	.89	110	0.28	62
July	1.50	259	3.21	338	3.04	260	2.47	152
Aug.	.03	3	.04	6	.03	4	0.12	6
Sept.	.86	108	.81	153	4.35	414	2.31	118
TOTALS	9.11	131	11.44	153	26.41	135	17.02	111
Mean Monthly	.76	--	.95	--	2.20	--	1.42	--

TABLE 3: HUNTER PLANT PRECIPITATION - HISTORICAL
Elevation - 5,800 Feet

Water Year	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	TOTAL
75-76	.13	.25	.19	.02	.40	.00	.89	.84	.03	.31	.08	.70	3.84
76-77	.00	.02	.00	.37	.07	.00	.03	1.28	.07	1.35	.41	.50	4.10
77-78	.01	.18	.00	1.28	1.05	1.74	.34	1.21	.00	.69	1.14	.14	7.78
78-79	.03	2.22	.22	1.43	.53	2.43	.24	.47	.00	.00	.79	.00	8.36
79-80	.00	.00	.41	1.70	1.70	.67	.75	1.11	.00	.02	.51	2.06	8.93
80-81	.66	.06	.02	.00	.07	1.48	.16	.45	.14	.20	.70	2.43	6.37
81-82	.58	.27	.45	.94	.45	.54	.00	.02	.00	.15	1.06	1.23	5.69
82-83	.20	1.25	.45	.54	.41	.84	.37	.51	.00	2.18	1.58	.88	9.21
83-84	.53	.66	1.07	.03	.35	.34	.34	.05	1.09	1.80	1.89	2.35	10.50
84-85	1.69	.06	1.24	.20	.95	1.01	.67	.64	.26	1.50	.03	.86	9.11
85-86	.92	1.40	.42										

TABLE 4: HUNTINGTON PLANT PRECIPITATION - HISTORICAL
Elevation - 6,500 Feet

Water Year	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	TOTAL
70-71	-	-	-	-	-	.08	.29	.16	.11	.57	.63	.43	2.27
71-72	2.26	.59	1.62	.04	.00	.32	.28	.16	.77	.40	.66	1.07	8.17
72-73	4.27	1.28	.34	.49	.80	2.42	.50	.17	.97	1.09	1.94	.12	14.39
73-74	.08	.02	.37	.20	.03	.01	.00	.00	.00	.09	.00	.07	.87
74-75	.68	1.19	.13	1.01	.30	.80	.03	.75	1.44	2.62	.31	.24	9.50
75-76	.23	.95	.03	.20	.23	.00	2.34	.86	.02	.73	.19	.85	6.63
76-77	.56	.00	.00	.35	.00	.00	:00	1.76	.00	2.08	.96	.70	6.41
77-78	.66	.12	.82	1.45	1.00	1.36	.94	.72	.12	.05	.72	.77	8.73
78-79	.02	2.65	.25	1.21	.52	2.50	.00	.84	.05	.09	3.32	.20	11.65
79-80	.17	.14	.15	2.88	3.63	.68	1.13	1.88	.65	.18	.38	2.22	14.09
80-81	1.20	.06	.00	.00	.00	.62	.08	1.75	.48	.00	.58	1.53	6.30
81-82	1.12	.25	1.30	1.63	.20	.73	.00	.17	.00	.08	.71	1.91	8.10
82-83	.20	.60	.67	.16	.65	1.87	.08	.40	.00	1.61	.39	1.15	7.78
83-84	.76	.76	2.13	.10	.15	1.18	.72	.17	1.04	.74	1.39	.46	9.60
84-85	2.07	.34	1.74	.49	.27	.53	.44	1.08	.42	3.21	.04	.81	11.44
85-86	.77	1.28	.64										

TABLE 5: ELECTRIC LAKE PRECIPITATION - HISTORICAL
Elevation - 8,350 Feet

Water Year	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	TOTAL
70-71	2.46	2.35	6.41	1.13	1.66	.36	1.05	.66	.47	.40	2.15	.78	19.88
71-72	3.49	1.69	4.07	3.35	.58	.70	1.02	.28	1.49	.70	.80	2.91	21.08
72-73	4.18	3.43	3.27	.97	2.09	2.74	3.67	1.42	.85	.82	1.23	1.15	25.82
73-74	.79	1.90	3.52	2.70	1.12	1.52	2.49	.20	.13	2.09	.06	.09	16.61
74-75	2.27	.62	1.73	2.10	2.37	3.42	1.23	3.21	1.08	1.93	.49	.25	20.70
75-76	1.31	2.57	.82	1.44	2.23	1.35	1.47	2.00	1.23	1.07	.54	1.19	17.22
76-77	1.00	.25	.14	.76	1.14	2.00	.05	3.00	.90	2.28	1.31	1.26	14.09
77-78	1.47	2.10	3.20	3.68	2.74	3.16	2.46	1.18	.30	.10	.24	.77	21.40
78-79	.40	3.18	2.66	2.90	2.18	2.53	.72	1.67	.19	.96	2.29	.32	20.00
79-80	1.55	2.23	.37	4.95	6.01	3.34	1.27	3.09	.12	.37	.38	1.80	25.48
10 Year	1.892	2.032	2.619	2.398	2.212	2.112	1.543	1.671	.666	1.072	.949	1.052	20.218
80-81	1.45	.98	.32	1.30	1.04	3.20	1.45	3.06	.39	1.61	2.73	1.44	18.97
81-82	4.18	1.44	4.79	5.26	1.66	5.06	1.11	1.40	.59	1.26	2.29	5.38	34.42
82-83	1.88	3.68	2.76	2.41	4.00	4.30	2.35	2.81	1.35	1.34	1.50	2.88	31.26
83-84	2.15	4.81	7.43	1.27	1.56	2.77	3.23	1.73	3.41	2.55	2.26	1.47	34.64
84-85	2.92	2.63	3.24	1.54	1.09	3.54	1.95	1.19	.89	3.04	.03	4.35	26.41
85-86	4.40	6.62	1.99										

NOTE: Climatic Station was moved from a point one mile above the dam site to a point 500 feet below dam site on November 15, 1973.

NOTE: October, November, and December 70-71 were estimated by correlation with Clear Creek Weather Station.

TABLE 6: EAST MOUNTAIN PRECIPITATION - HISTORICAL
Elevation 9,005 Feet

Water Year	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	TOTAL
80-81	1.28	.39	.05	.29	.52	2.77	.64	.87	.11	.57	.85	2.55	10.9
81-82	1.93	.53	.97	3.22	.14	1.67	.00	.45	.09	1.86	1.10	2.61	14.57
82-83	.38	2.90	1.39	1.30	1.81	1.98	.92	.71	.61	1.27	4.83	1.62	19.71
83-84	.76	2.43	2.42	.27	.65	1.22	.50	.22	1.18	1.90	2.33	.64	14.53
84-85	3.27	.97	1.67	.49	.59	1.77	1.35	1.73	.28	2.47	.12	2.31	17.02
85-86	1.15	2.38	0.87										

great fluctuation in yearly totals. Figure 2 shows monthly precipitation at the East Mountain site for the 1985 water year.

The correlation of precipitation levels with spring discharges will be discussed in the East Mountain Springs section of this report.

2. Temperatures. During the 1985 water year, temperatures within Emery County at the lower elevations were generally higher than normal while the higher elevations were generally cooler than normal. At the Hunter Plant station, temperatures for October, December thru February, and September were below normal while temperatures for November and March thru August were above normal. The Huntington Plant station was cooler than normal during the months of October thru December, February thru March, and September while the rest of the year was above normal. The Electric Lake station was cooler than normal every month except for April thru August resulting in a yearly average temperature of 1.3° below normal. At the East Mountain Station, temperatures were below normal during the months of October thru November, January thru February and September. During the months of April, May and June, the East Mountain temperatures were +7.8, +6.1 and +7.3 degrees warmer than normal resulting in a yearly average temperature of 1.5° above normal (see Table 7).

A comparison of 1984 and 1985 temperatures for the four stations is addressed since temperatures also influence water supplies from year to year. Table 8 depicts the variation and 1984 to 1985.

FIGURE 2

EAST MOUNTAIN PRECIPITATION

1984/1985 TOTAL = 17.02

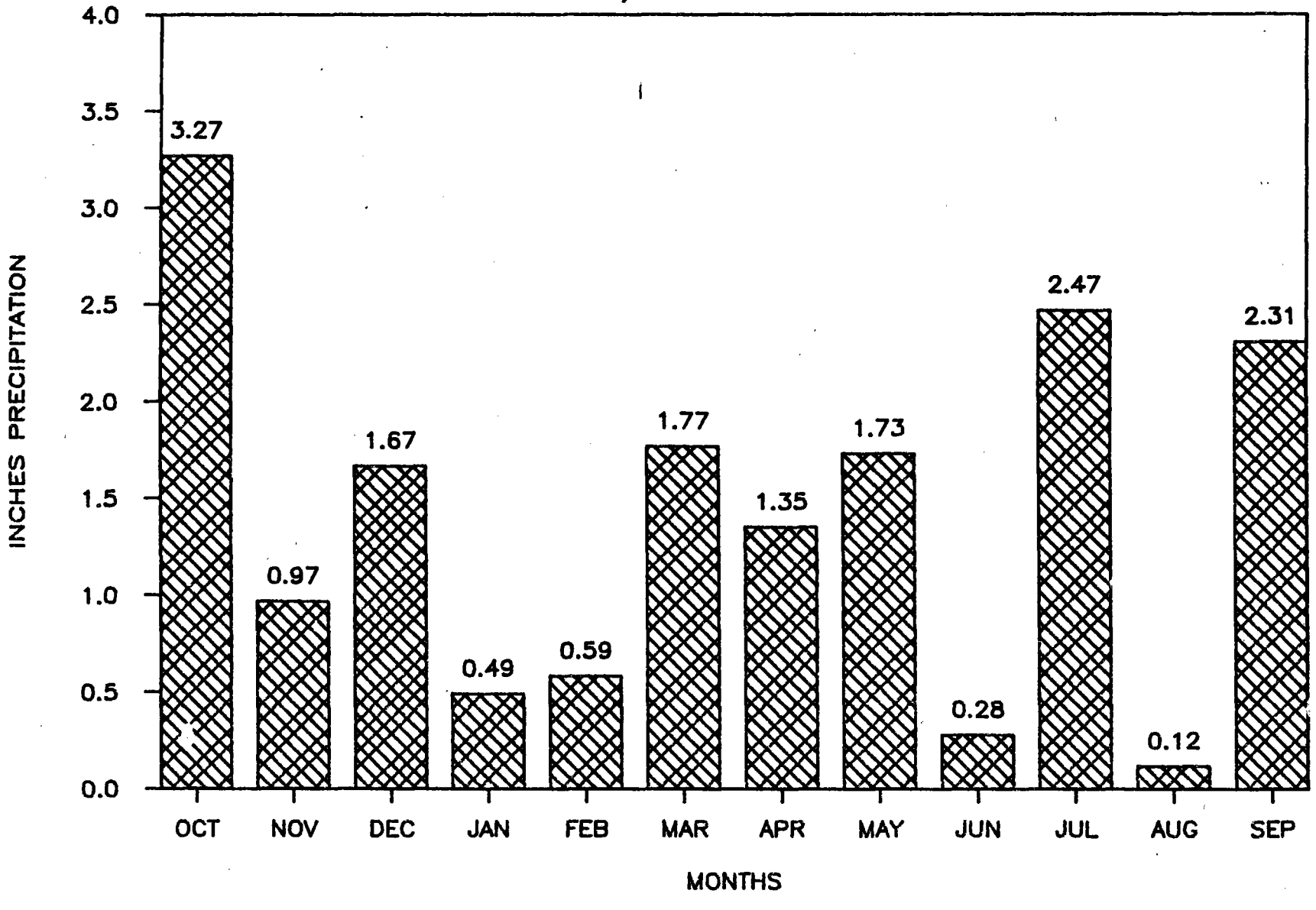


TABLE 7: TEMPERATURES IN EMERY COUNTY, UTAH (1985 WATER YEAR)

Month	Hunter Plant		Huntington Plant		Electric Lake		East Mountain	
	Average Temp. (°F)	Departure From Normal	Average Temp. (°F)	Departure From Normal	Average Temp. (°F)	Departure From Normal	Average Temp. (°F)	Departure From Normal
1984								
Oct.	44.8	-3.6	43.6	-5.8	29.9	-7.6	32.4	-3.0
Nov.	37.4	+2.2	35.9	-0.1	22.0	3.7	27.4	-0.3
Dec.	23.6	-3.1	25.6	-1.8	12.2	-3.6	22.3	+0.4
1985								
Jan.	21.3	-2.8	25.7	+2.1	-8.9	-5.7	21.4	-1.4
Feb.	23.9	-4.5	24.7	-5.5	10.7	-8.6	21.1	-2.5
Mar.	38.0	+2.2	37.3	-0.4	19.4	-1.4	27.8	+1.0
Apr.	52.6	+8.0	51.2	+6.1	35.3	+6.6	41.4	+7.8
May	60.5	+8.4	57.4	+2.5	46.6	+7.6	48.7	+6.1
June	68.2	+6.8	66.1	+0.3	51.6	+3.0	60.4	+7.3
July	24.3	+5.9	72.0	+0.3	58.0	+0.5	64.4	+2.0
Aug.	71.0	+4.6	20.7	+1.3	58.0	+0.5	64.7	+3.1
Sept	57.7	-1.0	56.7	-3.7	42.9	-4.6	48.4	-3.1
TOTALS	47.8	+1.9	47.2	-0.4	32.7	-1.3	40.0	+1.5

TABLE 8: COMPARISON OF 1984 AND 1985 TEMPERATURES

Station	1984 Average Temp. (°F)	1984 Departure From Normal	1985 Average Temp. (°F)	1985 Departure From Normal	1985 Departure From 1984
Hunter Plant	47.6	+1.8	47.8	+1.9	+0.1
Huntington Plant	48.7	+1.1	47.2	-0.4	-0.7
Electric Lake	33.4	-0.5	32.7	-1.3	+0.8
East Mountain	39.2	+0.8	40.0	+1.5	+0.7
Average Departure From Normal		+0.8		+0.4	-0.4

III. DRAINAGE SYSTEMS

The surface drainage system on East Mountain is divided into two major drainages; the southwest portion forms part of the Cottonwood Creek drainage and the northeast portion of East Mountain contributes to the Huntington Creek drainage (see Map 1). These drainage boundaries, including minor subdivisions to Cottonwood and Huntington Creeks, are designated on the accompanying map. Both Huntington and Cottonwood Creeks flow out of the Wasatch Plateau in a southeasterly direction. The creeks merge with Ferron Creek to form the San Rafael River which is a tributary to the Green River.

A. Huntington Creek Drainage System

1. Huntington Creek. Flow data are recorded on a continuous basis by Utah Power & Light at two locations; one station is located near the UP&L Huntington Plant, the other is located about 22 miles upstream from the Huntington Plant. Flow records are maintained by Utah Power & Light Company in order to determine water entitlements and reservoir storage allocation for the various users on the river.

The following table (Table 9) shows a summary of actual Huntington Creek flows below Electric Lake, at Huntington Plant, and calculated natural flow at Huntington Plant. The calculated natural flow considers actual flow

recorded at the plant, plant diversions, Electric Lake storage change and lake evaporation. The average daily discharges for the 1985 water year (October 1984 - September 1985) at the two stations plus the calculated natural flow are found in Appendix A.

TABLE 9: HUNTINGTON CREEK WATER FLOWS (1985 WATER YEAR)

	Huntington Creek Below Electric Lake	Huntington Creek At Plant	Calc. Natural Flow At Plant
Total Yearly Flow (Ac. Ft.)	26,410	95,950	102,600
% Of Normal	*122	141	147
Mean Discharge In Cubic Feet Per Second (CFS)	36.5	133	
Maximum Discharge (CFS)	184	493	
Date of Maximum Discharge	6/11/85	5/28/85	
Minimum Discharge In CFS	8.2	31.0	
Date Of Minimum Discharge	10/10/85	12/24/85	

* Influenced by upstream storage in Electric Lake.

During the 1985 spring runoff period (April thru July), approximately 6,000 acre feet of water was impounded behind Electric Lake Dam. During spring runoff the impoundment reached its highest level on May 28. Total storage on this date amounted to 31,685 acre feet which is 413 acre feet into surcharge (above spill level). Reservoir releases for the fishery and Huntington Plant needs during the water year totaled 26,410 acre feet. The total flow of 102,600 acre feet recorded for Huntington Creek at the Huntington Plant is equal to 141% of normal.

A comparison of runoff values from 1984 and 1985 is presented in Table 10.

TABLE 10: COMPARISON OF 1984 AND 1985 RUNOFF VALUES

	1984		1985		
	Amount	% Of Normal	Amount	% Of Normal	1985 As A % Of 1984
Spring Runoff Stored In Electric Lake (Ac. Ft.)	8,200	81	6,000	60	73
Calculated Natural Flow At Plant (Ac. Ft.)	182,400	260	102,600	147	56

An examination of Table 2, Page 5, indicates that precipitation recorded at Electric Lake and Huntington plant during 1985 averaged 99 percent of the 1984 values while natural flow runoff for 1985 was 56 percent of 1984 (Table 10).

The 1985 water quality information on Huntington Creek was compiled on a monthly basis for stations above and below the Huntington Plant while samples for Huntington Creek below Electric Lake and the Right Fork were taken quarterly. Utah Power & Light's Environmental Department conducted the sampling program and the analyses were performed by Standard Labs, Huntington, Utah, and Ford Lab of Salt Lake City. The location of water quality sampling stations on Huntington Creek that were considered for this report are listed as follows (refer to Map No. 1 in pocket):

1. Below Electric Lake
2. Above the Forks
3. Above the Power Plant Diversion
4. Below the Power Plant

Specific water quality constituents which were analyzed are shown in Table 11. Values are in milligrams per liter unless otherwise noted. Raw data can be found in Appendix A.

TABLE 11: HUNTINGTON CREEK WATER QUALITY (1985 WATER YEAR)

Parameter	Below Electric Lake			Right Fork Above Left Fork			Above Power Plant			Below Power Plant		
	Ave.	Max.	Min.	Ave.	Max.	Min.	Ave.	Max.	Min.	Ave.	Max.	Min.
pH (N.U.)	7.5	8.1	6.8	7.9	8.4	7.2	8.0	8.5	7.4	8.0	8.4	7.3
Sulfate	—	—	—	—	—	—	33	48	10	58	94	25
Susp. Solids	4.1	9.0	1.0	2.4	193	1.0	30	72	9	34	63	7
Diss. Solids	178	258	100	237	346	160	242	290	190	295	335	228
Spec. Cond. (umhos)	257	290	225	334	378	276	380	450	280	450	510	350
Turbidity (NTU)	2.1	3.9	.6	5.7	22.5	1.8	—	—	—	—	—	—
Alkalinity ($CaCO_3$)	—	—	—	—	—	—	197	210	172	195	213	168
Hardness ($CaCO_3$)	-	-	-	-	-	-	232	280	174	243	280	182

The values at the station below Electric Lake do not express the actual natural drainage water quality characteristics above Electric Lake because of the lake effect but it appears that the surface flow in Huntington Canyon is of very high quality in the upper reaches with some natural degradation occurring as the flow proceeds to the canyon mouth.

The comparison of water quality characteristics with the Huntington drainage for 1984 and 1985 is presented in Table 12. This comparison merits consideration in order to evaluate the changes in water quality from year to year. Average values are presented in milligrams per liter unless otherwise noted.

TABLE 12: HUNTINGTON CREEK WATER QUALITY 1984-1985

Parameter	Below Electric Lake 1984	Below Electric Lake 1985	Right Fork Above Left Fork 1984	Right Fork Above Left Fork 1985	Above Power Plant 1984	Above Power Plant 1985	Below Power Plant 1984	Below Power Plant 1985
pH (N.U.)	7.6	7.5	7.8	7.9	8.0	8.0	8.0	8.0
Sulfate	-	-	-	-	35	33	59	58
T. Susp. Solids	2.5	4.1	24.5	24.0	14.7	30	15	34
T. Diss. Solids		178		237	236	242	297	295
Turbidity (NTU)	3.5	2.1	9.9	5.7	-	-	-	-
Alkalinity ($CaCO_3$)	-	-	-	-	185	197	190	195
T. Hardness	-	-	-	-	219	232	255	243

2. Deer Creek

a. Flow and Sampling Schedule:

(1) Locations: 1) Above the Mine

2) Below the Mine

(See Map No. 1 in pocket)

(2) Flow: Information is collected during the first or second week of each month.

(3) Water Quality Sampling: Water samples are collected and analyzed during the first or second week of each month throughout the duration of the runoff season. Normal runoff season is considered from May through October. If runoff persists beyond the month of October, samples are collected on a quarterly basis until the month of May of the following year.

b. Flow Information. As stated above, flow information is collected monthly throughout the year with the use of three parshall flumes (see Map No. 1 for flume locations). A hydrograph showing all the data collected for 1985 vs. 1984 has been generated for each flume location (See Appendix B). During 1985 these hydrographs show a peak flow of approximately 2900 GPM in May for all monitoring locations. Base flow for 1985 at the above location was 12.5 GPM during December and 0.0 GPM for the below site during February.

c. Quality Information. The results of the 1985 quality analysis are listed in Table 13 and 14. The minimum, maximum and mean values are given for a five-year period along with the historical results. Values are in milligrams per liter unless otherwise noted. Complete raw data can be found in Appendix B. It is apparent from the tables that the quality of the Deer Creek runoff degradates slightly from the upper to the lower sampling point. The quality of the lower sampling point is thought to be affected by the Mancos Shale which outcrops above the lower sampling location. An examination of Tables 13 and 14 reveals an increase in the TDS level from 322 mg/l to 836 mg/l for the respective locations. All remaining parameters tested for both locations follow closely with the historical results.

3. Meetinghouse Canyon Creek

a. Flow and Sampling Schedule

(1) Location: South Fork of Meetinghouse
800 N 1500 E of the SW corner of
Section 35, T. 16S, R. 7E

(2) Flow: Information is collected during the first or second week of each month.

TABLE 13: DEER CREEK SURFACE WATER QUALITY
ABOVE THE MINE

1985 Sample Dates	pH (Units)	Conductivity umhos/cm	TDS	TSS	Iron Total	Manganese
1-11	7.5	580	377	1.0	<0.05	<0.01
4-04	8.0	685	362	2.0	<0.05	<0.01
5-07	7.4	472	246	162.0	0.21	<0.01
6-05	7.8	510	291	9.0	<0.05	<0.01
7-08	7.7	473	268	1.0	<0.05	<0.01
8-05	7.8	439	259	4.0	<0.05	0.08
9-09	8.0	600	340	11.0	<0.05	0.01
10-07	8.0	500	346	1.0	<0.05	0.01
11-14	8.0	650	378	27.0	<0.05	0.01
12-10	8.0	650	354	25.0	0.06	0.01
Min.	7.4	439	246	1.0	<0.05	<0.01
Max.	8.0	685	378	162.0	0.21	0.08
Mean	7.8	555.9	322.1	24.3	0.07	0.02
1984						
Min.	7.3	480	231	0.5	<0.05	<0.01
Max.	8.3	700	381	41.5	<0.05	<0.01
Mean	7.9	582.5	319.5	11.5	<0.05	<0.01
1983						
Min.	7.7	525	280	<0.5	0.03	<0.01
Max.	8.4	770	566	164.0	0.74	0.07
Mean	8.1	600.6	350.3	31.5	0.18	0.03
1982						
Min.	7.3	490	276	<0.5	0.15	0.06
Max.	8.2	640	359	92.0	0.87	0.18
Mean	7.9	526.7	298.8	27.8	0.60	0.13
1981						
Min.	8.3	600	332	<0.5	0.09	<0.01
Max.	8.3	700	482	3.5	0.20	0.02
Mean	8.3	633.3	384.7	1.7	0.13	0.01
Historical 1978 - 1984						
Min.	7.0	360	231	<0.5	0.03	<0.01
Max.	8.5	820	566	3592	40.1	0.24
Mean	8.0	577.4	332.7	201.1	1.6	0.06

TABLE 14: DEER CREEK SURFACE WATER QUALITY BELOW THE MINE

1985 Sample Dates	pH (Units)	Conductivity umhos/cm	TDS	TSS	Iron Total	Manganese
1-11	7.7	2079	1346	4.0	<0.05	<0.01
4-04	7.9	2300	1448	18.0	0.10	<0.01
5-07	7.6	630	334	258.0	0.35	<0.01
6-05	7.8	680	360	28.0	<0.05	<0.01
7-08	8.3	750	401	1.0	<0.05	<0.01
8-05	7.4	850	468	10.0	<0.05	0.08
9-09	8.2	1250	790	16.0	<0.05	<0.01
10-07	8.0	1308	824	25.0	0.08	<0.01
11-14	8.1	1800	1095	28.0	0.08	0.01
12-10	7.9	2100	1293	10.0	0.39	0.01
Min.	7.4	630	334	4.0	<0.05	<0.01
Max.	8.3	2300	1448	258.0	0.39	0.08
Mean	7.9	1374.7	835.9	44.1	0.13	0.02
1984						
Min.	7.8	620	320	0.5	<0.05	<0.01
Max.	8.5	2150	1354	141.0	0.18	<0.01
Mean	8.1	1172.5	690.6	29.8	0.07	<0.01
1983						
Min.	8.0	650	371	6.5	0.05	<0.01
Max.	8.6	1150	637	557.0	2.12	0.15
Mean	8.3	830.8	465.5	129.7	0.55	0.04
1982						
Min.	7.7	650	367	2.0	0.10	0.09
Max.	8.3	1380	868	183.0	1.80	0.23
Mean	8.0	951.7	550	46.1	1.01	0.17
1981						
Min.	8.2	1500	959	2.5	0.09	0.01
Max.	8.3	1650	1021	5.5	0.24	0.03
Mean	8.3	1575	990	4.0	0.17	0.02
Historical 1978 - 1984						
Min.	6.9	420	273	0.5	<0.05	<0.01
Max.	8.6	2150	1354	20540	170	0.27
Mean	8.1	1001.3	585.4	867.1	6.7	0.07

(3) Water Quality Sampling: Water samples are collected and analyzed during the first or second week of each month throughout the duration of the runoff season. Normal runoff season is considered from May through October. If runoff persists beyond the month of October, samples are collected on a quarterly basis until the Month of May of the following year.

b. Flow Information. A hydrograph comparing 1985 vs. 1984 can be found in Appendix B. The peak flow occurred during the month of May at a rate of 4700 GPM. A base flow of 0.0 GPM existed during December - April.

c. Quality Information. Sampling on the schedule stated above will be initiated during 1986 and will be included in the annual reports thereafter.

B. Cottonwood Creek Drainage System

Utah Power & Light monitors two of the tributaries of the Cottonwood Creek Drainage system, Cottonwood Canyon Creek and Grimes Wash (see Map No. 1 in pocket).

1. Cottonwood Canyon Creek. An extensive baseline study conducted on Cottonwood Canyon Creek to determine water characteristics prior to mining at the proposed Cottonwood Mine began in 1979. A property acquisition in 1981 has resulted in mine plan changes. Due to this change, the baseline study was terminated as of January 1, 1984. As agreed upon in both the Deer Creek

Mine and Wilberg Mine permit applications, UP&L will continue to monitor the flow at the USGS flume location on a monthly basis. The hydrograph in Appendix C illustrates the flow information collected during 1985 vs. 1984. This shows a peak flow of 6500 GPM in May and a baseline flow of approximately 1170 GPM in January and September respectively.

2. Grimes Wash

a. Flow and Sampling Schedule

(1) Locations: 1) Right Fork
2) Left Fork
3) Below the Mine
(See Map No. 1 in pocket)

(2) Flow: Information is collected during the first or second week of each month.

(3) Water Quality Sampling: Water samples are collected and analyzed during the first or second week of each month throughout the duration of the runoff season. Normal runoff season is considered from May through October. If runoff persists beyond the month of October, samples are collected on a quarterly basis until the month of May of the following year.

b. Flow Information. As stated above, flow information is collected monthly throughout the year with the use of two parshall flumes (see Map No. 1 for flume locations). A hydrograph comparing 1984 vs. 1985

has been generated for each flume location (See Appendix C). The hydrographs show that during 1985 the Right Fork and Below the Mine locations reached a peak flow of 3360 during the month of April where the Left Fork reached a peak flow of 650 GPM in May. Base flow for the Right Fork was 0.0 GPM during January - March and the Left Fork was 8.0 GPM in December.

c. Quality Information. The results of the 1985 quality analysis are listed in Tables 15, 16 and 17. The minimum, maximum and mean values are given for a five year period along with the historical results. Values are in milligrams per liter unless otherwise noted. Complete raw data can be found in Appendix C.

Grimes Wash drainage quality is greatly affected by the influx of the Right Fork. The Right Fork originates in the North Horn Formation, (interbedded shales, siltstones and sandstones) which is abundant with calcareous material. As a result the Right Fork contributes a relatively high amount of suspended solids to the Grimes Wash drainage. Under normal conditions, concentration of solids decreases at the sampling location below the mine as a result of the Left Fork and Wilberg Mine discharge influx. The greatest factor influencing the suspended solids level in the Right Fork drainage during 1985 was the sudden increase in temperature resulting in a rapid increase in flow which occurred in April. The Left Fork drainage area is higher in elevation and a considerable amount of that area faces a northerly direction. As a result, it responded at a slower rate of discharge than the Right Fork.

TABLE 15: GRIMES WASH SURFACE QUALITY
RIGHT FORK

1985 Sample Dates	pH (Units)	Conductivity umhos/cm	TDS	TSS	Iron Total	Manganese
4-03	7.4	200	125	7116.0	2.90	0.03
5-08	7.9	603	323	108.0	0.33	<0.01
6-03	7.9	550	307	60.0	0.21	<0.01
7-08	8.3	458	254	55.0	0.34	<0.01
8-06	7.8	441	252	14.0	0.11	0.08
9-09	8.3	500	308	19.0	<0.05	<0.01
10-07	8.2	599	325	11.0	0.06	<0.01
11-13	8.3	740	430	28.0	0.13	0.01
12-10	8.0	700	415	93.0	0.37	0.01
Min.	7.4	200	125	11.0	<0.05	<0.01
Max.	8.3	740	430	7116.0	2.90	0.08
Mean	8.0	532.3	304.3	833.8	0.50	0.02
1984						
Min.	7.9	470	246	7.0	<0.05	<0.01
Max.	8.7	750	477	1482.0	1.05	0.02
Mean	8.2	593.8	332.6	207.7	0.26	0.01
1983						
Min.	8.1	525	386	10.5	0.08	<0.01
Max.	8.6	650	280	493	2.64	0.18
Mean	8.3	610.0	328.2	183.3	0.69	0.06
1982						
Min.	7.6	500	280	30.5	0.87	0.08
Max.	8.4	720	435	485	2.02	0.30
Mean	8.1	570	334	175.8	1.54	0.21
1981						
Min.	8.2	600	379	1.5	0.01	0.02
Max.	8.5	700	476	46.5	0.29	0.02
Mean	8.35	650	427	24.0	0.15	0.02
Historical 1979 - 1984						
Min.	7.6	470	246	1.5	0.01	<0.01
Max.	8.7	750	700	1860	7.20	0.30
Mean	8.2	604.2	368.9	263.4	1.24	0.09

TABLE 16: GRIMES WASH SURFACE QUALITY
LEFT FORK

1985 Sample Dates	pH (Units)	Conductivity umhos/cm	TDS	TSS	Iron Total	Manganese
1-22	8.1	695	383	<0.5	<0.05	<0.01
4-03	7.5	473	283	141.0	0.08	<0.01
5-08	7.8	610	338	130.0	0.17	<0.01
6-03	7.5	605	339	10.0	<0.05	<0.01
7-08	8.0	605	339	12.0	<0.05	<0.01
8-06	7.7	550	302	12.0	<0.05	0.08
9-09	8.3	600	355	22.0	<0.05	<0.01
10-07	8.2	654	372	15.0	0.18	<0.01
11-13	7.9	750	438	25.0	0.05	<0.01
12-10	8.0	740	411	3.0	<0.05	<0.01
Min.	7.5	473	283	<0.5	<0.05	<0.01
Max.	8.3	750	438	141.0	0.18	0.08
Mean	7.9	628.2	356.0	37.1	0.08	0.02
1984						
Min.	7.8	600	278	<0.5	<0.05	<0.01
Max.	8.5	685	396	76.0	0.09	<0.01
Mean	8.1	639.3	343.9	17.0	0.06	<0.01
1983						
Min.	7.4	720	295	<0.5	0.04	<0.01
Max.	8.3	650	570	133.0	0.56	0.11
Mean	8.1	676.3	388.1	28.6	0.19	0.03
1982						
Min.	7.8	590	339	<0.5	0.20	0.09
Max.	8.2	790	448	23.5	0.36	0.15
Mean	8.05	645	373.5	6.3	0.28	0.12
1981						
Min.	8.7	610	379	<0.5	0.07	0.02
Max.	8.3	750	518	8.5	0.30	0.05
Mean	8.2	682.5	453	4.8	0.22	0.03
Historical 1978 - 1984						
Min.	7.4	590	278	<0.5	0.04	<0.01
Max.	8.7	790	570	133	0.81	0.15
Mean	8.1	659.4	379.1	16.6	0.19	0.04

TABLE 17: GRIMES WASH SURFACE QUALITY
BELOW THE MINE

1985 Sample Dates	pH (Units)	Conductivity umhos/cm	TDS	TSS	Iron Total	Manganese
1-22	8.0	1225	791	42.0	0.09	0.02
4-03	7.4	220	152	9702.0	2.70	0.03
5-08	7.9	700	391	75.0	0.23	<0.01
6-03	7.8	710	404	2.0	<0.05	<0.01
7-08	8.1	1800	1035	14.5	0.08	<0.01
8-06	7.4	1810	1129	6.0	0.14	0.13
9-09	8.1	1250	756	19.0	<0.05	0.01
10-07	8.1	1253	760	9.0	0.10	0.04
11-13	7.9	--	895	63.0	0.24	0.09
12-10	7.4	1675	1016	15.0	<0.05	0.05
Min.	7.4	220	152	2.0	<0.05	<0.01
Max.	8.1	1810	1129	9702.0	2.70	0.13
Mean	7.8	1182.6	732.9	994.8	0.37	0.04
1984						
Min.	7.7	800	457	1.0	0.05	<0.01
Max.	8.3	1700	923	107.0	0.45	0.07
Mean	8.1	1101.3	649.3	24.5	0.15	0.02
1983						
Min.	7.7	700	427	<1.0	0.05	0.01
Max.	8.3	1000	643	244.0	1.25	0.06
Mean	8.13	851.9	521.9	57.4	0.28	0.03
1982						
Min.	7.9	780	435	3.0	0.26	0.09
Max.	8.2	1000	679	171.0	1.20	0.19
Mean	8.0	906.7	554.7	63.92	0.82	0.12
1981						
Min.	8.0	790	434	0.5	0.01	0.01
Max.	8.3	1100	715	19.5	0.06	0.03
Mean	8.15	970.0	609.8	6.34	0.03	0.02
Historical 1978 - 1984						
Min.	7.6	700	172	<0.5	0.01	<0.01
Max.	8.5	1700	923	1180	18.9	0.30
Mean	8.1	944.1	544.2	105.1	1.07	0.06

As reported in 1985, the TDS level increased slightly at the Below the Mine location. Two possible factors stated for the rise were 1) Wilberg Mine Discharge and 2) Mancos Shale seeps. Due to the fact that no water was discharged from the mine during 1985, the second factor, seeps emanating from the Mancos Shale, is thought to have the greatest influence upon the level. Periodic sampling throughout 1986 will help delineate the seeps contribution to the TDS level.

IV. EAST MOUNTAIN SPRINGS.

A. Flow and Sampling Schedule

1. Flow. All springs identified on East Mountain are measured during the month of July. At least one spring from each mode of occurrence (Table 18) is measured a second time during the month of October. In addition to this monitoring, a minimum of thirteen springs are monitored to establish a discharge recession curve. In general, measurements are made on a monthly basis during the months of July through September, if weather and reasonable access permits. But, when historical data indicate that a spring is short lived, all efforts are made to measure discharge from that spring at least three times, equally spaced, within it's flow period.

2. Quality Samples. All springs located within the area covered by the five year mine plan are sampled for water quality characteristics during the month of July. A representative group of springs are sampled again in October to document quality variations.

TABLE 18: MODES OF OCCURRENCE EAST MOUNTAIN SPRINGS

Stratigraphic Location	Occurrences: Permeable fluvial channels that intersect the land surface	Flow along permeable strata underlain by impermeable mudstone which intersects the land surface	Contact of permeable beds and the Roans Canyon Fault zone	Mode of occurrence not identified
Base of Flagstaff Limestone		79-6, 79-7, 79-35	Sheba Springs 79 -1	
North Horn Formation	Teds Tub, Burnt Tree, 79-2, 79-3, 79-8, 79-9, 79-11, 79-12, 79-13, 79-14, 79-15, 79-16, 79-17, 79-21, 79-22, 79-26, 79-27, 79-28, 79-29, 79-34, 79-39, 80-42, 80-43, 80-46, 80-47, 80-48, 84-53, 84-56		Elk Springs, 79-10, 79-18, 79-19, 79-20, 84-54	
Base of North Horn Formation		79-23, 79-25, 79-32, 79-36, 79-37, 79-38, 84-55	79-30, 79-31	
Other Stratigraphic Horizons	Blackhawk Formation 80-50, 84-57		Roans Canyon Fault 80-49 (Price River) Bear Canyon Fault Zone 82-51 (Price River)	Flagstaff Limestone 79-4, 79-5, Pine Springs Trough, Price River Formation 79-24, 79-33, 79-40, 80-41, 80-44, 80-45, 82-52, Jerk Water

B. Spring Flow

The precipitation increased from 1985 to 1986 while the corresponding spring discharge rates decreased. An examination of the Hydrographs generated for drainages surrounding East Mountain (see Appendices B and C) reveal peak flows occurred at least one month earlier than in 1985. The above normal temperatures (see Table 7) in March, April and May in turn caused the July discharge values for 1985 to be lower than in 1985. Table 19 A & B is a tabulation of the flow data collected during the 1985 monitoring season. To record the season variation, at least one spring from each mode of occurrence was monitored more than once. The seasonal variation is represented in Table 19 A & B under the column heading "Seasonal Net Change". The percentage figures represent the amount of change either positive or negative. The average change reveals a 66 percent decrease from the July to the October measurements.

A five year comparison of spring discharge is shown in Table 20. This table includes a year by year comparison of springs identified from each mode of occurrence (Table 18). The springs utilized in this comparison are underlined in Table 18. The flow values for the individual springs represent the July measurements. October measurements were not utilized due to the winter weather conditions causing some springs to be inaccessible.

Table 20 has been compared to local climatology to see how closely spring discharge rates follow local annual precipitation. Figure 3 reflects the direct correlation between spring discharge and precipitation. The annual precipitation is an average of the four weather stations reported in the Climatology section, i.e., Hunter Plant, Huntington Plant, Electric Lake and East Mountain. This comparison is vital in determining mining effects on spring discharge versus general changes in annual precipitation.

TABLE 19A: EAST MOUNTAIN SPRINGS DISCHARGE

Spring	Type of Measurement	Date Sampled	Flow (GPM)	Temperature F°	Date Sampled	Flow (GPM)	Temperature F°	Seasonal Net Change %
Sheba	2	7-10-85	14.4	41°	10-09-85	2.4	43°	-83
Elk Spring	1	7-10-85	390.5	39°	10-09-85	90.0	39°	-77
Burnt Tree	2	7-15-85	26.1	42°	10-10-85	15.0	42°	-43
Jerk Water	2	7-12-85	2.5	40°	10-10-85	1.9	40°	-24
Pine Springs	2	7-11-85	3.9	46°	10-09-85	0.5	44°	-87
Pine Springs Trough	2	7-11-85	7.5	43°	10-09-85	0.2	42°	-97
Ted's Tub	3	7-12-85	39.1	41°	10-10-85	16.2	39°	-59
79-1	3	7-11-85	48.0	40°	10-09-85	12.0	39°	-75
79-2	2	7-15-85	5.5	42°	10-10-85	2.6	41°	-53
79-3	2	7-15-85	4.6	41°	10-10-85	0.5	40°	-89
79-4	2	7-10-85	1.4	41°				
79-5	2	7-10-85	3.0	52°				
79-6	2	7-10-85	damp	—				
79-7	2	7-10-85	0.8	45°				
79-8	2	7-10-85	2.0	45°				
79-9	2	7-10-85	5.2	43°				
79-10	2	7-10-85	33.3	42°	10-09-85	1.3	42°	-75
79-11	2	7-10-85	4.1	41°	10-09-95	9.8	42°	-71
79-12*	2	7-12-85	3.4	57°				
79-13	2	7-12-85	13.0	49°				
79-14	2	7-12-85	damp	—				
79-15	2	7-12-85	18.2	40°	10-09-85	6.3	41°	-65
79-16	2	7-11-83	4.3	44°				
79-17	2	7-11-85	3.7	39°	10-09-85	0.7	39°	-82
79-18	2	7-10-85	5.1	40°	10-09-85	dry		
79-19	2	7-10-85	23.1	41°	10-09-85	6.9	41°	-83
79-20	2	7-10-85	2.6	42°	10-09-85	0.5	42°	-81
79-21	2	7-15-85	dry	—				
79-22	2	7-15-85	damp	—				
79-23	2	7-15-85	6.8	49°				
79-24	2	7-15-85	5.0	51°				
79-25	2	7-10-85	14.0	47°				
79-26	2	7-10-85	10.9	44°	10-10-85	1.9	41°	-83
79-27	2	7-10-85	8.0	51°	10-10-85	2.2	47°	-73
79-28	2	7-10-85	8.6	41°	10-10-85	5.4	40°	-37
79-29	2	7-10-85	6.0	40°	10-10-85	3.8	42°	-37
79-30	2	7-10-85	5.0	48°				
79-31	2	7-10-85	1.0	59°				
79-32	2	7-10-85	2.7	52°	10-10-85	0.8	48°	-70
79-33	2	7-10-85	4.1	44°				
79-34	3	7-12-85	18.5	40°	10-09-85	2.0	41°	-89
79-35	2	7-10-85	10.5	40°	10-09-85	3.2	40°	-69
79-36	2	7-12-85	8.1	39°				
79-37	2	7-12-85	0.3	48°				

TABLE 19B: EAST MOUNTAIN SPRINGS DISCHARGE (Continued)

Spring	Type of Measurement	Date Sampled	Flow (GPM)	Temperature F°	Date Sampled	Flow (GPM)	Temperature F°	Seasonal Net Change %
79-38	2	7-12-85	4.7	44°				
79-39	2	7-15-85	damp	—				
79-40	2	7-16-85	5.6	40°				
80-41	2	7-16-85	5.8	39°				
80-42	2	7-15-85	damp	—°				
80-43	2	7-15-85	6.6	43°	10-10-85	seep	33°	
80-44	2	7-16-85	5.5	40°	10-10-85	0.8	41°	-85
80-45	2	7-16-85	0.5	45°				
80-46	2	7-15-85	18.2	42°	10-10-85	7.1	42°	-61
80-47	2	7-15-85	12.5	40°	10-10-85	8.0	41°	-36
80-48	2	7-11-85	10.4	42°				
80-49	3	7-12-85	26.8	42°	10-09-85	inaccessible		
80-50	2	7-08-85	2.8	45°				
82-51	2	7-15-85	3.8	47°	10-10-85	12.0	40°	-63
82-52	3	7-12-85	32.1	39°				
84-53	2	7-10-85	16.0	40°				
84-54	2	7-10-85	3.8	40°				
84-55	2	7-16-85	2.7	40°				
84-56	2	7-15-85	4.7	41°	10-10-85	4.3	40°	-5
84-57	2	7-08-85	0.4	67°				

Type of Measurement:
1 = Parshall Flume
2 = Pipe and 1-gallon bucket, stopwatch
3 = Pipe and 5-gallon bucket, stopwatch

*No place for an accurate temperature measurement

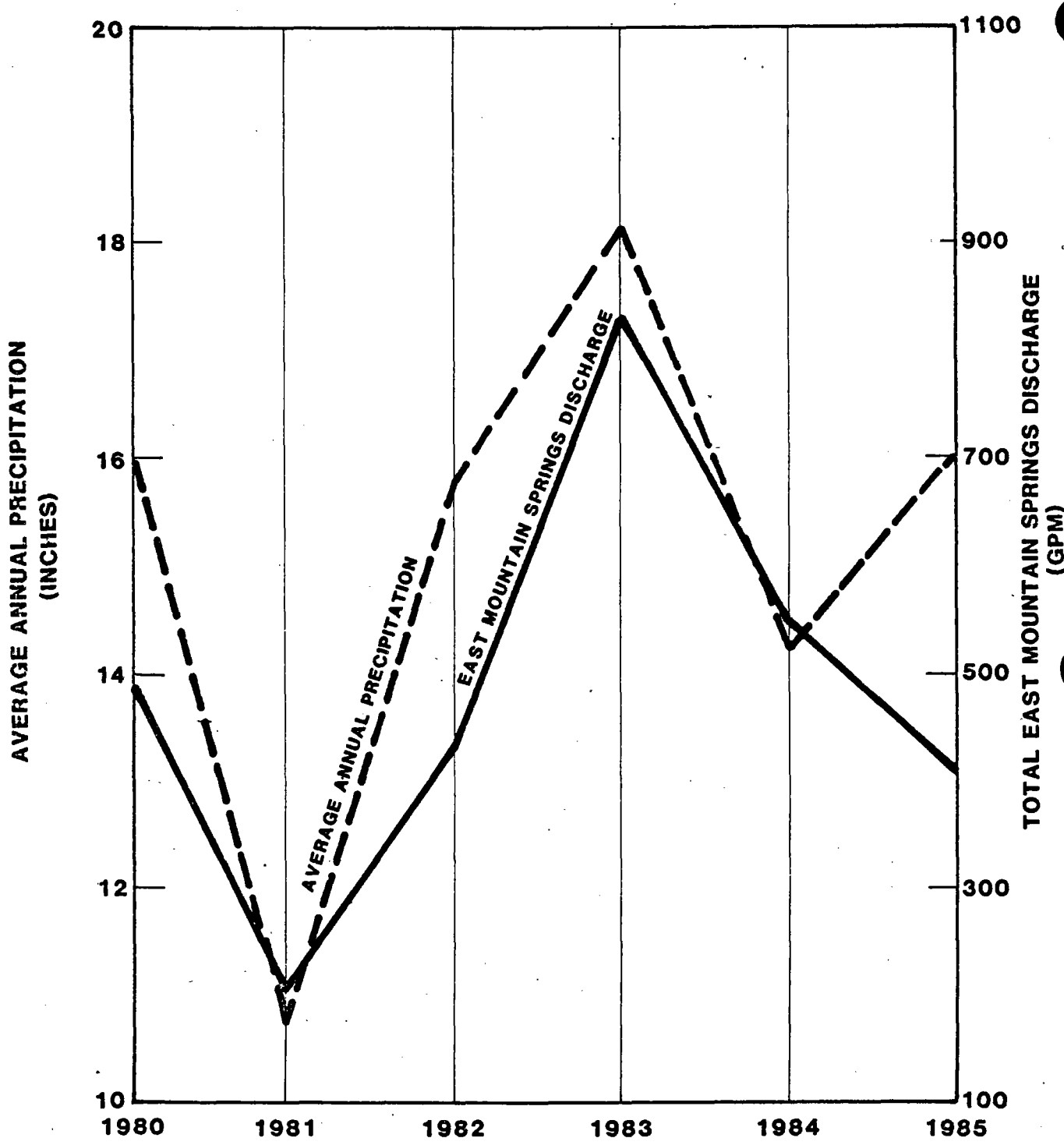
TABLE 20: YEARLY SPRING DISCHARGE VARIATIONS (GPM)

Spring	1979	1980	1981	1982	1983	1984	1985
Sheba	12.0	13.0	10.7	15.0	22.9	19.7	14.4
Burnt Tree	12.0	26.0	9.2	12.0	30.5	26.6	26.1
Pine Springs	4.1	12.0	2.6	5.3	17.1	4.4	3.9
Pine Springs Trough	6.6	Dry	6.9	8.6	20.9	10.9	7.5
Ted's Tub	65.0	78.0	27.3	60.0	89.0	48.0	39.1
79-1	40.0	130.0	28.3	72.0	106.7	51.6	48.0
79-2	0.5	7.5	10.0	12.0	9.1	9.7	5.5
79-3	2.6	15.0	2.6	10.0	26.7	21.8	4.6
79-5	3.1	1.2	4.6	5.0	5.7	6.7	3.0
79-6	0.86	Damp	Dry	1.0	1.2	1.3	Damp
79-7	0.53	Damp	5.0	1.0	1.8	2.0	0.8
79-8	2.0	1.5	1.7	2.4	5.9	***2.1	2.0
79-11	6.0	5.0	0.5	2.0	8.3	5.5	4.1
79-15	2.0	5.0	7.2	27.5	42.9	26.1	18.2
79-17	0.5	0.5	0.2	4.6	5.0	7.4	3.7
79-18	4.0	17.0	16.0	20.0	25.0	25.5	5.1
79-19	3.0	Dry	3.5	46.0	41.1	35.3	23.1
79-20	-	1.0	Dry	4.3	4.3	4.0	2.6
79-21	-	Dry	Dry	Dry	Damp	Dry	Dry
79-22	14.0	Dry	Dry	0.5	1.0	2.4	Damp
79-25	10.0	8.0	4.6	12.0	12.4	9.5	14.0
79-28	3.0	43.0	4.0	4.6	16.7	11.2	8.6
79-29	4.0	6.0	1.3	4.0	10.0	6.2	6.0
79-30	1.5	2.0	Damp	10.0	4.2	*** 1.2	5.0
79-31	0.6	0.5	0.4	1.0	1.0	*** 0.9	1.0
79-32	1.4	3.0	0.45	2.1	3.3	3.1	2.7
79-34	10.0	5.0	2.4	30.0	56.7	42.9	18.5
Sub-Total	271.69	381.40	152.45	377.20	569.4	386.0	267.5
80-41		14.0	0.4	1.0	10.9	15.0	5.8
80-42		5.7	Dry	Dry	27.3	4.3	Damp
80-43		10.0	Damp	10.0	24.0	20.0	6.6
80-44		20.0	39.6	12.0	24.0	13.1	5.5
80-45		12.0	Damp	4.0	12.0	1.1	0.5
80-46**	40.0	31.0	1.6	12.0	60.0	28.3	18.2
80-47**	20.0	12.0	4.6	12.0	20.0	15.0	12.5
80-48		5.0	1.8	1.33	26.7	18.8	10.4
80-49		4.0	1.3	15.0	60.0	42.9	26.8
TOTALS (Includes All Springs)	350*	495.10	201.75	444.53	834.3	544.5	353.8

* Estimated

** In 1979 these springs were monitored as 79-20 and 79-21.

*** Monitoring delayed - access blocked by mudslide, date of measurement - 8-22-84



EAST MOUNTAIN PROPERTY
EMERY COUNTY, UTAH
AVERAGE ANNUAL PRECIPITATION VS. TOTAL SPRINGS DISCHARGE
UTAH POWER & LIGHT COMPANY
Department of Mining & Exploration

DATE: MAR 7, 1986	BY: LJ GUM
SCALE: NONE	FIGURE 3

An additional flow information study was initiated during the summer of 1984. The purpose of this program is to establish flow recession curves for the following springs: (1) Burnt Tree, (2) Elk Springs, (3) Sheba, (4) 79-10, (5) 79-23, (6) 79-26, (7) 79-32, (8) 79-35, (9) 80-44, (10) 80-46, (11) 82-52, (12) North Spring and (13) South Spring. The flow information collected during 1985 is shown in Table 21. Corresponding spring recession curves comparing 1985 vs. 1984 are located in Appendix D.

TABLE 21: EAST MOUNTAIN REGRESSION STUDY (FLOW*/TEMP.)

Spring	July 7/10-7/16	August 8-08	September 9-10	October 10/9-10/10	November 11/6
Burnt Tree	26.1/42°	18.2/44°	14.5/45°	15.0/42°	10.0/41°
Elk Springs	390.5/39°	170.6/39°	112.0/41°	90.0/39°	67.3/38°
Sheba	14.4/41°	5.3/44°	2.8/47°	2.4/43°	1.7/40°
79-10	33.3/42°	18.2/42°	12.0/43°	9.8/42°	8.6/42°
79-23	6.8/49°	1.6/54°	DAMP	DAMP	DAMP
79-26	10.9/44°	4.6/48°	2.7/48°	1.9/41°	1.9/41°
79-32	2.7/52°	1.8/53°	1.2/54°	0.8/48°	1.2/38°
79-35	10.5/39°	6.7/39°	2.0/41°	3.2/40°	2.4/43°
80-44	5.5/40°	3.6/43°	0.5/48°	0.8/41°	0.1/42°
80-46	18.2/42°	13.3/41°	10.5/44°	7.1/42°	5.5/39°
82-52	32.1/39°	21.8/40°	15.2/42°	12.0/40°	10.0/39°
84-56	4.7/41°	---	5.2/43°	4.3/40°	4.8/40°
North Spring**					
South Spring**					

*All flow given in gallons per minute
**To be sampled starting in 1986

C. Quality

To more closely identify springs which are related one with another, samples of their water were analyzed to determine the percentage of cations and anions in solution. These percentages have been graphically represented as cation-anion diagrams (see Appendix D). The purpose of the cation-anion diagrams is to identify groups of related springs by water chemistry. These diagrams clearly show the similarity of water quality of springs originating in

the same geologic formation. To better visualize this concept, the cation/anion diagrams are presented by the geologic formation in which it originates.

The quality of the springs sampled in 1985 reveals only a slight variation from historical averages. The sulfate content which showed an unexplainable increase from 1981 through 1982, declined in 1983 thru 1985 to levels similar to the 1979 and 1980 content. A summary of the water quality analysis for a representative group of East Mountain Springs is presented in Table 22. In this table the mean values for 1985 are compared to the historical results for each respective spring. The raw data regarding all springs sampled is contained in Appendix D.

V. MINE HYDROLOGY

A. Surface Water Sources in Relation to Mine Workings

The relationship of the Deer Creek and Wilberg Mine workings with the overlying springs is shown in Figures 4 and 5. Beginning in 1979, UP&L has developed an ambitious spring monitoring program with emphasis to detect changes in the East Mountain hydrologic regime as a result of mining. With the data collected to date, there is no indication of any mine related effects on spring discharge rates. As expected, there is a direct relationship between annual precipitation and spring discharge rates as previously discussed on page 30 and shown in Figure 3.

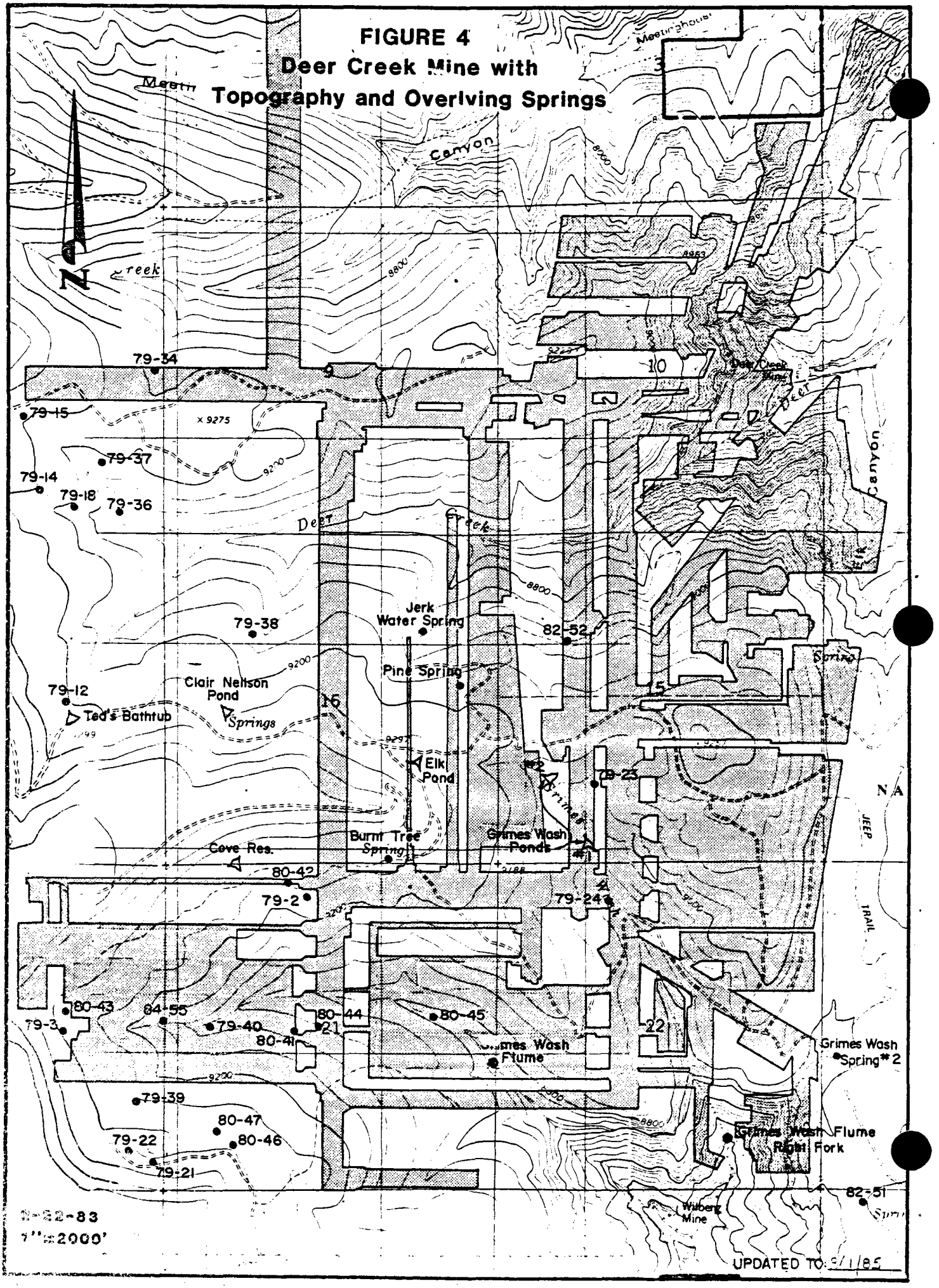
B. Groundwater Quality and Collection Procedures

In-mine quality and quantity measurement began by UP&L in 1977 and have continued through 1985. With the collection of numerous samples throughout the extent of the mine workings, the quality has remained relatively constant. Figure 6 depicts the consistency of the ground water quality by the use of

TABLE 22: EAST MOUNTAIN SPRINGS WATER QUALITY (Historical to 1985)

Parameter	Burnt Tree		Ted's Tub		79-15		79-28		80-44	
	Historical	1985	Historical	1985	Historical	1985	Historical	1985	Historical	1985
Elevation	9260		9290		9290		9290		8980	
Geologic Formation	TKN		TKN		TKN		TKN		KPR	
PH	7.5	7.3	7.7	7.4	7.5	7.5	7.5	7.3	7.8	7.5
Alkalinity	277.2	272.0	268.5	259.0	287.0	267.0	263.5	255.5	384.6	372.0
TSS	1.7	5.0	9.4	3.0	3.7	6.5	41.0	2.5	33.0	37.5
TDS	288.5	286.5	295.3	297.0	308.9	283.0	411.4	409.5	524.4	530.0
Sulfate	38.7	10.0	48.0	10.0	125.9	8.0	140.3	71.5	151.9	120.0
Iron	0.32	0.05	0.15	—	0.12	0.05	0.41	0.05	0.16	0.05

FIGURE 4
Deer Creek Mine with Topography and Overlying Springs



9-22-83
1"=2000'

UPDATED TO: 9/1/85

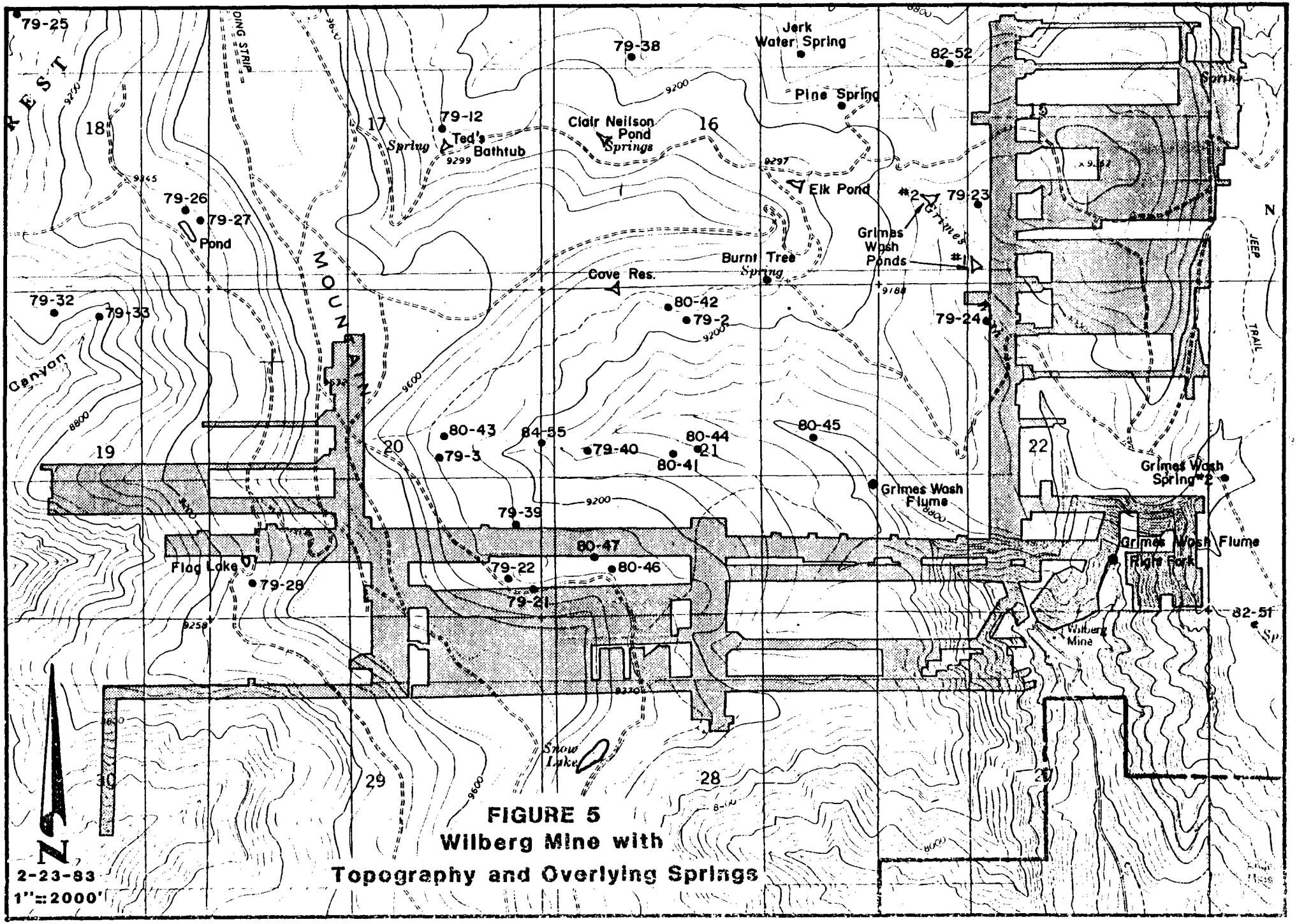


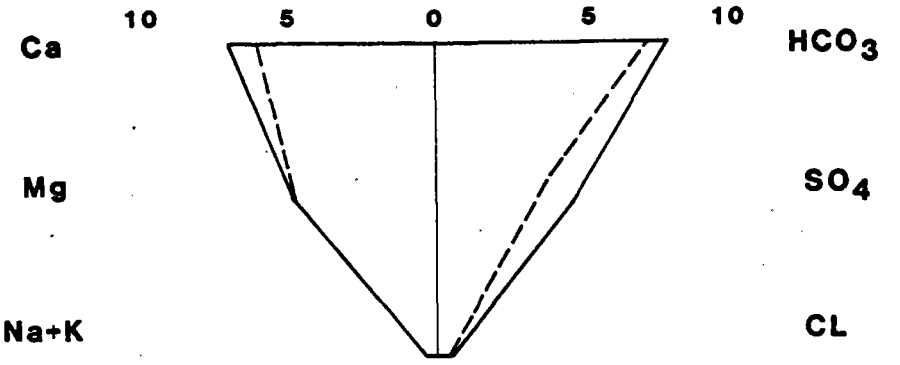
FIGURE 5
Wilberg Mine with
Topography and Overlying Springs

FIGURE 6

IN-MINE WATER QUALITY CATION-ANION DIAGRAMS

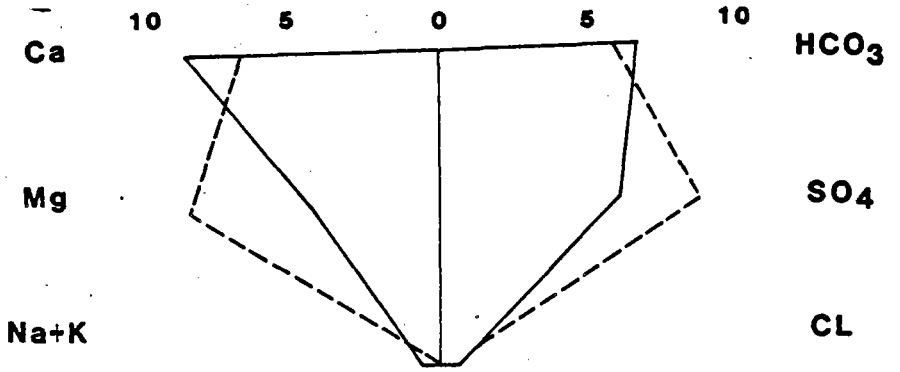
DEER CREEK IN-MINE

Historical _____
1985 _ _ _ _ _



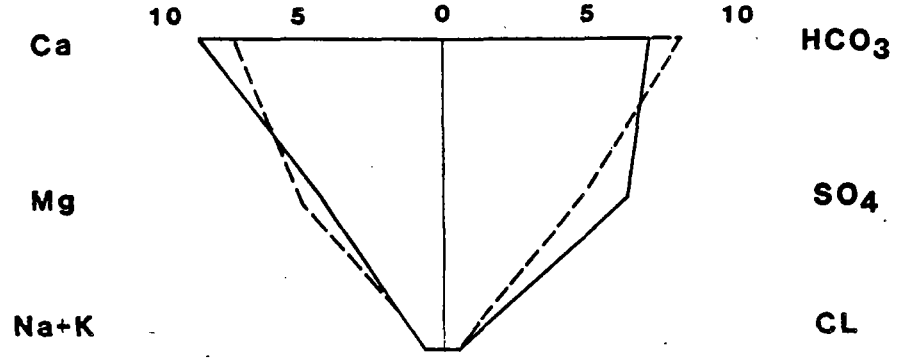
WILBERG IN-MINE

Historical _____
1985 _ _ _ _ _



WILBERG/DEER CREEK HISTORICAL

Wilberg _____
Deer Creek _ _ _ _ _



cation and anion diagrams. Wilberg 1985 vs. Historical does not correlate due to the number of sites affected by the 1985 mine fire. It also reveals the similarity between Deer Creek Mine and Wilberg Mine.

Collection procedures for ground water quality consist of two grab samples collected and analyzed per quarter at each of the mines which produce measurable quantities of water. Sampling according to this established plan began in the first quarter of 1982.

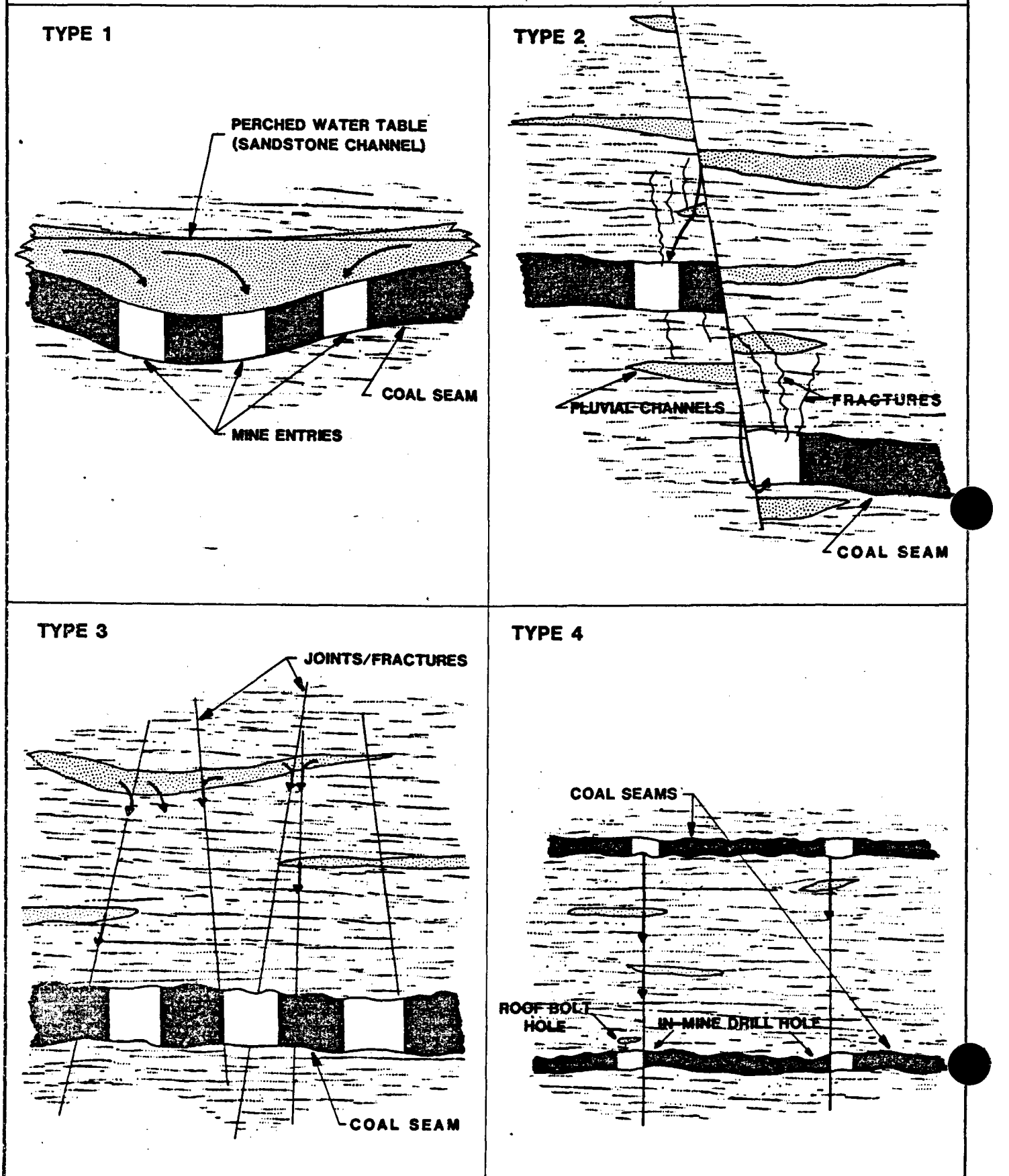
Long-term monitoring locations have been established at each of the mines which produce measurable quantities of water, i.e., Deer Creek and Wilberg Mines, see Map 3 and 4 in pocket. Four types of occurrences have been recognized to exist within the current mine workings, refer to Figure 7. They include:

1. Structural rolls with overlying fluvial channels.
2. Pleasant Valley Fault System
3. Fractures and joints (lineaments)
4. Roof bolt and in-mine drill holes.

A collection device was installed at each long-term monitoring location. Flow and temperatures collected on a quarterly basis from the long-term sites in both mines were fairly consistent (See Appendix F for Deer Creek In-Mine hydrographs, Wilberg In-Mine hydrographs were omitted due to the small number of samples collected as a result of inaccessibility caused by the fire).

Two long-term sites in the Deer Creek Mine, along with five sites in Wilberg during 1985, were eliminated. The location and reason for termination of monitoring are as follows:

FIGURE 7
LONG TERM WATER SOURCES



DEER CREEK MINE

1985 ID No.	Location Description	Reason for Termination
3	Third West xc-10, 3L	Deteriorating roof conditions.
4	Third West xc-33½, 2L	Flow from this site ceased during 1985.

WILBERG MINE

1985 ID No.	Location Description	Reason for Termination
1	First North xc-13, 2L	Within sealed area due to the mine fire.
2	First North xc-46, 3R	Within sealed area due to the mine fire.
3	First South Neck-off, xc-5	Within sealed area, due to the mine fire.
5	Third North xc-5, 1L	Within sealed area, not related to the fire.
7	Main West xc-109, 1R	Semi-restricted zone, not traveled daily.

One site in Wilberg was relocated from Fourth East xc-42 belt to Fourth East xc-40, 2L. Quantity measurements will not correlate with the previous site, quality should remain relatively constant. One new site was established in Wilberg during 1985. The type of occurrence and site are indicated on Map No. 4 (in pocket) and described as the following:

New Site	Type
4th East xc-24, 2R	4b: Surface exploration bore hole which intersects an overlying fluvial channels.

Additional long-term monitoring sites will be added when areas meeting our long-term criteria are opened by mining (i.e.: long-term accessibility and water source is such that consistent sampling can be achieved).

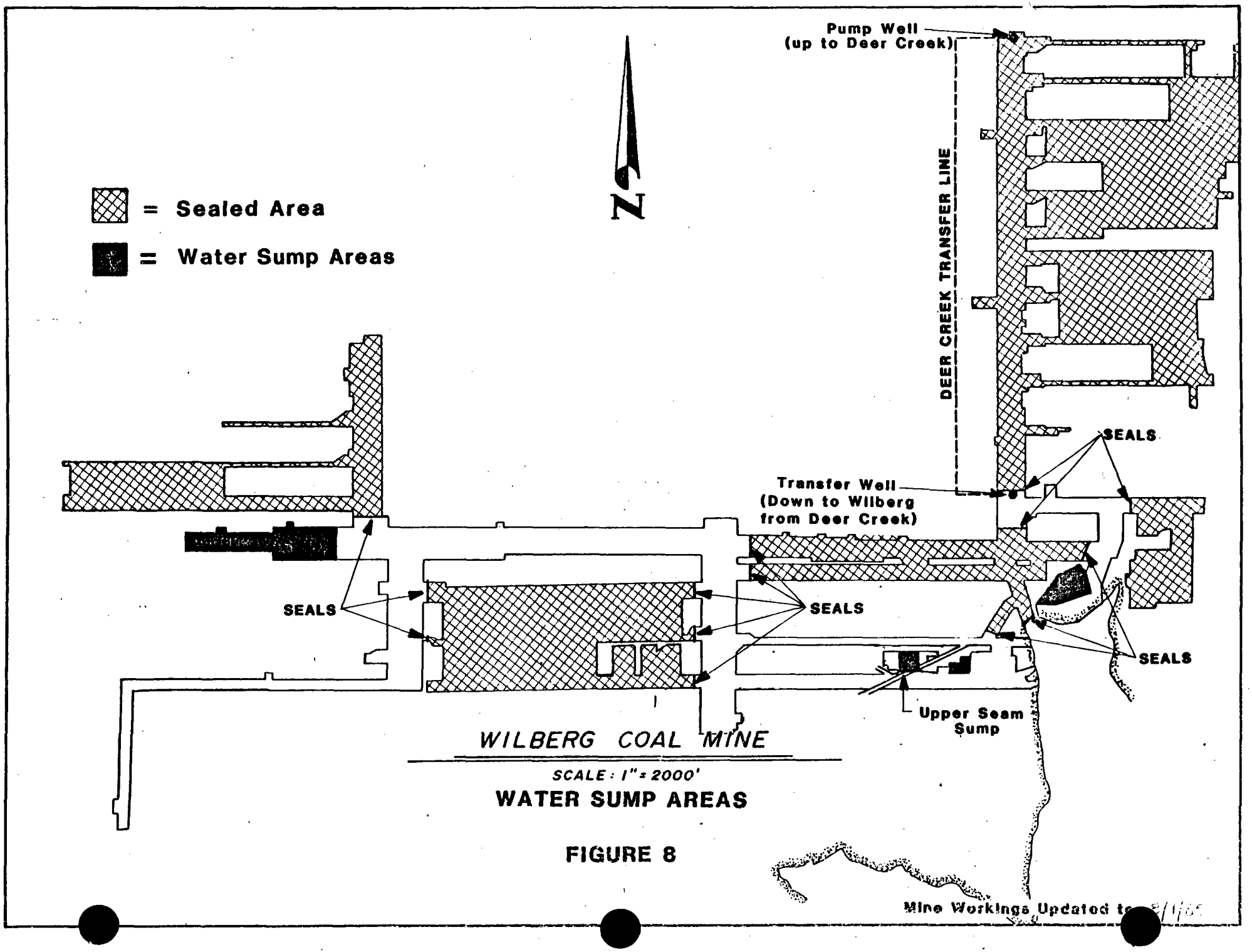
C. Mine Water

1. Des-Bee-Dove Mines. The mine workings of the Des-Bee-Dove Mines have been generally dry since the inception of mining. One minor exception existed during 1985, Deseret Mine, 2nd North entry. As described in the 1982

annual report, the ground water occurrence in 2nd North was of an unusual nature. Fractures in the Starpoint floor began to produce water at an estimated rate of 10 GPM during mid-1982. As in the case of most multiple seam extraction mining of the upper seam (Little Dove Mine), precedes the mining of the lower seam (Deseret Mine). During the Little Dove development, a sump was constructed at crosscut 38, for in-mine water storage. As the mine workings of the Deseret were developed below the area in which Little Dove sump is located, fractures in the Starpoint (Deseret floor) began to produce water. It is felt that water from the Little Dove sump was percolating along fractures associated with the Deer Creek Fault and enters the Deseret Mine through fractures in the Starpoint floor. This condition continued in 1985.

2. Wilberg Mine. The mine fire which occurred in late 1984 altered normal hydrologic monitoring at the Wilberg Mine. A tremendous amount of water was utilized in attempt to extinguish the fire. Major sumps within the mine were completely exhausted. One of the major water producing areas, 1st North, remained sealed for nearly a year. A pump hole was drilled from Deer Creek to Wilberg, Figure 8, so that water from the sealed area could be utilized to replenish sumps within Wilberg and to prevent machinery from being inundated with water. As of December 31, 1985, a total of 50.1 million gallons were pumped from the 1st North sealed area. The table below gives a breakdown of the total value.

Sump replenishment and mine usage	39.0 Million Gallons
Pumped through the Deer Creek Mine workings	11.1 Million Gallons
Total	50.1 Million Gallons


= Sealed Area
= Water Sump Areas
N
Pump Well
(up to Deer Creek)
DEER CREEK TRANSFER LINE
SEALS
Transfer Well
(Down to Wilberg
from Deer Creek)
SEALS
SEALS
SEALS
Upper Seam
Sump
WILBERG COAL MINE
SCALE: 1" = 2000'
WATER SUMP AREAS
FIGURE 8
Mine Workings Updated to 8/1/85

As a result of the gases produced by the fire and sealing procedure, water chemistry within 1st North area was also altered. Due to the lack of oxygen and lowering of the pH, the TDS value rose slightly to more than 900 ppm. More significant was the dramatic rise in the level of iron from the normal value of less than 0.5 ppm to in excess of 7.0 ppm. The rise in the TDS and iron values is due to a formation of weak carbonic acid which dissolved minerals associated with the coal deposit. It is expected that the water chemistry will return to normal in 1986.

a. In-Mine Water Production. In previous reports, in-mine water production was arrived by combining several factors. Due to the fire, normal production and usage were not experienced. The values given below will not correlate with previous years.

Wilberg Mine Discharge*	11.1 Million Gallons
Des-Bee-Dove Mine Transfer	1.8 Million Gallons
Estimated Evaporation**	6.9 Million Gallons
Domestic Usage	1.1 Million Gallons
Total Discharge	20.8 Million Gallons

* Water Pumped from Wilberg to Deer Creek (No Discharge to Surrounding Drainages).

** See 1981 Hydrologic Monitoring Report

b. In-Mine Quality. Due to the fire and rescue efforts, in-mine monitoring was temporarily halted until the fourth quarter of 1985. Two samples were collected in the Wilberg Mine in 1985. Table 23 lists the characteristics of the samples collected and compares the mean, minimum, and maximum results of 1985 to the historical values. The average quality by location has remained relatively constant (refer to past water report for

comparison of the individual sites). However, due to the five sites that were eliminated, the overall yearly averages do not correlate with the historical results (see Table 23). A complete chemical analysis of samples can be found in Appendix E.

TABLE 23: WILBERG IN-MINE WATER QUALITY

Location		pH	Alka.	Ca	Cl	Cond.	Mg	K	Na	SO_4	TDS	TSS
2Sxc-11,2L		7.5	389	126	13.5	1405	104.5	4.4	23.5	385	901	8.0
4Exc-40,2L		6.7	524	210	17.0	2080	156.8	5.1	24.0	650	1502	5.0
	Min	6.7	389	126	13.5	1405	104.5	4.4	23.5	385	901	5.0
1985	Max	7.4	524	210	17.0	2080	156.8	5.1	24.0	650	1502	8.0
	Mean	7.1	456.5	168.0	15.3	1742.5	130.7	4.8	23.75	517.5	1201.5	6.5
Hist.	Min	6.6	169	11.2	0.89	620	4.9	1.0	16.6	78	419	0.1
(1977-	Max	8.5	566	356	21.9	2200	163	21.0	183.8	780	1610	70.1
1984)	Mean	7.38	388.5	160.7	10.5	1156.9	50.3	6.6	42.7	267.4	715.1	3.7

c. Discharge Quantity. Under normal conditions, water produced in the Wilberg Mine is pumped to a primary sump location within the Wilberg workings by a complex pumping and piping system. The sump, which functions as a settling basin, effectively removes settleable solids from the water. A portion of this water is redistributed to various areas of the mine to be utilized in the mining operations. Water from this sump is also used to supply the water treatment plant at the Wilberg Mine and water to the Des-Bee-Dove mining complex. Excess water is discharged into the Left Fork of Grimes Wash after passing through an oil skimmer in accordance with stipulations of the Wilberg Mine Discharge Permit UT-0022896. No water was discharged from Wilberg during 1985.

3. Deer Creek Mine

a. In-Mine Water Production. The best estimate of in-mine water production was arrived at by combining the following values:

Deer Creek Discharge	153.4 Million Gallons
Estimated Evaporation*	19.0 Million Gallons
Domestic Usage	9.2 Million Gallons
Total Discharge	181.6 Million Gallons

*See 1981 Hydrologic Monitoring Report

b. In-Mine Quality. A total of eight samples were collected in the Deer Creek Mine in 1985. Table 24 lists the characteristics of the samples collected and compares the mean, minimum, and maximum results of 1985 to the historical values. It is apparent from Table 24 that the average quality of the in-mine water has remained relatively constant. The consistency was also depicted in the stiff diagrams presented as Figure 6. The complete chemical analysis of samples collected in 1985 can be found in Appendix F.

TABLE 24: DEER CREEK IN-MINE WATER QUALITY

Location	pH	Alka.	Ca	Cl	Cond.	Mg	K	Na	SO_4	TDS	TSS
EM-3	7.3	376	111.2	10.7	972	53.2	3.0	18.7	145	571	2.0
3Sxc-33,1L	7.1	310	78.0	8.6	756	41.6	5.0	22.5	95	415	<0.5
1Sxc-40,1L	7.4	352	102.0	7.4	900	49.9	3.8	16.6	120	499	6.0
3SBxc-21,1R	7.0	346	100.0	8.3	900	51.1	4.6	21.0	135	488	1.0
EM-3	6.9	372	114.0	9.5	1008	54.7	3.1	18.3	163	560	8.0
3Nxc-41,3R	6.8	304	72.0	4.2	672	37.1	2.4	16.0	55	352	<0.5
3Sxc-33,1L	7.1	306	78.0	7.9	750	40.1	4.8	19.4	90	423	<0.5
EM-3	7.1	384	112.0	10.2	950	52.3	2.9	18.3	150	563	2.0
1985 Min	6.8	304	72.0	4.2	672	37.1	2.4	16.0	55	352	<0.5
1985 Max	7.3	384	114	10.7	1008	54.7	5.0	22.5	163	571	8.0
1985 Mean	7.0	343.8	95.9	8.4	863.5	46.8	3.7	18.9	119.1	483.9	2.6
Hist. Min (1977-1984)	6.8	214.7	60.8	4.0	470	4.4	2.2	10.2	40.0	263	0.1
Hist. Max (1977-1984)	7.9	554.4	245.0	13.2	1700	79.5	10.0	66.0	915.2	982	26.0
Hist. Mean (1977-1984)	7.3	397.1	121.5	9.8	906.6	51.0	4.2	25.0	181.2	558.6	4.5

c. Discharge Quantity. Excess water not utilized in the mining operation or for domestic use was either pumped to storage areas or discharged from the mine. The location of the main sump areas within the mine are shown in Figure 9. The largest volume of water is stored in the western part of Main West, an area that has not been actively mined for several years.

The water that is discharged from the mine flows through an oil skimmer and then a recording weir before being piped to UP&L's Huntington Power Plant. None of the discharge water leaving the mine enters any of the natural streams in the region, but instead is used in the cooling towers at the power plant.

The total water that was discharged from the Deer Creek Mine during 1985 amounted to 471 acre feet or 153.4 million gallons. The recorded flow of 471 acre feet during 1985 is slightly higher than the 1985 discharge of 397 acre feet. The average monthly discharges are shown in Figure 10. A graph displaying the historical discharge rates is included as Figure 11. The rapid variations from month to month could possibly be the result of several factors which include: (1) changes in coal production, (2) increase in the labor force (higher culinary use), (3) improved pumping techniques or changes made to sump capacities, and (4) near portal ground water sources freezing during the winter months resulting in an overall decrease in discharge rates during this period. It is thought that the factor of greatest influence on ground water is the increase in the annual coal production especially in areas overlain by sandstone channels.

d. Discharge Quality. Monthly water quality samples were collected for 1985. Table 25 compares the minimum, maximum and mean values from an historical standpoint to 1985. An examination of Table 25 shows a slight

FIGURE 9

DEER CREEK COAL MINE
WATER SUMP AREAS

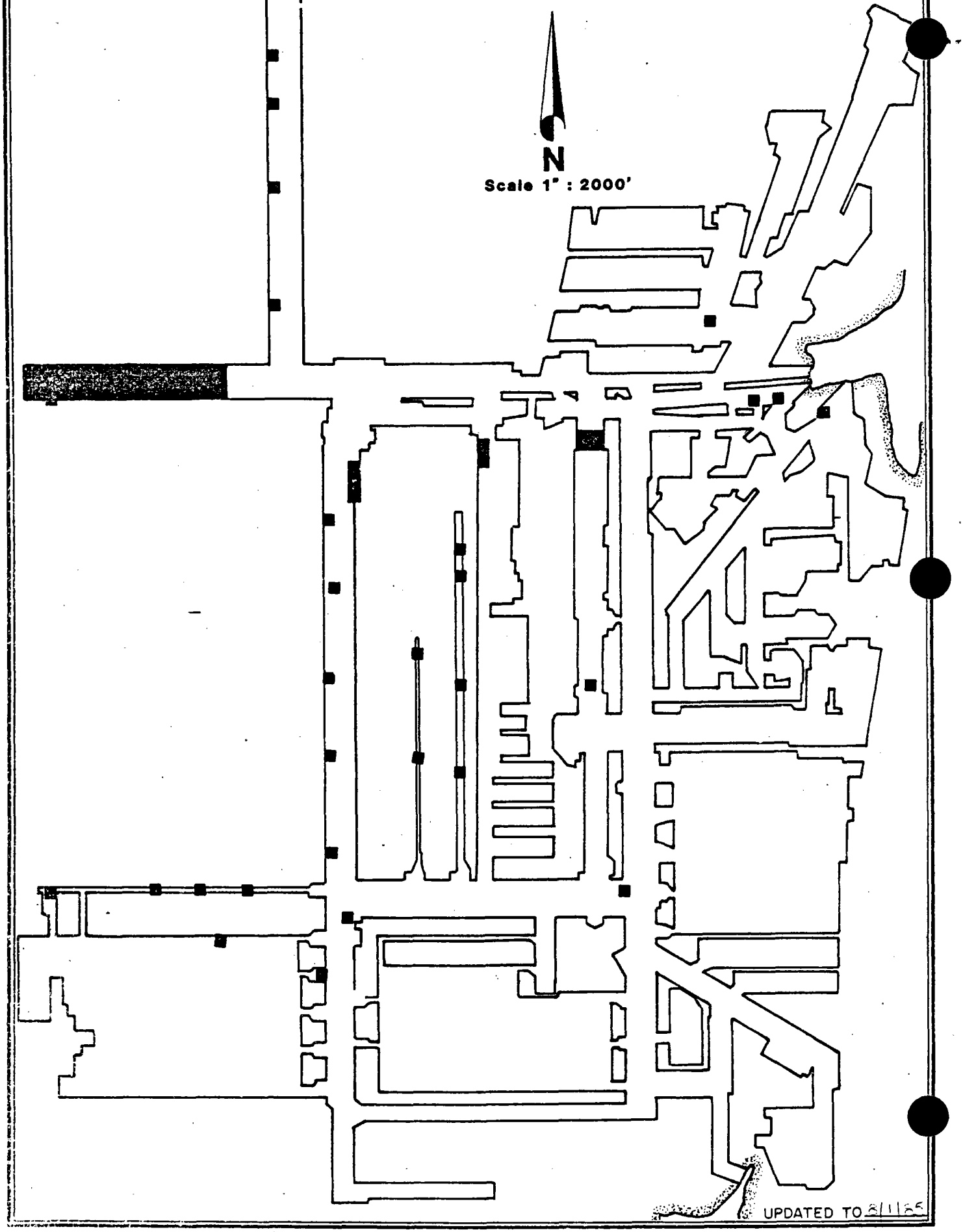


FIGURE 10

DEER CREEK MINE

1985

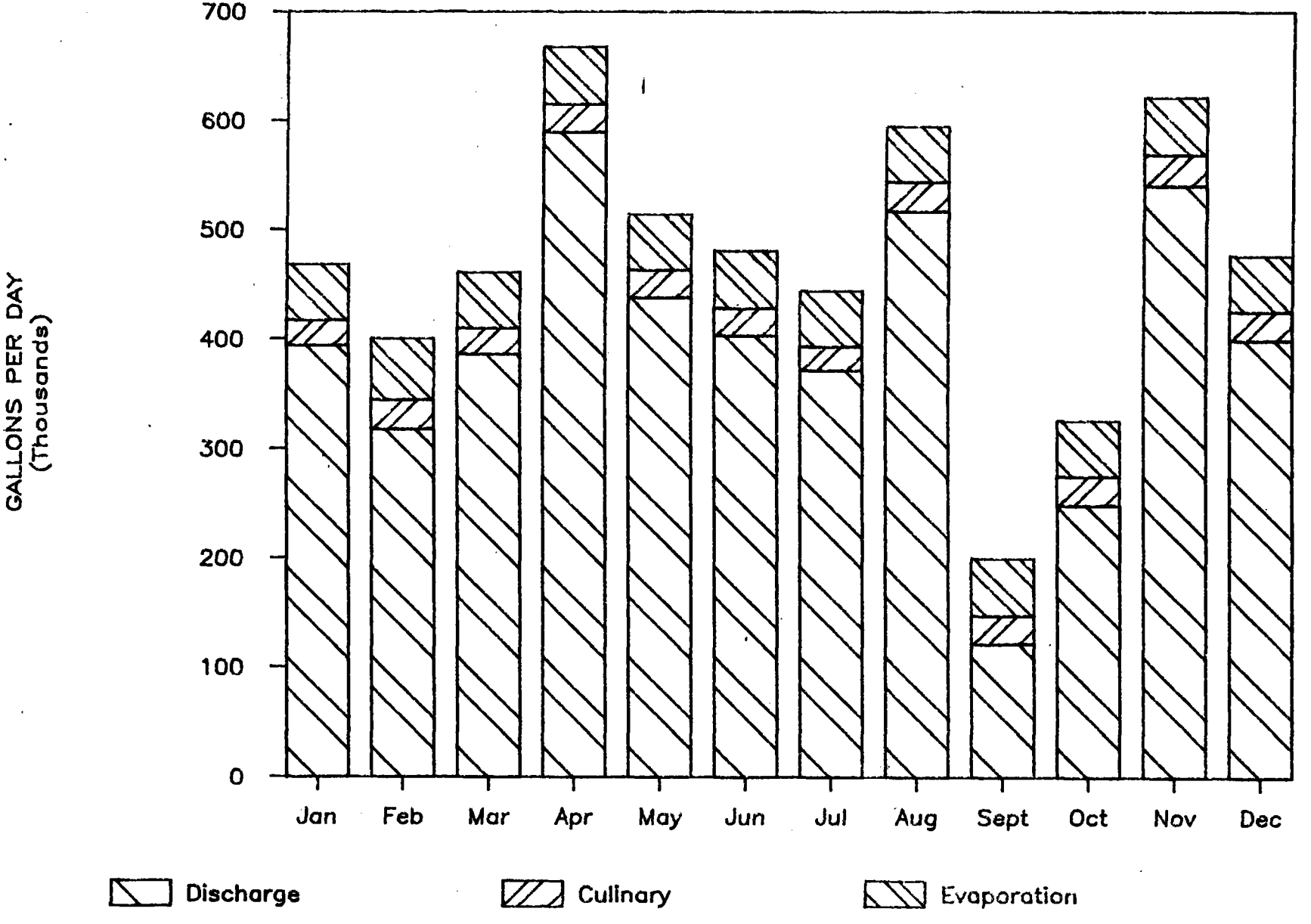
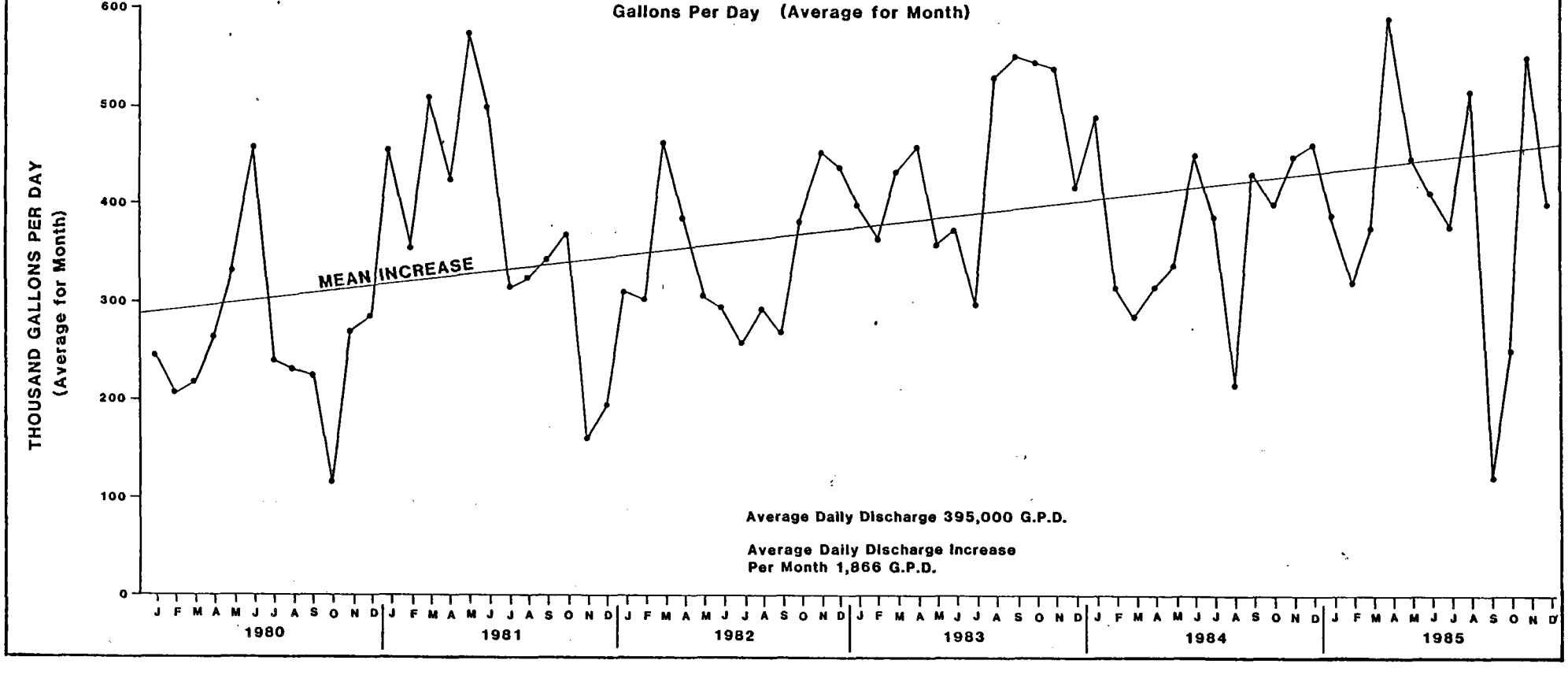


FIGURE 11

DEER CREEK MINE DISCHARGE 1-80 to 12-85

Gallons Per Day (Average for Month)



change in chloride, TDS and TSS between samples collected in 1985 to the historical results. Individual analysis can be found in Appendix H.

TABLE 25: DEER CREEK MINE - DISCHARGE* WATER QUALITY

Parameters	1985			Historical - (1976-1984)		
	Minimum	Maximum	Mean	Minimum	Maximum	Mean
pH	7.0	7.8	7.3	6.8	8.1	7.5
Acidity	1.0	1.0	1.0	0.7	52.0	8.3
Alkalinity	257	338	290.3	207	414	298.4
Chloride	8.2	26.8	14.3	2.4	2700	95.8
Conductivity	810	1200	1023.8	480	10,000	1281.9
Iron	0.18	6.7	1.39	0.03	7.53	0.59
Oil & Grease	<0.5	13.3	2.7	0.01	19.9	1.72
Sulfate	105	400	253.6	29.8	497.0	205.5
TDS	470	824	649.6	320	5100	746.05
TSS	1.0	2019	379.4	0.5	272	27.4

* Used only in the power plant cooling system.

D. Piezometric Gradient Information

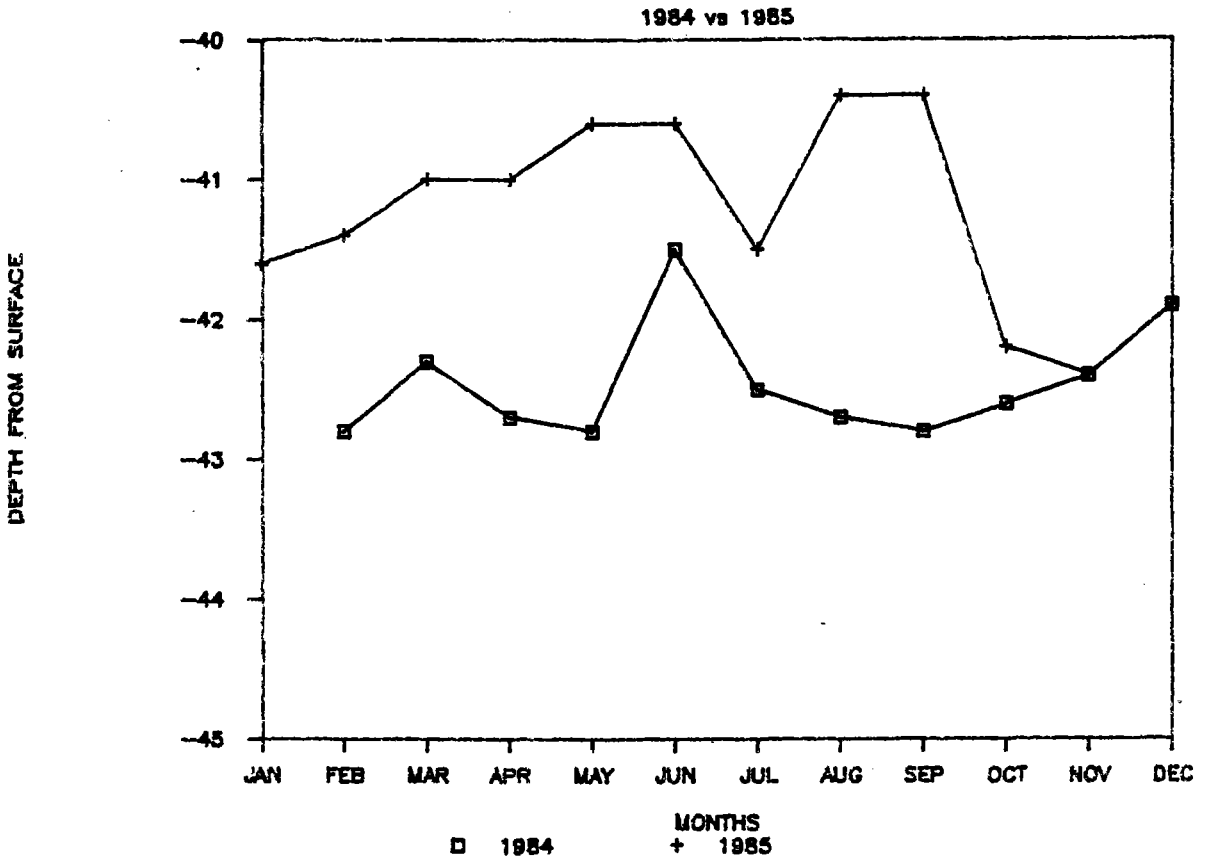
1. Surface. Two surface exploration drill holes which were developed into permanent water monitoring stations in 1978 continued to be monitored on a monthly basis, as access permits (See Map No. 1).

Drill hole EM-31 in Cottonwood Creek Canyon was monitored monthly throughout 1985 (See Map No. 2 in pocket). The water level in the hole was at it's highest, -40.4 feet, during the months of August - September, and at it's lowest point, -42.4 feet, in November. Drill hole EM-47 in Rilda Canyon was accessible only during the months of May through November. During this time frame, the water was at its highest, -190.6 feet, in June and lowest, -199.0 feet, in November. Hydrographs of 1985 vs. 1985 data collected are shown in Figure 12.

2. In-Mine Water level elevations from the seven in-mine drill holes completed in the Deer Creek Mine are monitored quarterly (refer to figure 13). One site was eliminated during July, 1985, due to mining activity. The drill holes depth and method of casing the holes are shown in Figure 14.

FIGURE 12

PIEZOMETRIC MONITORING WELL EM–31



PIEZOMETRIC MONITORING WELL EM–47

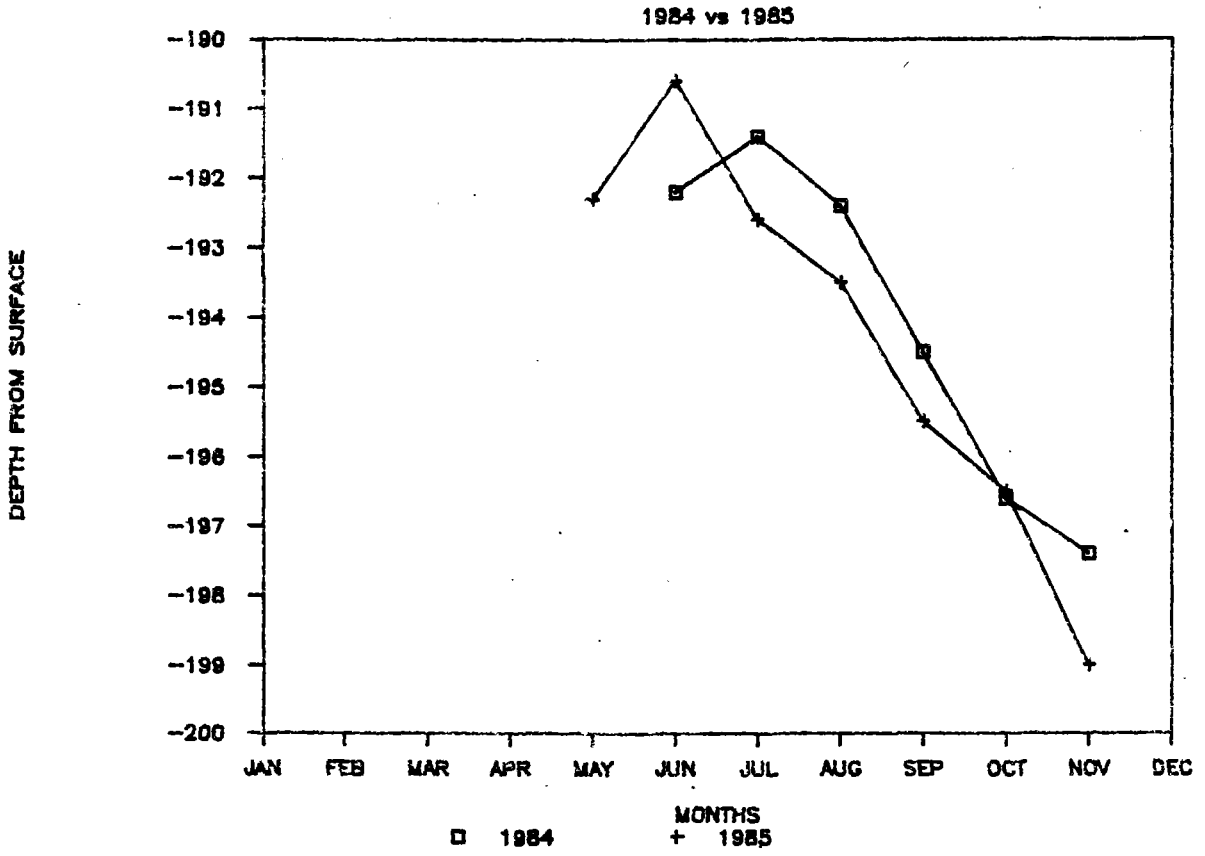
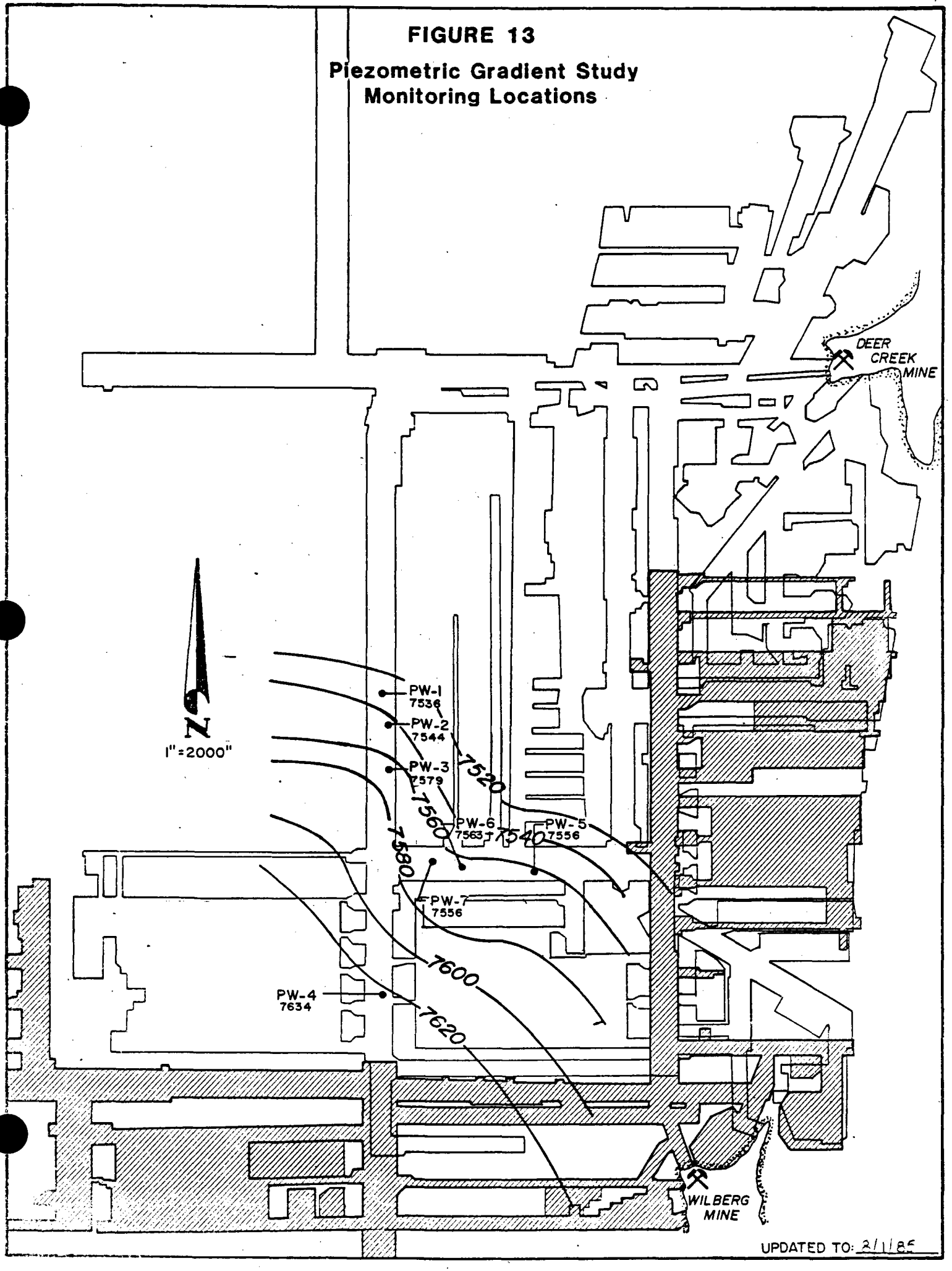


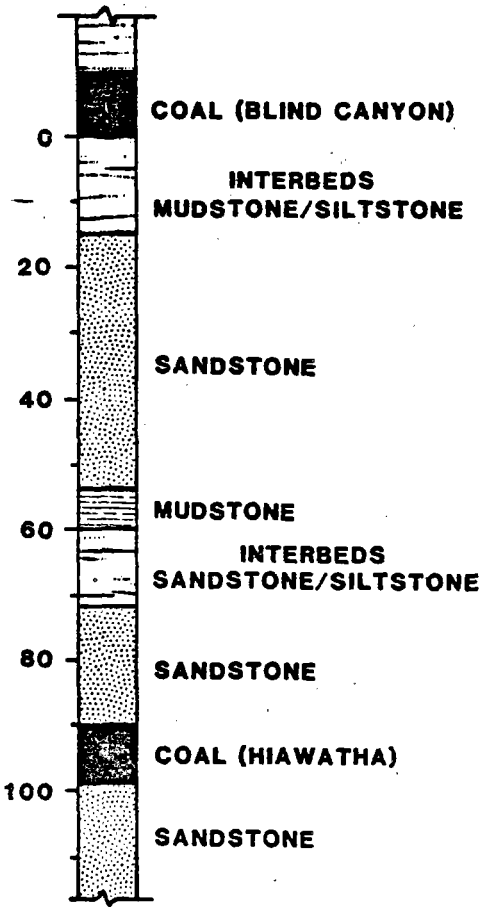
FIGURE 13

Piezometric Gradient Study
Monitoring Locations

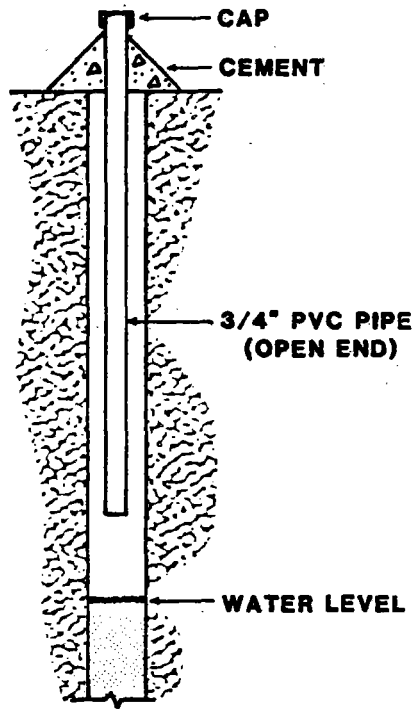


UPDATED TO: 2/1/85

DRILL HOLE #	COLLAR ELEVATION	DEPTH (FT.)	CASING DEPTH (FT.)	LOCATION OF HOLE BOTTOM	WATER DEPTH (FT.) Initial 1983	WATER DEPTH (FT.) 1985	WATER ELEVATION Initial 1983	WATER ELEVATION 1985
PW-1	7576.0	103.5	20	11.2' Below Top of Star Point	39.9	40.0	7536	7538
PW-2	7582.5	111.5	20	18.8' " "	37.2	39.8	7545	7543
PW-3	7590	94.6	30	10.8' " "	11.0	11.8	7579	7578
PW-4	7638	110.0	80	22.0' " "	16.8	11.9	7621	7626
PW-5	7605.0	98.4	20	21.0' " "	47.9	44.2	7557	7561
PW-6	7603.0	130.5	20	20.0' " "	40.1	35.1	7562	7568
PW-7	7602.8	103.6	20	17.0' " "	49.0	*	7553	*
PW-7A	7602.8	75.0	20	12.0' Above Top of Star Point	49.0	*	7553	*



TYPICAL GEOLOGIC SECTION



CASING DETAIL

Revised March 5, 1986

DEER CREEK COAL MINE
Emery County, Utah

PIEZOMETRIC DRILL HOLE STUDY

UTAH POWER & LIGHT COMPANY
Department of Mining & Exploration

DATE: JAN. 15, 1985	BY: LINDA J GUM
SCALE: NONE	FIGURE 14

The purpose of this program is to attempt to establish a piezometric gradient map for the area on the west side of the Pleasant Valley Fault system. The preliminary data indicates a piezometric gradient trend in a north-northeast direction (see Figure 13) which corresponds with the Deer Creek drainage system. Depending upon access and feasibility, additional drill hole monitoring sites could be established during 1986-1987 to substantiate the preliminary data.

VI. EFFECTS OF MINING AND SUBSIDENCE ON HYDROLOGY

Since the development of the UP&L mining complex on East Mountain, coal in several areas of the property have been extracted causing the partial collapse of the immediate overburden strata. The areas where the partial collapse of roof strata occurs is in areas of retreat mining in room and pillar sections and in areas of longwall mining. These areas were inspected for subsidence (See 1985 Subsidence Monitoring Report).

Eleven areas of subsidence have been observed on East Mountain (see Figure 15). Springs adjacent to these areas were observed to flow at decreased rates compared to 1984, which is understandable considering the fact that the peak runoff occurred prior to discharge measurements in July 1985. The areas of subsidence is discussed in detail in the subsidence monitoring report.

The springs and surface waters above all areas of mine workings are being monitored closely to measure the effects of mining. No mining related changes to the springs or surface waters have been identified in the data collected (See Figure 16). The water flowing into the mine workings, although temporarily diverted or detained, has not had an impact on the surface waters of East Mountain or the surrounding area.

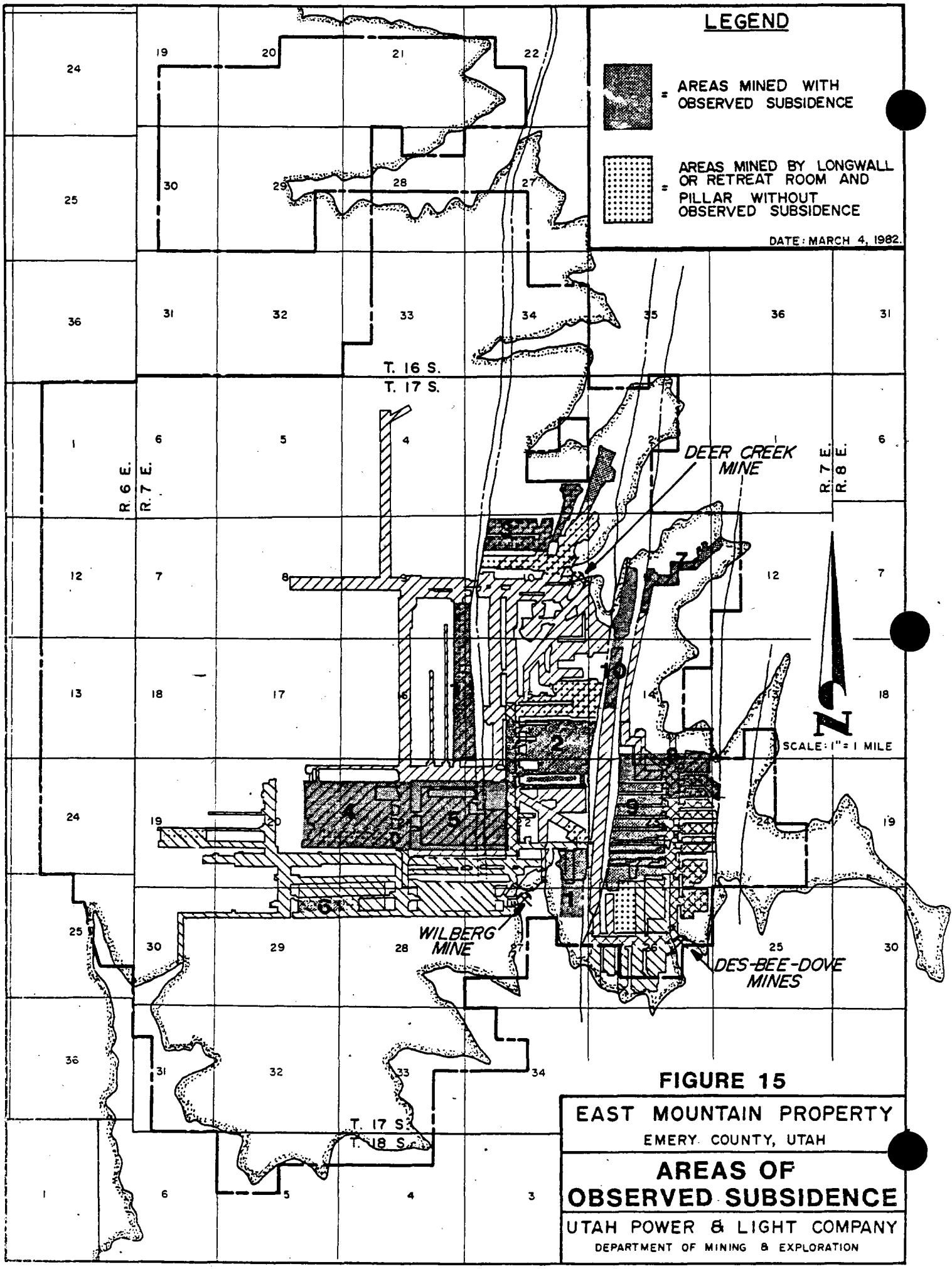


FIGURE 15

EAST MOUNTAIN PROPERTY

EMERY COUNTY, UTAH

AREAS OF OBSERVED SUBSIDENCE

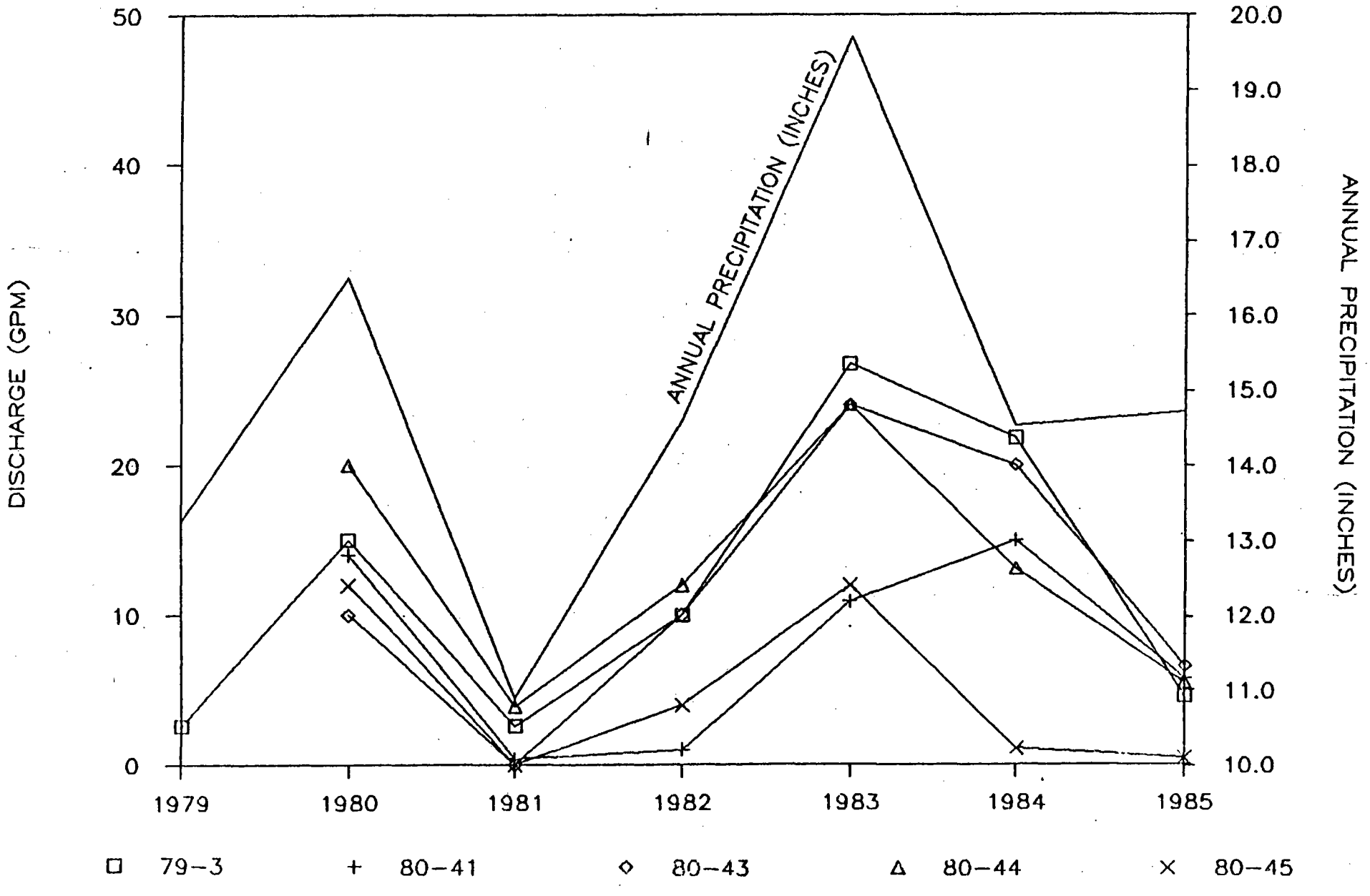
UTAH POWER & LIGHT COMPANY

DEPARTMENT OF MINING & EXPLORATION

FIGURE 16

EAST MOUNTAIN SPRINGS

Over Deer Creek 1–5L & 1–5R



VII. SUMMARY

Utah Power & Light Company has been conducting a water monitoring program in the area of their underground coal mines in Emery County, Utah in accordance with federal and state regulations. This program has been in existence since 1977 and this is the eighth annual report submitted concerning the hydrology.

Unusually high precipitation throughout 1982 - 1984 caused record level runoff and spring discharge rates for that period. This precipitation pattern changed in 1985 with conditions returning to slightly above normal.

Runoff for drainages surrounding East Mountain occurred one to two months earlier than in previous years. This is a result of above normal temperatures recorded for the months of April thru June (see East Mountain Weather Station Data, Table 7). Even though the precipitation in 1984 - 85 was greather than 1983 - 84, the East Mountain spring discharge rates were lower as a result of the above normal temperatures.

During 1984, an East Mountain Spring Recession Study was initiated. This program continued through 1985 with similar discharge patterns being recorded. Several of the springs show a possible double porosity feature, meaning the springs discharge rate drops rapidly due to the snow pack runoff and the flow rate stabilizes at a lower value, which could be considered the formation porosity. Subsequent years of data will help in distinguishing this form.

The most important factor influencing the collection of hydrologic data pertaining to the mines was the 1984 Wilberg Mine fire. Due to the fire and rescue efforts, in-mine monitoring at Wilberg Mine was temporarily halted until the fourth quarter of 1985. Also, the 1985 average quality data will not correlate with the historical data due to five sites which were

eliminated as a result of the fire. All other data pertaining to the mines remained relatively constant.

In-Mine piezometric data gathering continued through 1985, with results still indicating a trend in a north-northeast direction, which parallels with the Deer Creek drainage system.

The data collected in 1985 continued to show the relationship between the variation in surface water quantity and precipitation but the hydrologic monitoring completed on East Mountain to date has failed to identify any change in the quantity or quality of ground or surface water present on the East Mountain property which can be attributed to mining.

APPENDIX A

UTAH POWER & LIGHT COMPANY

STREAM DISCHARGE RECORDS

DAILY DISCHARGE (CFS)

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DAY
157.00	62.00	39.00	43.00	65.00	55.00	54.00	278.00	400.00	150.00	101.00	124.00	1
172.00	58.00	40.00	38.00	43.00	50.00	62.00	288.00	371.00	145.00	97.00	125.00	2
150.00	61.00	39.00	44.00	57.00	48.00	69.00	329.00	357.00	144.00	99.00	188.00	3
126.00	58.00	42.00	46.00	56.00	48.00	75.00	344.00	385.00	137.00	97.00	245.00	4
105.00	55.00	45.00	48.00	45.00	55.00	76.00	351.00	370.00	132.00	100.00	246.00	5
95.00	93.00	45.00	65.00	58.00	55.00	83.00	347.00	376.00	128.00	77.00	188.00	6
88.00	124.00	45.00	63.00	49.00	52.00	92.00	368.00	387.00	130.00	92.00	143.00	7
85.00	124.00	45.00	59.00	57.00	53.00	102.00	372.00	389.00	127.00	107.00	142.00	8
83.00	119.00	46.00	57.00	52.00	54.00	117.00	414.00	384.00	124.00	101.00	131.00	9
69.00	123.00	46.00	54.00	56.00	58.00	133.00	450.00	368.00	135.00	94.00	143.00	10
68.00	123.00	46.00	52.00	54.00	61.00	142.00	433.00	321.00	149.00	103.00	146.00	11
72.00	120.00	46.00	48.00	63.00	57.00	149.00	412.00	294.00	151.00	103.00	173.00	12
70.00	118.00	46.00	45.00	60.00	48.00	155.00	385.00	278.00	152.00	94.00	147.00	13
76.00	116.00	46.00	54.00	49.00	49.00	170.00	378.00	246.00	147.00	118.00	143.00	14
68.00	108.00	47.00	62.00	49.00	48.00	203.00	358.00	225.00	142.00	119.00	141.00	15
66.00	108.00	47.00	58.00	48.00	48.00	258.00	308.00	214.00	131.00	126.00	139.00	16
67.00	102.00	47.00	66.00	46.00	48.00	290.00	279.00	209.00	115.00	132.00	138.00	17
66.00	97.00	47.00	68.00	46.00	47.00	293.00	271.00	198.00	128.00	132.00	134.00	18
68.00	97.00	47.00	60.00	45.00	47.00	277.00	284.00	202.00	131.00	135.00	152.00	19
70.00	89.00	47.00	54.00	48.00	47.00	254.00	288.00	201.00	146.00	130.00	150.00	20
69.00	82.00	47.00	55.00	46.00	47.00	237.00	315.00	207.00	204.00	130.00	133.00	21
69.00	76.00	41.00	55.00	45.00	47.00	248.00	341.00	202.00	153.00	128.00	128.00	22
70.00	69.00	36.00	57.00	46.00	46.00	234.00	388.00	194.00	143.00	130.00	112.00	23
61.00	67.00	31.00	51.00	45.00	47.00	237.00	425.00	191.00	144.00	133.00	105.00	24
55.00	66.00	31.00	49.00	45.00	51.00	237.00	442.00	201.00	129.00	136.00	108.00	25
55.00	67.00	37.00	63.00	42.00	51.00	232.00	468.00	165.00	124.00	139.00	107.00	26
56.00	78.00	40.00	58.00	47.00	50.00	232.00	486.00	158.00	121.00	133.00	107.00	27
55.00	80.00	44.00	58.00	46.00	50.00	243.00	493.00	154.00	121.00	127.00	107.00	28
56.00	80.00	48.00	60.00	0.00	48.00	255.00	474.00	156.00	128.00	125.00	108.00	29
56.00	55.00	53.00	54.00	0.00	50.00	265.00	459.00	155.00	127.00	126.00	96.00	30
57.00	0.00	52.00	65.00	0.00	51.00	0.00	433.00	0.00	114.00	123.00	0.00	31
ITHLY												
2480.00	2575.00	1358.00	1708.00	1408.00	1566.00	5474.00	11661.00	7958.00	4252.00	3587.00	4249.00	
80.00	89.20	43.80	55.10	50.30	50.50	182.00	376.00	265.00	137.00	116.00	142.00	
172.00	124.00	53.00	68.00	65.00	61.00	293.00	493.00	400.00	204.00	139.00	246.00	
55.00	55.00	31.00	38.00	42.00	46.00	54.00	271.00	154.00	114.00	77.00	96.00	
4920.00	5310.00	2690.00	3390.00	2790.00	3110.00	10860.00	23130.00	15780.00	8430.00	7110.00	8430.00	

84-SEPT85 TOTAL 48376.00 MEAN 133.00 MAX 493.00 MIN 31.00 TOT ACR FT 95950.00

TOTAL MEAN MAX MIN TOT ACR FT

MAX UNIT DISCHARGE 500.00 CFS (3.88 FT) DATE MAY 28 MIN UNIT DISCHARGE 17.00 CFS DATE JAN 25

ARKS:

ote: discharge pipe has been plugged for quite some time, resulting in high guage height readings compared much lower flows. repaires will be made on the discharge pipe when water level in huntington ek drops substantially.(CPS).From 9/3 to 9/30,chart ran one day slow. (CPS).

PRECIPITATION 84-85

OCT	NOV.	DEC	JAN.	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT.
207	.34	1.74	.49	.27	.53	.44	1.08	.42	3.21	.04	.81

UTAH POWER & LIGHT COMPANY

STREAM DISCHARGE RECORDS

DAILY DISCHARGE (CFS)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DAY
1	6.70	12.00	24.00	4.20	12.00	12.00	12.00	9.10	14.00	7.80	10.00	20.00	1
2	6.70	12.00	21.00	4.50	12.00	12.00	12.00	9.40	13.00	7.60	16.00	20.00	2
3	6.70	13.00	15.00	4.70	12.00	12.00	12.00	9.60	12.00	6.70	8.50	20.00	3
4	6.70	12.00	12.00	4.70	12.00	12.00	10.00	9.10	5.80	8.00	9.40	20.00	4
5	6.70	12.00	13.00	4.50	12.00	12.00	8.90	8.90	3.90	7.80	9.60	21.00	5
6	8.00	12.00	12.00	4.70	12.00	7.10	8.90	8.90	3.60	7.40	4.90	20.00	6
7	13.00	12.00	12.00	4.70	12.00	7.10	8.90	9.10	3.70	8.00	4.50	20.00	7
8	16.00	12.00	12.00	4.70	12.00	7.00	8.90	8.90	14.00	8.50	4.50	20.00	8
9	15.00	13.00	12.00	4.70	12.00	8.50	8.90	8.90	13.00	8.70	6.70	17.00	9
10	14.00	9.10	12.00	4.70	9.30	7.00	8.20	8.90	10.00	8.50	12.00	14.00	10
11	15.00	11.00	12.00	4.70	3.60	7.00	8.20	8.70	11.00	8.20	11.00	15.00	11
12	14.00	12.00	12.00	4.70	3.60	7.00	8.20	9.40	4.80	8.70	11.00	14.00	12
13	15.00	12.00	12.00	4.50	3.40	14.00	8.20	8.50	2.70	7.60	13.00	14.00	13
14	16.00	12.00	12.00	4.50	11.00	13.00	8.20	8.20	18.00	7.40	16.00	14.00	14
15	15.00	12.00	12.00	4.50	11.00	14.00	8.00	7.80	26.00	7.80	16.00	14.00	15
16	14.00	12.00	12.00	4.50	12.00	14.00	3.30	7.60	26.00	8.00	19.00	15.00	16
17	15.00	13.00	12.00	4.50	13.00	15.00	3.30	7.80	16.00	8.00	18.00	14.00	17
18	14.00	12.00	12.00	4.50	12.00	13.00	4.00	7.80	13.00	8.00	21.00	14.00	18
19	16.00	12.00	12.00	8.00	12.00	15.00	4.00	7.80	8.80	10.00	21.00	11.00	19
20	16.00	10.00	12.00	12.00	13.00	16.00	6.20	7.60	6.20	8.90	21.00	14.00	20
21	16.00	9.60	13.00	12.00	12.00	17.00	5.80	12.00	7.00	4.50	20.00	12.00	21
22	13.00	14.00	14.00	12.00	12.00	16.00	5.80	14.00	6.00	10.00	21.00	15.00	22
23	11.00	18.00	12.00	12.00	12.00	17.00	5.80	16.00	5.40	15.00	21.00	13.00	23
24	13.00	18.00	0.96	12.00	12.00	17.00	4.50	16.00	2.80	9.60	21.00	9.80	24
25	13.00	18.00	14.00	11.00	12.00	17.00	3.60	16.00	5.10	11.00	21.00	12.00	25
26	14.00	15.00	10.00	12.00	12.00	17.00	3.30	14.00	5.20	10.00	21.00	12.00	26
27	14.00	24.00	4.20	12.00	12.00	17.00	3.30	16.00	4.90	10.00	21.00	14.00	27
28	13.00	22.00	4.20	12.00	12.00	16.00	3.60	14.00	4.70	8.20	21.00	14.00	28
29	12.00	22.00	4.20	12.00	0.00	17.00	3.60	15.00	5.00	8.70	20.00	13.00	29
30	11.00	25.00	4.50	12.00	0.00	16.00	3.60	15.00	4.50	8.00	20.00	13.00	30
31	11.00	0.00	4.50	12.00	0.00	13.00	0.00	15.00	0.00	7.80	21.00	0.00	31
MONTHLY													
TOT	390.50	422.70	350.56	233.50	307.90	404.70	203.20	335.00	276.10	264.40	481.10	458.80	
MEA	12.60	14.10	11.30	7.53	11.00	13.10	6.77	10.80	9.20	8.53	15.50	15.30	
MAX	16.00	25.00	24.00	12.00	13.00	17.00	12.00	16.00	26.00	15.00	21.00	21.00	
MIN	6.70	9.10	0.96	4.20	3.40	7.00	3.30	7.60	2.70	4.50	4.50	9.80	
ACR FT	775.00	838.00	695.00	463.00	611.00	803.00	403.00	664.00	548.00	524.00	954.00	910.00	

OCT84-SEPT85 TOTAL 4128.46 MEAN 11.30 MAX 26.00 MIN 0.96 TOT ACR FT 8190.00

TOTAL MEAN MAX MIN TOT ACR FT

MAX UNIT DISCHARGE 26.00 CFS DATE JUN 16 MIN UNIT DISCHARGE 0.96 CFS DATE DEC 24
(26.34 FT)

REMARKS:

UTAH POWER & LIGHT COMPANY

DAILY GAGE HEIGHT (FEET)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DAY
1	271.69	271.90	270.16	268.34	266.16	264.16	262.25	265.78	275.65	274.91	273.50	270.71	1
2	271.75	271.87	270.11	268.26	266.11	264.17	262.25	266.45	275.63	274.88	273.43	270.62	2
3	271.76	271.77	270.04	268.20	266.05	264.10	262.18	266.33	275.59	274.83	273.35	270.50	3
4	271.75	271.71	269.88	268.14	265.97	264.03	262.14	268.39	275.55	274.79	273.26	270.39	4
5	271.71	271.63	269.82	268.08	265.92	263.97	262.10	269.46	275.54	274.73	273.18	270.30	5
6	271.62	271.59	269.75	268.01	265.85	263.91	262.07	270.46	275.53	274.67	273.10	270.25	6
7	271.56	271.53	269.67	267.94	265.78	263.84	262.09	271.45	275.52	274.64	273.00	270.12	7
8	271.52	271.54	269.64	267.90	265.73	263.77	262.17	272.29	275.52	274.59	272.92	270.01	8
9	271.49	271.49	269.56	267.81	265.70	263.70	262.35	272.79	275.49	274.54	272.83	269.91	9
10	271.49	271.42	269.50	267.75	265.63	263.63	262.67	272.84	275.45	274.48	272.73	269.81	10
11	271.51	271.35	269.48	267.68	265.55	263.55	263.00	272.86	275.42	274.41	272.64	269.83	11
12	271.56	271.28	269.46	267.60	265.45	263.50	263.40	272.71	275.37	274.34	272.55	269.74	12
13	271.59	271.24	269.39	267.55	265.38	263.48	263.83	272.46	275.33	274.28	272.45	269.65	13
14	271.62	271.18	269.32	267.48	265.30	263.37	264.30	272.39	275.30	274.22	272.38	269.55	14
15	271.62	271.12	269.26	267.42	265.27	263.29	264.80	272.32	275.26	274.15	272.28	269.46	15
16	271.63	271.05	269.25	267.35	265.15	263.19	265.18	272.51	275.24	274.11	272.18	269.36	16
17	271.73	270.98	269.17	267.28	265.08	263.13	265.58	272.89	275.22	274.12	272.16	269.26	17
18	271.74	270.91	269.11	267.20	265.00	263.05	265.95	273.43	275.19	274.04	272.03	269.20	18
19	271.75	270.84	269.08	267.10	264.93	262.97	266.28	273.99	275.15	274.04	271.95	269.20	19
20	271.78	270.87	269.08	267.03	264.90	262.90	266.40	274.58	275.13	274.04	271.85	269.11	20
21	271.79	270.68	269.04	267.02	264.80	262.85	266.43	275.14	275.12	274.09	271.77	268.97	21
22	271.80	270.63	268.96	266.95	264.73	262.77	266.40	275.46	275.09	274.07	271.68	268.93	22
23	271.81	270.55	268.88	266.88	264.66	262.68	266.27	275.60	275.04	274.08	271.63	268.83	23
24	271.81	270.52	268.83	266.80	264.61	262.61	266.12	275.64	275.07	274.06	271.44	268.74	24
25	271.82	270.51	268.77	266.77	264.52	262.54	266.02	275.67	275.11	273.98	271.38	268.63	25
26	271.86	270.43	268.68	266.70	264.40	262.47	265.85	275.69	275.11	273.92	271.29	268.54	26
27	271.92	270.34	268.65	266.62	264.32	262.50	265.67	275.70	275.06	273.85	271.17	268.45	27
28	271.92	270.33	268.58	266.56	264.25	262.46	265.53	275.88	275.03	273.83	271.12	268.34	28
29	271.93	270.28	268.51	266.52	0.00	262.43	265.43	275.85	275.00	273.72	271.01	268.23	29
30	271.95	270.23	268.45	266.46	0.00	262.36	265.45	275.73	274.95	273.65	270.90	268.09	30
31	271.94	0.00	268.39	266.40	0.00	262.27	0.00	275.70	0.00	273.56	270.80	0.00	31

MAXIMUM GAGE HEIGHT 275.88 MAY 28 MINIMUM GAGE HEIGHT 262.07 APR 6

NOTE: ADD 8300 FEET TO GAGE HEIGHT TO OBTAIN ELEVATION

UTAH POWER & LIGHT COMPANY

STREAM DISCHARGE RECORDS

DAILY DISCHARGE (CFS)

:Y	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DAY
	19.00	20.00	27.00	27.00	27.00	29.00	30.00	39.00	115.00	32.00	28.00	28.00	1
	22.00	21.00	28.00	27.00	27.00	29.00	26.00	40.00	104.00	32.00	28.00	28.00	2
	27.00	25.00	28.00	27.00	27.00	28.00	18.00	40.00	97.00	32.00	28.00	28.00	3
	27.00	25.00	28.00	27.00	27.00	29.00	18.00	40.00	90.00	32.00	28.00	28.00	4
	25.00	25.00	28.00	27.00	27.00	28.00	18.00	40.00	85.00	32.00	28.00	28.00	5
	21.00	25.00	28.00	27.00	27.00	28.00	18.00	41.00	82.00	32.00	28.00	28.00	6
	22.00	25.00	28.00	27.00	27.00	28.00	17.00	41.00	81.00	32.00	28.00	28.00	7
	22.00	25.00	28.00	27.00	26.00	28.00	16.00	61.00	79.00	32.00	28.00	28.00	8
	14.00	25.00	28.00	27.00	26.00	28.00	13.00	132.00	75.00	32.00	28.00	28.00	9
	8.20	25.00	28.00	27.00	26.00	27.00	16.00	164.00	73.00	32.00	28.00	28.00	10
	8.30	25.00	28.00	27.00	26.00	27.00	16.00	184.00	67.00	32.00	28.00	28.00	11
	8.40	25.00	28.00	28.00	26.00	28.00	16.00	184.00	62.00	32.00	28.00	28.00	12
	8.50	25.00	27.00	27.00	27.00	28.00	15.00	184.00	57.00	32.00	28.00	28.00	13
	8.50	25.00	27.00	27.00	27.00	28.00	15.00	184.00	53.00	32.00	28.00	28.00	14
	8.60	25.00	27.00	27.00	27.00	29.00	39.00	139.00	48.00	32.00	28.00	28.00	15
	8.70	26.00	27.00	27.00	27.00	29.00	66.00	81.00	46.00	18.00	28.00	28.00	16
	8.70	26.00	27.00	27.00	27.00	30.00	70.00	45.00	44.00	16.00	28.00	28.00	17
	8.50	26.00	27.00	27.00	27.00	30.00	69.00	29.00	41.00	31.00	28.00	28.00	18
	8.90	26.00	27.00	27.00	27.00	30.00	68.00	29.00	39.00	31.00	28.00	28.00	19
	9.00	26.00	27.00	27.00	27.00	31.00	68.00	29.00	38.00	31.00	28.00	28.00	20
	9.20	26.00	27.00	27.00	28.00	30.00	67.00	38.00	37.00	31.00	28.00	28.00	21
	9.20	26.00	27.00	27.00	28.00	30.00	66.00	85.00	34.00	31.00	28.00	28.00	22
	9.30	26.00	27.00	27.00	28.00	29.00	66.00	128.00	31.00	28.00	28.00	28.00	23
	9.30	26.00	27.00	27.00	28.00	29.00	65.00	148.00	30.00	28.00	28.00	28.00	24
	9.40	26.00	27.00	27.00	28.00	29.00	65.00	153.00	36.00	28.00	28.00	28.00	25
	9.40	27.00	27.00	27.00	28.00	29.00	64.00	162.00	36.00	28.00	28.00	28.00	26
	9.30	27.00	27.00	27.00	29.00	29.00	65.00	167.00	33.00	28.00	28.00	28.00	27
	9.20	27.00	27.00	27.00	29.00	29.00	65.00	162.00	31.00	28.00	28.00	29.00	28
	9.30	27.00	27.00	27.00	0.00	30.00	64.00	153.00	29.00	28.00	28.00	29.00	29
	9.70	27.00	27.00	27.00	0.00	30.00	64.00	142.00	31.00	28.00	28.00	29.00	30
	14.00	0.00	27.00	27.00	0.00	30.00	0.00	127.00	0.00	28.00	28.00	0.00	31
)NTHLY													
)T	400.60	761.00	848.00	838.00	761.00	896.00	1283.00	3191.00	1704.00	921.00	868.00	843.00	
:A	12.90	25.40	27.40	27.00	27.20	28.90	42.80	103.00	56.80	29.70	28.00	28.10	
:X	27.00	27.00	28.00	28.00	29.00	31.00	70.00	184.00	115.00	32.00	28.00	29.00	
:N	8.20	20.00	27.00	27.00	26.00	27.00	13.00	29.00	29.00	16.00	28.00	28.00	
:R T	795.00	1510.00	1680.00	1660.00	1510.00	1780.00	2540.00	6330.00	3380.00	1830.00	1720.00	1670.00	

:T84-SEPT85 TOTAL 13314.60 MEAN 36.50 MAX 184.00 MIN 8.20 TOT ACR FT 26410.00

TOTAL MEAN MAX MIN TOT ACR FT

MAX UNIT DISCHARGE 186.00 CFS (2.68 FT) DATE MAY 10 MIN UNIT DISCHARGE 1.60 CFS DATE APR 9

:MARKS:

note; recorder ran out of paper; flow has been the same for the entire period for 8/1 tp 9/2. (CPS).

Note: The evaporation pan has been disassembled for the year. (CPS).

ENG0006A ELECTRIC LAKE OCT84-SEPT85 PAGE 0

UTAH POWER & LIGHT COMPANY

RESERVOIR RECORDS

DAILY CONTENTS (ACRE FEET)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DAY
1	29729.00	29824.00	29045.00	28250.00	27325.00	26500.00	25732.00	27167.00	31575.00	31221.00	30559.00	29889.00	1
2	29756.00	29810.00	29022.00	28216.00	27304.00	26504.00	25732.00	27447.00	31565.00	31207.00	30526.00	29249.00	2
3	29760.00	29765.00	28992.00	28190.00	27279.00	26476.00	25704.00	27396.00	31546.00	31183.00	30489.00	29195.00	3
4	29756.00	29738.00	28921.00	28164.00	27246.00	26447.00	25688.00	28272.00	31527.00	31164.00	30447.00	29146.00	4
5	29738.00	29702.00	28895.00	28139.00	27225.00	26423.00	25672.00	28737.00	31522.00	31134.00	30410.00	29107.00	5
6	29697.00	29683.00	28864.00	28109.00	27196.00	26398.00	25660.00	29178.00	31517.00	31107.00	30373.00	29064.00	6
7	29670.00	29656.00	28829.00	28079.00	27167.00	26370.00	25668.00	29620.00	31512.00	31093.00	30327.00	29027.00	7
8	29652.00	29661.00	28816.00	28061.00	27146.00	26342.00	25700.00	30001.00	31512.00	31070.00	30290.00	28978.00	8
9	29638.00	29638.00	28780.00	28023.00	27134.00	26313.00	25772.00	30230.00	31498.00	31046.00	30249.00	28934.00	9
10	29638.00	29607.00	28754.00	27997.00	27104.00	26285.00	25899.00	30253.00	31479.00	31018.00	30203.00	28890.00	10
11	29647.00	29575.00	28745.00	27967.00	27071.00	26253.00	26031.00	30262.00	31465.00	30985.00	30161.00	28899.00	11
12	29670.00	29544.00	28737.00	27933.00	27030.00	26233.00	26192.00	30193.00	31441.00	30952.00	30120.00	28859.00	12
13	29683.00	29526.00	28702.00	27912.00	27001.00	26224.00	26366.00	30079.00	31421.00	30923.00	30074.00	28820.00	13
14	29697.00	29499.00	28675.00	27882.00	26968.00	26180.00	26557.00	30047.00	31407.00	30895.00	30042.00	28776.00	14
15	29697.00	29472.00	28649.00	27857.00	26955.00	26148.00	26762.00	30015.00	31388.00	30862.00	29997.00	28737.00	15
16	29702.00	29441.00	28645.00	27827.00	26906.00	26108.00	26918.00	30102.00	31379.00	30843.00	29951.00	28693.00	16
17	29747.00	29409.00	28610.00	27797.00	26877.00	26083.00	27084.00	30276.00	31369.00	30843.00	29942.00	28649.00	17
18	29751.00	29378.00	28584.00	27763.00	26844.00	26051.00	27238.00	30526.00	31355.00	30811.00	29883.00	28623.00	18
19	29756.00	29347.00	28571.00	27721.00	26815.00	26019.00	27376.00	30787.00	31336.00	30811.00	29846.00	28623.00	19
20	29769.00	29360.00	28571.00	27691.00	26803.00	25991.00	27426.00	31065.00	31326.00	30811.00	29801.00	28584.00	20
21	29774.00	29275.00	28553.00	27687.00	26762.00	25971.00	27438.00	31331.00	31321.00	30834.00	29765.00	28523.00	21
22	29778.00	29253.00	28519.00	27657.00	26733.00	25939.00	27426.00	31464.00	31307.00	30825.00	29724.00	28506.00	22
23	29783.00	29218.00	28484.00	27628.00	26704.00	25903.00	27371.00	31551.00	31283.00	30829.00	29702.00	28462.00	23
24	29783.00	29204.00	28462.00	27594.00	26684.00	25875.00	27309.00	31570.00	31297.00	30820.00	29616.00	28423.00	24
25	29788.00	29200.00	28436.00	27581.00	26647.00	25847.00	27267.00	31584.00	31317.00	30782.00	29589.00	28376.00	25
26	29806.00	29164.00	28397.00	27552.00	26598.00	25819.00	27196.00	31594.00	31317.00	30754.00	29548.00	28337.00	26
27	29833.00	29124.00	28384.00	27518.00	26565.00	25831.00	27121.00	31599.00	31293.00	30722.00	29494.00	28298.00	27
28	29833.00	29120.00	28354.00	27493.00	26537.00	25915.00	27063.00	31685.00	31278.00	30712.00	29472.00	28250.00	28
29	29837.00	29098.00	28324.00	27476.00	0.00	25803.00	27022.00	31671.00	31264.00	30661.00	29423.00	28203.00	29
30	29846.00	29076.00	28298.00	27451.00	0.00	25776.00	27030.00	31613.00	31240.00	30628.00	29374.00	28143.00	30
31	29842.00	0.00	28272.00	27426.00	0.00	25740.00	0.00	31599.00	0.00	30586.00	29329.00	0.00	31
MONTHLY CHANGE	118.	-766.	-804.	-846.	-889.	-797.	1290.	4569.	-359.	-654.	-1257.	-1186.	

OCT84-SEPT85 TOTAL CHANGE -1581. MAX CONTENTS 31685. AC FT MAY 28 MIN CONTENTS 25660. AC FT APR 6

TOTAL CHANGE MAX CONTENTS MIN CONTENTS

REMARKS:

UTAH POWER & LIGHT COMPAN

INFLOW AND UTILIZATION RECORDS

Y	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	DAY
	16.14	14.75	14.03	14.67	-4.65	12.58	19.27	75.42	109.18	23.14	13.33	8.73	1
	30.08	12.62	13.96	12.63	-3.49	20.64	24.09	145.81	99.84	25.62	15.58	9.97	2
	34.34	9.97	14.39	11.62	15.53	22.27	11.04	98.26	93.37	24.32	13.04	5.94	3
	26.52	6.71	2.36	13.63	12.37	14.23	6.75	248.96	84.53	23.03	10.75	3.70	4
	19.00	9.00	3.33	15.87	13.24	14.79	9.73	379.52	83.21	21.98	10.73	7.52	5
	6.58	11.03	13.37	12.86	14.10	15.70	10.51	270.35	83.81	19.42	11.98	14.11	6
	4.57	13.32	11.07	11.67	11.94	14.68	16.23	265.03	82.13	22.91	9.69	9.61	7
	10.63	19.39	15.57	14.87	13.82	13.92	26.53	269.67	81.64	24.38	9.67	3.09	8
	6.16	20.42	15.28	13.02	17.96	13.39	39.48	287.07	75.98	21.82	10.91	6.40	9
	4.69	11.36	11.96	11.17	15.09	12.79	66.03	229.00	68.47	20.52	8.63	7.70	10
	10.57	9.11	18.73	13.35	9.77	12.30	81.05	193.44	62.76	18.22	8.36	21.10	11
	16.44	9.13	23.23	11.37	7.42	14.69	89.45	170.16	56.47	16.92	9.60	22.14	12
	17.53	12.68	16.64	13.54	8.87	20.84	99.71	139.06	50.27	17.94	8.57	10.08	13
	15.34	13.82	11.81	14.44	10.98	15.13	107.06	148.30	48.34	19.21	10.82	9.10	14
	12.15	11.81	14.05	13.33	15.17	9.68	138.38	124.26	43.97	18.21	11.06	9.14	15
	9.96	11.06	19.81	13.22	11.37	11.03	157.49	95.39	42.65	7.06	7.51	9.17	16
	21.32	10.05	17.50	11.86	7.45	13.13	151.45	111.35	42.77	14.88	16.57	7.95	17
	20.88	10.30	11.92	10.75	11.59	15.49	149.85	137.38	38.90	25.07	13.27	12.52	18
	11.15	10.77	17.43	7.62	11.70	14.07	142.02	159.21	34.28	24.12	6.19	23.65	19
	13.58	21.76	23.94	8.52	17.11	15.39	115.04	166.17	34.62	33.33	9.70	20.41	20
	13.70	8.00	22.64	18.04	14.19	18.13	82.51	176.38	37.09	39.15	9.94	5.07	21
	11.48	-0.98	14.04	18.04	10.02	16.44	66.32	191.39	33.32	36.84	10.93	10.65	22
	11.53	11.62	9.71	11.73	13.15	12.23	48.96	184.07	25.94	28.55	14.44	14.97	23
	10.57	13.81	12.70	10.71	15.53	13.06	35.89	170.67	31.91	31.27	5.08	9.46	24
	10.62	21.80	14.93	14.74	13.62	14.90	38.69	162.62	49.06	20.34	1.80	8.74	25
	15.21	16.43	10.61	15.99	6.42	14.73	35.95	168.70	45.20	15.50	13.12	8.78	26
	20.62	7.53	13.85	10.69	8.02	24.92	28.10	171.98	31.21	17.39	6.30	10.83	27
	16.00	15.78	16.08	11.69	13.61	28.23	31.12	186.26	24.85	21.91	11.07	8.60	28
	10.32	20.49	11.76	15.97	0.00	22.46	39.22	172.07	25.67	17.04	12.31	6.62	29
	12.96	16.13	12.73	15.96	0.00	19.97	55.39	124.45	25.18	11.65	5.49	3.63	30
	15.41	0.00	13.70	13.94	0.00	14.20	0.00	113.03	0.00	13.88	6.48	0.00	31
NTHLY													
T	456.05	379.68	443.14	405.50	311.93	496.00	1923.30	5535.46	1646.62	675.64	310.91	309.36	
A	14.71	12.66	14.29	13.08	11.14	16.00	64.11	178.56	54.89	21.79	10.03	10.31	
X	34.34	21.80	23.94	18.04	17.96	28.23	157.49	379.52	109.18	39.15	16.57	23.65	
N	4.57	-0.98	2.36	7.62	-4.65	9.68	6.75	75.42	24.85	7.06	1.80	3.09	

T84-SEPT85 TOTAL 12894. MEAN 35. MAX 380. MIN -5.

TOTAL MEAN MAX MIN

MARKS:

here

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-3
LOCATION DESCRIPTION : HUNTINGTON CREEK JUST BELOW ELECT. LAKE DAM
SAMPLE DATE: 01/03/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-3.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.2000	
CONDUCTIVITY	umhos/cm		264.0000	
TOTAL DISSOLVED SOLIDS	mg/l		100.0000	
TURBIDITY	NTUs		3.0000	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.5000	
NITRITE, NO2 as N	mg/l		0.0400	
TOT. COLIFORM	M.P.#/100ml		5.0000	
FEC. COLIFORM	M.P.#/100ml	<	2.0000	
KJELDAHL NITROGEN	mg/l		0.1000	
SUSPENDED SOLIDS	mg/l		1.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-3
LOCATION DESCRIPTION : HUNTINGTON CREEK JUST BELOW ELECT. LAKE DAM
SAMPLE DATE: 02/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-3.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.5000	
CONDUCTIVITY	umhos/cm		253.0000	
TOTAL DISSOLVED SOLIDS	mg/l		140.0000	
TURBIDITY	NTUs		2.4000	
AMMONIA, NH3 as N	mg/l		0.0100	
NITRATE, NO3 as N	mg/l		0.4600	
NITRITE, NO2 as N	mg/l		0.0100	
TOT. COLIFORM	M.P.#/100ml		2.0000	
FEC. COLIFORM	M.P.#/100ml	<	2.0000	
KJELDAHL NITROGEN	mg/l		0.0500	
SUSPENDED SOLIDS	mg/l	<	1.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-3
LOCATION DESCRIPTION : HUNTINGTON CREEK JUST BELOW ELECT. LAKE DAM
SAMPLE DATE: 03/12/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-3.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		6.8500	
CONDUCTIVITY	umhos/cm		248.0000	
TOTAL DISSOLVED SOLIDS	mg/l		242.0000	
TURBIDITY	NTUs		2.8000	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.4700	
TOT. COLIFORM	M.P.#/100ml	<	2.0000	
FEC. COLIFORM	M.P.#/100ml	<	2.0000	
KJELDAHL NITROGEN	mg/l		0.1000	
SUSPENDED SOLIDS	mg/l		1.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-3
LOCATION DESCRIPTION : HUNTINGTON CREEK JUST BELOW ELECT. LAKE DAM
SAMPLE DATE: 04/23/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-3.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		6.9000	
CONDUCTIVITY	umhos/cm		229.0000	
TOTAL DISSOLVED SOLIDS	mg/l		258.0000	
TURBIDITY	NTUs		3.9000	
AMMONIA, NH3 as N	mg/l		0.4000	
NITRATE, NO3 as N	mg/l		0.7200	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOT. COLIFORM	M.P.#/100ml		50.0000	
FEC. COLIFORM	M.P.#/100ml	<	2.0000	
KJELDAHL NITROGEN	mg/l		0.5500	
SUSPENDED SOLIDS	mg/l		8.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-3
LOCATION DESCRIPTION : HUNTINGTON CREEK JUST BELOW ELECT. LAKE DAM
SAMPLE DATE: 05/09/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-3.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		6.8000	
CONDUCTIVITY	umhos/cm		270.0000	
TOTAL DISSOLVED SOLIDS	mg/l		252.0000	
TURBIDITY	NTUs		3.0000	
AMMONIA, NH3 as N	mg/l		0.0500	
NITRATE, NO3 as N	mg/l		0.6100	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOT. COLIFORM	M.P.#/100ml		80.0000	
FEC. COLIFORM	M.P.#/100ml	<	2.0000	
KJELDAHL NITROGEN	mg/l		0.1000	
SUSPENDED SOLIDS	mg/l		6.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-3
LOCATION DESCRIPTION : HUNTINGTON CREEK JUST BELOW ELECT. LAKE DAM
SAMPLE DATE: 06/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-3.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		6.9500	
CONDUCTIVITY	umhos/cm		238.0000	
TOTAL DISSOLVED SOLIDS	mg/l		148.0000	
TURBIDITY	NTUs		2.0600	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.7500	
NITRITE, NO2 as N	mg/l		0.0100	
TOT. COLIFORM	M.P.#/100ml		4.0000	
FEC. COLIFORM	M.P.#/100ml		2.0000	
KJELDAHL NITROGEN	mg/l		0.0300	
SUSPENDED SOLIDS	mg/l		5.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-3
LOCATION DESCRIPTION : HUNTINGTON CREEK JUST BELOW ELECT. LAKE DAM
SAMPLE DATE: 07/11/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-3.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.9000	
CONDUCTIVITY	umhos/cm		252.0000	
TOTAL DISSOLVED SOLIDS	mg/l		152.0000	
TURBIDITY	NTUs		1.3600	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.8000	
NITRITE, NO2 as N	mg/l		0.0100	
TOT. COLIFORM	M.P.#/100ml		8.0000	
FEC. COLIFORM	M.P.#/100ml		2.0000	
KJELDAHL NITROGEN	mg/l	<	0.0100	
SUSPENDED SOLIDS	mg/l		9.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-3
LOCATION DESCRIPTION : HUNTINGTON CREEK BELOW ELECTRIC LAKE
SAMPLE DATE: 08/23/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-3.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.0000	
CONDUCTIVITY	umhos/cm		265.0000	
TOTAL DISSOLVED SOLIDS	mg/l		158.0000	
TURBIDITY	NTUs		2.5600	
AMMONIA, NH3 as N	mg/l		0.1000	
NITRATE, NO3 as N	mg/l		0.8000	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOT. COLIFORM	M.P.#/100ml		4.0000	
FEC. COLIFORM	M.P.#/100ml		4.0000	
KJELDAHL NITROGEN	mg/l		0.1400	
SUSPENDED SOLIDS	mg/l		6.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-3
LOCATION DESCRIPTION : HUNTINGTON CREEK BELOW ELECTRIC LAKE
SAMPLE DATE: 09/13/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-3.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.8500	
CONDUCTIVITY	umhos/cm		225.0000	
TOTAL DISSOLVED SOLIDS	mg/l		164.0000	
TURBIDITY	NTUs		1.4000	
AMMONIA, NH3 as N	mg/l		0.1000	
NITRATE, NO3 as N	mg/l		0.5800	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOT. COLIFORM	M.P.#/100ml		17.0000	
FEC. COLIFORM	M.P.#/100ml		8.0000	
KJELDAHL NITROGEN	mg/l		0.1700	
SUSPENDED SOLIDS	mg/l		5.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-3
LOCATION DESCRIPTION : HUNTINGTON CREEK BELOW ELECTRIC LAKE
SAMPLE DATE: 10/25/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-3.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.0500	
CONDUCTIVITY	umhos/cm		290.0000	
TOTAL DISSOLVED SOLIDS	mg/l		180.0000	
TURBIDITY	NTUs		0.6400	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.5500	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOT. COLIFORM	M.P.#/100ml	<	2.0000	
FEC. COLIFORM	M.P.#/100ml	<	2.0000	
KJELDAHL NITROGEN	mg/l		0.0200	
SUSPENDED SOLIDS	mg/l		5.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-3
LOCATION DESCRIPTION : HUNTINGTON CREEK BELOW ELECTRIC LAKE
SAMPLE DATE: 11/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-3.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.0000	
CONDUCTIVITY	umhos/cm		288.0000	
TOTAL DISSOLVED SOLIDS	mg/l		164.0000	
TURBIDITY	NTUs		1.0600	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.5400	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOT. COLIFORM	M.P.#/100ml		800.0000	
FEC. COLIFORM	M.P.#/100ml		2.0000	
KJELDAHL NITROGEN	mg/l		0.0800	
SUSPENDED SOLIDS	mg/l		1.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-3
LOCATION DESCRIPTION : HUNTINGTON CREEK BELOW ELECTRIC LAKE
SAMPLE DATE: 12/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-3.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.1000	
CONDUCTIVITY	umhos/cm		258.0000	
TOTAL DISSOLVED SOLIDS	mg/l		176.0000	
TURBIDITY	NTUs		0.9900	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.4900	
NITRITE, NO2 as N	mg/l		0.0200	
TOT. COLIFORM	M.P.#/100ml	<	2.0000	
FEC. COLIFORM	M.P.#/100ml	<	2.0000	
KJELDAHL NITROGEN	mg/l		0.0200	
SUSPENDED SOLIDS	mg/l		1.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-2
LOCATION DESCRIPTION : N. FORK HUNTINGTON CREEK ABOVE CONFLUENCE
SAMPLE DATE: 01/03/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-2.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.6500	
CONDUCTIVITY	umhos/cm		362.0000	
TOTAL DISSOLVED SOLIDS	mg/l		160.0000	
TURBIDITY	NTUs		2.3000	
AMMONIA, NH3 as N	mg/l		0.2000	
NITRATE, NO3 as N	mg/l		0.4100	
NITRITE, NO2 as N	mg/l		0.0100	
TOT. COLIFORM	M.P.#/100ml		49.0000	
FEC. COLIFORM	M.P.#/100ml	<	2.0000	
KJELDAHL NITROGEN	mg/l		0.4000	
SUSPENDED SOLIDS	mg/l		1.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-2
LOCATION DESCRIPTION : N. FORK HUNTINGTON CREEK ABOVE CONFLUENCE
SAMPLE DATE: 02/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-2.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.8000	
CONDUCTIVITY	umhos/cm		341.0000	
TOTAL DISSOLVED SOLIDS	mg/l		216.0000	
TURBIDITY	NTUs		12.0000	
AMMONIA, NH3 as N	mg/l		0.6000	
NITRATE, NO3 as N	mg/l		0.3900	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOT. COLIFORM	M.P.#/100ml		11.0000	
FEC. COLIFORM	M.P.#/100ml	<	2.0000	
KJELDAHL NITROGEN	mg/l		0.8500	
SUSPENDED SOLIDS	mg/l		18.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-2
LOCATION DESCRIPTION : N. FORK HUNTINGTON CREEK ABOVE CONFLUENCE
SAMPLE DATE: 03/13/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-2.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.3000	
CONDUCTIVITY	umhos/cm		327.0000	
TOTAL DISSOLVED SOLIDS	mg/l		320.0000	
TURBIDITY	NTUs		3.6000	
AMMONIA, NH3 as N	mg/l		0.1000	
NITRATE, NO3 as N	mg/l		0.3900	
NITRITE, NO2 as N	mg/l		0.0200	
TOT. COLIFORM	M.P.#/100ml		17.0000	
FEC. COLIFORM	M.P.#/100ml	<	2.0000	
KJELDAHL NITROGEN	mg/l		0.3000	
SUSPENDED SOLIDS	mg/l		2.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-2
LOCATION DESCRIPTION : N. FORK HUNTINGTON CREEK ABOVE CONFLUENCE
SAMPLE DATE: 04/23/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-2.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.2000	
CONDUCTIVITY	umhos/cm		276.0000	
TOTAL DISSOLVED SOLIDS	mg/l		325.0000	
TURBIDITY	NTUs		3.3000	
AMMONIA, NH3 as N	mg/l		0.0500	
NITRATE, NO3 as N	mg/l		0.7900	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOT. COLIFORM	M.P.#/100ml		70.0000	
FEC. COLIFORM	M.P.#/100ml	<	2.0000	
KJELDAHL NITROGEN	mg/l		0.3000	
SUSPENDED SOLIDS	mg/l		22.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-2
LOCATION DESCRIPTION : N. FORK HUNTINGTON CREEK ABOVE CONFLUENCE
SAMPLE DATE: 05/09/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-2.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.4500	
CONDUCTIVITY	umhos/cm		283.0000	
TOTAL DISSOLVED SOLIDS	mg/l		346.0000	
TURBIDITY	NTUs		22.5000	
AMMONIA, NH3 as N	mg/l		0.0500	
NITRATE, NO3 as N	mg/l		0.7000	
NITRITE, NO2 as N	mg/l		0.0300	
TOT. COLIFORM	M.P.#/100ml		50.0000	
FEC. COLIFORM	M.P.#/100ml	<	2.0000	
KJELDAHL NITROGEN	mg/l		0.1000	
SUSPENDED SOLIDS	mg/l		193.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-2
LOCATION DESCRIPTION : N. FORK HUNTINGTON CREEK ABOVE CONFLUENCE
SAMPLE DATE: 06/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-2.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.5000	
CONDUCTIVITY	umhos/cm		326.0000	
TOTAL DISSOLVED SOLIDS	mg/l		198.0000	
TURBIDITY	NTUs		3.9000	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.6300	
NITRITE, NO2 as N	mg/l		0.0100	
TOT. COLIFORM	M.P.#/100ml		30.0000	
FEC. COLIFORM	M.P.#/100ml		4.0000	
KJELDAHL NITROGEN	mg/l		0.1000	
SUSPENDED SOLIDS	mg/l		14.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-2
LOCATION DESCRIPTION : N. FORK HUNTINGTON CREEK ABOVE CONFLUENCE
SAMPLE DATE: 07/11/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-2.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.3000	
CONDUCTIVITY	umhos/cm		323.0000	
TOTAL DISSOLVED SOLIDS	mg/l		200.0000	
TURBIDITY	NTUs		5.7800	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.5700	
NITRITE, NO2 as N	mg/l		0.0200	
TOT. COLIFORM	M.P.#/100ml		230.0000	
FEC. COLIFORM	M.P.#/100ml		230.0000	
KJELDAHL NITROGEN	mg/l	<	0.0100	
SUSPENDED SOLIDS	mg/l		11.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-2
LOCATION DESCRIPTION : N. FORK HUNTINGTON CREEK ABOVE CONFLUENCE
SAMPLE DATE: 08/23/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-2.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.4000	
CONDUCTIVITY	umhos/cm		338.0000	
TOTAL DISSOLVED SOLIDS	mg/l		200.0000	
TURBIDITY	NTUs		5.4200	
AMMONIA, NH3 as N	mg/l		0.0900	
NITRATE, NO3 as N	mg/l		0.6400	
NITRITE, NO2 as N	mg/l		0.0200	
TOT. COLIFORM	M.P.#/100ml		8.0000	
FEC. COLIFORM	M.P.#/100ml		4.0000	
KJELDAHL NITROGEN	mg/l		0.1200	
SUSPENDED SOLIDS	mg/l		12.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-2
LOCATION DESCRIPTION : N. FORK HUNTINGTON CREEK ABOVE CONFLUENCE
SAMPLE DATE: 09/13/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-2.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.4000	
CONDUCTIVITY	umhos/cm		315.0000	
TOTAL DISSOLVED SOLIDS	mg/l		208.0000	
TURBIDITY	NTUs		2.6600	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.4400	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOT. COLIFORM	M.P.#/100ml		13.0000	
FEC. COLIFORM	M.P.#/100ml		2.0000	
KJELDAHL NITROGEN	mg/l		0.0200	
SUSPENDED SOLIDS	mg/l		9.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-2
LOCATION DESCRIPTION : NORTH FORK HUNTINGTON CR ABOVE CONFLUENCE
SAMPLE DATE: 10/25/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-2.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.2500	
CONDUCTIVITY	umhos/cm		378.0000	
TOTAL DISSOLVED SOLIDS	mg/l		236.0000	
TURBIDITY	NTUs		1.7700	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.3500	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOTAL PHOSPHATE,PO4-P	mg/l		0.0200	
TOT. COLIFORM	M.P.#/100ml		230.0000	
FEC. COLIFORM	M.P.#/100ml		30.0000	
KJELDAHL NITROGEN	mg/l	<	0.0100	
SUSPENDED SOLIDS	mg/l		2.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-2
LOCATION DESCRIPTION : NORTH FORK HUNTINGTON CR ABOVE CONFLUENCE
SAMPLE DATE: 11/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-2.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.3000	
CONDUCTIVITY	umhos/cm		369.0000	
TOTAL DISSOLVED SOLIDS	mg/l		212.0000	
TURBIDITY	NTUs		2.4200	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.4100	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOT. COLIFORM	M.P.#/100ml		130.0000	
FEC. COLIFORM	M.P.#/100ml		2.0000	
KJELDAHL NITROGEN	mg/l		0.0500	
SUSPENDED SOLIDS	mg/l		4.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-2
LOCATION DESCRIPTION : NORTH FORK HUNTINGTON CREEK ABOVE CONFLUENCE
SAMPLE DATE: 12/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-2.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.2000	
CONDUCTIVITY	umhos/cm		370.0000	
TOTAL DISSOLVED SOLIDS	mg/l		228.0000	
TURBIDITY	NTUs		2.8500	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		5.9700	
NITRITE, NO2 as N	mg/l		0.0200	
TOT. COLIFORM	M.P.#/100ml		50.0000	
FEC. COLIFORM	M.P.#/100ml		23.0000	
KJELDAHL NITROGEN	mg/l		0.0400	
SUSPENDED SOLIDS	mg/l		1.0000	
FECAL STREP	M.P.#/100ml	<	2.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : H-1
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE PLANT
SAMPLE DATE: 01/03/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : h-1.WAT

PARAMETER	UNITS	VALUE	CODE
BORON, B	mg/l	0.1130	T U

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : H-1
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE PLANT
SAMPLE DATE: 02/26/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : h-1.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.8000	
CONDUCTIVITY	umhos/cm		400.0000	
ALKALINITY, AS CaCO3	mg/l		204.0000	
BICARBONATE, AS HCO3	mg/l		249.0000	
CALCIUM, Ca	mg/l		58.7000	
CARBONATE, CO3	mg/l	<	0.0100	
CHLORIDE, Cl	mg/l		10.0000	
FLOURIDE, Fl	mg/l		0.1000	
HARDNESS, as CaCO3	mg/l		254.0000	
MAGNESIUM, Mg	mg/l		25.8000	
POTASSIUM, K	mg/l		1.1600	
SODIUM, Na	mg/l		7.5000	
SULFATE, SO4	mg/l		45.0000	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.2800	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOTAL PHOSPHATE,PO4-P	mg/l		0.0600	
ORTHO PHOSPHATE,PO4-P	mg/l	<	0.0100	
ALUMINUM, Al	mg/l		0.0060	D
ARSENIC, As	mg/l	<	0.0010	D
BARIUM, Ba	mg/l		0.0800	D
BORON, B	mg/l		0.2170	D
CADMIUM, Cd	mg/l	<	0.0010	D
COBALT, Co	mg/l	<	0.0100	D
COPPER, Cu	mg/l	<	0.0100	D
IRON, Fe	mg/l		0.0400	D
LEAD, Pb	mg/l	<	0.0010	D
MANGANESE, Mn	mg/l		0.0200	D
MERCURY, Hg	mg/l		0.0002	
NICKEL, Ni	mg/l	<	0.0100	D
SILVER, Ag	mg/l	<	0.0010	
ZINC, Zn	mg/l		0.0150	
CYANIDE, Cn	mg/l	<	0.0010	
OIL & GREASE	mg/l		0.6000	
PHENOL	ppm		0.0030	
SUSPENDED SOLIDS	mg/l		10.0000	
CHROMIUM (tot.),Cr	mg/l		0.0020	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : H-1
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE PLANT
SAMPLE DATE: 03/12/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : h-1.WAT

PARAMETER	UNITS	VALUE	CODE
BORON, B	mg/l	0.0800	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : H-1
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE PLANT
SAMPLE DATE: 04/23/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : h-1.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.4000	
CONDUCTIVITY	umhos/cm		450.0000	
ALKALINITY, AS CaCO3	mg/l		210.0000	
BICARBONATE, AS HCO3	mg/l		256.0000	
CALCIUM, Ca	mg/l		78.0900	
CARBONATE, CO3	mg/l	<	0.0100	
CHLORIDE, Cl	mg/l		17.0000	
FLOURIDE, Fl	mg/l		0.0900	
HARDNESS, as CaCO3	mg/l		280.0000	
MAGNESIUM, Mg	mg/l		20.7200	
POTASSIUM, K	mg/l		0.6000	
SODIUM, Na	mg/l		5.0000	
SULFATE, SO4	mg/l		48.0000	
TOTAL DISSOLVED SOLIDS	mg/l		290.0000	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.6000	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOTAL PHOSPHATE,PO4-P	mg/l		0.1000	
ORTHO PHOSPHATE,PO4-P	mg/l	<	0.0100	
ALUMINUM, Al	mg/l		0.3700	D
ARSENIC, As	mg/l	<	0.0010	D
BARIUM, Ba	mg/l		0.0700	D
BORON, B	mg/l		0.0500	D
CADMIUM, Cd	mg/l	<	0.0010	D
COBALT, Co	mg/l	<	0.0100	D
COPPER, Cu	mg/l	<	0.0100	D
IRON, Fe	mg/l		0.4500	D
LEAD, Pb	mg/l		0.0200	D
MANGANESE, Mn	mg/l		0.0600	D
MERCURY, Hg	mg/l	<	0.0002	
NICKEL, Ni	mg/l		0.0200	D
SILVER, Ag	mg/l	<	0.0010	D
ZINC, Zn	mg/l		0.0120	D
CYANIDE, Cn	mg/l	<	0.0010	
OIL & GREASE	mg/l	<	0.1000	
PHENOL	ppm	<	0.0010	
SUSPENDED SOLIDS	mg/l		72.0000	
CHROMIUM (tot.),Cr	mg/l		0.0030	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : H-1
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE PLANT
SAMPLE DATE: 05/09/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : h-1.WAT

PARAMETER	UNITS	VALUE	CODE
BORON, B	mg/l	0.0360	D

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : H-1
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE PLANT
SAMPLE DATE: 06/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : h-1.WAT

PARAMETER	UNITS	VALUE	CODE
BORON, B	mg/l	0.0730	D

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : H-1
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE PLANT
SAMPLE DATE: 07/11/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : h-1.WAT

PARAMETER	UNITS	VALUE	CODE
BORON, B	mg/l	0.1600	D

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : H-1
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE PLANT
SAMPLE DATE: 08/22/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : h-1.WAT

PARAMETER	UNITS	VALUE	CODE
BORON, B	mg/l	0.0800	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : H-1
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE PLANT
SAMPLE DATE: 09/13/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : h-1.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.4500	
CONDUCTIVITY	umhos/cm		280.0000	
ALKALINITY, AS CaCO3	mg/l		172.0000	
BICARBONATE, AS HCO3	mg/l		210.0000	
CALCIUM, Ca	mg/l		49.6000	
CARBONATE, CO3	mg/l	<	0.0100	
CHLORIDE, Cl	mg/l		3.1000	
FLOURIDE, Fl	mg/l		0.1000	
HARDNESS, as CaCO3	mg/l		174.0000	
MAGNESIUM, Mg	mg/l		12.0000	
POTASSIUM, K	mg/l		0.6400	
SODIUM, Na	mg/l		8.0000	
SULFATE, SO4	mg/l		10.0000	
TOTAL DISSOLVED SOLIDS	mg/l		190.0000	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.2400	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOTAL PHOSPHATE,PO4-P	mg/l		0.0400	
ORTHO PHOSPHATE,PO4-P	mg/l		0.0700	
ALUMINUM, Al	mg/l	<	0.0050	D
ARSENIC, As	mg/l	<	0.0010	D
BARIUM, Ba	mg/l		0.2300	D
BORON, B	mg/l		0.0740	D
CADMIUM, Cd	mg/l	<	0.0010	D
CHROMIUM (-hex.-),Cr	mg/l	<	0.0010	
COBALT, Co	mg/l	<	0.0100	D
COPPER, Cu	mg/l	<	0.0100	D
IRON, Fe	mg/l		0.0400	D
LEAD, Pb	mg/l	<	0.0010	D
MANGANESE, Mn	mg/l	<	0.0100	D
MERCURY, Hg	mg/l	<	0.0002	
SILVER, Ag	mg/l	<	0.0010	D
ZINC, Zn	mg/l		0.0070	D
CYANIDE, Cn	mg/l	<	0.0010	
OIL & GREASE	mg/l		0.6000	
SUSPENDED SOLIDS	mg/l		9.0000	
CHROMIUM (tot.),Cr	mg/l	<	0.0010	D

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : H-1
LOCATION DESCRIPTION : HUNTINGTON CR. DIVERSION ABOVE PLANT
SAMPLE DATE: 10/25/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : h-1.WAT

PARAMETER	UNITS	VALUE	CODE
BORON, B	mg/l	0.5500	D

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : H-1
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE PLANT
SAMPLE DATE: 11/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : h-1.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.4000	
CONDUCTIVITY	umhos/cm		390.0000	
ALKALINITY, AS CaCO3	mg/l		203.0000	
BICARBONATE, AS HCO3	mg/l		248.0000	
CALCIUM, Ca	mg/l		54.8000	
CARBONATE, CO3	mg/l	<	0.0100	
CHLORIDE, Cl	mg/l		6.9000	
FLOURIDE, Fl	mg/l		0.1200	
HARDNESS, as CaCO3	mg/l		219.0000	
MAGNESIUM, Mg	mg/l		19.7000	
POTASSIUM, K	mg/l		0.9600	
SODIUM, Na	mg/l		11.8000	
SULFATE, SO4	mg/l		29.0000	
TOTAL DISSOLVED SOLIDS	mg/l		248.0000	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.3400	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOTAL PHOSPHATE,PO4-P	mg/l	<	0.0100	
ORTHO PHOSPHATE,PO4-P	mg/l	<	0.0100	
ALUMINUM, Al	mg/l	<	0.0010	D
ARSENIC, As	mg/l	<	0.0010	D
BARIUM, Ba	mg/l		0.1600	D
BORON, B	mg/l		0.1200	D
CADMIUM, Cd	mg/l	<	0.0010	D
CHROMIUM (-hex.-),Cr	mg/l	<	0.0010	
COBALT, Co	mg/l	<	0.0100	D
COPPER, Cu	mg/l	<	0.0100	D
IRON, Fe	mg/l	<	0.0100	D
LEAD, Pb	mg/l	<	0.0010	D
MANGANESE, Mn	mg/l		0.0200	D
MERCURY, Hg	mg/l	<	0.0002	D
NICKEL, Ni	mg/l	<	0.0100	D
SILVER, Ag	mg/l	<	0.0010	D
ZINC, Zn	mg/l	<	0.0010	D
CYANIDE, Cn	mg/l	<	0.0010	
OIL & GREASE	mg/l	<	0.1000	
PHENOL	ppm	<	0.0010	
CHROMIUM (tot.),Cr	mg/l		0.0010	D

COMMENTS REGARDING THIS SAMPLING OF H-1 ON 12/27/85 :

NOT ACCESSIBLE: WATER FLOWING UNDER ICE

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : H-1
LOCATION DESCRIPTION : DIVERSION ABOVE PLANT
SAMPLE DATE: 12/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : h-1.WAT

PARAMETER	UNITS	VALUE	CODE

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-9
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE FISH CREEK
SAMPLE DATE: 02/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-9.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.8000	
CONDUCTIVITY	umhos/cm		510.0000	
ALKALINITY, AS CaCO3	mg/l		200.0000	
BICARBONATE, AS HCO3	mg/l		244.0000	
CALCIUM, Ca	mg/l		68.9000	
CARBONATE, CO3	mg/l	<	0.0100	
CHLORIDE, Cl	mg/l		11.0000	
FLOURIDE, Fl	mg/l		0.1100	
HARDNESS, as CaCO3	mg/l		263.0000	
MAGNESIUM, Mg	mg/l		27.9000	
POTASSIUM, K	mg/l		1.2700	
SODIUM, Na	mg/l		10.2000	
SULFATE, SO4	mg/l		94.0000	
TOTAL DISSOLVED SOLIDS	mg/l		335.0000	
AMMONIA, NH3 as N	mg/l		0.0200	
NITRATE, NO3 as N	mg/l		0.3400	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOTAL PHOSPHATE,PO4-P	mg/l		0.1400	
ORTHO PHOSPHATE,PO4-P	mg/l	<	0.0100	
ALUMINUM, Al	mg/l	<	0.0050	
ARSENIC, As	mg/l	<	0.0010	
BARIUM, Ba	mg/l		0.0700	
BORON, B	mg/l		0.0680	
CADMIUM, Cd	mg/l	<	0.0010	
CHROMIUM (-hex.-),Cr	mg/l	<	0.0010	
COBALT, Co	mg/l	<	0.0100	
COPPER, Cu	mg/l	<	0.0100	
IRON, Fe	mg/l		0.1000	
LEAD, Pb	mg/l		0.0020	
MANGANESE, Mn	mg/l		0.0200	
MERCURY, Hg	mg/l		0.0002	
NICKEL, Ni	mg/l	<	0.0100	
SILVER, Ag	mg/l	<	0.0010	
ZINC, Zn	mg/l		0.0040	
CYANIDE, Cn	mg/l	<	0.0010	
OIL & GREASE	mg/l		0.8000	
PHENOL	ppm	<	0.0010	
SUSPENDED SOLIDS	mg/l		33.0000	

COMMENTS REGARDING THIS SAMPLING OF UPL-9 ON 02/27/85 :

CHROMIUM WAS REPORTED AS DISSOLVED NOT TOTAL <.001

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-9
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE FISH CREEK
SAMPLE DATE: 04/23/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-9.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		7.3000	
CONDUCTIVITY	umhos/cm		460.0000	
ALKALINITY, AS CaCO3	mg/l		200.0000	
BICARBONATE, AS HCO3	mg/l		244.0000	
CALCIUM, Ca	mg/l		77.6800	
CARBONATE, CO3	mg/l	<	0.0100	
CHLORIDE, Cl	mg/l		27.0000	
FLOURIDE, Fl	mg/l		0.1000	
HARDNESS, as CaCO3	mg/l		280.0000	
MAGNESIUM, Mg	mg/l		21.1400	
POTASSIUM, K	mg/l		1.0000	
SODIUM, Na	mg/l		6.0000	
SULFATE, SO4	mg/l		50.0000	
TOTAL DISSOLVED SOLIDS	mg/l		310.0000	
AMMONIA, NH3 as N	mg/l		0.1000	
NITRATE, NO3 as N	mg/l		2.1800	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOTAL PHOSPHATE,PO4-P	mg/l		0.0700	
ORTHO PHOSPHATE,PO4-P	mg/l	<	0.0100	
ALUMINUM, Al	mg/l		0.2900	D
ARSENIC, As	mg/l	<	0.0010	D
BARIUM, Ba	mg/l		0.1200	D
BORON, B	mg/l		0.0600	D
CADMIUM, Cd	mg/l	<	0.0010	D
CHROMIUM (-hex.-),Cr	mg/l	<	0.0010	
COBALT, Co	mg/l	<	0.0100	D
COPPER, Cu	mg/l	<	0.0100	D
IRON, Fe	mg/l		0.4400	D
LEAD, Pb	mg/l		0.0200	D
MANGANESE, Mn	mg/l		0.0600	D
MERCURY, Hg	mg/l	<	0.0002	
NICKEL, Ni	mg/l		0.0200	D
SILVER, Ag	mg/l	<	0.0010	D
ZINC, Zn	mg/l		0.0110	D
CYANIDE, Cn	mg/l	<	0.0010	
OIL & GREASE	mg/l	<	0.1000	
PHENOL	ppm	<	0.0010	
SUSPENDED SOLIDS	mg/l		63.0000	

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

SAMPLE LOCATION : UPL-9
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE FISH CREEK
SAMPLE DATE: 09/13/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-9.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.4000	
CONDUCTIVITY	umhos/cm		350.0000	
ALKALINITY, AS CaCO3	mg/l		168.0000	
BICARBONATE, AS HCO3	mg/l		205.0000	
CALCIUM, Ca	mg/l		50.4000	
CARBONATE, CO3	mg/l	<	0.0100	
CHLORIDE, Cl	mg/l		5.3000	
FLOURIDE, Fl	mg/l		0.0900	
HARDNESS, as CaCO3	mg/l		182.0000	
MAGNESIUM, Mg	mg/l		13.4000	
POTASSIUM, K	mg/l		1.1700	
SODIUM, Na	mg/l		7.5000	
SULFATE, SO4	mg/l		25.0000	
TOTAL DISSOLVED SOLIDS	mg/l		228.0000	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.2500	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOTAL PHOSPHATE,PO4-P	mg/l	<	0.0100	
ORTHO PHOSPHATE,PO4-P	mg/l	<	0.0100	
ALUMINUM, Al	mg/l		0.1450	D
ARSENIC, As	mg/l	<	0.0010	D
BARIUM, Ba	mg/l		0.2000	D
BORON, B	mg/l		0.0740	D
CADMIUM, Cd	mg/l	<	0.0010	D
CHROMIUM (-hex.-),Cr	mg/l	<	0.0010	
COBALT, Co	mg/l	<	0.0100	D
COPPER, Cu	mg/l	<	0.0100	D
IRON, Fe	mg/l	<	0.0100	D
LEAD, Pb	mg/l	<	0.0010	D
MANGANESE, Mn	mg/l		0.0200	D
MERCURY, Hg	mg/l	<	0.0002	
NICKEL, Ni	mg/l	<	0.0100	D
SILVER, Ag	mg/l	<	0.0010	D
ZINC, Zn	mg/l		0.0050	D
CYANIDE, Cn	mg/l	<	0.0010	
OIL & GREASE	mg/l		0.4000	
SUSPENDED SOLIDS	mg/l		7.0000	
CHROMIUM (tot.),Cr	mg/l	<	0.0010	D

UTAH POWER & LIGHT COMPANY
WATER QUALITY DATA
ANALYSIS SUMMARY

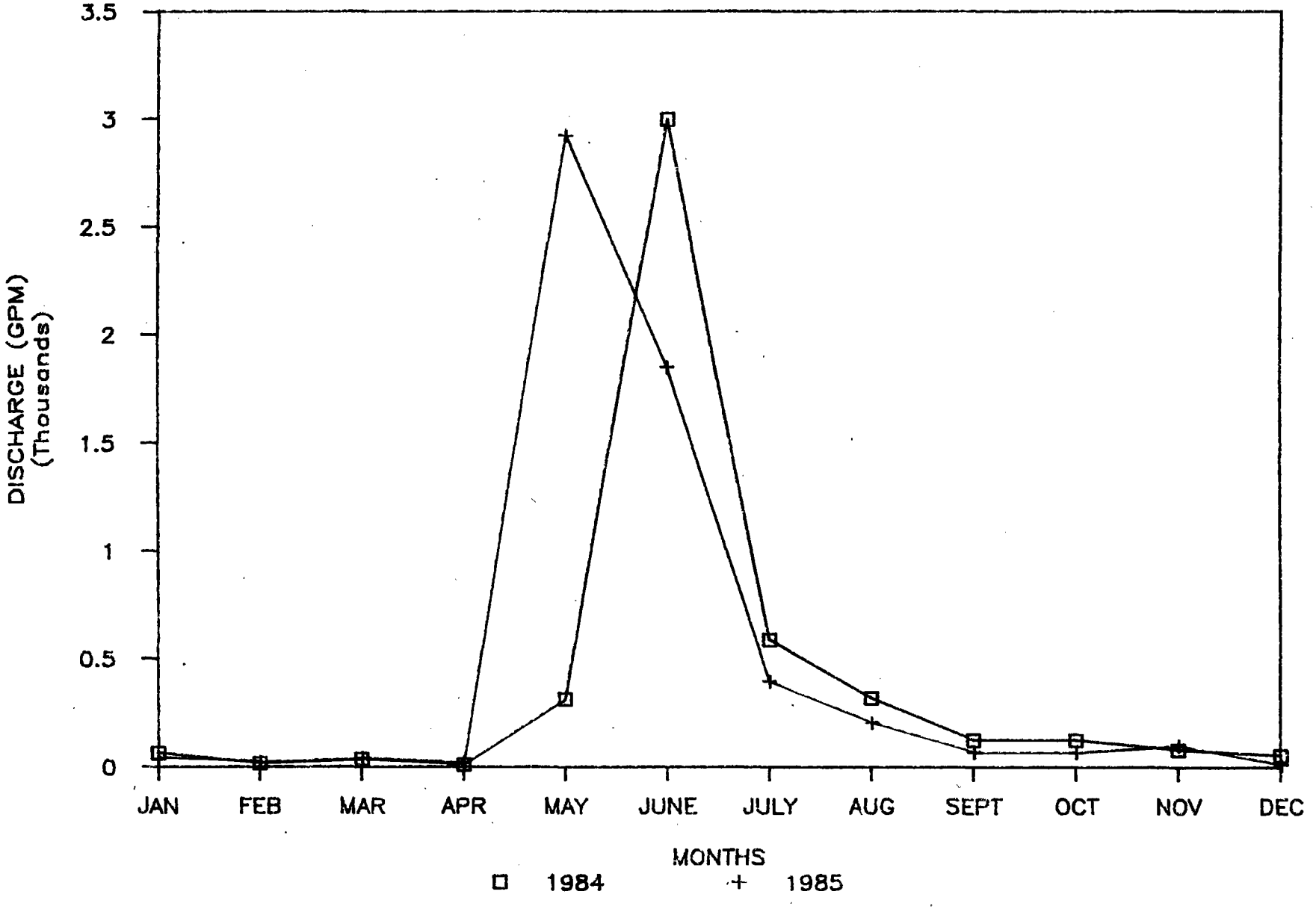
SAMPLE LOCATION : UPL-9
LOCATION DESCRIPTION : HUNTINGTON CREEK ABOVE FISH CREEK
SAMPLE DATE: 11/27/85
ANALYZING LAB: FORD LABORATORY S.L.C.; UTAH
DATA FILE FROM WHICH THIS REPORT GENERATED : upl-9.WAT

PARAMETER	UNITS		VALUE	CODE
pH	units		8.3500	
CONDUCTIVITY	umhos/cm		487.0000	
ALKALINITY, AS CaCO3	mg/l		213.0000	
BICARBONATE, AS HCO3	mg/l		260.0000	
CALCIUM, Ca	mg/l		59.6000	
CARBONATE, CO3	mg/l	<	0.0100	
CHLORIDE, Cl	mg/l		11.5000	
FLOURIDE, Fl	mg/l		0.1200	
HARDNESS, as CaCO3	mg/l		247.0000	
MAGNESIUM, Mg	mg/l		23.5000	
POTASSIUM, K	mg/l		1.9200	
SODIUM, Na	mg/l		24.2000	
SULFATE, SO4	mg/l		64.0000	
TOTAL DISSOLVED SOLIDS	mg/l		306.0000	
AMMONIA, NH3 as N	mg/l	<	0.0100	
NITRATE, NO3 as N	mg/l		0.3900	
NITRITE, NO2 as N	mg/l	<	0.0100	
TOTAL PHOSPHATE,PO4-P	mg/l	<	0.0100	
ORTHO PHOSPHATE,PO4-P	mg/l	<	0.0100	
ALUMINUM, Al	mg/l	<	0.0010	D
ARSENIC, As	mg/l	<	0.0010	D
BARIUM, Ba	mg/l		0.1100	D
BORON, B	mg/l		0.4750	D
CADMIUM, Cd	mg/l	<	0.0010	D
CHROMIUM (-hex.-),Cr	mg/l	<	0.0010	D
COBALT, Co	mg/l	<	0.0100	D
COPPER, Cu	mg/l	<	0.0100	D
IRON, Fe	mg/l	<	0.0100	D
LEAD, Pb	mg/l	<	0.0010	D
MANGANESE, Mn	mg/l		0.0200	D
MERCURY, Hg	mg/l	<	0.0002	D
NICKEL, Ni	mg/l	<	0.0100	D
SILVER, Ag	mg/l	<	0.0010	D
ZINC, Zn	mg/l		0.0140	D
CYANIDE, Cn	mg/l	<	0.0010	
OIL & GREASE	mg/l	<	0.1000	
PHENOL	ppm	<	0.0010	
CHROMIUM (tot.),Cr	mg/l		0.0160	D

APPENDIX B

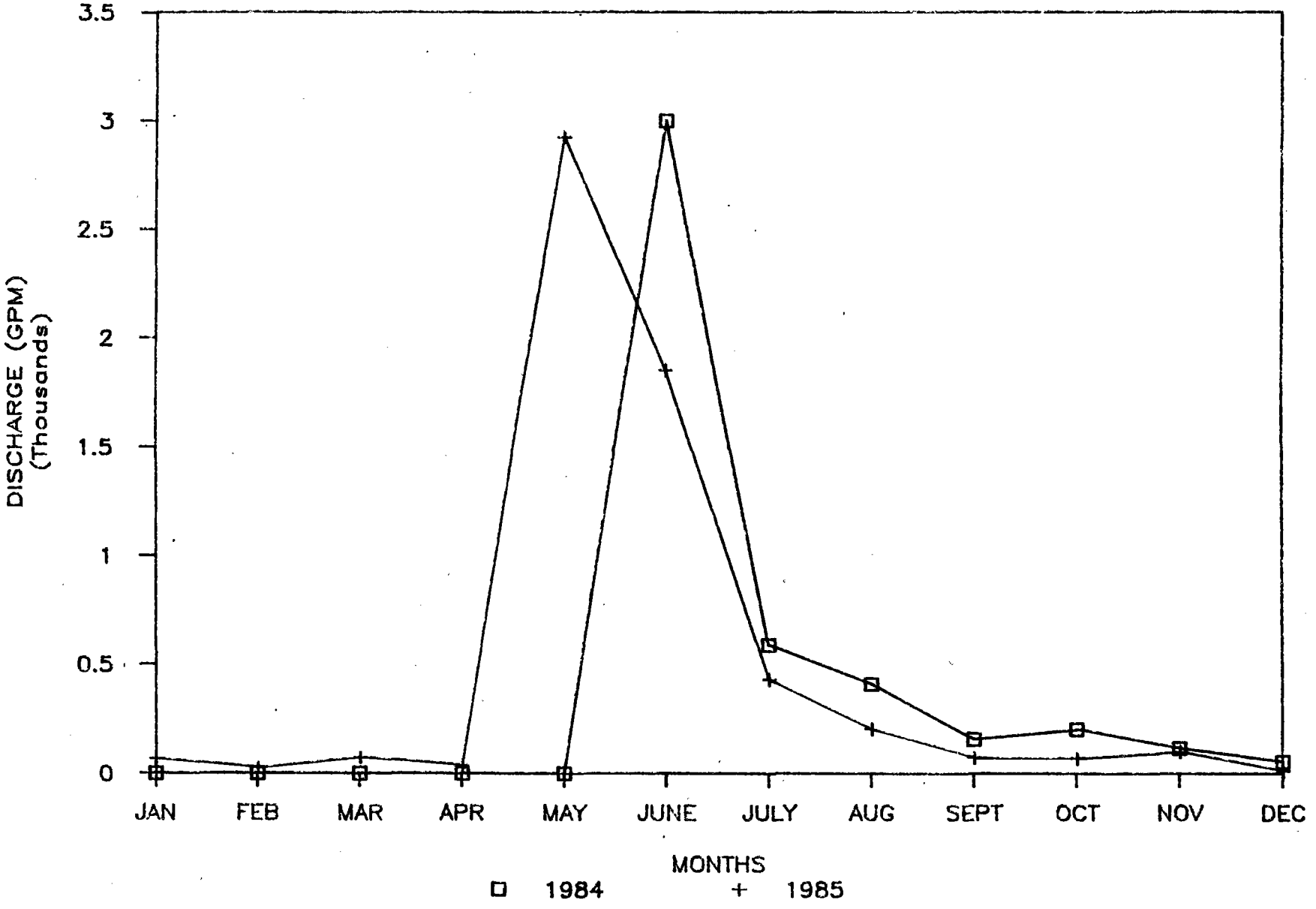
DEER CREEK – ABOVE THE MINE

1984 VS. 1985



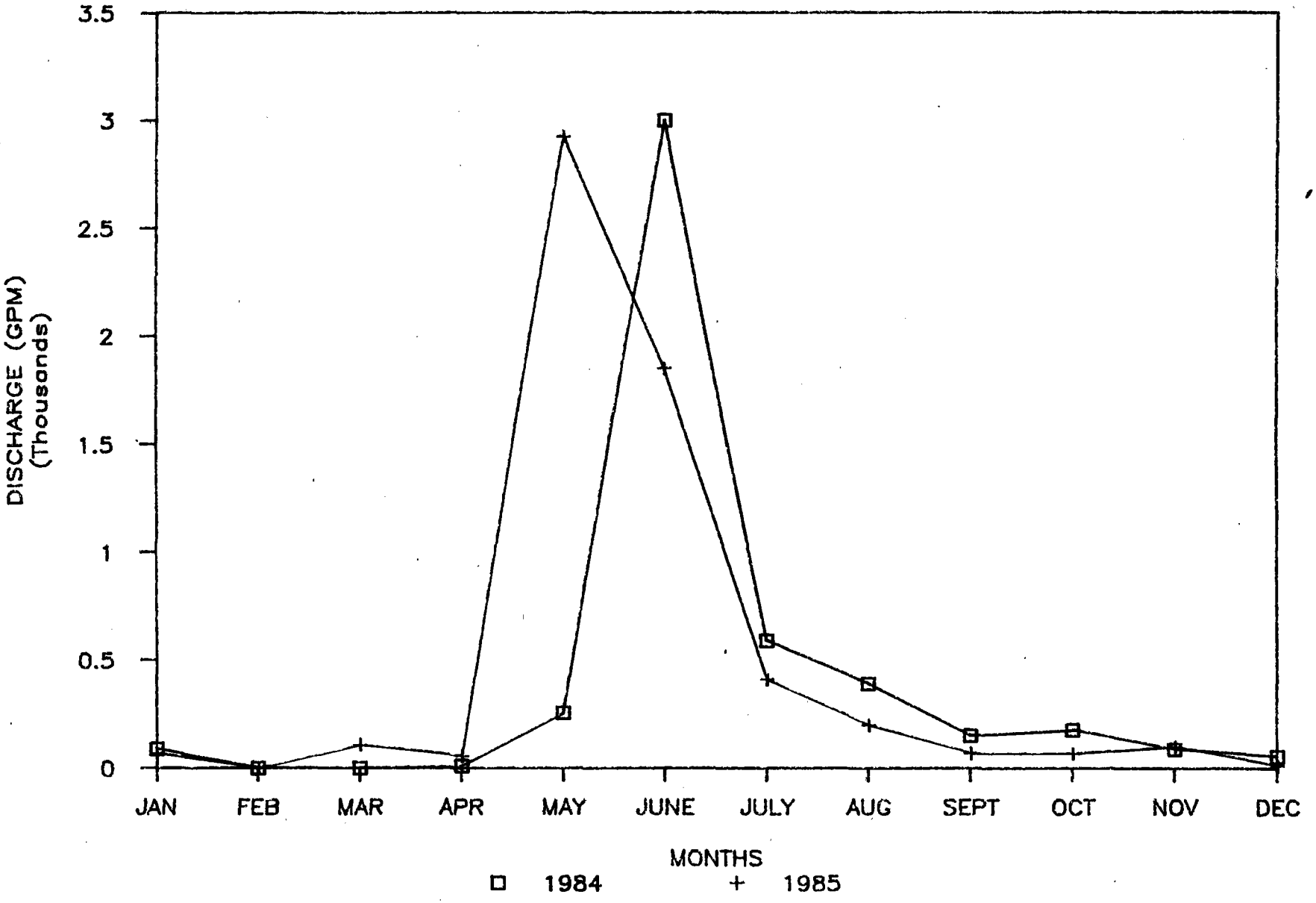
DEER CREEK – PERMIT BOUNDARY

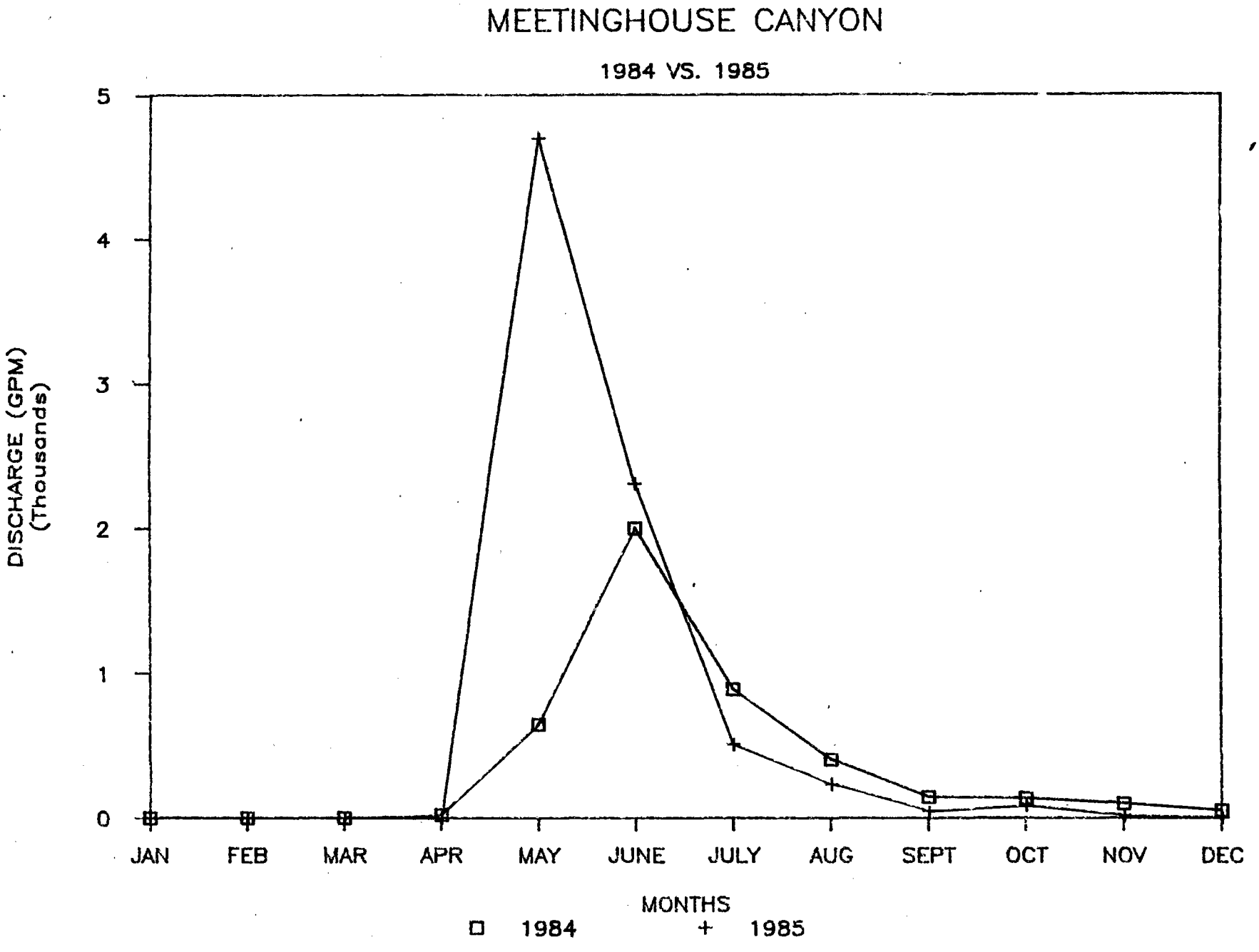
1984 VS. 1985



DEER CREEK -- BELOW THE MINE

1984 VS. 1985




MEETINGHOUSE CANYON
1984 VS. 1985
DISCHARGE (GPM)
(Thousands)
5
4
3
2
1
0
JAN
FEB
MAR
APR
MAY
JUNE
JULY
AUG
SEPT
OCT
NOV
DEC
MONTHS
1984
1985

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6541

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Above the Mine
Temp. 32°
Flow 0.23/45.8 GPM

Date Rec'd 1-11-85
Date Sampled 1-11-85
Time Sampled 1220

Acidity		mg/l $CaCO_3$	
Alkalinity, Total		mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride		mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	580	umhos/cm	1/14
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	7.45	Units	1/14
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	377	mg/l	1/14
Solids, Total Suspended	1.0	mg/l	1/14
Sulfate		mg/l	
Sulfide		mg/l	
Turbidity		NTU	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium		mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron	< 0.05	mg/l	1/14
Lead		mg/l	
Magnesium		mg/l	
Manganese	< 0.01	mg/l	1/14
Mercury		ug/l	
Nickel		mg/l	
Potassium		mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium		mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Analyst: David A Ramsey

Respectfully submitted [signature] 1-15-85

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6542

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Below the Mine
Temp. 32°
Flow 0.28/61.9 GPM

Date Rec'd 1-11-85

Date Sampled 11-11-85

Time Sampled 1305

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total		mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride		mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium		mg/l
Conductivity	2079	umhos/cm 1/14	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron	< 0.05	mg/l 1/14
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium		mg/l
Nitrogen, Nitrite		mg/l	Manganese	< 0.01	mg/l 1/14
Oil & Grease		mg/l	Mercury		ug/l
pH	7.65	Units 1/14	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium		mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	1346	mg/l 1/14	Silica		mg/l
Solids, Total Suspended	4.0	mg/l 1/14	Sodium		mg/l
Sulfate		mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			

Analyst: David A Janum

Respectfully submitted 1-15-85

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6774
Date Rec'd 4-4-85
Date Sampled 4-4-85
Time Sampled 1125

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Above the Mine
Temp 34°
Flow 0.14/21.1 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total		mg/l $CaCO_3$
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride		mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity	685	umhos/cm 4/8
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH	8.00	Units 4/8
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	362	mg/l 4/4
Solids, Total Suspended	2.0	mg/l 4/4
Sulfate		mg/l
Sulfide		mg/l
Turbidity		NTU

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron	< 0.05	mg/l
Lead		mg/l
Magnesium		mg/l
Manganese	< 0.01	mg/l
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

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FIELD OFFICE

Respectfully submitted [signature]

Analyst: David A Janusz

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6775
Date Rec'd 4-4-85
Date Sampled 4-4-85
Time Sampled 1240

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Below the Mine
Temp 57°
Flow 0.26/ 55.7 GPM

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total		mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride		mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium		mg/l
Conductivity	2300	umhos/cm 4/8	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron	0.10	mg/l 4/8
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium		mg/l
Nitrogen, Nitrite		mg/l	Manganese	< 0.01	mg/l 4/8
Oil & Grease		mg/l	Mercury		ug/l
pH	7.85	Units 4/8	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium		mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	1448	mg/l 4/4	Silica		mg/l
Solids, Total Suspended	18.0	mg/l 4/4	Sodium		mg/l
Sulfate		mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			

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APR 08 1985
MINING & EXPLORATION
FIELD OFFICE

Respectfully submitted

Analyst: David A Janusz

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6957
Date Rec'd 5-7-85
Date Sampled 5-7-85
Time Sampled 11:15

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Above the Mine

Temp. 42° Flow 2925 GPM

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total	____ mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride	____ mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium	____ mg/l
Conductivity	472 umhos/cm 5-9	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron 5-9	0.21 mg/l
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
Nitrogen, Nitrate	____ mg/l	Magnesium	____ mg/l
Nitrogen, Nitrite	____ mg/l	Manganese 5-9	< 0.01 mg/l
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH	7.40 Units 5-9	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium	____ mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved	246 mg/l 5-9	Silica	____ mg/l
Solids, Total Suspended	162.0 mg/l	Sodium	____ mg/l
Sulfate	____ mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		

Analyst: David A Janney

Respectfully submitted David A Janney

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6958
Date Rec'd 5-7-85
Date Sampled 5-7-85
Time Sampled 11:35

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Below the Mine

Temp. 49° Flow 2925 GPM

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total	____ mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride	____ mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium	____ mg/l
Conductivity	630 umhos/cm 5-9	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron 5-9	0.35 mg/l
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
Nitrogen, Nitrate	____ mg/l	Magnesium	____ mg/l
Nitrogen, Nitrite	____ mg/l	Manganese 5-9	<0.01 mg/l
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH	7.60 Units 5-9	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium	____ mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved	334 mg/l 5-9	Silica	____ mg/l
Solids, Total Suspended	258.0 mg/l 5-9	Sodium	____ mg/l
Sulfate	____ mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		

Analyst: David A Janusz

Respectfully submitted David A Janusz

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7088
Date Rec'd 6-5-85
Date Sampled 6-5-85
Time Sampled 1005

Client: UTAH POWER & LIGHT CO
FIELD OFFICE
PO BOX 1005
HUNTINGTON, UTAH 84528

Sample ID: Deer Creek Runoff above the mine

Temp 42°C Flow 1850 GPM

Acidity	mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total	mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	mg/l $CaCO_3$	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride	mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium	mg/l
Conductivity 6-6	510 umhos/cm	Chromium	mg/l
Fluoride	mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron 6-10	<0.05 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
Nitrogen, Nitrate	mg/l	Magnesium	mg/l
Nitrogen, Nitrite	mg/l	Manganese 6-10	<0.01 mg/l
Oil & Grease	mg/l	Mercury	ug/l
pH 6-6	7.80 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium	mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved	291 mg/l	Silica	mg/l
Solids, Total Suspended 6-6	9.0 mg/l	Sodium	mg/l
Sulfate	mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity	NTU		

Analyst: David A Janusz

Respectfully submitted 6-11-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7089
Date Rec'd 6-5-85
Date Sampled 6-5-85
Time Sampled 1040

Client: UTAH POWER & LIGHT CO
FIELD OFFICE
PO BOX 1005
HUNTINGTON, UTAH 84528

Sample ID: Deer Creek Runoff
Below the Mine

Temp 50°C Flow 1850 GPM

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total	____ mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride	____ mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium	____ mg/l
Conductivity 6-6	680 umhos/cm	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron 6-10	<0.05 mg/l
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
Nitrogen, Nitrate	____ mg/l	Magnesium	____ mg/l
Nitrogen, Nitrite	____ mg/l	Manganese 6-10	<0.01 mg/l
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH 6-6	7.80 Units	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium	____ mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved 6-6	360 mg/l	Silica	____ mg/l
Solids, Total Suspended	28.0 mg/l	Sodium	____ mg/l
Sulfate	____ mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		

Analyst: David A Ramsey

Respectfully submitted [signature] 6-11-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7211
Date Rec'd 7-8-85
Date Sampled 7-8-85
Time Sampled 1300

Client: Utah Power & Light co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Above the Mine
Temp. 57°
Flow 0.93/398.1 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total		mg/l $CaCO_3$
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride		mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity	473	umhos/cm 7/9
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH	7.65	Units 7/9
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	268	mg/l 7/12
Solids, Total Suspended	1.0	mg/l 7/12
Sulfate		mg/l
Sulfide		mg/l
Turbidity		NTU

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron	< 0.05	mg/l 7/10
Lead		mg/l
Magnesium		mg/l
Manganese	< 0.01	mg/l 7/10
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Janusz

Respectfully submitted [signature] 7-17-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7212
Date Rec'd 7-8-85
Date Sampled 7-8-85
Time Sampled 1340

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Below the Mine
Temp. 71°
Flow 0.95/411.1 GPM

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total		mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride		mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium		mg/l
Conductivity	750	umhos/cm 7/9	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron	< 0.05	mg/l 7/10
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium		mg/l
Nitrogen, Nitrite		mg/l	Manganese	< 0.01	mg/l 7/10
Oil & Grease		mg/l	Mercury		ug/l
pH	8.25	Units 7/9	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium		mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	401	mg/l 7/12	Silica		mg/l
Solids, Total Suspended	1.0	mg/l 7/12	Sodium		mg/l
Sulfate		mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			

Analyst: David A Ramsey

Respectfully submitted 7-17-85

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7342

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff above the mine

Date Rec'd 8-6-85

Date Sampled 8-5-85

Time Sampled 1455

Temp. 56° Flow 207.4 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total		mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride		mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	8-9 439	umhos/cm	
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	8-9 7.80	Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	8-8 259	mg/l	
Solids, Total Suspended	8-8 4.0	mg/l	
Sulfate		mg/l	
Sulfide		mg/l	
Turbidity		NTU	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium		mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron	8-9 <0.05	mg/l	
Lead		mg/l	
Magnesium		mg/l	
Manganese	8-9 0.08	mg/l	
Mercury		ug/l	
Nickel		mg/l	
Potassium		mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium		mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Analyst: David K Ramsey

Respectfully submitted

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7333
Date Rec'd 8-6-85
Date Sampled 8-5-85
Time Sampled 1600

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Below the Mine

Temp. 66°

Flow 198.6 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total		mg/l $CaCO_3$
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride		mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 8-9	850	umhos/cm
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 8-9	7.40	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	468	mg/l
Solids, Total Suspended 8-8	10.0	mg/l
Sulfate		mg/l
Sulfide		mg/l
Turbidity		NTU

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron 8-9	< 0.05	mg/l
Lead		mg/l
Magnesium		mg/l
Manganese 8-9	0.08	mg/l
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Jensen

Respectfully submitted [signature]

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7433
Date Rec'd 9-9-85
Date Sampled 9-9-85
Time Sampled 1420

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Above the Mine

Flow 69.1 GPM Temp. 42°

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total		mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride		mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium		mg/l
Conductivity 9-10	600	umhos/cm	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron 9-16	< 0.05	mg/l
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium		mg/l
Nitrogen, Nitrite		mg/l	Manganese 9-16	0.01	mg/l
Oil & Grease		mg/l	Mercury		ug/l
pH 9-10	8.00	Units	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium		mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved 9-10	340	mg/l	Silica		mg/l
Solids, Total Suspended	11.0	mg/l	Sodium		mg/l
Sulfate		mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			

Analyst: David H. Janus

Respectfully submitted [signature]

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7434
Date Rec'd 9-9-85
Date Sampled 9-9-85
Time Sampled 1340

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Below The Mine

Temp. 65° Flow 0.30/69.1 GPM

Acidity	mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total	mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	mg/l $CaCO_3$	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride	mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium	mg/l
Conductivity 9-10	1250 umhos/cm	Chromium	mg/l
Fluoride	mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron 9-16	< 0.05 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
Nitrogen, Nitrate	mg/l	Magnesium	mg/l
Nitrogen, Nitrite	mg/l	Manganese 9-16	< 0.01 mg/l
Oil & Grease	mg/l	Mercury	ug/l
pH 9-10	8.20 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium	mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved 9-10	790 mg/l	Silica	mg/l
Solids, Total Suspended	16.0 mg/l	Sodium	mg/l
Sulfate	mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity	NTU		

Analyst: David L. Ramsey

Respectfully submitted

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7564
Date Rec'd 10-07-85
Date Sampled 10-07-85
Time Sampled 1440

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Above the Mine

Temp. 40° Flow 0.30/ 69.1 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total		mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride		mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity 10-9	500	umhos/cm	
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH 10-9	8.00	Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	346	mg/l	
Solids, Total Suspended 10-8	1.0	mg/l	
Sulfate		mg/l	
Sulfide		mg/l	
Turbidity		NTU	
Aluminum			mg/l
Arsenic			mg/l
Barium			mg/l
Beryllium			mg/l
Boron			mg/l
Cadmium			mg/l
Calcium			mg/l
Chromium			mg/l
Copper			mg/l
Iron 10-9	<0.05		mg/l
Lead			mg/l
Magnesium			mg/l
Manganese 10-9	0.01		mg/l
Mercury			ug/l
Nickel			mg/l
Potassium			mg/l
Selenium			mg/l
Silica			mg/l
Sodium			mg/l
Vanadium			mg/l
Zinc			mg/l

Analyst: David L. Parrish

Respectfully submitted

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7565
Date Rec'd 10-07-85
Date Sampled 10-07-85
Time Sampled 1500

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Below The Mine

Temp. 52° Flow 0.30/69.1 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total		mg/l $CaCO_3$
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride		mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 10-9	1308	umhos/cm
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 10-9	8.00	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved 10-8	824	mg/l
Solids, Total Suspended	25.0	mg/l
Sulfate		mg/l
Sulfide		mg/l
Turbidity		NTU

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron 10-9	0.08	mg/l
Lead		mg/l
Magnesium		mg/l
Manganese 10-9	<0.01	mg/l
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst; David A Janney

Respectfully submitted [signature]

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7654
Date Rec'd 11-14-85
Date Sampled 11-14-85
Time Sampled 1220

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Above the Mine

Temp. 34° Flow 0.38/99.6 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total		mg/l $CaCO_3$
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride		mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 11-15	650	umhos/cm
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 11-15	8.00	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	378	mg/l
Solids, Total Suspended 11-14	27.0	mg/l
Sulfate		mg/l
Sulfide		mg/l
Turbidity		NTU

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron 11-15	<0.05	mg/l
Lead		mg/l
Magnesium		mg/l
Manganese 11-15	0.01	mg/l
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A. Janney

Respectfully submitted [signature] 11-14-85

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7655
Date Rec'd 11-14-85
Date Sampled 11-14-85
Time Sampled 1155

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Below The Mine

Temp. 37° Flow 0.38/99.6 GPM

Acidity	mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total	mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	mg/l $CaCO_3$	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride	mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium	mg/l
Conductivity 11-15	1800 umhos/cm	Chromium	mg/l
Fluoride	mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron 11-15	0.08 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
Nitrogen, Nitrate	mg/l	Magnesium	mg/l
Nitrogen, Nitrite	mg/l	Manganese 11-15	0.01 mg/l
Oil & Grease	mg/l	Mercury	ug/l
pH 11-15	8.10 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium	mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved	1095 mg/l	Silica	mg/l
Solids, Total Suspended 11-14	28.0 mg/l	Sodium	mg/l
Sulfate	mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity	NTU		

Analyst: David A Ramsey

Respectfully submitted 11-18-85

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7714
Date Rec'd 12-11-85
Date Sampled 12-10-85
Time Sampled 1340

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek
Above the Mine

Temp. 33° Flow 0.10/12.5 GPM

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total	____ mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride	____ mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium	____ mg/l
Conductivity 12-12	650 umhos/cm	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron 12-12	0.064 mg/l
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
ogen, Nitrate	____ mg/l	Magnesium	____ mg/l
Nitrogen, Nitrite	____ mg/l	Manganese 12-12	< 0.01 mg/l
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH 12-12	8.00 Units	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium	____ mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved	354 mg/l	Silica	____ mg/l
Solids, Total Suspended 12-12	25 mg/l	Sodium	____ mg/l
Sulfate	____ mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		

Analyst: [signature]

Respectfully submitted [signature] 12-16-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7715
Date Rec'd 12-11-85
Date Sampled 12-10-85
Time Sampled 1430

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Runoff
Below The Mine

Temp. 34° Flow 01/12.5 GPM

Acidity	mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total	mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	mg/l $CaCO_3$	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride	mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium	mg/l
Conductivity 12-12	2100 umhos/cm	Chromium	mg/l
Fluoride	mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron 12-12	0.39 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
Nitrogen, Nitrate	mg/l	Magnesium	mg/l
Nitrogen, Nitrite	mg/l	Manganese 12-12	0.01 mg/l
Oil & Grease	mg/l	Mercury	ug/l
pH 12-12	7.85 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium	mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved	1293 mg/l	Silica	mg/l
Solids, Total Suspended 12-12	10 mg/l	Sodium	mg/l
Sulfate	mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity	NTU		

Respectfully submitted [signature] 12-16-85

Analyst: [signature]

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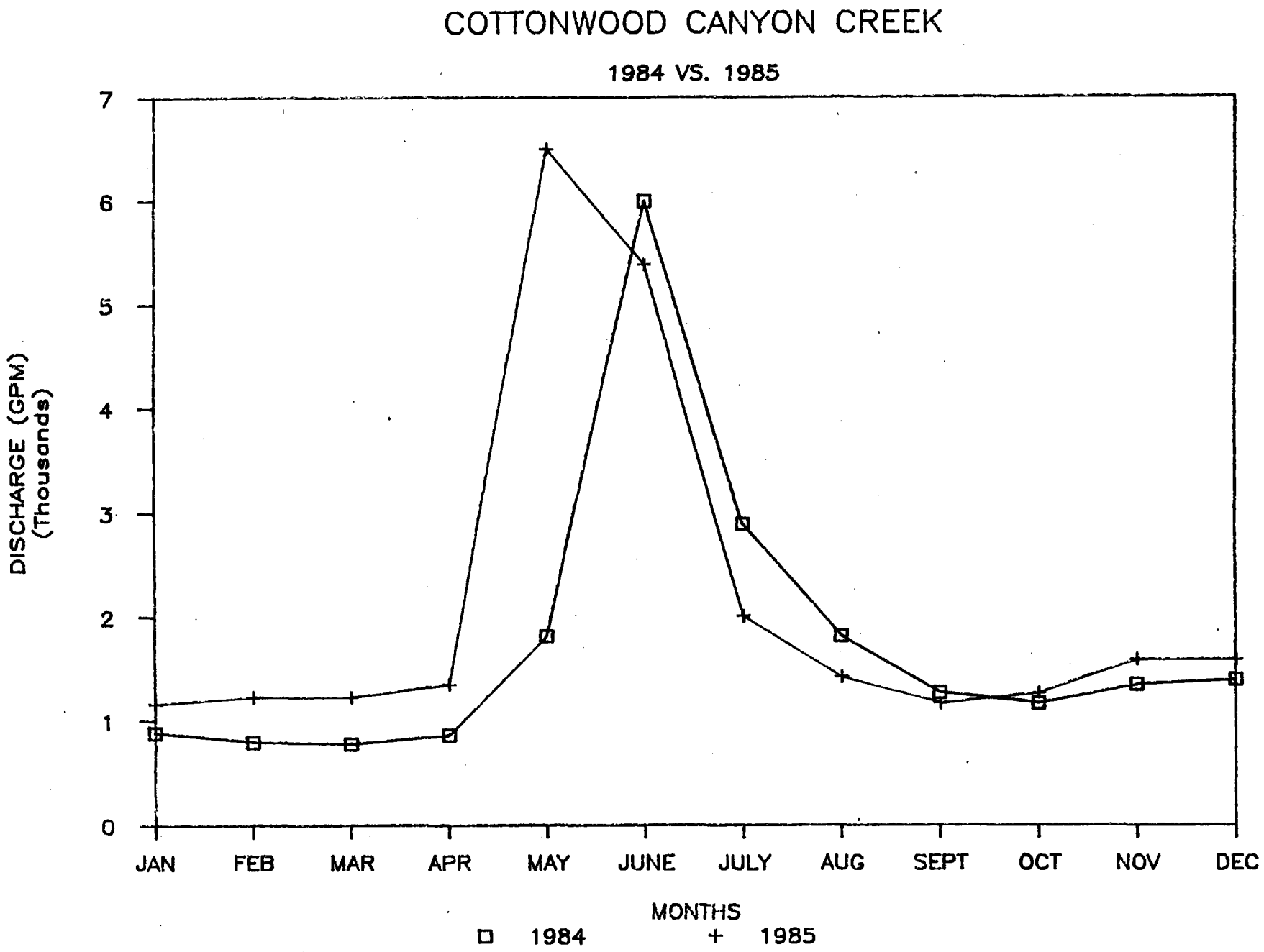
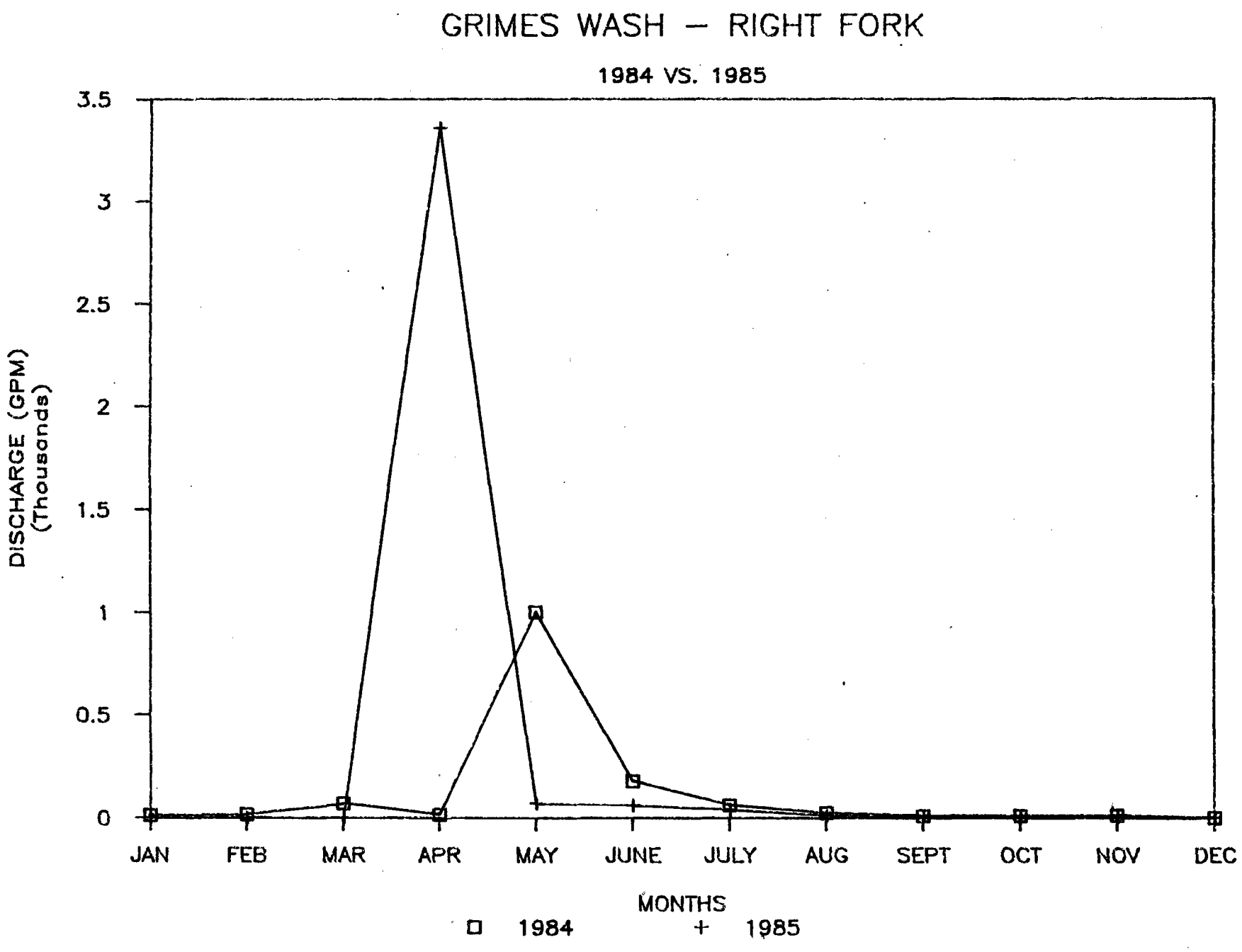
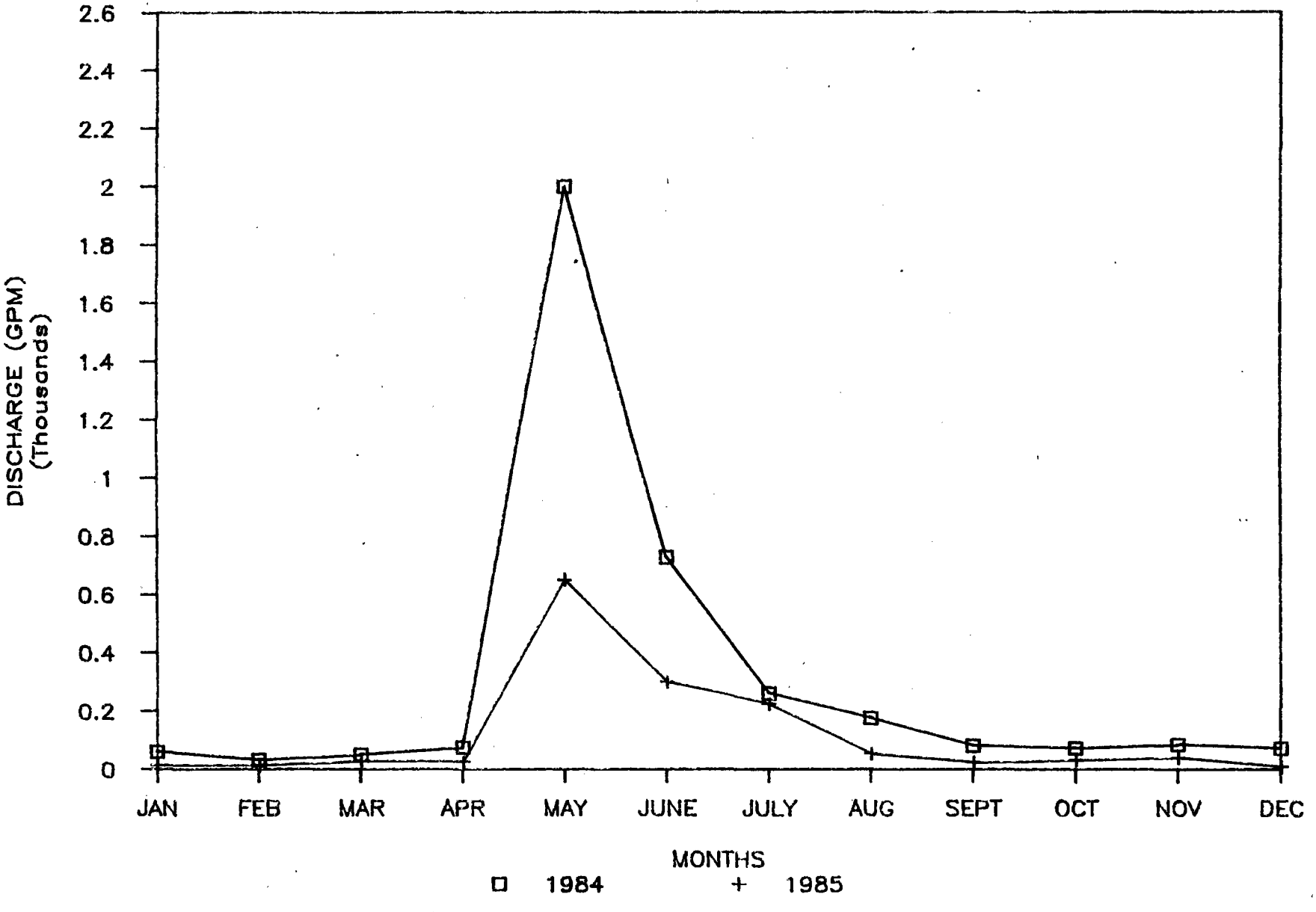
APPENDIX C

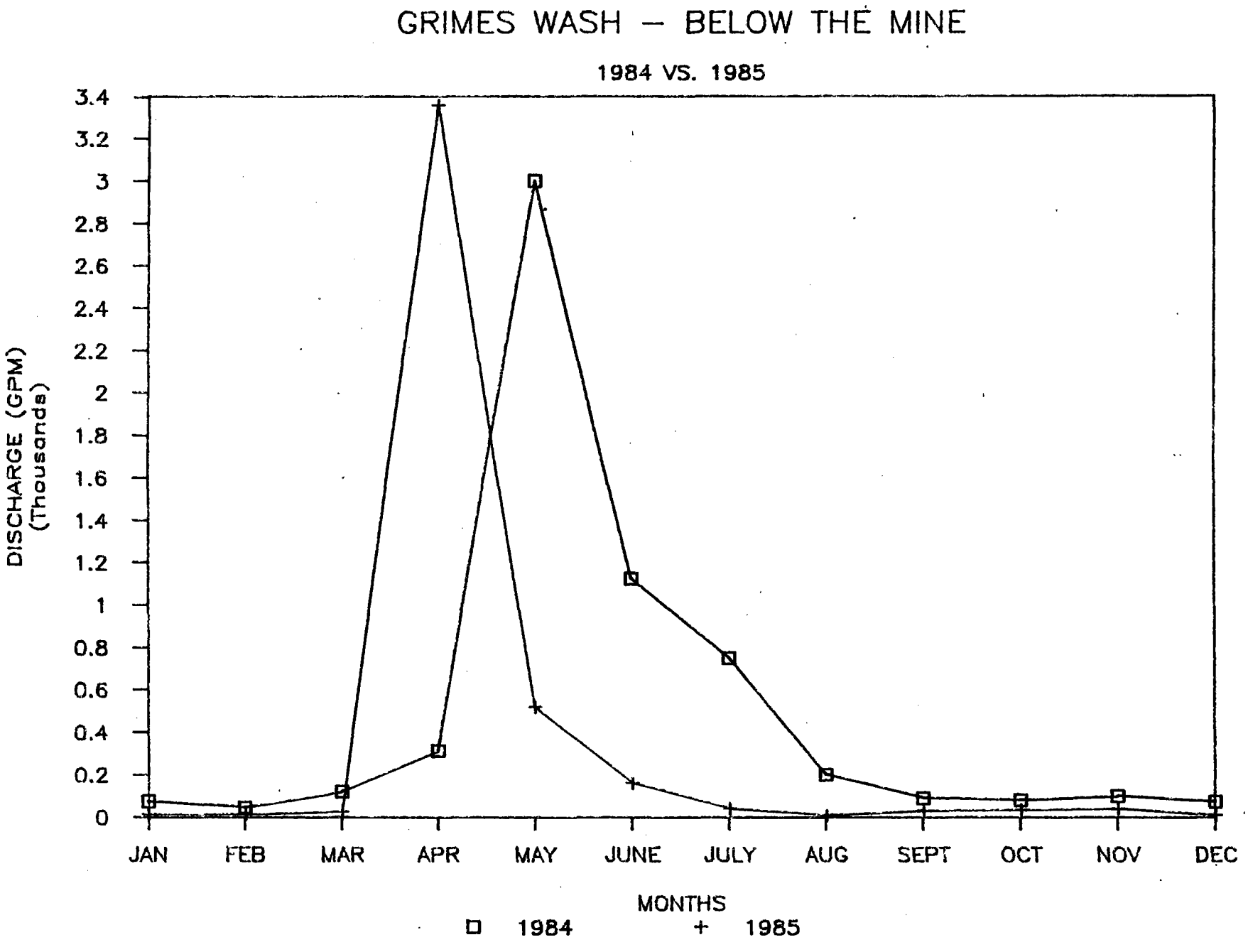

COTTONWOOD CANYON CREEK
1984 VS. 1985
DISCHARGE (GPM)
(Thousands)
7
6
5
4
3
2
1
0
JAN
FEB
MAR
APR
MAY
JUNE
JULY
AUG
SEPT
OCT
NOV
DEC
MONTHS
1984
1985


GRIMES WASH – RIGHT FORK
1984 VS. 1985
DISCHARGE (GPM)
(Thousands)
3.5
3
2.5
2
1.5
1
0.5
0
JAN
FEB
MAR
APR
MAY
JUNE
JULY
AUG
SEPT
OCT
NOV
DEC
MONTHS
1984
1985

GRIMES WASH — LEFT FORK

1984 VS. 1985




GRIMES WASH – BELOW THE MINE
1984 VS. 1985
DISCHARGE (GPM)
(Thousands)
3.4
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
JAN
FEB
MAR
APR
MAY
JUNE
JULY
AUG
SEPT
OCT
NOV
DEC
MONTHS
1984
1985

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6574

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Left Fork
Temp 32°
Flow 0.11/14.8 GPM

Date Rec'd 1-22-85

Date Sampled 1-22-85

Time Sampled 940

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total		mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride		mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium		mg/l
Conductivity	695	umhos/cm 1/23	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron	< 0.05	mg/l 1/24
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium		mg/l
Nitrogen, Nitrite		mg/l	Manganese	< 0.01	mg/l 1/24
Oil & Grease		mg/l	Mercury		ug/l
pH	8.05	Units 1/23	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium		mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	383	mg/l 1/23	Silica		mg/l
Solids, Total Suspended	< 0.5	mg/l 1/23	Sodium		mg/l
Sulfate		mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			

Analyst: David A Janusz

Respectfully submitted 1-25-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6575

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Below the Mine
Temp 32°
Flow 15.0 GPM

Date Rec'd 1-22-85

Date Sampled 1-22-85

Time Sampled 1030

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total	____ mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride	____ mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium	____ mg/l
Conductivity	1225 umhos/cm 1/23	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron	0.09 mg/l 1/24
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
Nitrogen, Nitrate	____ mg/l	Magnesium	____ mg/l
Nitrogen, Nitrite	____ mg/l	Manganese	0.02 mg/l 1/24
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH	8.00 Units 1/23	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium	____ mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved	791 mg/l 1/23	Silica	____ mg/l
Solids, Total Suspended	42.0 mg/l 1/23	Sodium	____ mg/l
Sulfate	____ mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		

Analyst: David A Jarvis

Respectfully submitted 1-25-85

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6772
Date Rec'd 4-3-85
Date Sampled 4-3-85
Time Sampled 1306

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash Right Fork
Temp 39°
Flow 3360 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total		mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride		mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	200	umhos/cm	4/8
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	7.40	Units	4/8
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	125	mg/l	4/4
Solids, Total Suspended	7116.0	mg/l	4/4
Sulfate		mg/l	
Sulfide		mg/l	
Turbidity		NTU	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium		mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron	2.90	mg/l	4/8
Lead		mg/l	
Magnesium		mg/l	
Manganese	0.03	mg/l	4/8
Mercury		ug/l	
Nickel		mg/l	
Potassium		mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium		mg/l	
Vanadium		mg/l	
Zinc		mg/l	

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Analyst: David A Jones

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Lab. No. 6771

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash Left Fork
Temp 38°
Flow 125 GPM

Date Rec'd 4-3-85

Date Sampled 4-3-85

Time Sampled 1240

Acidity		mg/l $CaCO_3$	
Alkalinity, Total		mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride		mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	473	umhos/cm	4/8
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	7.50	Units	4/8
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	283	mg/l	4/4
Solids, Total Suspended	141.0	mg/l	4/4
Sulfate		mg/l	
Sulfide		mg/l	
Turbidity		NTU	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium		mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron	0.08	mg/l	4/8
Lead		mg/l	
Magnesium		mg/l	
Manganese	< 0.01	mg/l	4/8
Mercury		ug/l	
Nickel		mg/l	
Potassium		mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium		mg/l	
Vanadium		mg/l	
Zinc		mg/l	

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Analyst: David L Jones

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Lab. No. 6773
Date Rec'd 4-3-85
Date Sampled 4-3-85
Time Sampled 1430

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash Below the Mine
Temp 40°
Flow 3360 GPM

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total		mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride		mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium		mg/l
Conductivity	220	umhos/cm 4/8	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron	2.70	mg/l 4/8
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium		mg/l
Nitrogen, Nitrite		mg/l	Manganese	0.03	mg/l 4/8
Oil & Grease		mg/l	Mercury		ug/l
pH	7.35	Units 4/8	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium		mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	152	mg/l 4/4	Silica		mg/l
Solids, Total Suspended	9702.0	mg/l 4/4	Sodium		mg/l
Sulfate		mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			

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Analyst: David A Jones

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P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6960

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Right Fork

Date Rec'd 5-8-85

Date Sampled 5-8-85

Time Sampled 11:10

Temp. 44° Flow 69.1 GPM

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total	____ mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride	____ mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium	____ mg/l
Conductivity	603 umhos/cm 5-9	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron 5-9	0.33 mg/l
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
Nitrogen, Nitrate	____ mg/l	Magnesium	____ mg/l
Nitrogen, Nitrite	____ mg/l	Manganese 5-9	<0.01 mg/l
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH	7.90 Units 5-9	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium	____ mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved	323 mg/l 5-9	Silica	____ mg/l
Solids, Total Suspended	108.0 mg/l	Sodium	____ mg/l
Sulfate	____ mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		

Analyst: David A Janney

Respectfully submitted David A Janney

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P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6959

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Left Fork

Date Rec'd 5-8-85

Date Sampled 5-8-85

Time Sampled 10:40

Temp. 42°

Flow 650GPM

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total	____ mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride	____ mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium	____ mg/l
Conductivity	610 umhos/cm 5-9	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron 5-9	0.17 mg/l
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
Nitrogen, Nitrate	____ mg/l	Magnesium	____ mg/l
Nitrogen, Nitrite	____ mg/l	Manganese 5-9	<0.01 mg/l
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH	7.80 Units 5-9	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium	____ mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved	338 mg/l 5-9	Silica	____ mg/l
Solids, Total Suspended	130.0 mg/l	Sodium	____ mg/l
Sulfate	____ mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		

Analyst: David L Janus

Respectfully submitted David L Janus

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P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6961
Date Rec'd 5-8-85
Date Sampled 5-8-85
Time Sampled 11:45

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Below the Mine

Temp. 44° Flow 520 GPM

Acidity		mg/l $CaCO_3$			
Alkalinity, Total		mg/l $CaCO_3$			
Alkalinity, Bicarbonate		mg/l $CaCO_3$			
Alkalinity, Carbonate		mg/l $CaCO_3$			
Chloride		mg/l			
Coliform, Fecal		MPN/100 ml			
Coliform, Total		MPN/100 ml			
Conductivity	700	umhos/cm	5-9		
Fluoride		mg/l			
Hardness, Total		mg/l $CaCO_3$			
Nitrogen, Ammonia		mg/l			
Nitrogen, Nitrate		mg/l			
Nitrogen, Nitrite		mg/l			
Oil & Grease		mg/l			
pH	7.90	Units	5-9		
Phosphorus, Ortho		mg/l			
Phosphorus, Total		mg/l			
Solids, Total Dissolved	391	mg/l	5-9		
Solids, Total Suspended	75.0	mg/l			
Sulfate		mg/l			
Sulfide		mg/l			
Turbidity		NTU			

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium		mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron	5-9	0.23	mg/l
Lead		mg/l	
Magnesium		mg/l	
Manganese	5-9	<0.01	mg/l
Mercury		ug/l	
Nickel		mg/l	
Potassium		mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium		mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Analyst: David A Janusz

Respectfully submitted David A Janusz

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P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7072
Date Rec'd 6-4-85
Date Sampled 6-3-85
Time Sampled 1535

Client: UTAH POWER & LIGHT CO
FIELD OFFICE
P.O. BOX 1005
HUNTINGTON, UTAH 84528

Sample ID: Grimes Wash Right Fork

Temp 52°C Flow 0.27/58.8 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total		mg/l $CaCO_3$
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride		mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 6-6	550	umhos/cm
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 6-6	7.85	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	307	mg/l
Solids, Total Suspended 6-6	60.0	mg/l
Sulfate		mg/l
Sulfide		mg/l
Turbidity		NTU

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron 6-10	0.21	mg/l
Lead		mg/l
Magnesium		mg/l
Manganese 6-10	<0.01	mg/l
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A. Janury

Respectfully submitted [signature]

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P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7071
Date Rec'd 6-4-85
Date Sampled 6-3-85
Time Sampled 1545

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash Left Fork

Temp 48°C Flow 300 GPM Est.

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total	____ mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride	____ mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium	____ mg/l
Conductivity 6-6	605 umhos/cm	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron 6-10	< 0.05 mg/l
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
Nitrogen, Nitrate	____ mg/l	Magnesium	____ mg/l
Nitrogen, Nitrite	____ mg/l	Manganese 6-10	< 0.01 mg/l
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH 6-6	7.50 Units	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium	____ mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved	339 mg/l	Silica	____ mg/l
Solids, Total Suspended 6-6	10.0 mg/l	Sodium	____ mg/l
Sulfate	____ mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		

Analyst: David A Ranney

Respectfully submitted [signature] 6-11-85

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Lab. No. 7073

Client: UTAH POWER & LIGHT CO
PO BOX 1005
HUNTINGTON, UTAH 84528

Sample ID: Grimes Wash Below the Mine

Date Rec'd 6-4-85

Date Sampled 6-3-85

Time Sampled 1625

FIELD OFFICE Temp 49°C Flow 160 GPM Est.

Acidity		mg/l $CaCO_3$	
Alkalinity, Total		mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride		mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	6-6	710 umhos/cm	
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	6-6	7.75 Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved		404 mg/l	
Solids, Total Suspended	6-6	2.0 mg/l	
Sulfate		mg/l	
Sulfide		mg/l	
Turbidity		NTU	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium		mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron	6-10	<0.05 mg/l	
Lead		mg/l	
Magnesium		mg/l	
Manganese	6-10	<0.01 mg/l	
Mercury		ug/l	
Nickel		mg/l	
Potassium		mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium		mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Analyst: David A Janusz

Respectfully submitted [signature] 6-11-85

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P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7214

Client: Utah Power & Light co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash Right Fork
Temp. 64°
Flow 0.20/36.8 GPM

Date Rec'd 7-8-85

Date Sampled 7-8-85

Time Sampled 1200

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total		mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride		mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium		mg/l
Conductivity	458	umhos/cm 7/9	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron	0.34	mg/l 7/10
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium		mg/l
Nitrogen, Nitrite		mg/l	Manganese	< 0.01	mg/l 7/10
Oil & Grease		mg/l	Mercury		ug/l
pH	8.30	Units 7/9	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium		mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	254	mg/l 7/12	Silica		mg/l
Solids, Total Suspended	55.0	mg/l 7/12	Sodium		mg/l
Sulfate		mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			

Analyst: David A Janney

Respectfully submitted 7-17-85

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P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Client: Utah Power & Light Co.
Field Office
P. O. Box 1201
Huntington, Utah 84528

Sample ID: Grimes Wash Left Fork
Temp. 59°
Flow 223.0 GPM

Lab. No. 7213
Date Rec'd 7-8-85
Date Sampled 7-8-85
Time Sampled 1120

Acidity		mg/l $CaCO_3$	
Alkalinity, Total		mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride		mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	605	umhos/cm	7/9
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	8.00	Units	7/9
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	339	mg/l	7/12
Solids, Total Suspended	12.0	mg/l	7/12
Sulfate		mg/l	
Sulfide		mg/l	
Turbidity		NTU	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium		mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron	< 0.05	mg/l	7/10
Lead		mg/l	
Magnesium		mg/l	
Manganese	< 0.01	mg/l	7/10
Mercury		ug/l	
Nickel		mg/l	
Potassium		mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium		mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Analyst: David A. Janusz

Respectfully submitted [signature] 7-17-85

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7215
Date Rec'd 7-8-85
Date Sampled 7-8-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Below the Mine
Temp. 60°
Flow 41.1 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total		mg/l $CaCO_3$
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride		mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity	1800	umhos/cm 7/9
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH	8.05	Units 7/9
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	1035	mg/l 7/12
Solids, Total Suspended	14.5	mg/l 7/12
Sulfate		mg/l
Sulfide		mg/l
Turbidity		NTU

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron	0.08	mg/l 7/10
Lead		mg/l
Magnesium		mg/l
Manganese	< 0.01	mg/l 7/10
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Janus

Respectfully submitted [signature] 7-17

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7341
Date Rec'd 8-6-85
Date Sampled 8-6-85
Time Sampled 1420

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Right Fork

Acidity		mg/l $CaCO_3$
Alkalinity, Total		mg/l $CaCO_3$
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride		mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 8-9	441	umhos/cm
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 8-9	7.80	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved 8-8	252	mg/l
Solids, Total Suspended	14.0	mg/l
Sulfate		mg/l
Sulfide		mg/l
Turbidity		NTU

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron 8-9	0.11	mg/l
Lead		mg/l
Magnesium		mg/l
Manganese 8-9	0.08	mg/l
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Janusz

Respectfully submitted [signature]

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7340
Date Rec'd 8-6-85
Date Sampled 8-6-85
Time Sampled 1500

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Left Fork

Acidity		mg/l $CaCO_3$	
Alkalinity, Total		mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride		mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	8-9 550	umhos/cm	
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	8-9 7.70	Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	302	mg/l	
Solids, Total Suspended	8-8 12.0	mg/l	
Sulfate		mg/l	
Sulfide		mg/l	
Turbidity		NTU	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium		mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron	8-9	< 0.05	mg/l
Lead		mg/l	
Magnesium		mg/l	
Manganese	8-9	0.08	mg/l
Mercury		ug/l	
Nickel		mg/l	
Potassium		mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium		mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Analyst: David L Ramsey

Respectfully submitted

Certified Environmental Laboratory

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7332
Date Rec'd 8-6-85
Date Sampled 8-6-85
Time Sampled 1410

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Below the Mine

Temp. 65° Flow 10 GPM (Est)

Acidity		mg/l $CaCO_3$
Alkalinity, Total		mg/l $CaCO_3$
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride		mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 8-9	1810	umhos/cm
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 8-9	7.40	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	1129	mg/l
Solids, Total Suspended 8-8	6.0	mg/l
Sulfate		mg/l
Sulfide		mg/l
Turbidity		NTU

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron 8-9	0.14	mg/l
Lead		mg/l
Magnesium		mg/l
Manganese 8-9	0.13	mg/l
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David W. Janusz

Respectfully submitted [signature]

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7436
Date Rec'd 9-9-85
Date Sampled 9-9-85
Time Sampled 1120

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash Right Fork

Temp. 49° Flow 0.08/8.9 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total		mg/l $CaCO_3$
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride		mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 9-10	500	umhos/cm
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 9-10	8.30	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved 9-10	308	mg/l
Solids, Total Suspended 9-10	19.0	mg/l
Sulfate		mg/l
Sulfide		mg/l
Turbidity		NTU

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron 9-16	<0.05	mg/l
Lead		mg/l
Magnesium		mg/l
Manganese 9-16	<0.01	mg/l
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: [signature]

Respectfully submitted [signature]

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7435
Date Rec'd 9-9-85
Date Sampled 9-9-85
Time Sampled 1055

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash Left Fork

Temp. 58° Flow 0.1/22.4 GPM

Acidity	mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total	mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	mg/l $CaCO_3$	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride	mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium	mg/l
Conductivity 9-10	600 umhos/cm	Chromium	mg/l
Fluoride	mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron 9-16	< 0.05 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
ogen, Nitrate	mg/l	Magnesium	mg/l
Nitrogen, Nitrite	mg/l	Manganese 9-16	< 0.01 mg/l
Oil & Grease	mg/l	Mercury	ug/l
pH 9-10	8.30 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium	mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved 9-10	355 mg/l	Silica	mg/l
Solids, Total Suspended	22.0 mg/l	Sodium	mg/l
Sulfate	mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity	NTU		

Analyst: Dan A. Jensen

Respectfully submitted

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7437
Date Rec'd 9-9-85
Date Sampled 9-9-85
Time Sampled 1130

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Below The Mine

Temp. 56° Flow 30.0 GPM

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total	____ mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride	____ mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium	____ mg/l
Conductivity 9-10	1250 umhos/cm	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron 9-16	< 0.05 mg/l
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
Nitrogen, Nitrate	____ mg/l	Magnesium	____ mg/l
Nitrogen, Nitrite	____ mg/l	Manganese 9-16	0.01 mg/l
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH 9-10	8.10 Units	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium	____ mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved	756 mg/l	Silica	____ mg/l
Solids, Total Suspended 9-10	19.0 mg/l	Sodium	____ mg/l
Sulfate	____ mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		

Analyst: David L Jones

Respectfully submitted

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7567
Date Rec'd 10-07-85
Date Sampled 10-07-85
Time Sampled 1120

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Wilberg Runoff
Right Fork

Temp. 46° Flow 0.05/4.3 GPM

Acidity			mg/l $CaCO_3$
Alkalinity, Total			mg/l $CaCO_3$
Alkalinity, Bicarbonate			mg/l $CaCO_3$
Alkalinity, Carbonate			mg/l $CaCO_3$
Chloride			mg/l
Coliform, Fecal			MPN/100 ml
Coliform, Total			MPN/100 ml
Conductivity	10-9	599	umhos/cm
Fluoride			mg/l
Hardness, Total			mg/l $CaCO_3$
Nitrogen, Ammonia			mg/l
Nitrogen, Nitrate			mg/l
Nitrogen, Nitrite			mg/l
Oil & Grease			mg/l
pH	10-9	8.20	Units
Phosphorus, Ortho			mg/l
Phosphorus, Total			mg/l
Solids, Total Dissolved	10-8	325	mg/l
Solids, Total Suspended		11.0	mg/l
Sulfate			mg/l
Sulfide			mg/l
Turbidity			NTU

Aluminum			mg/l
Arsenic			mg/l
Barium			mg/l
Beryllium			mg/l
Boron			mg/l
Cadmium			mg/l
Calcium			mg/l
Chromium			mg/l
Copper			mg/l
Iron	10-9	0.06	mg/l
Lead			mg/l
Magnesium			mg/l
Manganese	10-9	<0.01	mg/l
Mercury			ug/l
Nickel			mg/l
Potassium			mg/l
Selenium			mg/l
Silica			mg/l
Sodium			mg/l
Vanadium			mg/l
Zinc			mg/l

Analyst: David L Janusz

Respectfully submitted [signature] 10-11-85

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7566
Date Rec'd 10-07-85
Date Sampled 10-07-85
Time Sampled 1100

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Wilberg Runoff
Left Fork

Temp. 48° Flow 30.0 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total		mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride		mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	10-9	654 umhos/cm	
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	10-9	8.20 Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	10-8	372 mg/l	
Solids, Total Suspended	10-8	15.0 mg/l	
Sulfate		mg/l	
Sulfide		mg/l	
Turbidity		NTU	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium		mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron	10-9	0.18 mg/l	
Lead		mg/l	
Magnesium		mg/l	
Manganese	10-9	<0.01 mg/l	
Mercury		ug/l	
Nickel		mg/l	
Potassium		mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium		mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Analyst: David K Carney

Respectfully submitted 10-11-85

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7568
Date Rec'd 10-7-85
Date Sampled 10-7-85
Time Sampled 1200

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Wilberg Runoff
Below the Mine

Temp. 51° Flow 35 GPM Est.

Acidity		mg/l $CaCO_3$	
Alkalinity, Total		mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride		mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	10-9	1253 umhos/cm	
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	10-9	8.10 Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	10-8	760 mg/l	
Solids, Total Suspended		9.0 mg/l	
Sulfate		mg/l	
Sulfide		mg/l	
Turbidity		NTU	
Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium		mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron	10-9	0.10 mg/l	
Lead		mg/l	
Magnesium		mg/l	
Manganese	10-9	0.04 mg/l	
Mercury		ug/l	
Nickel		mg/l	
Potassium		mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium		mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Analyst: David A. Jensen

Respectfully submitted [signature] 10-11-85

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7658
Date Rec'd 11-14-85
Date Sampled 11-13-85
Time Sampled 1450

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Right Fork

Temp. 33° Flow 0.05/4.3 GPM

Acidity	mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total	mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	mg/l $CaCO_3$	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride	mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium	mg/l
Conductivity 11-15	740 umhos/cm	Chromium	mg/l
Fluoride	mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron 11-15	0.13 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
Nitrogen, Nitrate	mg/l	Magnesium	mg/l
Nitrogen, Nitrite	mg/l	Manganese 11-15	0.01 mg/l
Oil & Grease	mg/l	Mercury	ug/l
pH 11-15	8.30 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium	mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved 11-14	430 mg/l	Silica	mg/l
Solids, Total Suspended	28.0 mg/l	Sodium	mg/l
Sulfate	mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity	NTU		

Analyst: David L. Jones

Respectfully submitted 11-18-85

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7657
Date Rec'd 11-14-85
Date Sampled 11-13-85
Time Sampled 1440

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Left Fork

Temp. 33° Flow 0.14/40.4 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total		mg/l $CaCO_3$
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride		mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 11-15	750	umhos/cm
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 11-15	7.90	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved 11-14	438	mg/l
Solids, Total Suspended	25.0	mg/l
Sulfate		mg/l
Sulfide		mg/l
Turbidity		NTU

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron 11-15	0.05	mg/l
Lead		mg/l
Magnesium		mg/l
Manganese 11-15	<0.01	mg/l
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Janus

Respectfully submitted [signature] 11-18-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7656
Date Rec'd 11-14-85
Date Sampled 11-13-85
Time Sampled 1230

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Below The Mine

Temp. 38° Flow 45.0 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total		mg/l $CaCO_3$
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride		mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 11-15	10000	umhos/cm
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 11-15	7.90	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved 11-14	* 5506	mg/l
Solids, Total Suspended	63.0	mg/l
Sulfate		mg/l
Sulfide		mg/l
Turbidity		NTU

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron 11-15	0.24	mg/l
Lead		mg/l
Magnesium		mg/l
Manganese 11-15	0.09	mg/l
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

* Resampled on 11/20/85 895 mg/l

Analyst: David A Jannes

Respectfully submitted [signature] 11-18-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7680
Date Rec'd 11-21-85
Date Sampled 11-20-85
Time Sampled 1500

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash Below the Mine

Temp. 38° Flow 40 GPM Est.

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total	____ mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride	____ mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium	____ mg/l
Conductivity	____ umhos/cm	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron	____ mg/l
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
Nitrogen, Nitrate	____ mg/l	Magnesium	____ mg/l
Nitrogen, Nitrite	____ mg/l	Manganese	____ mg/l
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH	____ Units	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium	____ mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved 11-22	895 mg/l	Silica	____ mg/l
Solids, Total Suspended	____ mg/l	Sodium	____ mg/l
Sulfate	____ mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		

Analyst: [signature]

Respectfully submitted [signature]

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7717
Date Rec'd 12-11-85
Date Sampled 12-10-85
Time Sampled 1100

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash
Right Fork

Temp. 33° Flow 0.01/0.35 GPM

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total	____ mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride	____ mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium	____ mg/l
Conductivity 12-12	700 umhos/cm	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron 12-12	0.37 mg/l
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
Nitrogen, Nitrate	____ mg/l	Magnesium	____ mg/l
Nitrogen, Nitrite	____ mg/l	Manganese 12-12	0.01 mg/l
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH 12-12	8.00 Units	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium	____ mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved 12-12	415 mg/l	Silica	____ mg/l
Solids, Total Suspended	93 mg/l	Sodium	____ mg/l
Sulfate	____ mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		

Respectfully submitted 12-16-85

Analyst:

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.

P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7716

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Grimes Wash Left Fork

Date Rec'd 12-11-85

Date Sampled 12-10-85

Time Sampled 1120

Temp. 33°

Flow 0.05/8.1 GPM

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total	____ mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride	____ mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium	____ mg/l
Conductivity 12-12	740 umhos/cm	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron 12-12	< 0.05 mg/l
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
[illegible]gen, Nitrate	____ mg/l	Magnesium	____ mg/l
Nitrogen, Nitrite	____ mg/l	Manganese 12-12	< 0.01 mg/l
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH 12-12	8.00 Units	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium	____ mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved	411 mg/l	Silica	____ mg/l
Solids, Total Suspended 12-12	3 mg/l	Sodium	____ mg/l
Sulfate	____ mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		

[illegible]lyst:

Respectfully submitted 12-16-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7718
Date Rec'd 12-13-85
Date Sampled 12-12-85
Time Sampled 14:00

Client: UTAH POWER & LIGHT CO.
P.O. Box 899
Salt Lake City, Utah 84110

Sample ID: GRIMES WASH
Below the mine

Temp. 33° Flow: 8-10 GPM (est)

Acidity	mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total	mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	mg/l $CaCO_3$	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride	mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium	mg/l
Conductivity 12/16	1675 umhos/cm	Chromium	mg/l
Fluoride	mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron 12/18	< 0.05 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
Nitrogen, Nitrate	mg/l	Magnesium	mg/l
Nitrogen, Nitrite	mg/l	Manganese 12/18	0.05 mg/l
Oil & Grease	mg/l	Mercury	ug/l
pH 12/16	7.35 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium	mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved 12/18	1016 mg/l	Silica	mg/l
Solids, Total Suspended "	15.0 mg/l	Sodium	mg/l
Sulfate	mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity	NTU		

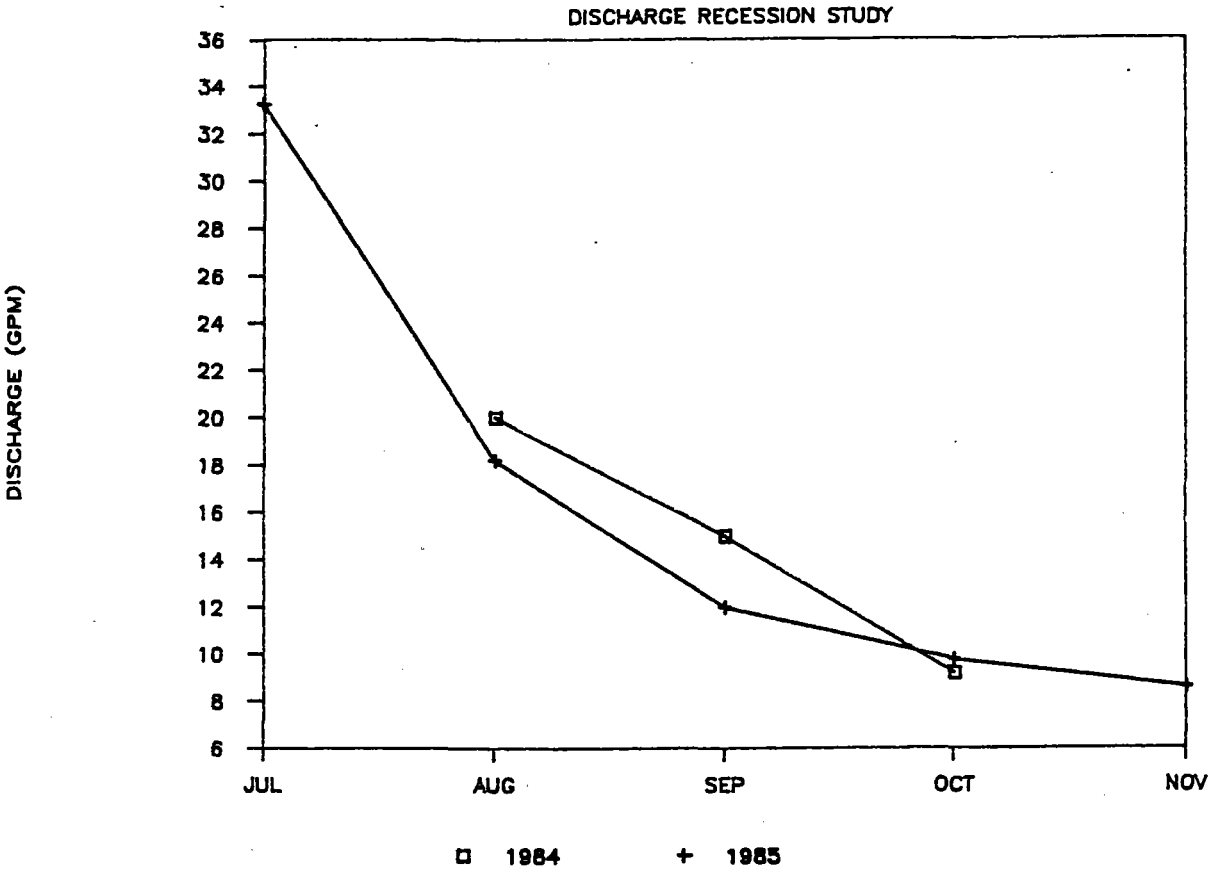
Analyst:

Respectfully submitted 12-20-85

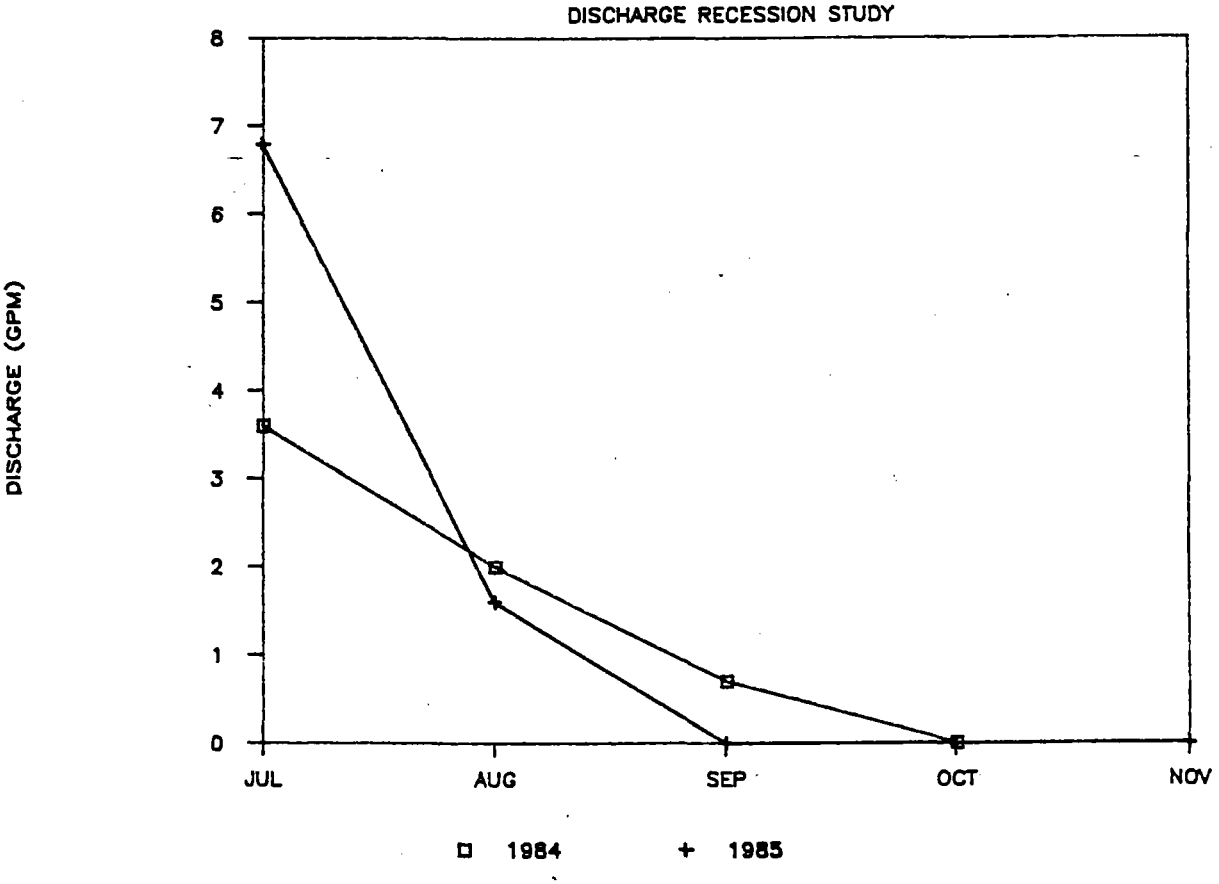
Certified Environmental Laboratory

APPENDIX D

SPRING 79–10



SPRING 79–23



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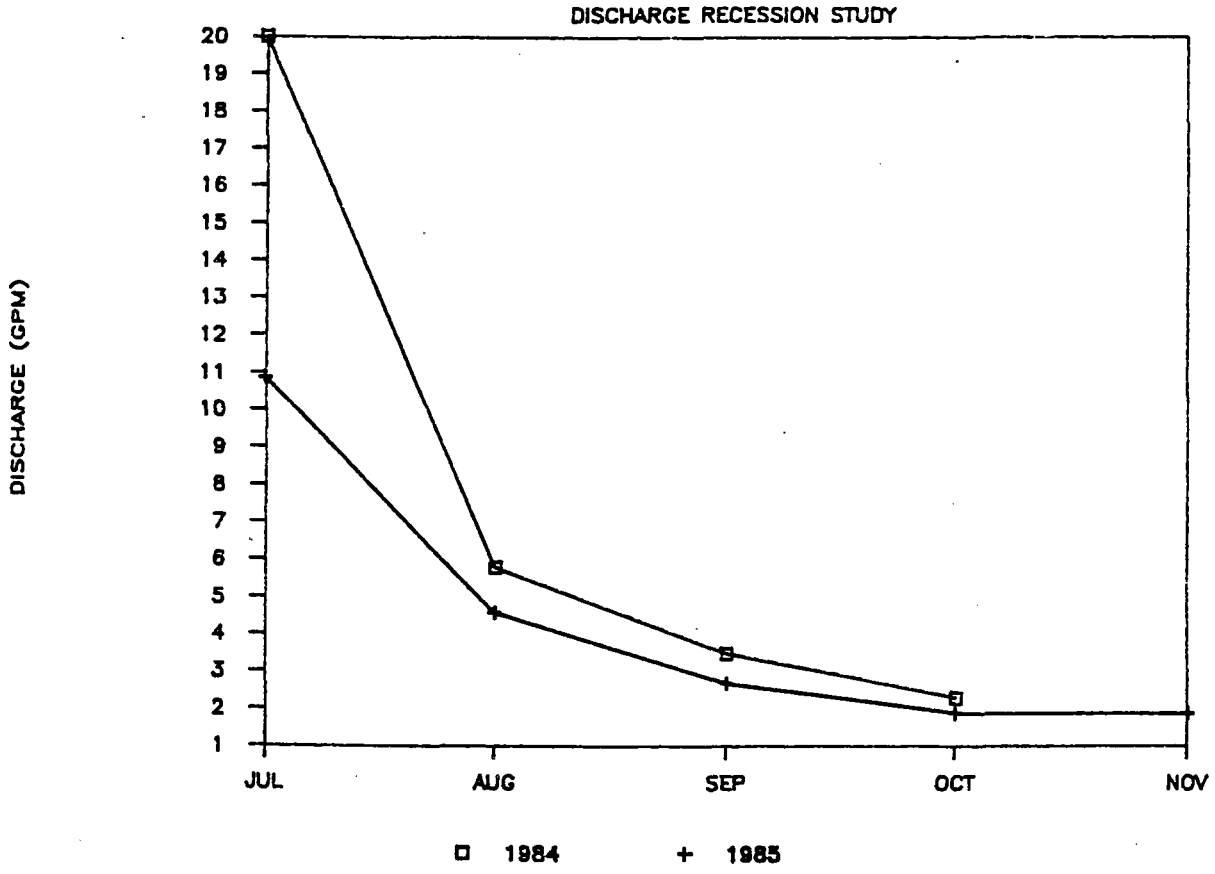

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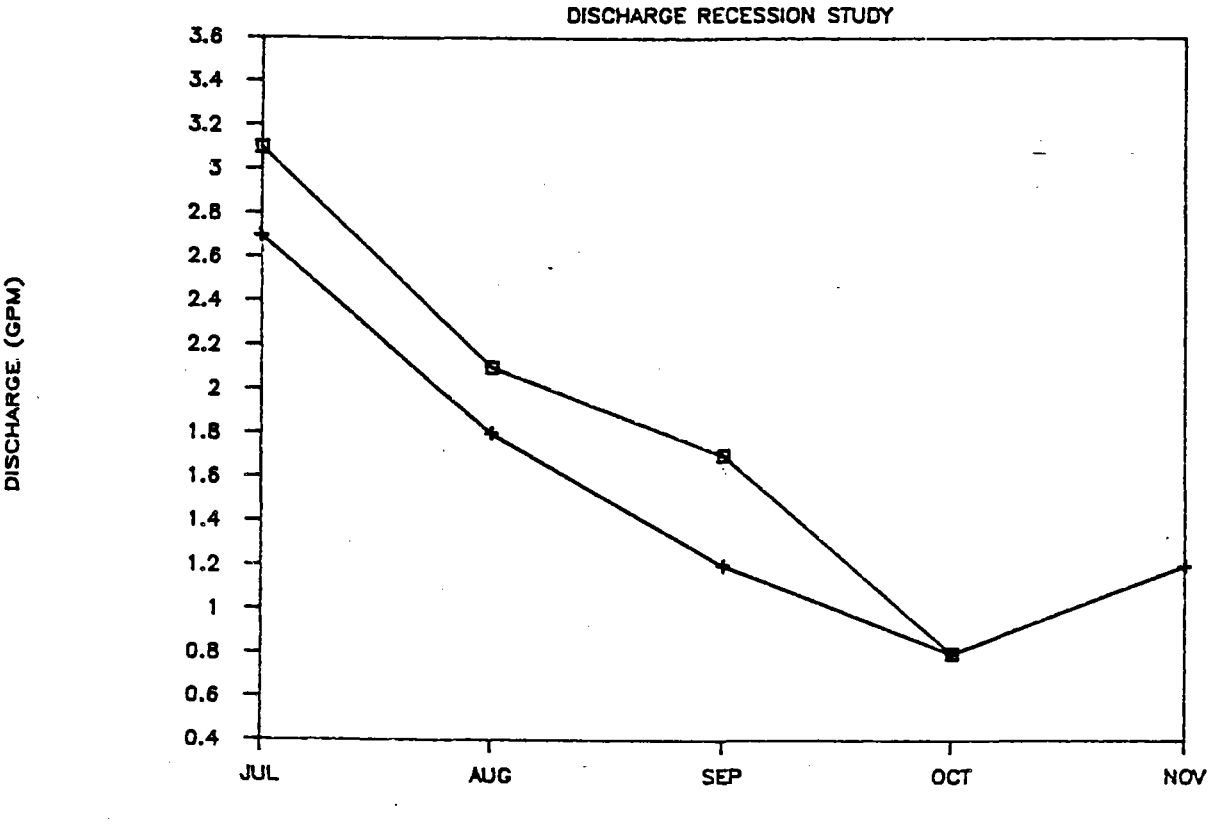

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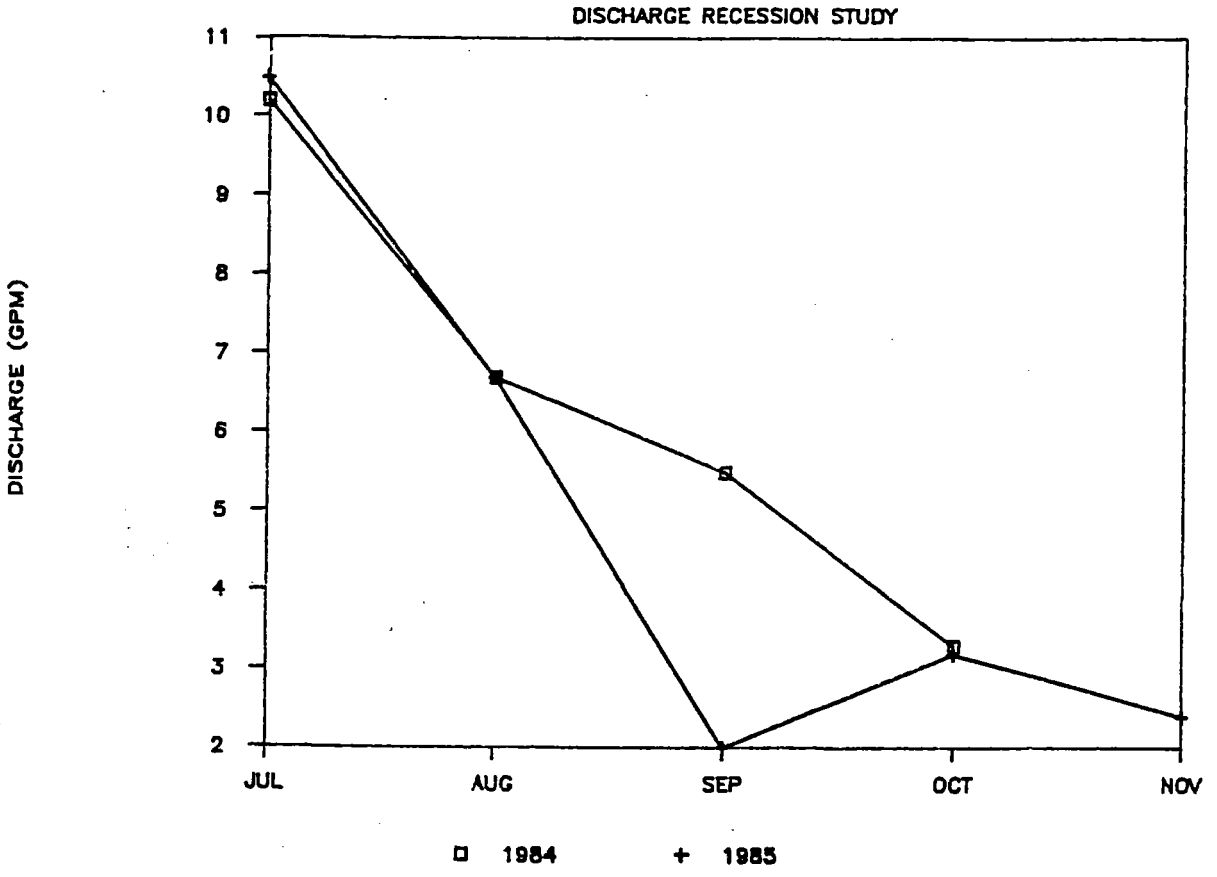

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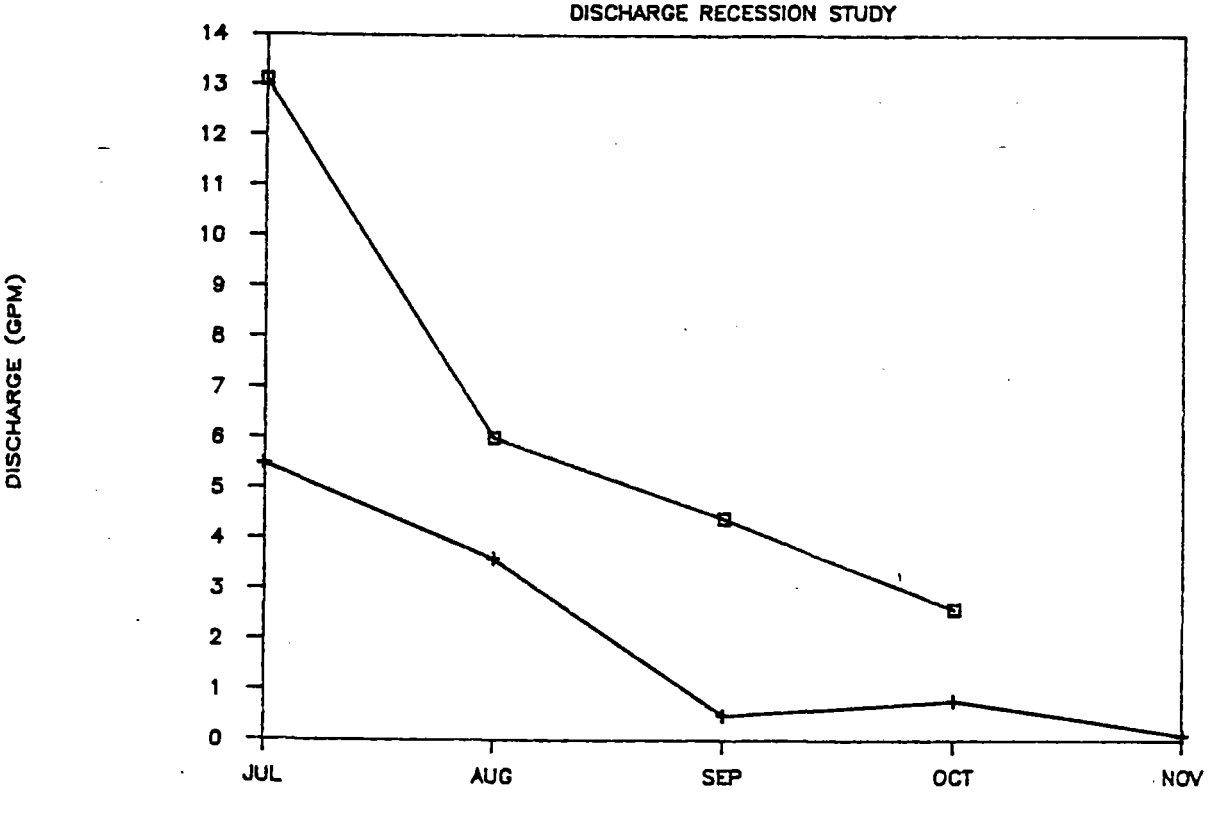
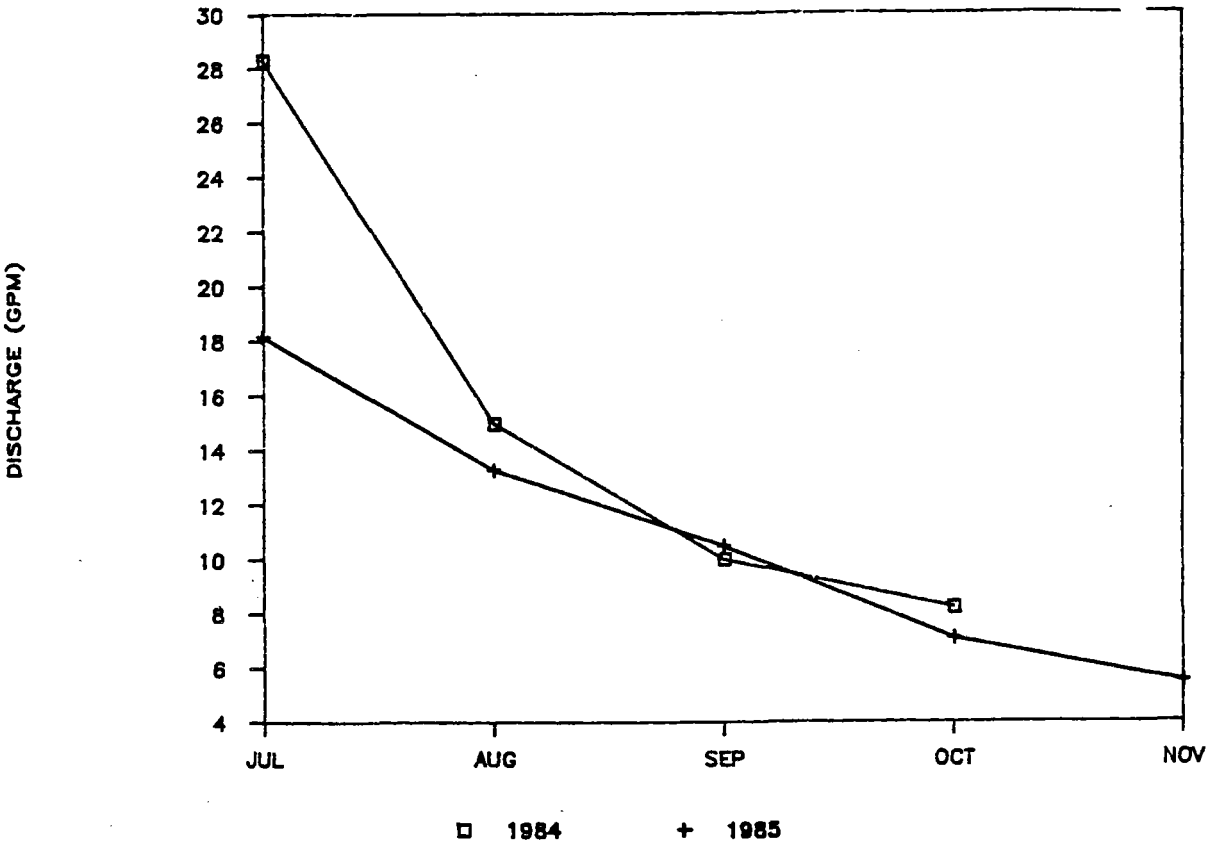


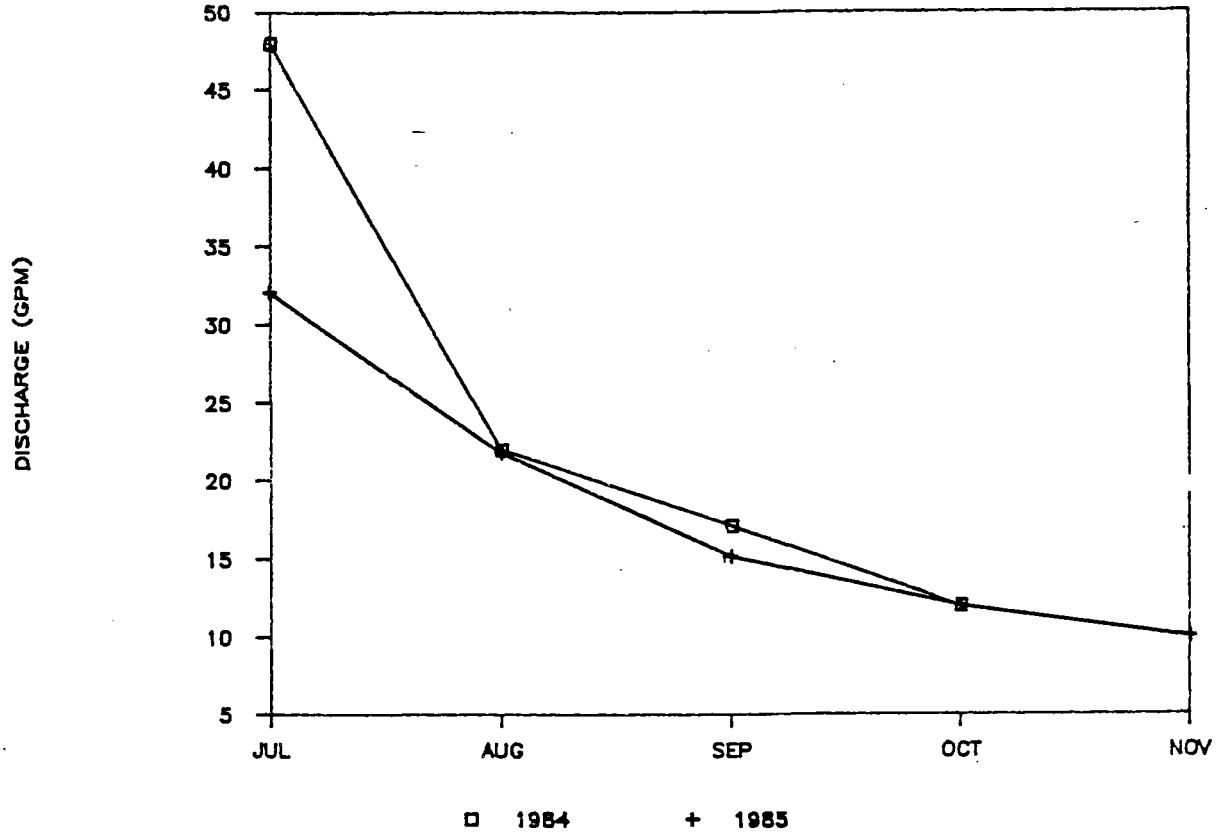
SPRING 80–46

DISCHARGE RECESSION STUDY



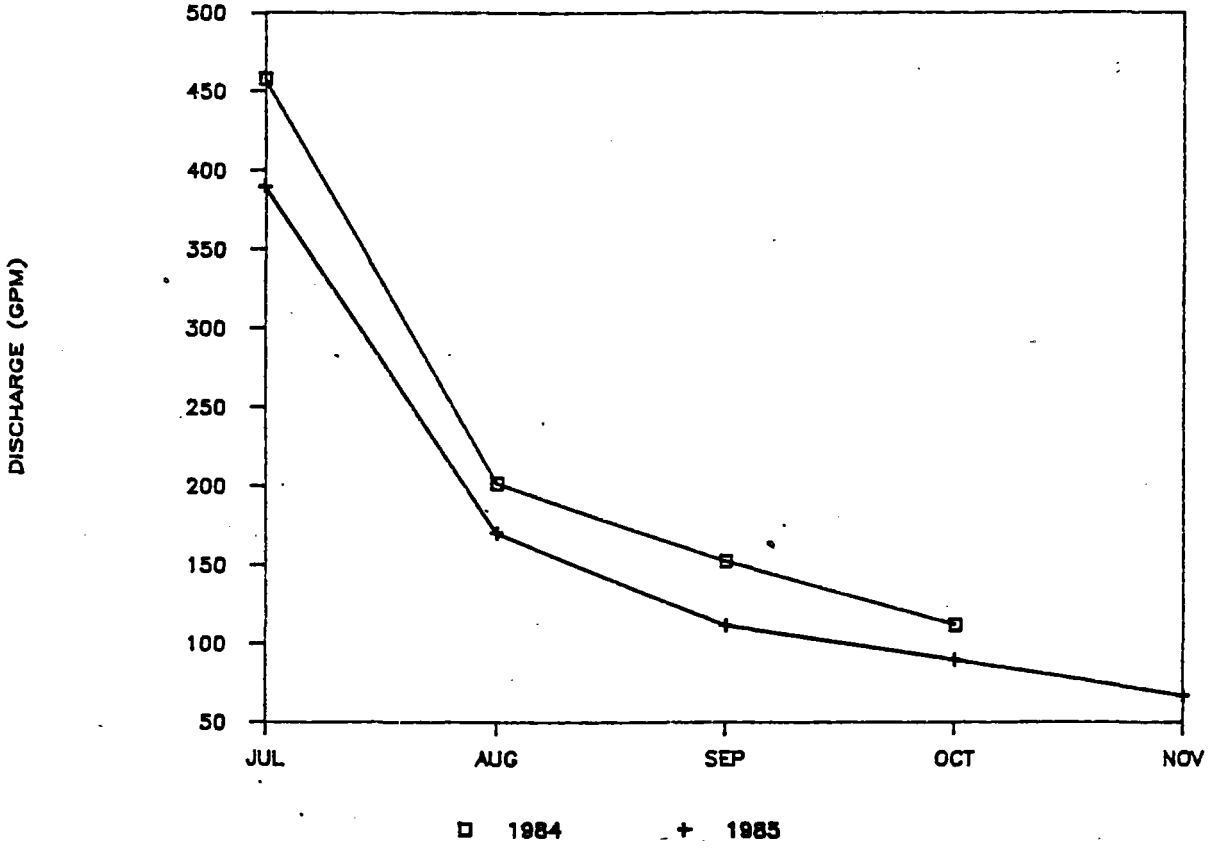
SPRING 82–52

DISCHARGE RECESSION STUDY



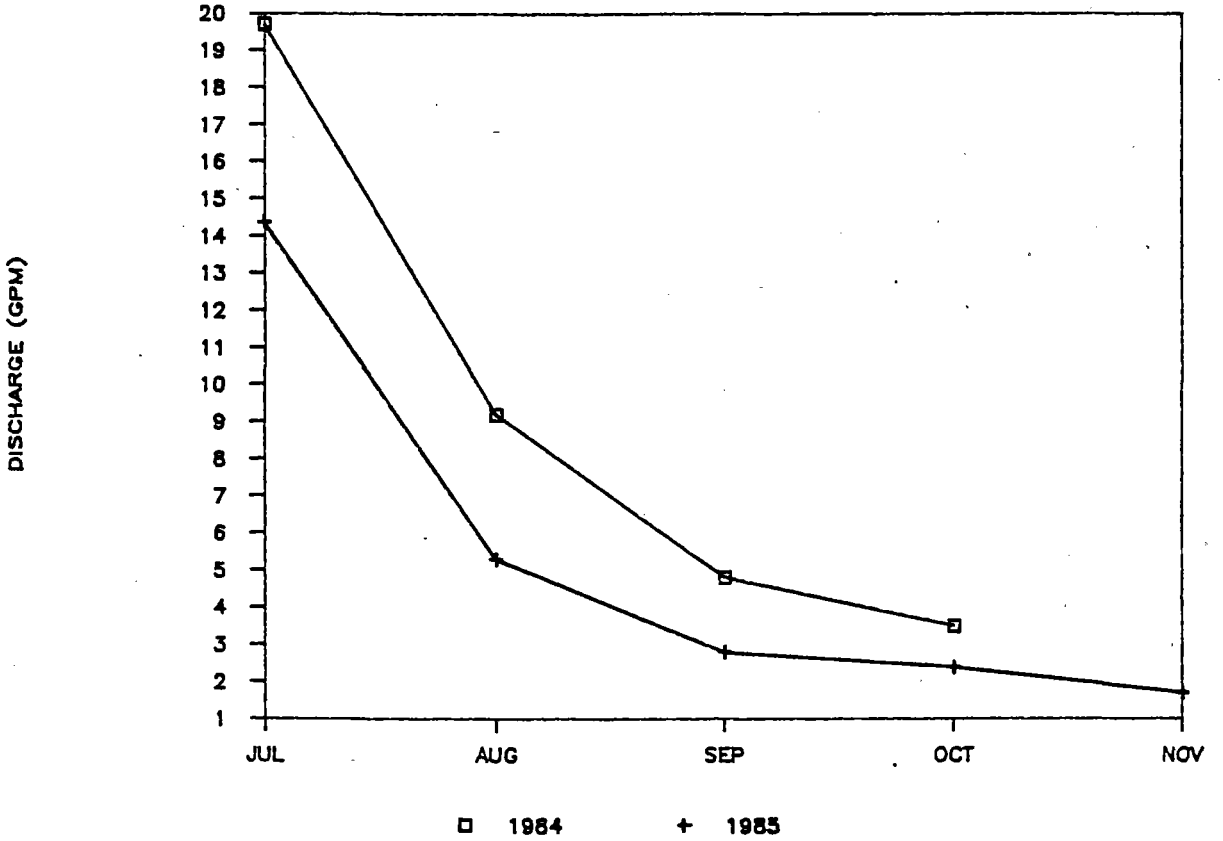
ELK SPRINGS

DISCHARGE RECESSION STUDY



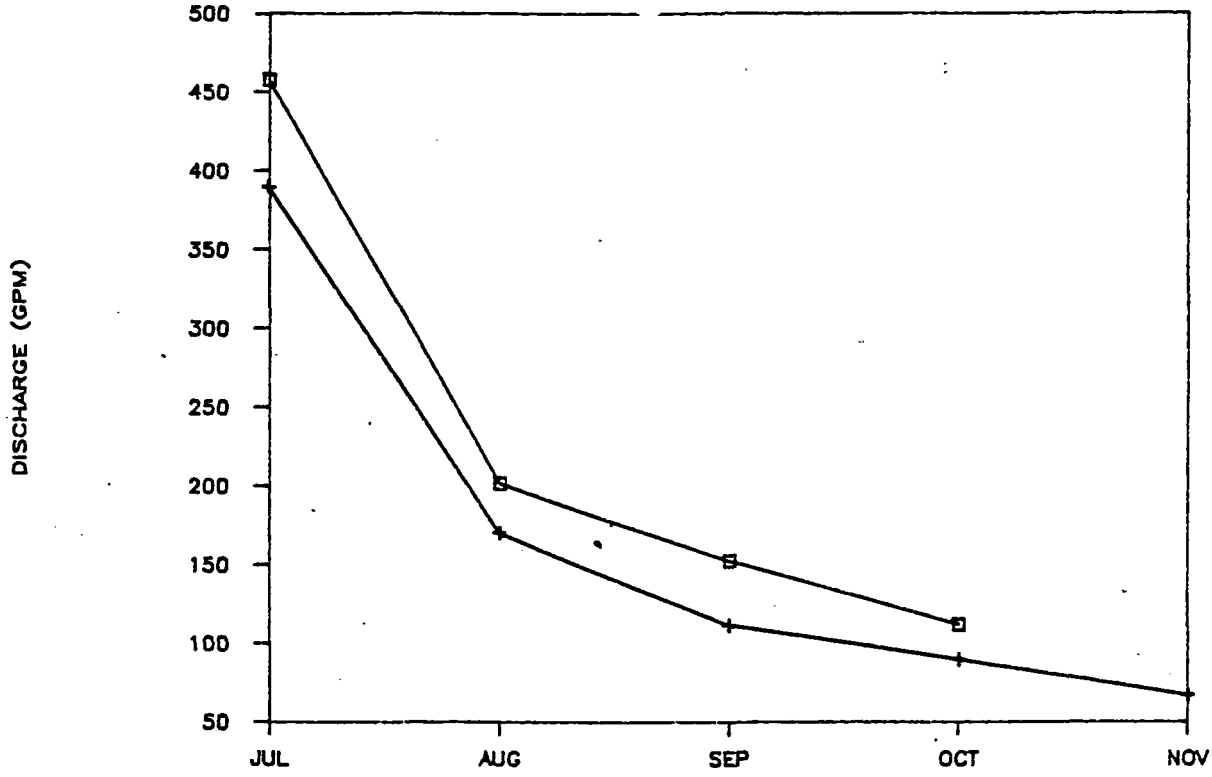
SHEBA SPRINGS

DISCHARGE RECESSION STUDY



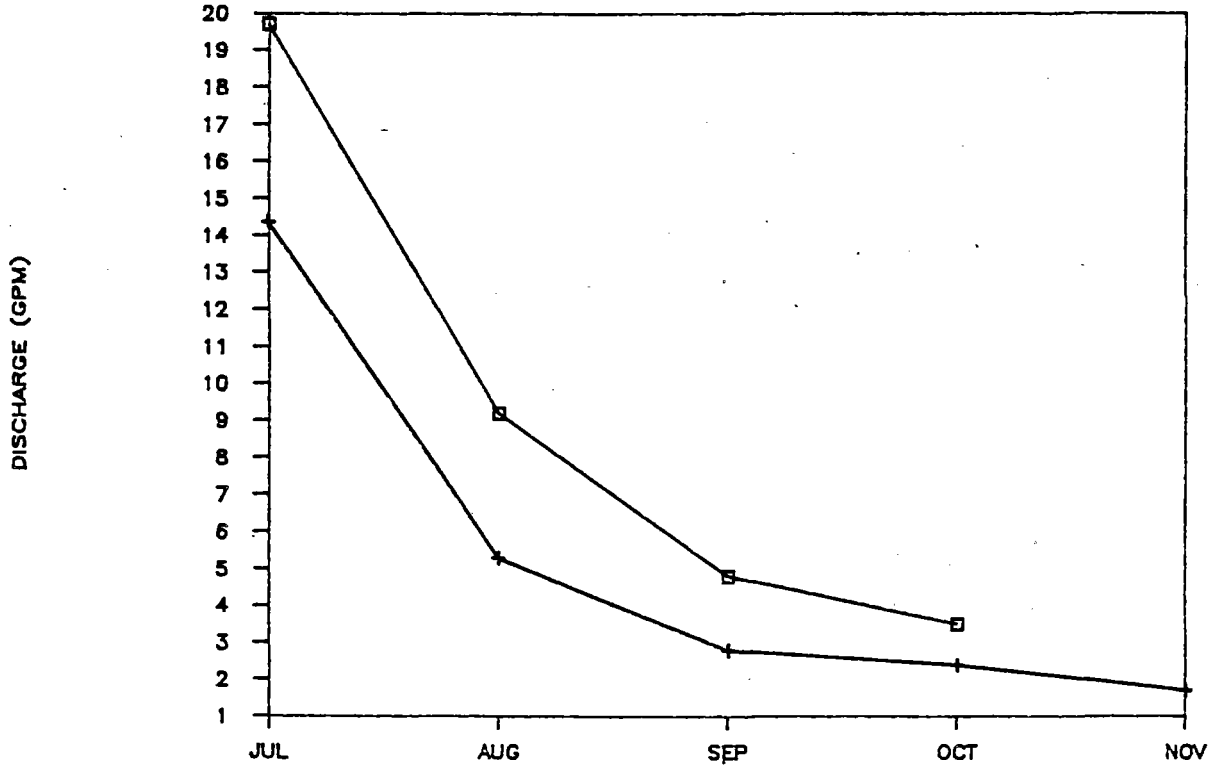
ELK SPRINGS

DISCHARGE RECESSION STUDY



SHEBA SPRINGS

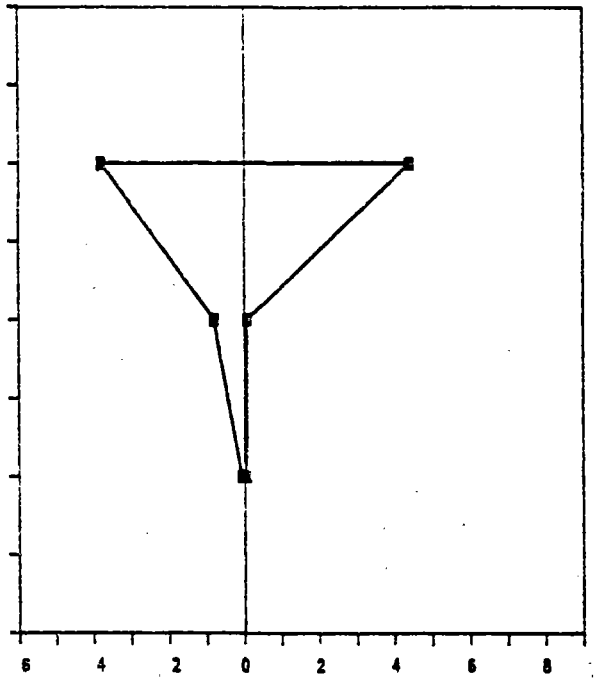
DISCHARGE RECESSION STUDY



FLAGSTAFF LIMESTONE

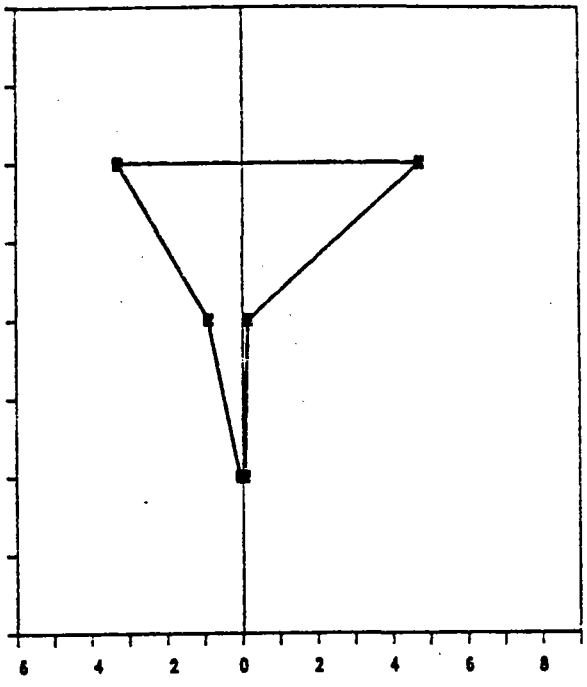
SHEBA SP

7-10-85



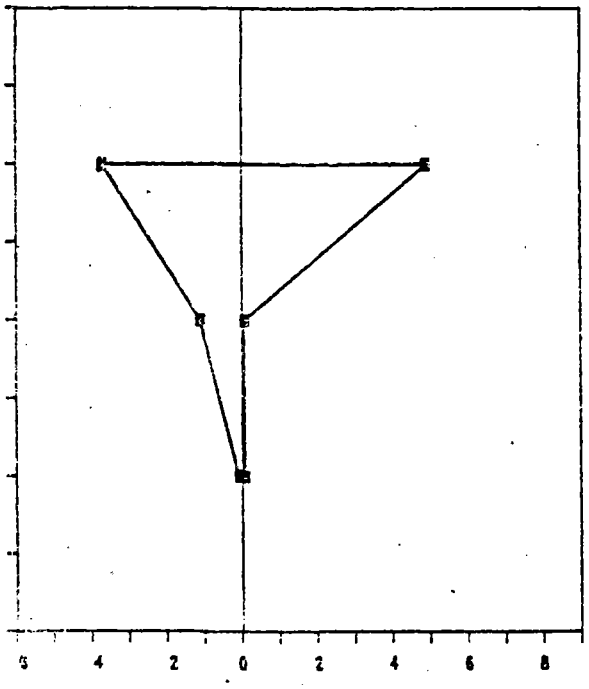
SHEBA SP

10-9-85



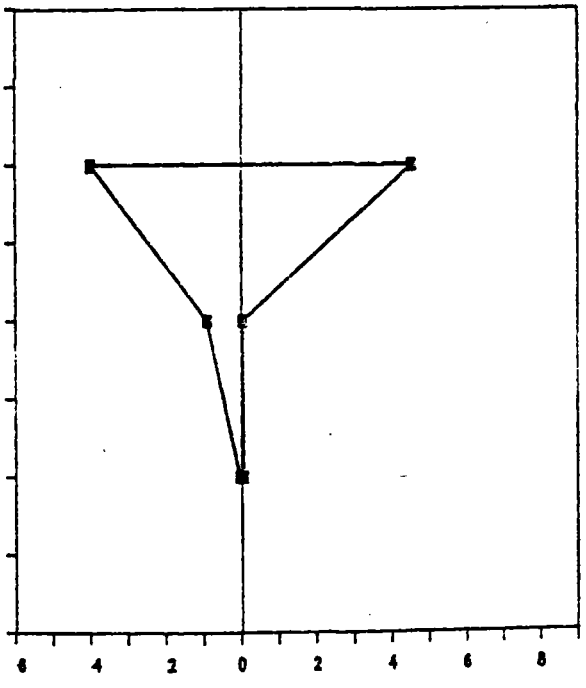
79-35

7-10-85



PINE SP

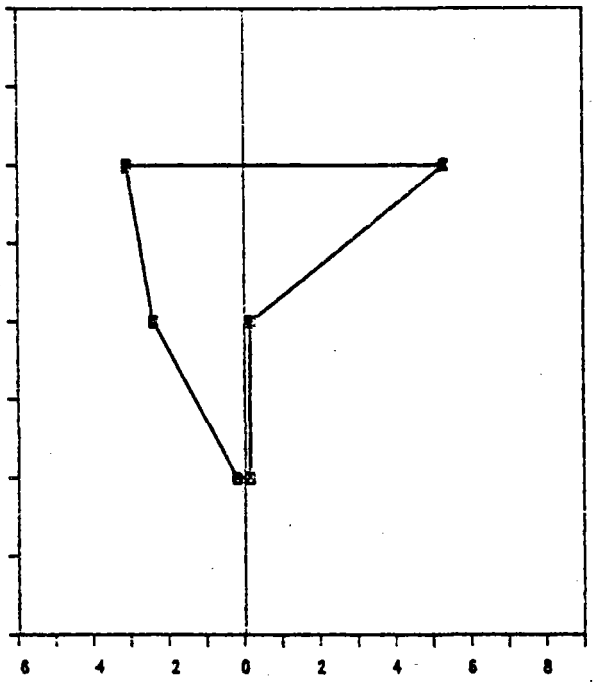
7-11-85



NORTH HORN FORMATION

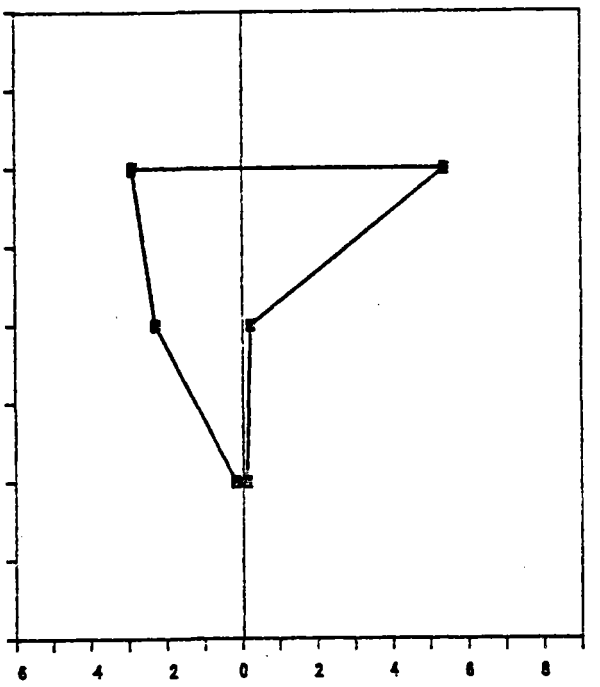
BURNT T.

7-15-85



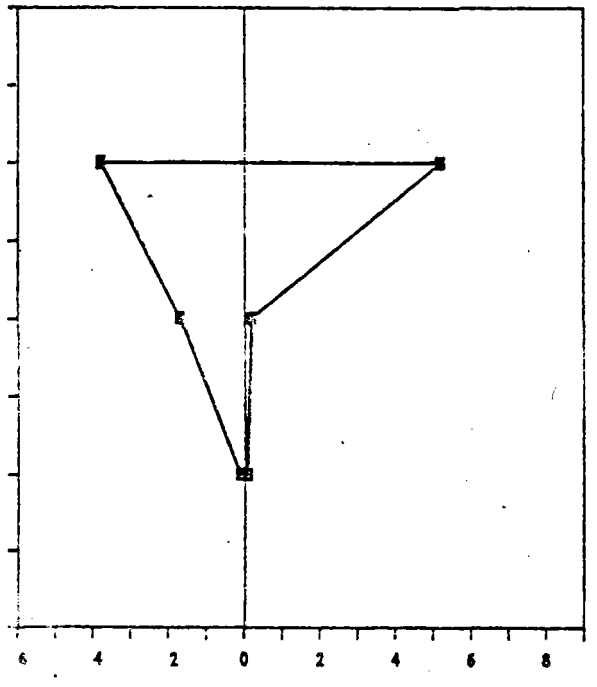
BURNT T.

10-10-85



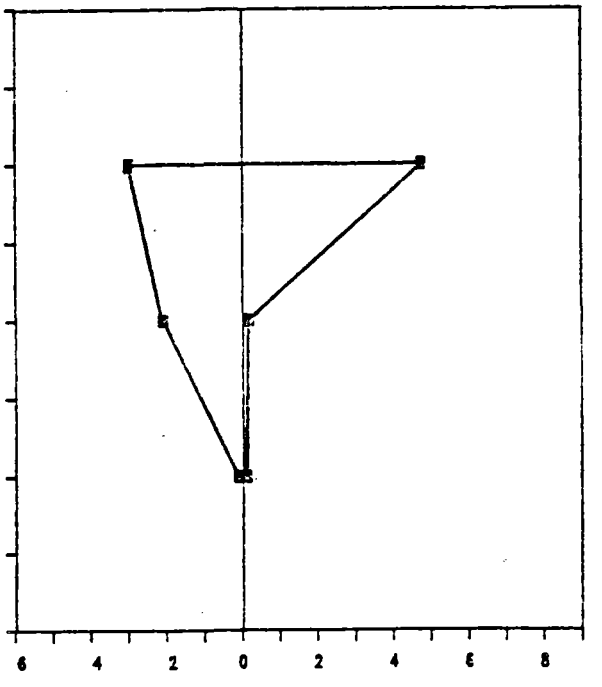
TEDS TUB

10-10-85



ELK SP

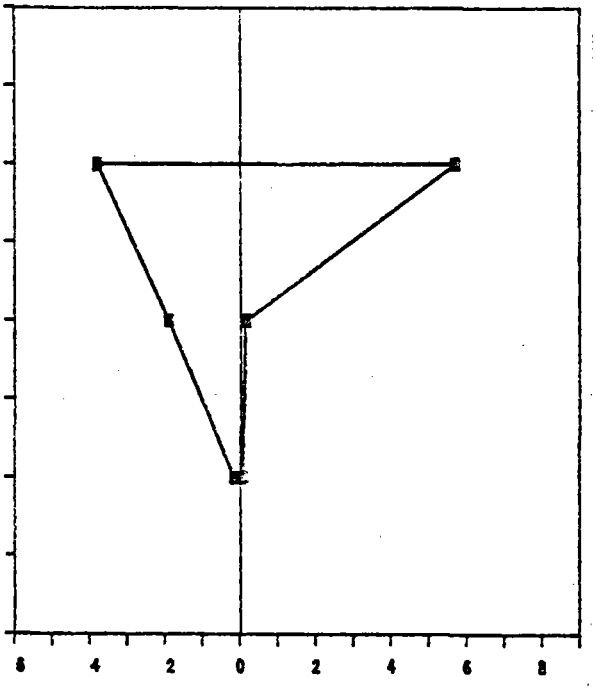
7-10-85



NORTH HORN FORMATION

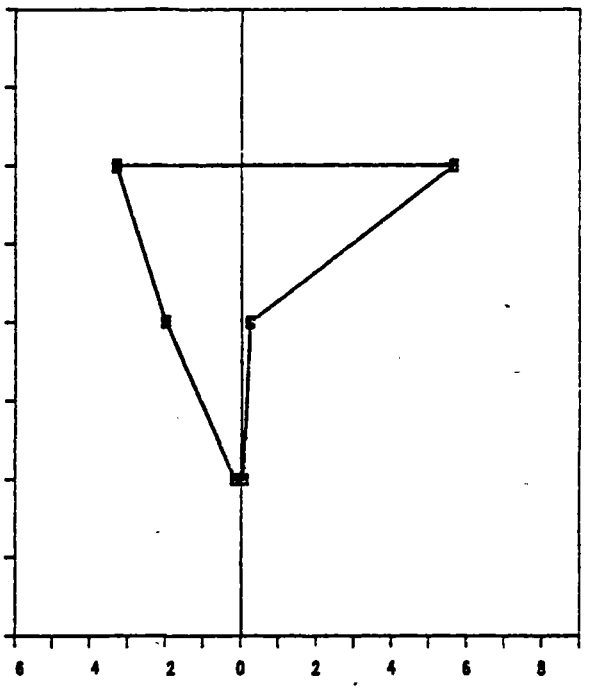
79-2

7-15-85



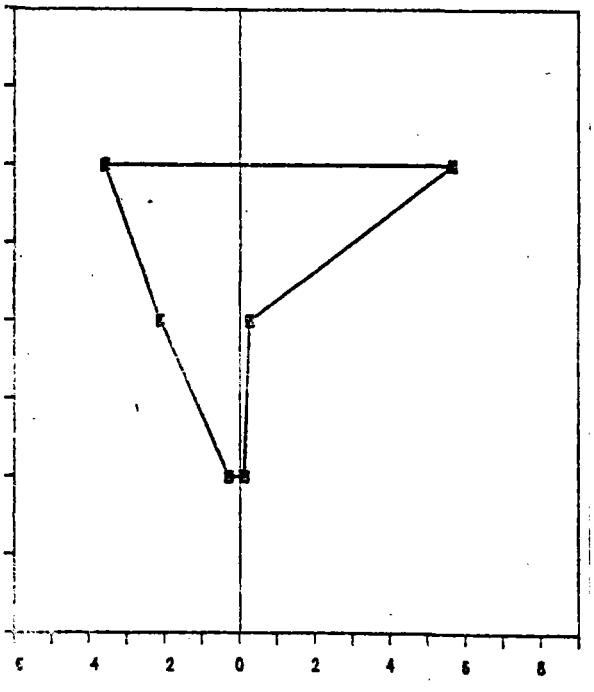
79-2

10-10-85



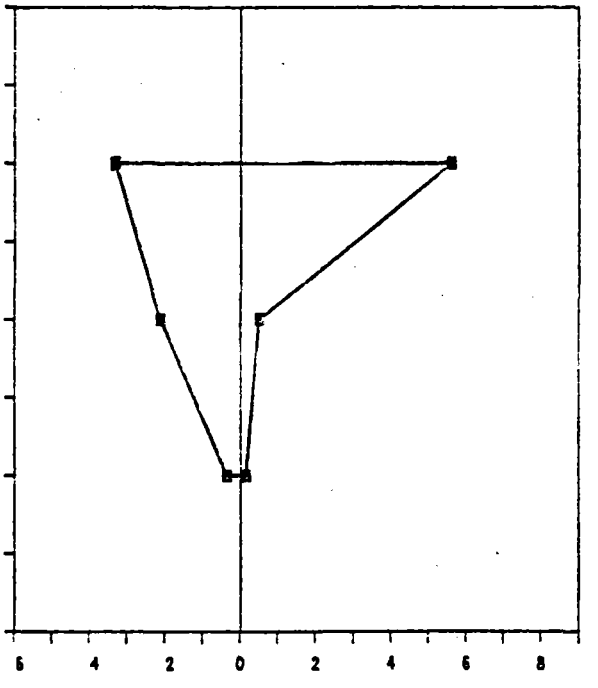
79-3

7-15-85



79-3

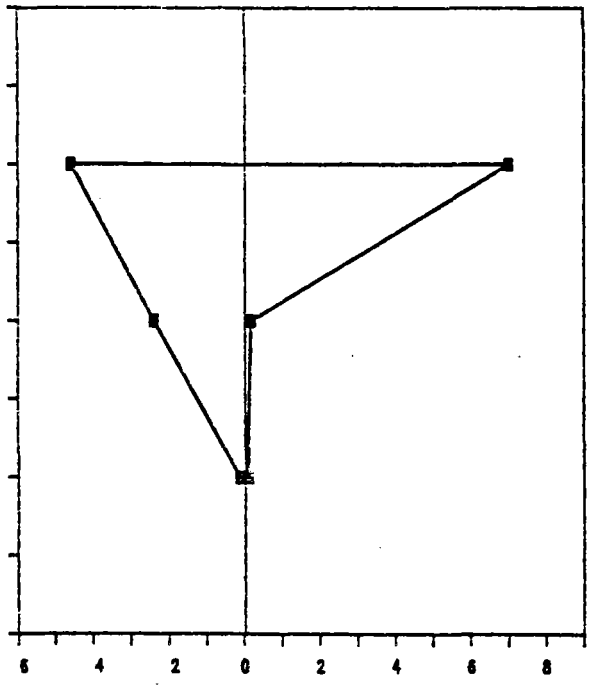
10-10-85



NORTH HORN FORMATION

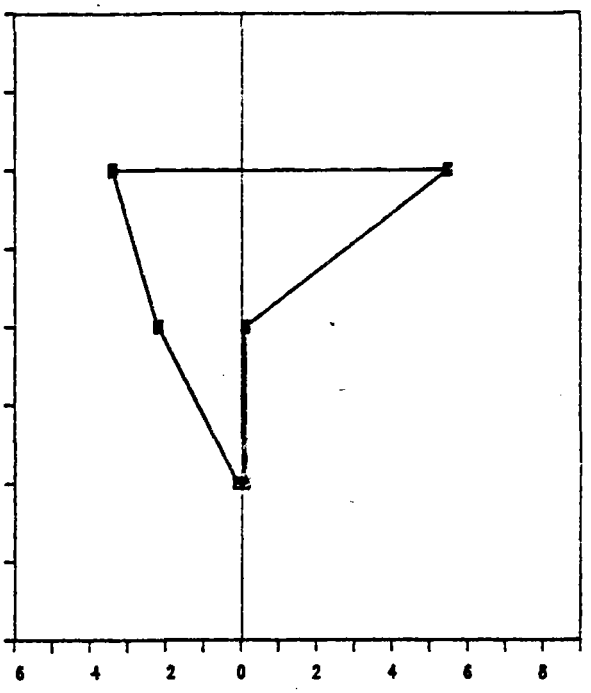
79–13

7–12–85



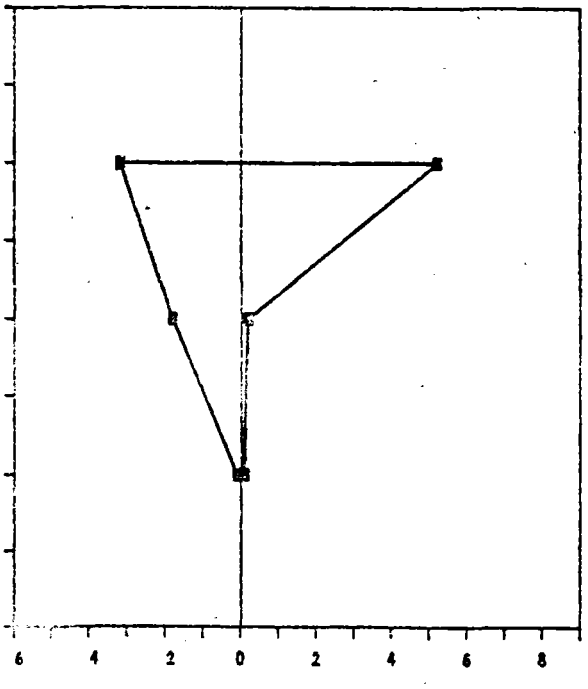
79–15

7–12–85



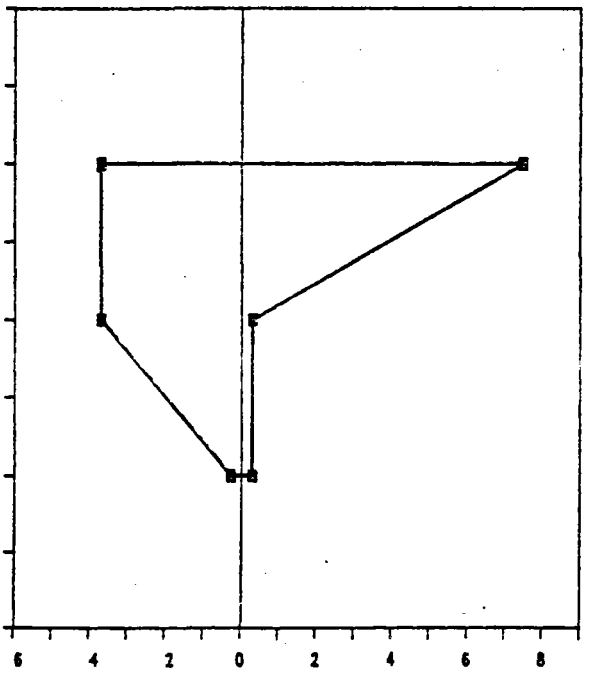
79–15

10–09–85



79–23

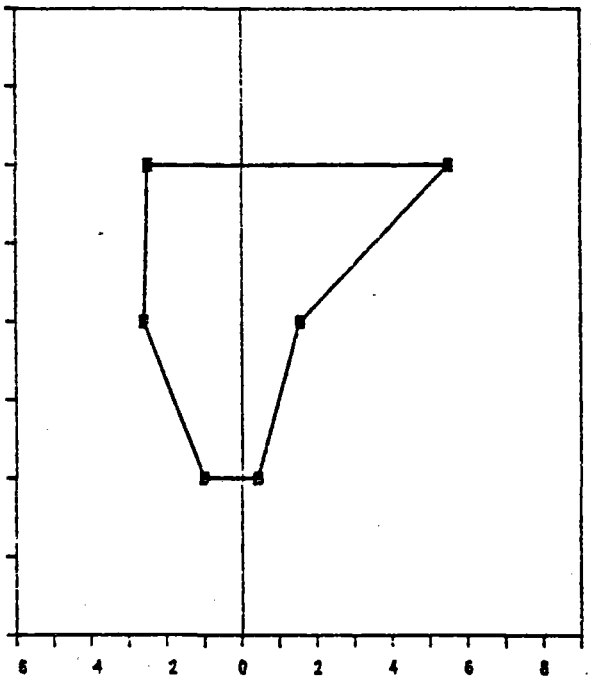
7–15–85



NORTH HORN FORMATION

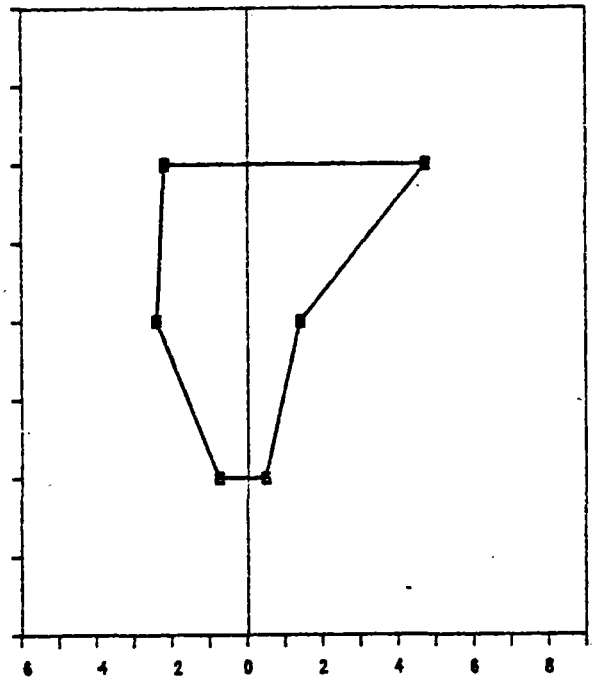
79-28

7-10-85



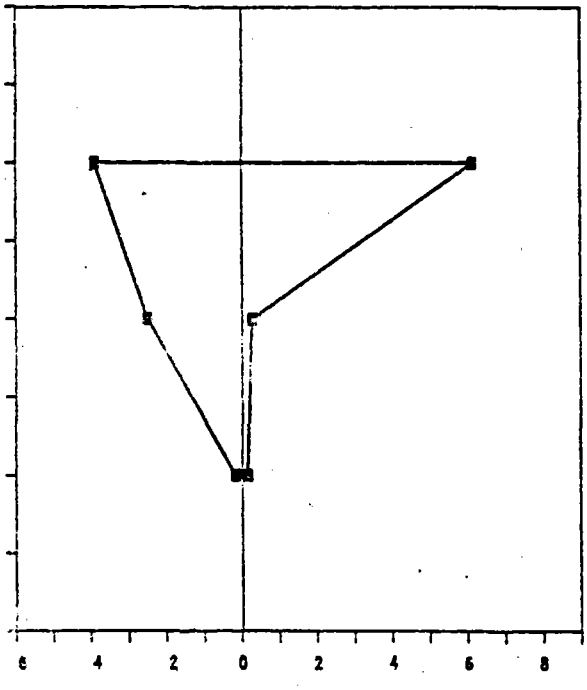
79-28

10-10-85



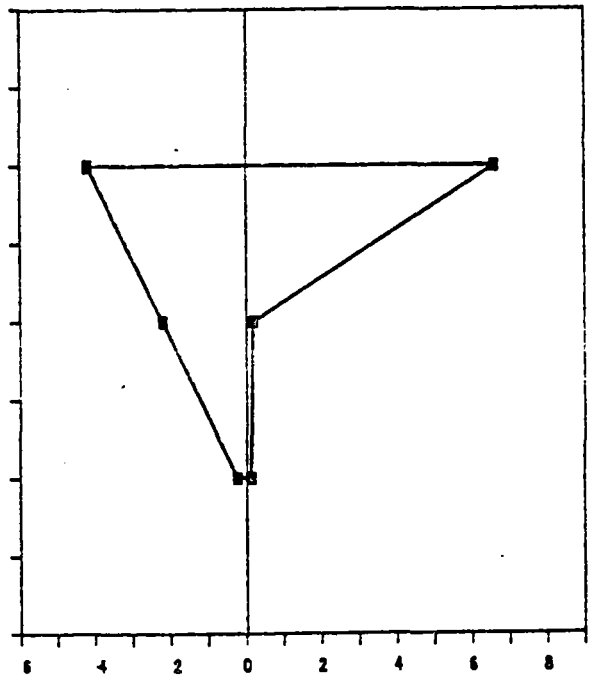
79-34

7-12-85



79-36

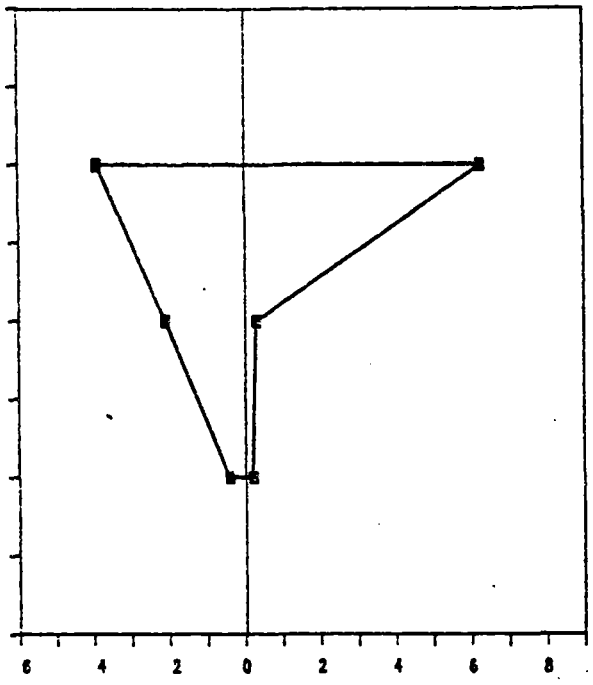
7-12-85



NORTH HORN FORMATION

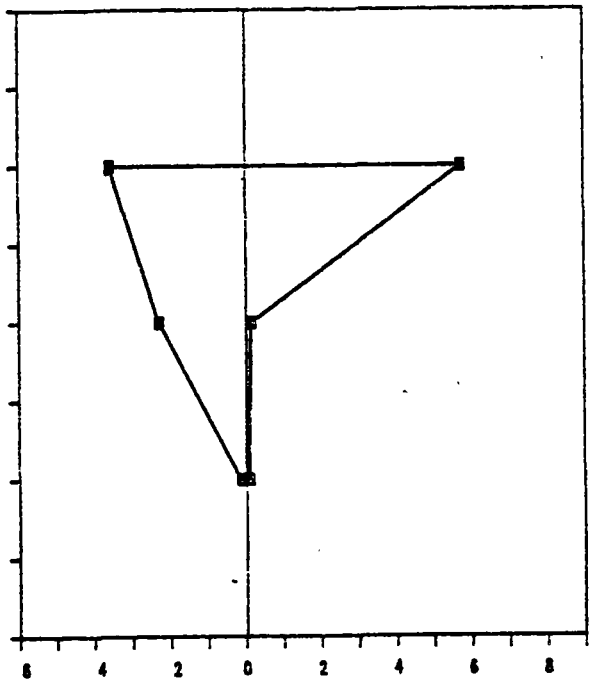
79-38

7-12-85



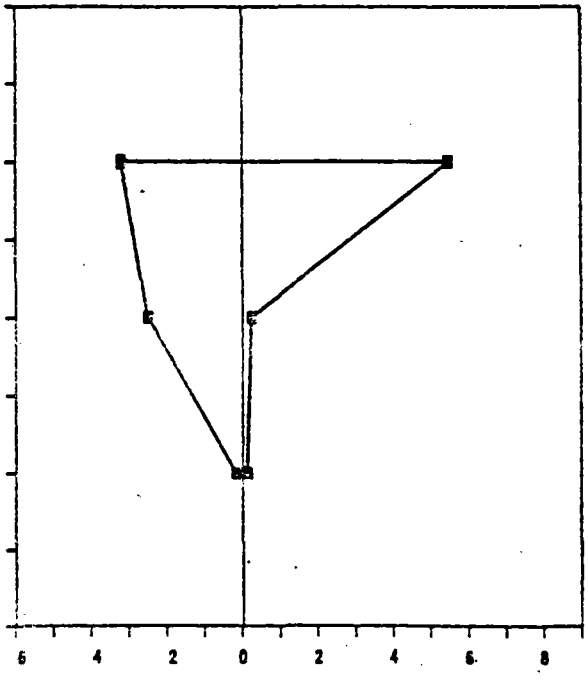
80-43

7-15-85



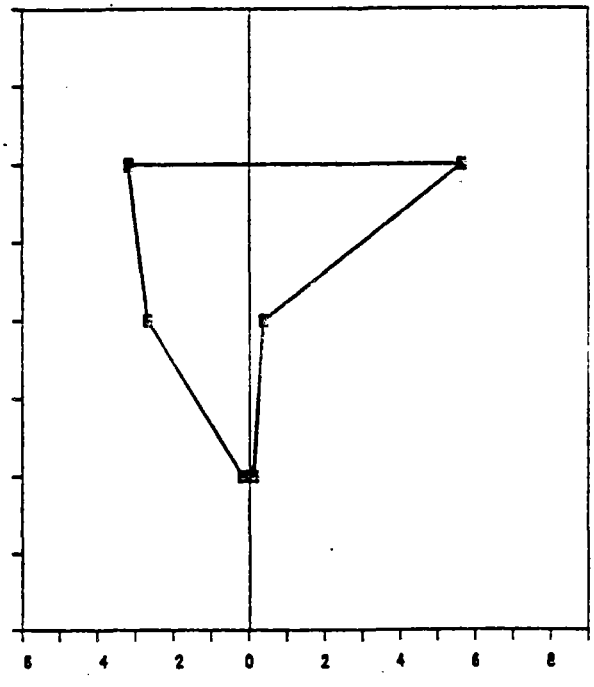
80-46

7-15-85



80-46

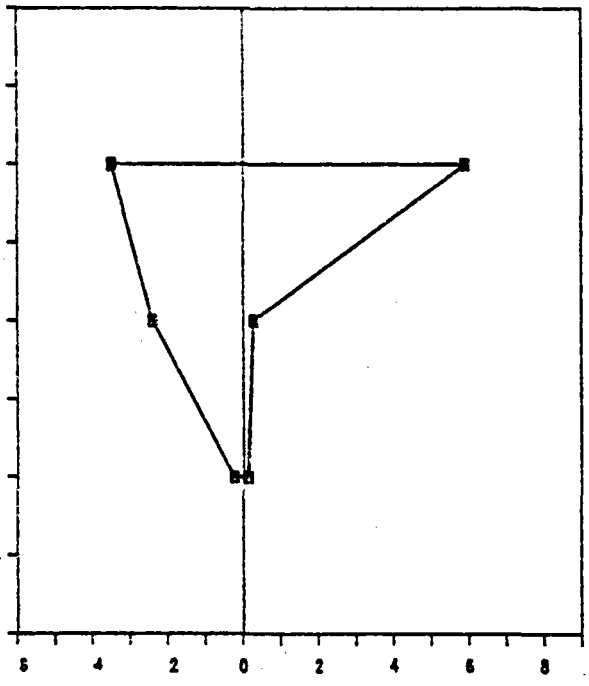
10-10-85



NORTH HORN FORMATION

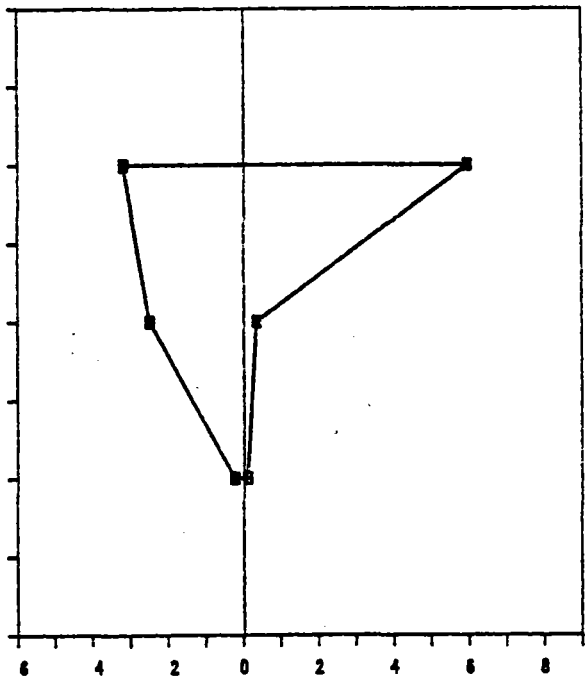
80-47

7-15-85



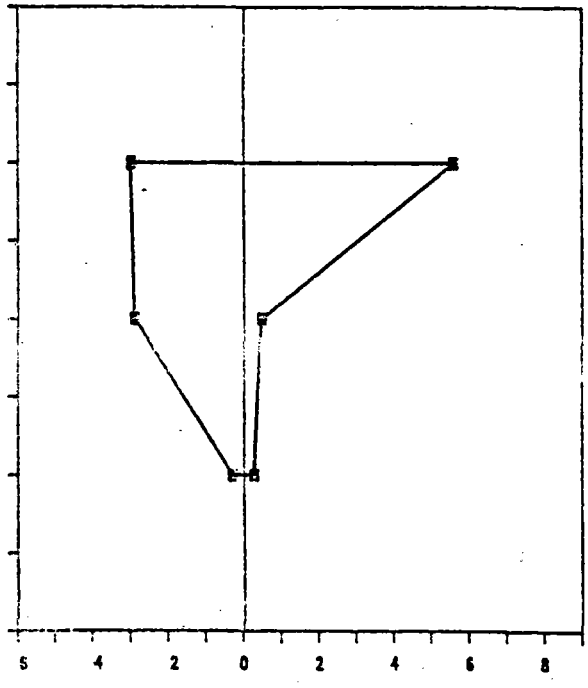
80-47

10-10-85



84-56

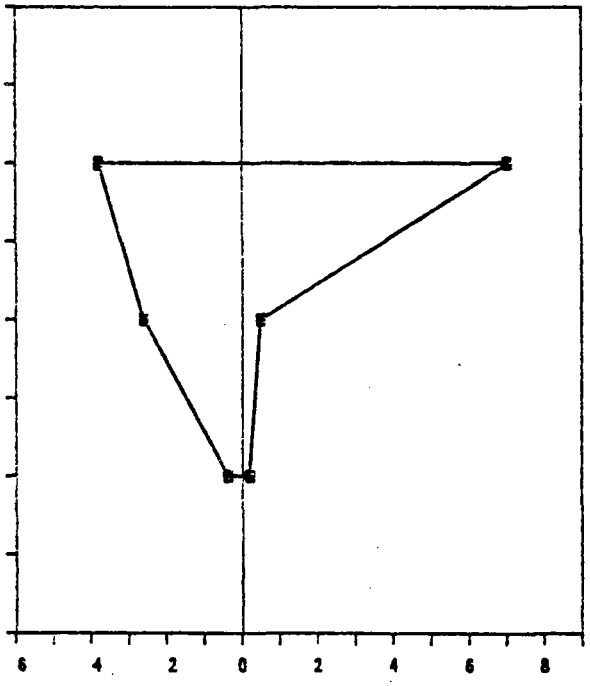
7-15-85



PRICE RIVER FORMATION

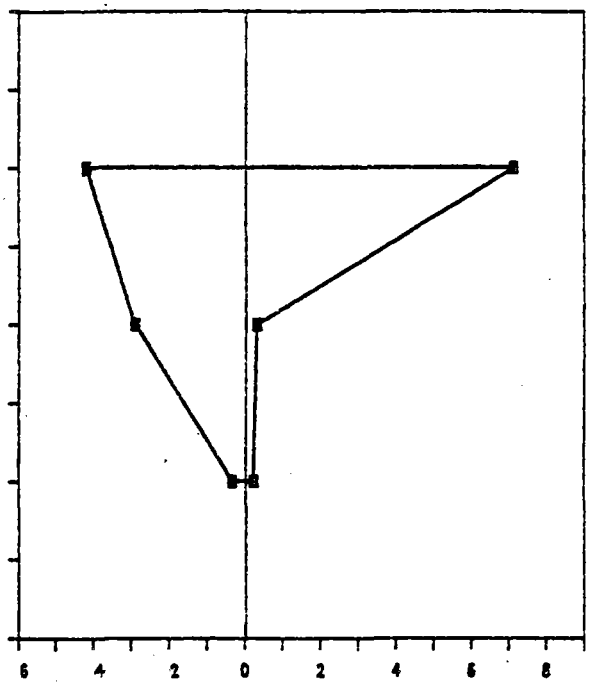
JERKWATER

10-10-85



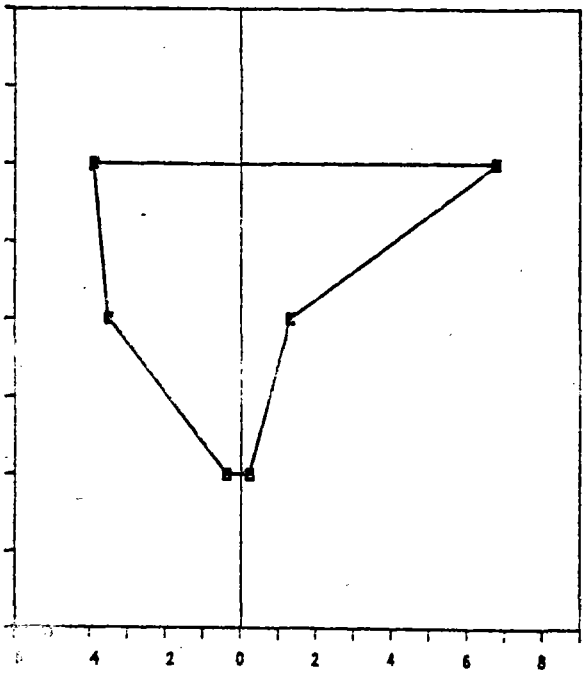
JERKWATER

7-12-85



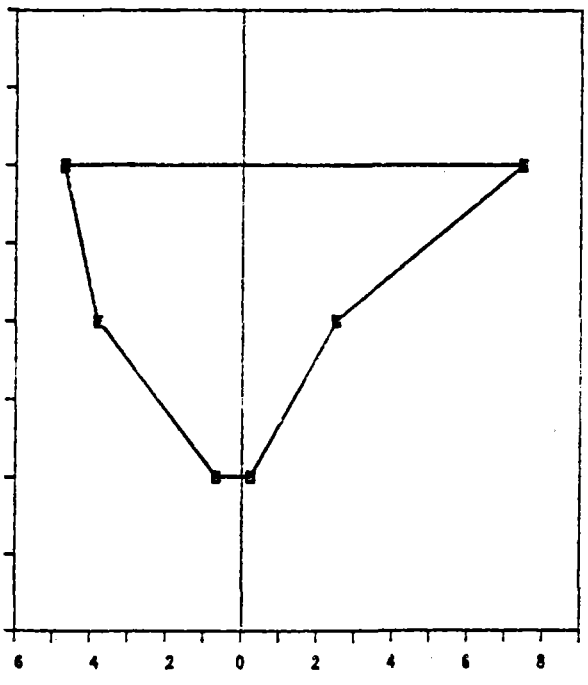
80-41

7-16-85



80-44

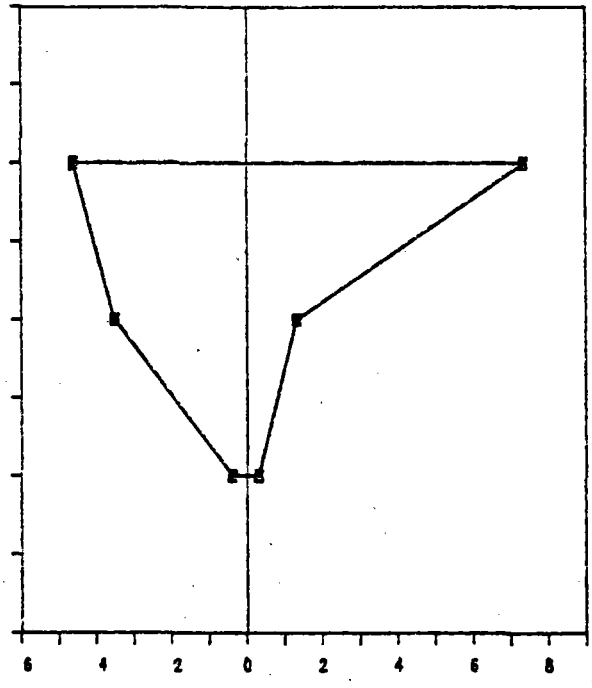
7-16-85



PRICE RIVER FORMATION

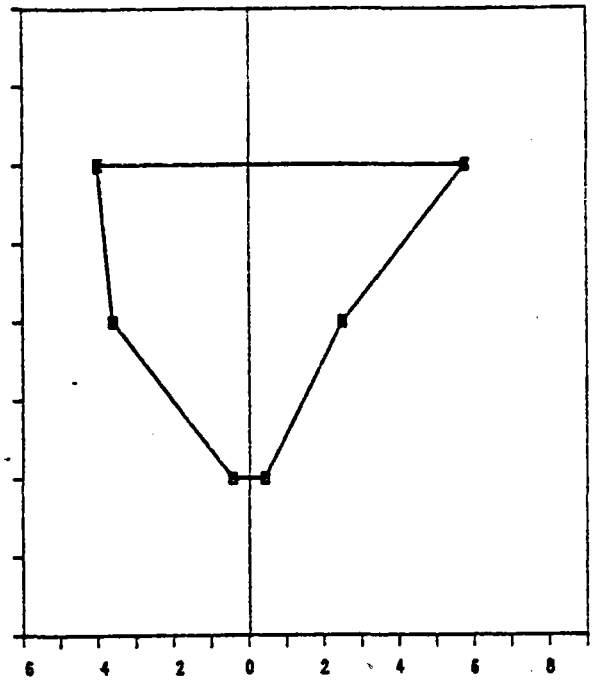
80--45

7-16-85



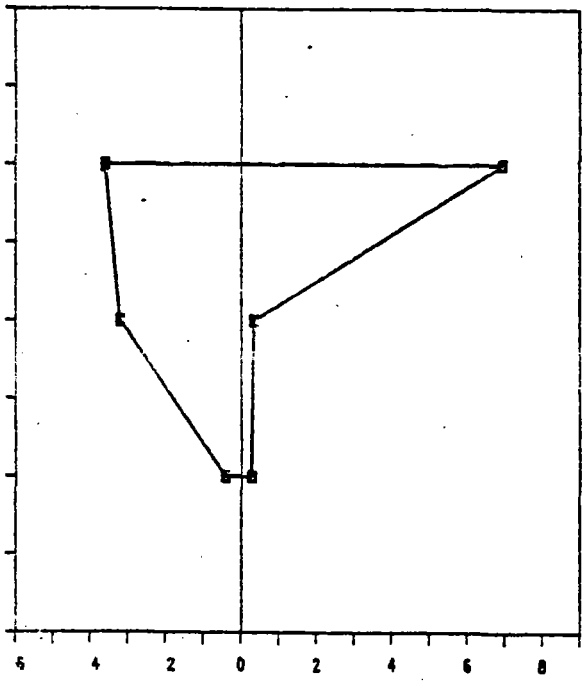
82-51

7-15-85



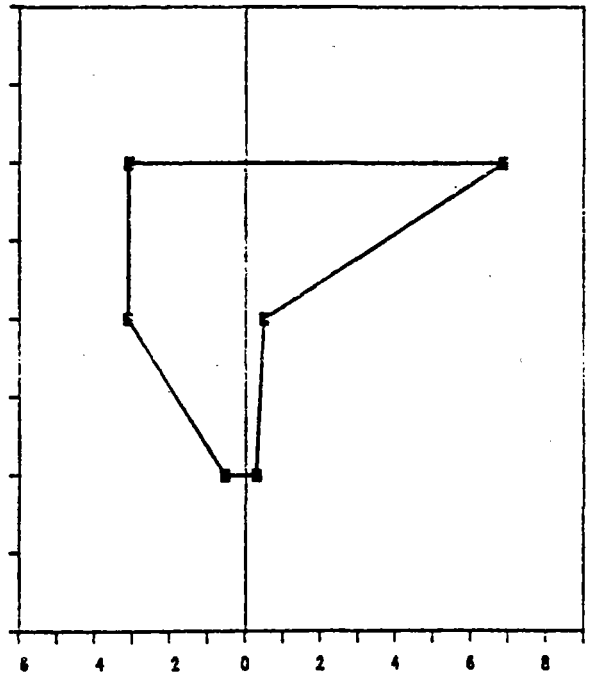
82-52

7-12-85



82-52

10-10-85



CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7264
Date Rec'd 7-16-85
Date Sampled 7-15-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
Burnt-Tree

Acidity	mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total 7-17	275 mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	323 mg/l ~~$CaCO_3$~~ HCO_3	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride 7-22	5.0 mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium 7-25	62.0 mg/l
Conductivity 7-17	550 umhos/cm	Chromium	mg/l
Fluoride 7-22	0.11 mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron (Diss.) 7-25	< 0.05 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
Nitrogen, Nitrate	mg/l	Magnesium 7-25	29.2 mg/l
Nitrogen, Nitrite	mg/l	Manganese	mg/l
Oil & Grease	mg/l	Mercury	ug/l
pH 7-17	7.25 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium 7-25	0.9 mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved 7-18	294 mg/l	Silica	mg/l
Solids, Total Suspended	7.0 mg/l	Sodium 7-25	12.0 mg/l
Sulfate 7-23	9 mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity 7-17	1.2 NTU		
Total Cations	6.04 meq/l		
Total Anions	5.84 meq/l		

Analyst: David L Ramsey

Respectfully submitted 7-26-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7227

Client: Utah Power & Light Co.
Field Office
PO Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
Elks Springs

Date Rec'd 7-11-85

Date Sampled 7-10-85

Time Sampled

Temp. 39° Flow 0.58/390.5 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total 7-15	238	mg/l $CaCO_3$	
Alkalinity, Bicarbonate	290	mg/l ~~$CaCO_3$~~ HCO_3	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride 7-22	3.8	mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity 7-15	450	umhos/cm	
Fluoride 7-22	0.14	mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH 7-15	7.25	Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	274	mg/l	
Solids, Total Suspended 7-15	7.0	mg/l	
Sulfate 7-16	8	mg/l	
Sulfide		mg/l	
Turbidity 7-15	0.4	NTU	
Total Cations	5.39	meq/l	
Total Anions	5.14	meq/l	

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 7-22	60.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron (Diss.) 7-15	< 0.05	mg/l
Lead		mg/l
Magnesium 7-22	25.5	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 7-15	1.0	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 7-15	6.2	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Yanney

Respectfully submitted 7-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7243
Date Rec'd 7-12-85
Date Sampled 7-12-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
Jerk Water

Temp. 40° Flow 2.5 GPM

Acidity	mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total 7-15	356 mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	434 mg/l ~~$CaCO_3$~~ HCO_3	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride 7-22	8.0 mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium 7-22	84.0 mg/l
Conductivity 7-15	705 umhos/cm	Chromium	mg/l
Fluoride 7-22	0.18 mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron (Diss.) 7-15	< 0.05 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
Nitrogen, Nitrate	mg/l	Magnesium 7-22	35.3 mg/l
Nitrogen, Nitrite	mg/l	Manganese	mg/l
Oil & Grease	mg/l	Mercury	ug/l
pH 7-15	7.35 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium 7-15	1.4 mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved	410 mg/l	Silica	mg/l
Solids, Total Suspended 7-15	9.0 mg/l	Sodium 7-15	19.8 mg/l
Sulfate 7-16	15 mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity 7-15	0.2 NTU		
Total Cations	7.99 meq/l		
Total Anions	7.67 meq/l		

Analyst: David L Ramsey

Respectfully submitted 7-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7240
Date Rec'd 7-12-85
Date Sampled 7-11-85
Time Sampled

Client: Utah Power & Light Co.
P.O. Box 1005
Huntington, Utah 84528
Field Office

Sample ID: East Mountain Springs
Pine Springs

Temp. 46° Flow 3.96 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total 7-15	227	mg/l $CaCO_3$	
Alkalinity, Bicarbonate	277	mg/l $CaCO_3$ HCO_3	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride 7-22	2.0	mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity 7-15	425	umhos/cm	
Fluoride 7-22	0.13	mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH 7-15	7.30	Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved 7-15	256	mg/l	
Solids, Total Suspended	7.0	mg/l	
Sulfate 7-16	2	mg/l	
Sulfide		mg/l	
Turbidity 7-15	0.8	NTU	
Total Cations	4.98	meq/l	
Total Anions	4.65	meq/l	

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 7-22	80.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron (Diss.) 7-15	< 0.05	mg/l
Lead		mg/l
Magnesium 7-22	10.9	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 7-15	0.1	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 7-15	2.0	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Tanner

Respectfully submitted 7-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7225

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
Sheba

Date Rec'd 7-11-85

Date Sampled 7-10-85

Time Sampled _____

Acidity	_____ mg/l $CaCO_3$	Aluminum	_____ mg/l
Alkalinity, Total 7-15	220 mg/l $CaCO_3$	Arsenic	_____ mg/l
Alkalinity, Bicarbonate	268 mg/l $CaCO_3$ HCO_3	Barium	_____ mg/l
Alkalinity, Carbonate	_____ mg/l $CaCO_3$	Beryllium	_____ mg/l
Chloride 7-22	2.8 mg/l	Boron	_____ mg/l
Coliform, Fecal	_____ MPN/100 ml	Cadmium	_____ mg/l
Coliform, Total	_____ MPN/100 ml	Calcium 7-22	76.0 mg/l
Conductivity 7-15	408 umhos/cm	Chromium	_____ mg/l
Fluoride 7-22	0.14 mg/l	Copper	_____ mg/l
Hardness, Total	_____ mg/l $CaCO_3$	Iron (Diss.) 7-15	< 0.05 mg/l
Nitrogen, Ammonia	_____ mg/l	Lead	_____ mg/l
Nitrogen, Nitrate	_____ mg/l	Magnesium 7-22	9.7 mg/l
Nitrogen, Nitrite	_____ mg/l	Manganese	_____ mg/l
Oil & Grease	_____ mg/l	Mercury	_____ ug/l
pH 7-15	7.50 Units	Nickel	_____ mg/l
Phosphorus, Ortho	_____ mg/l	Potassium 7-15	0.3 mg/l
Phosphorus, Total	_____ mg/l	Selenium	_____ mg/l
Solids, Total Dissolved 7-15	239 mg/l	Silica	_____ mg/l
Solids, Total Suspended	3.0 mg/l	Sodium 7-15	3.0 mg/l
Sulfate 7-16	4 mg/l	Vanadium	_____ mg/l
Sulfide	_____ mg/l	Zinc	_____ mg/l
Turbidity	0.5 NTU		
Total Cations	4.73 meq/l		
Total Anions	4.57 meq/l		

Analyst: David L Ramsey

Respectfully submitted _____ 7/23/85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7265
Date Rec'd 7-16-85
Date Sampled 7-15-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs 79-2

Temp. 42° Flow: 5.5 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total 7-17	285	mg/l $CaCO_3$
Alkalinity, Bicarbonate	348	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride 7-22	3.1	mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 7-17	550	umhos/cm
Fluoride 7-22	0.10	mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 7-17	7.30	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved 7-18	302	mg/l
Solids, Total Suspended	2.0	mg/l
Sulfate 7-23	8	mg/l
Sulfide		mg/l
Turbidity 7-17	0.6	NTU
Total Cations	6.09	meq/l
Total Anions	5.97	meq/l

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 7-25	76.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron (Diss.) 7-25	< 0.05	mg/l
Lead		mg/l
Magnesium 7-25	23.1	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 7-25	0.3	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 7-25	8.8	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David L. Janusz

Respectfully submitted [signature] 7-26-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7260
Date Rec'd 7-16-85
Date Sampled 7-15-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs 79-3

Temp. 41° Flow: 4.6 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total	283	mg/l $CaCO_3$	
Alkalinity, Bicarbonate 7-17	345	mg/l ~~$CaCO_3$~~ HCO_3	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride 7-22	4.8	mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity 7-17	595	umhos/cm	
Fluoride 7-22	0.16	mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH 7-17	7.60	Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	316	mg/l	
Solids, Total Suspended 7-18	6.0	mg/l	
Sulfate 7-23	14	mg/l	
Sulfide		mg/l	
Turbidity 7-17	1.1	NTU	
Total Cations	6.42	meq/l	
Total Anions	6.10	meq/l	

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 7-25	72.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron (Diss.) 7-25	< 0.05	mg/l
Lead		mg/l
Magnesium 7-25	25.5	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 7-25	0.9	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 7-25	16.2	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David L. Jamison

Respectfully submitted 7-26-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7246

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs 79-13

Date Rec'd 7-12-85

Date Sampled 7-12-85

Time Sampled _____

Temp. 49°

Flow 13.0 GPM

Acidity	_____ mg/l $CaCO_3$	Aluminum	_____ mg/l
Alkalinity, Total 7-15	350 mg/l $CaCO_3$	Arsenic	_____ mg/l
Alkalinity, Bicarbonate	427 mg/l ~~$CaCO_3$~~ HCO_3	Barium	_____ mg/l
Alkalinity, Carbonate	_____ mg/l $CaCO_3$	Beryllium	_____ mg/l
Chloride 7-22	3.7 mg/l	Boron	_____ mg/l
Coliform, Fecal	_____ MPN/100 ml	Cadmium	_____ mg/l
Coliform, Total	_____ MPN/100 ml	Calcium 7-22	92.0 mg/l
Conductivity 7-15	680 umhos/cm	Chromium	_____ mg/l
Fluoride 7-22	0.09 mg/l	Copper	_____ mg/l
Hardness, Total	_____ mg/l $CaCO_3$	Iron (Diss.) 7-15	< 0.05 mg/l
Nitrogen, Ammonia	_____ mg/l	Lead	_____ mg/l
ogen, Nitrate	_____ mg/l	Magnesium 7-22	29.2 mg/l
Nitrogen, Nitrite	_____ mg/l	Manganese	_____ mg/l
Oil & Grease	_____ mg/l	Mercury	_____ ug/l
pH 7-15	7.20 Units	Nickel	_____ mg/l
Phosphorus, Ortho	_____ mg/l	Potassium 7-15	1.2 mg/l
Phosphorus, Total	_____ mg/l	Selenium	_____ mg/l
Solids, Total Dissolved 7-15	359 mg/l	Silica	_____ mg/l
Solids, Total Suspended	15.0 mg/l	Sodium 7-15	6.2 mg/l
Sulfate 7-16	9 mg/l	Vanadium	_____ mg/l
Sulfide	_____ mg/l	Zinc	_____ mg/l
Turbidity 7-15	2.9 NTU		
Total Cations	7.30 meq/l		
Total Anions	7.30 meq/l		

Analyst: David A Janney

Respectfully submitted 7-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab No. 7241

Client: Utah Power & Light Co.
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs 79-15

Date Rec'd 7-12-85

Date Sampled 7-12-85

Time Sampled

Field Office

Temp. 40° Flow 18.2 GPM

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total 7-15	273	mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate	333	mg/l $CaCO_3$/HCO_3	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride 7-22	4.3	mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium 7-22	68.0	mg/l
Conductivity 7-15	500	umhos/cm	Chromium		mg/l
Fluoride 7-22	0.21	mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron (Diss.) 7-15	<0.05	mg/l
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium 7-22	26.7	mg/l
Nitrogen, Nitrite		mg/l	Manganese		mg/l
Oil & Grease		mg/l	Mercury		ug/l
pH 7-15	7.50	Units	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium 7-15	0.9	mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	291	mg/l	Silica		mg/l
Solids, Total Suspended 7-15	9.0	mg/l	Sodium 7-15	4.9	mg/l
Sulfate 7-16	6	mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity 7-15	0.5	NTU			
Total Cations	5.83	meq/l			
Total Anions	5.72	meq/l			

Analyst: David A Ramus

Respectfully submitted 7-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7261
Date Rec'd 7-16-85
Date Sampled 7-15-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
79-23

Acidity		mg/l $CaCO_3$	
Alkalinity, Total 7-17	374	mg/l $CaCO_3$	
Alkalinity, Bicarbonate	456	mg/l ~~$CaCO_3$~~ HCO_3	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride 7-22	10.7	mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity 7-17	750	umhos/cm	
Fluoride 7-22	0.11	mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH 7-17	7.65	Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved 7-18	410	mg/l	
Solids, Total Suspended	4.0	mg/l	
Sulfate 7-23	15	mg/l	
Sulfide		mg/l	
Turbidity 7-17	0.4	NTU	
Total Cations	8.08	meq/l	
Total Anions	8.10	meq/l	

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 7-25	74.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron (Diss.) 7-25	<0.05	mg/l
Lead		mg/l
Magnesium 7-25	45.0	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 7-25	0.6	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 7-25	15.5	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David L. Ramsey

Respectfully submitted 7-26-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7226
Date Rec'd 7-11-85
Date Sampled 7-10-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
79-28 Flag Lake

Temp. 41°

Flow 8.6 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total 7-15	275	mg/l $CaCO_3$	
Alkalinity, Bicarbonate	335	mg/l $CaCO_3$ HCO_3	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride 7-22	15.2	mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity 7-15	700	umhos/cm	
Fluoride 7-22	0.12	mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH 7-15	7.20	Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved 7-15	405	mg/l	
Solids, Total Suspended	3.01	mg/l	
Sulfate 7-16	75	mg/l	
Sulfide		mg/l	
Turbidity 7-15	0.4	NTU	
Total Cations	7.76	meq/l	
Total Anions	7.50	meq/l	

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 7-22	50.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron (Diss.) 7-15	< 0.05	mg/l
Lead		mg/l
Magnesium 7-22	31.6	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 7-15	2.7	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 7-15	59.6	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Jones

Respectfully submitted 7-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7242

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs 79-34

Date Rec'd 7-12-85

Date Sampled 7-12-85

Time Sampled _____

Temp. 40° Flow 18.5 GPM

Acidity	_____ mg/l $CaCO_3$	Aluminum	_____ mg/l
Alkalinity, Total 7-15	307 mg/l $CaCO_3$	Arsenic	_____ mg/l
Alkalinity, Bicarbonate	374 mg/l ~~$CaCO_3$~~ HCO_3	Barium	_____ mg/l
Alkalinity, Carbonate	_____ mg/l $CaCO_3$	Beryllium	_____ mg/l
Chloride 7-22	6.2 mg/l	Boron	_____ mg/l
Coliform, Fecal	_____ MPN/100 ml	Cadmium	_____ mg/l
Coliform, Total	_____ MPN/100 ml	Calcium 7-22	78.0 mg/l
Conductivity 7-15	600 umhos/cm	Chromium	_____ mg/l
Fluoride 7-22	0.16 mg/l	Copper	_____ mg/l
Hardness, Total	_____ mg/l $CaCO_3$	Iron (Diss.) 7-15	<0.05 mg/l
Nitrogen, Ammonia	_____ mg/l	Lead	_____ mg/l
Nitrogen, Nitrate	_____ mg/l	Magnesium 7-22	30.4 mg/l
Nitrogen, Nitrite	_____ mg/l	Manganese	_____ mg/l
Oil & Grease	_____ mg/l	Mercury	_____ ug/l
pH 7-15	7.40 Units	Nickel	_____ mg/l
Phosphorus, Ortho	_____ mg/l	Potassium 7-15	1.4 mg/l
Phosphorus, Total	_____ mg/l	Selenium	_____ mg/l
Solids, Total Dissolved	342 mg/l	Silica	_____ mg/l
Solids, Total Suspended 7-15	8.0 mg/l	Sodium 7-15	8.5 mg/l
Sulfate 7-16	14 mg/l	Vanadium	_____ mg/l
Sulfide	_____ mg/l	Zinc	_____ mg/l
Turbidity 7-15	1.0 NTU		
Total Cations	6.80 meq/l		
Total Anions	6.62 meq/l		

Analyst: David A Ramsey

Respectfully submitted 7-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7228

Client: Utah Power & Light Co.
Field Office,
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
79-35

Date Rec'd 7-11-85

Date Sampled 7-10-85

Time Sampled _____

Temp. 39.5° Flow 10.5 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total	7-15	245 mg/l $CaCO_3$	
Alkalinity, Bicarbonate		299 mg/l ~~$CaCO_3$~~ HCO_3	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride	7-22	3.0 mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	7-15	453 umhos/cm	
Fluoride	7-22	0.13 mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	7-15	7.30 Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved		272 mg/l	
Solids, Total Suspended	7-15	7.0 mg/l	
Sulfate	7-16	4 mg/l	
Sulfide		mg/l	
Turbidity	7-15	0.8 NTU	
Total Cations		4.96 meq/l	
Total Anions		5.07 meq/l	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium	7-22	74.0 mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron (Diss.)	7-15	< 0.05 mg/l	
Lead		mg/l	
Magnesium	7-22	13.4 mg/l	
Manganese		mg/l	
Mercury		ug/l	
Nickel		mg/l	
Potassium	7-15	0.1 mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium	7-15	3.7 mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Analyst: David A Jones

Respectfully submitted [signature] 7-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7247
Date Rec'd 7-12-85
Date Sampled 7-12-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
PO Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
79-36

Temp. 39° Flow 8.1 GPM

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total 7-15	330	mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate	402	mg/l $CaCO_3$ / HCO_3	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride 7-22	5.3	mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium 7-22	84.0	mg/l
Conductivity 7-15	670	umhos/cm	Chromium		mg/l
Fluoride 7-22	0.10	mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron (Diss.) 7-15	< 0.05	mg/l
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium 7-22	26.8	mg/l
Nitrogen, Nitrite		mg/l	Manganese		mg/l
Oil & Grease		mg/l	Mercury		ug/l
pH 7-15	7.25	Units	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium 7-15	1.2	mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	342	mg/l	Silica		mg/l
Solids, Total Suspended 7-15	14.0	mg/l	Sodium 7-15	12.3	mg/l
Sulfate 7-16	10	mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity 7-15	1.5	NTU			
Total Cations	6.96	meq/l			
Total Anions	6.97	meq/l			

Analyst: David A. Ramsey

Respectfully submitted 7-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7244

Client: Utah Power & Light Co.
Field Office
PO Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs 79-38

Date Rec'd 7-12-85

Date Sampled 7-12-85

Time Sampled

Temp. 44° Flow 4.7 GPM

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total	7-15 313	mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate	382	mg/l ~~$CaCO_3$~~ HCO_3	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride	7-22 7.8	mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium	7-22 78.0	mg/l
Conductivity	7-15 650	umhos/cm	Chromium		mg/l
Fluoride	7-22 0.21	mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron (Diss.)	7-15 <0.05	mg/l
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium	7-22 25.5	mg/l
Nitrogen, Nitrite		mg/l	Manganese		mg/l
Oil & Grease		mg/l	Mercury		ug/l
pH	7-15 7.30	Units	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium	7-15 1.3	mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	7-15 348	mg/l	Silica		mg/l
Solids, Total Suspended	67.0	mg/l	Sodium	7-15 23.8	mg/l
Sulfate	7-16 15	mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity	7-15 15.0	NTU			
Total Cations	7.06	meq/l			
Total Anions	6.80	meq/l			

Analyst: David L Janney

Respectfully submitted 7-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7269
Date Rec'd 7-16-85
Date Sampled 7-16-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
79-40

Temp. 40° Flow: 5.6 GPM

Acidity	mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total 7-17	346 mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	422 mg/l ~~$CaCO_3$~~ HCO_3	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride 7-22	6.6 mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium 7-25	82.0 mg/l
Conductivity 7-17	705 umhos/cm	Chromium	mg/l
Fluoride 7-22	0.10 mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron (Diss.) 7-25	<0.05 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
Nitrogen, Nitrate	mg/l	Magnesium 7-25	26.7 mg/l
Nitrogen, Nitrite	mg/l	Manganese	mg/l
Oil & Grease	mg/l	Mercury	ug/l
pH 7-17	7.85 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium 7-25	0.8 mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved	380 mg/l	Silica	mg/l
Solids, Total Suspended 7-18	3.0 mg/l	Sodium 7-25	38.2 mg/l
Sulfate 7-23	24 mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity 7-17	0.6 NTU		
Total Cations	7.98 meq/l		
Total Anions	7.62 meq/l		

Analyst: David K. Tanner

Respectfully submitted 7-26-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7266
Date Rec'd 7-16-85
Date Sampled 7-16-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
80-41

Temp. 39° Flow: 5.8 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total	339	mg/l $CaCO_3$
Alkalinity, Bicarbonate 7-17	413	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride 7-22	8.6	mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 7-17	780	umhos/cm
Fluoride 7-22	0.22	mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 7-17	7.55	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	449	mg/l
Solids, Total Suspended 7-18	7.0	mg/l
Sulfate 7-23	64	mg/l
Sulfide		mg/l
Turbidity 7-17	1.1	NTU
Total Cations	8.36	meq/l
Total Anions	8.36	meq/l

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 7-25	78.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron (Diss.) 7-25	< 0.05	mg/l
Lead		mg/l
Magnesium 7-25	42.6	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 7-25	0.7	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 7-25	21.6	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A. Janusz

Respectfully submitted [signature] 7-26-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7263
Date Rec'd 7-16-85
Date Sampled 7-15-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
80-43

Temp. 43°

Flow: 6.6 GPM

Acidity	mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total 7-17	286 mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	349 mg/l ~~$CaCO_3$~~ HCO_3	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride 7-22	3.1 mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium 7-25	72.0 mg/l
Conductivity 7-17	580 umhos/cm	Chromium	mg/l
Fluoride 7-22	0.12 mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron (Diss.) 7-25	<0.05 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
Nitrogen, Nitrate	mg/l	Magnesium 7-25	28.0 mg/l
Nitrogen, Nitrite	mg/l	Manganese	mg/l
Oil & Grease	mg/l	Mercury	ug/l
pH 7-17	7.35 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium 7-25	0.6 mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved	311 mg/l	Silica	mg/l
Solids, Total Suspended 7-18	1.0 mg/l	Sodium 7-25	7.8 mg/l
Sulfate 7-23	7 mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity 7-17	0.2 NTU		
Total Cations	6.25 meq/l		
Total Anions	5.97 meq/l		

Analyst: David L. Ramsey

Respectfully submitted 7-26-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7270
Date Rec'd 7-16-85
Date Sampled 7-16-85
Time Sampled

Client: Utah Power & Light Co.
P.O. Box 1005
Huntington, Utah 84528
Field Office

Sample ID: East Mountain Springs
80-44

Temp. 40° Flow: 5.5 GPM

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total 7-17	372	mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate	454	mg/l ~~$CaCO_3$~~ HCO_3	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride 7-22	8.5	mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium 7-25	94.0	mg/l
Conductivity 7-17	910	umhos/cm	Chromium		mg/l
Fluoride 7-22	0.10	mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron (Diss.) 7-25	<0.05	mg/l
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium 7-25	46.2	mg/l
Nitrogen, Nitrite		mg/l	Manganese		mg/l
Oil & Grease		mg/l	Mercury		ug/l
pH 7-17	7.50	Units	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium 7-25	0.8	mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved 7-18	530	mg/l	Silica		mg/l
Solids, Total Suspended	37.5	mg/l	Sodium 7-25	40.9	mg/l
Sulfate 7-23	120	mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity 7-17	3.0	NTU			
Total Cations	10.29	meq/l			
Total Anions	10.19	meq/l			

Analyst: David L Janney

Respectfully submitted 7-26-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7267
Date Rec'd 7-16-85
Date Sampled 7-16-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
80-45

Temp. 45° Flow: 0.46 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total	7-17	367 mg/l $CaCO_3$	
Alkalinity, Bicarbonate		448 mg/l ~~$CaCO_3$~~ HCO_3	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride	7-22	11.2 mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	7-17	805 umhos/cm	
Fluoride	7-22	0.10 mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	7-17	7.60 Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved		458 mg/l	
Solids, Total Suspended	7-18	20.0 mg/l	
Sulfate	7-23	64 mg/l	
Sulfide		mg/l	
Turbidity	7-17	4.3 NTU	
Total Cations		9.10 meq/l	
Total Anions		9.00 meq/l	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium	7-25	92.0 mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron	(Diss.) 7-25	< 0.05 mg/l	
Lead		mg/l	
Magnesium	7-25	42.6 mg/l	
Manganese		mg/l	
Mercury		ug/l	
Nickel		mg/l	
Potassium	7-25	1.1 mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium	7-25	22.5 mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Analyst: David L. Janusz

Respectfully submitted 7-26-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7262
Date Rec'd 7-16-85
Date Sampled 7-15-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
80-46

Temp. 42° Flow: 18.2 GPM

Acidity			mg/l $CaCO_3$
Alkalinity, Total	7-17	273	mg/l $CaCO_3$
Alkalinity, Bicarbonate		333	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate			mg/l $CaCO_3$
Chloride	7-22	4.7	mg/l
Coliform, Fecal			MPN/100 ml
Coliform, Total			MPN/100 ml
Conductivity	7-17	560	umhos/cm
Fluoride	7-22	0.18	mg/l
Hardness, Total			mg/l $CaCO_3$
Nitrogen, Ammonia			mg/l
Nitrogen, Nitrate			mg/l
Nitrogen, Nitrite			mg/l
Oil & Grease			mg/l
pH	7-17	7.30	Units
Phosphorus, Ortho			mg/l
Phosphorus, Total			mg/l
Solids, Total Dissolved	7-18	298	mg/l
Solids, Total Suspended		2.0	mg/l
Sulfate	7-23	12	mg/l
Sulfide			mg/l
Turbidity	7-17	0.5	NTU
Total Cations		6.16	meq/l
Total Anions		5.85	meq/l

Aluminum			mg/l
Arsenic			mg/l
Barium			mg/l
Beryllium			mg/l
Boron			mg/l
Cadmium			mg/l
Calcium	7-25	64.0	mg/l
Chromium			mg/l
Copper			mg/l
Iron (Diss.)	7-25	< 0.05	mg/l
Lead			mg/l
Magnesium	7-25	30.4	mg/l
Manganese			mg/l
Mercury			ug/l
Nickel			mg/l
Potassium	7-25	0.5	mg/l
Selenium			mg/l
Silica			mg/l
Sodium	7-25	10.3	mg/l
Vanadium			mg/l
Zinc			mg/l

Analyst: David A. Janney

Respectfully submitted [signature] 7-26-85

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7259
Date Rec'd 7-16-85
Date Sampled 7-15-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs 80-47

Temp. 40° Flow: 12.5 GPM

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total	294	mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate 7-17	359	mg/l ~~$CaCO_3$~~ HCO_3	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride 7-22	4.9	mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium 7-25	70.0	mg/l
Conductivity 7-17	600	umhos/cm	Chromium		mg/l
Fluoride 7-22	0.13	mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron (Diss.) 7-25	< 0.05	mg/l
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium 7-25	29.2	mg/l
Nitrogen, Nitrite		mg/l	Manganese		mg/l
Oil & Grease		mg/l	Mercury		ug/l
pH 7-17	7.60	Units	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium 7-25	0.7	mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved 7-18	313	mg/l	Silica		mg/l
Solids, Total Suspended	2.0	mg/l	Sodium 7-25	14.6	mg/l
Sulfate 7-23	14	mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity 7-17	0.4	NTU			
Total Cations	6.55	meq/l			
Total Anions	6.32	meq/l			

Analyst: David A Parsons

Respectfully submitted 7-26-85

Certified Environmental Laboratory

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7268

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
82-51

Date Rec'd 7-16-85

Date Sampled 7-15-85

Time Sampled _____

Temp. 47°

FLOW: 3.8 GPM

Acidity	_____ mg/l $CaCO_3$	Aluminum	_____ mg/l
Alkalinity, Total 7-17	289 mg/l $CaCO_3$	Arsenic	_____ mg/l
Alkalinity, Bicarbonate	352 mg/l ~~$CaCO_3$~~ HCO_3	Barium	_____ mg/l
Alkalinity, Carbonate	_____ mg/l $CaCO_3$	Beryllium	_____ mg/l
Chloride 7-22	15.0 mg/l	Boron	_____ mg/l
Coliform, Fecal	_____ MPN/100 ml	Cadmium	_____ mg/l
Coliform, Total	_____ MPN/100 ml	Calcium 7-25	80.0 mg/l
Conductivity 7-17	805 umhos/cm	Chromium	_____ mg/l
Fluoride 7-22	0.09 mg/l	Copper	_____ mg/l
Hardness, Total	_____ mg/l $CaCO_3$	Iron (Diss.) 7-25	<0.05 mg/l
Nitrogen, Ammonia	_____ mg/l	Lead	_____ mg/l
Nitrogen, Nitrate	_____ mg/l	Magnesium 7-25	43.8 mg/l
Nitrogen, Nitrite	_____ mg/l	Manganese	_____ mg/l
Oil & Grease	_____ mg/l	Mercury	_____ ug/l
pH 7-17	7.60 Units	Nickel	_____ mg/l
Phosphorus, Ortho	_____ mg/l	Potassium 7-25	0.5 mg/l
Phosphorus, Total	_____ mg/l	Selenium	_____ mg/l
Solids, Total Dissolved	477 mg/l	Silica	_____ mg/l
Solids, Total Suspended 7-18	12.0 mg/l	Sodium 7-25	26.1 mg/l
Sulfate 7-23	120 mg/l	Vanadium	_____ mg/l
Sulfide	_____ mg/l	Zinc	_____ mg/l
Turbidity 7-17	2.2 NTU		
Total Cations	8.74 meq/l		
Total Anions	8.71 meq/l		

Analyst: David A Ramsey

Respectfully submitted 7-26-85

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7245
Date Rec'd 7-12-85
Date Sampled 7-12-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
PO Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs 82-52

Temp. 39° Flow 32.1 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total 7-15	348	mg/l $CaCO_3$
Alkalinity, Bicarbonate	424	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride 7-22	10.2	mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 7-15	700	umhos/cm
Fluoride 7-22	0.16	mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 7-15	7.25	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved 7-15	369	mg/l
Solids, Total Suspended	10.0	mg/l
Sulfate 7-16	17	mg/l
Sulfide		mg/l
Turbidity 7-15	0.5	NTU
Total Cations	7.86	meq/l
Total Anions	7.62	meq/l

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 7-22	72.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron (Diss.) 7-15	< 0.05	mg/l
Lead		mg/l
Magnesium 7-22	38.9	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 7-15	1.8	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 7-15	23.5	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Yanuz

Respectfully submitted [signature] 7-23-85

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7229
Date Rec'd 7-11-85
Date Sampled 7-10-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
84-53

Temp. 40° Flow 16.0 GPM

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total	7-15 269	mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate	328	mg/l ~~$CaCO_3$~~ HCO_3	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride	7-22 8.3	mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium	7-22 56.0	mg/l
Conductivity	7-15 585	umhos/cm	Chromium		mg/l
Fluoride	7-22 0.10	mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron (Diss.)	7-15 < 0.05	mg/l
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium	7-22 31.6	mg/l
Nitrogen, Nitrite		mg/l	Manganese		mg/l
Oil & Grease		mg/l	Mercury		ug/l
pH	7-15 7.25	Units	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium	7-15 1.6	mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	311	mg/l	Silica		mg/l
Solids, Total Suspended	7-15 24.0	mg/l	Sodium	7-15 18.1	mg/l
Sulfate	7-16 15	mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity	7-15 5.2	NTU			
Total Cations	6.22	meq/l			
Total Anions	5.94	meq/l			

Analyst: David L Janney

Respectfully submitted 7-23-85

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STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7258
Date Rec'd 7-16-85
Date Sampled 7-16-85
Time Sampled

Client: Utah Power & Light Co.
P.O. Box 1005
Huntington, Utah 84528

Field Office

Sample ID: East Mountain Springs 84-55

Temp. 40°

Flow: 2.7 GPM

Acidity			mg/l $CaCO_3$
Alkalinity, Total	7-17	331	mg/l $CaCO_3$
Alkalinity, Bicarbonate		404	mg/l ~~$CaCO_3$~~ HCl_3
Alkalinity, Carbonate			mg/l $CaCO_3$
Chloride	7-22	8.7	mg/l
Coliform, Fecal			MPN/100 ml
Coliform, Total			MPN/100 ml
Conductivity	7-17	750	umhos/cm
Fluoride	7-22	0.11	mg/l
Hardness, Total			mg/l $CaCO_3$
Nitrogen, Ammonia			mg/l
Nitrogen, Nitrate			mg/l
Nitrogen, Nitrite			mg/l
Oil & Grease			mg/l
pH	7-17	7.55	Units
Phosphorus, Ortho			mg/l
Phosphorus, Total			mg/l
Solids, Total Dissolved	7-18	425	mg/l
Solids, Total Suspended		4.0	mg/l
Sulfate	7-23	66	mg/l
Sulfide			mg/l
Turbidity	7-17	0.6	NTU
Total Cations		8.25	meq/l
Total Anions		8.25	meq/l

Aluminum			mg/l
Arsenic			mg/l
Barium			mg/l
Beryllium			mg/l
Boron			mg/l
Cadmium			mg/l
Calcium	7-25	80.0	mg/l
Chromium			mg/l
Copper			mg/l
Iron	(Diss.) 7-25	<0.05	mg/l
Lead			mg/l
Magnesium	7-25	41.3	mg/l
Manganese			mg/l
Mercury			ug/l
Nickel			mg/l
Potassium	7-25	0.8	mg/l
Selenium			mg/l
Silica		–	mg/l
Sodium	7-25	19.1	mg/l
Vanadium			mg/l
Zinc			mg/l

Analyst: David A Janusz

Respectfully submitted [signature] 7-26-85

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7257
Date Rec'd 7-16-85
Date Sampled 7-15-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
84-56

Temp. 41° Flow 4.7 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total 7-17	279	mg/l $CaCO_3$
Alkalinity, Bicarbonate	340	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride 7-22	9.5	mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 7-17	600	umhos/cm
Fluoride 7-22	0.11	mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 7-17	7.55	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved 7-18	331	mg/l
Solids, Total Suspended	1.0	mg/l
Sulfate 7-23	23	mg/l
Sulfide		mg/l
Turbidity 7-17	0.4	NTU
Total Cations	6.70	meq/l
Total Anions	6.34	meq/l

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 7-25	60.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron (Diss.) 7-25	<0.05	mg/l
Lead		mg/l
Magnesium 7-25	35.3	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 7-25	0.8	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 7-25	17.9	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Janusz

Respectfully submitted [signature] 7-26-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7579
Date Rec'd 10-11-85
Date Sampled 10-10-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
Burnt Tree

Temp. 42° Flow 15.0 GPM

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total 10-14	269	mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate	328	mg/~~l $CaCO_3$~~ HCO_3	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride 10-11	4.3	mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium 10-22	58.0	mg/l
Conductivity 10-14	520	umhos/cm	Chromium		mg/l
Fluoride 10-15	0.21	mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron		mg/l
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium 10-22	27.9	mg/l
Nitrogen, Nitrite		mg/l	Manganese		mg/l
Oil & Grease		mg/l	Mercury		ug/l
pH 10-14	7.40	Units	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium 10-18	0.5	mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	279	mg/l	Silica		mg/l
Solids, Total Suspended 10-11	3.0	mg/l	Sodium 10-18	11.0	mg/l
Sulfate	11	mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity 10-14	0.4	NTU			
Total Cations	5.69	meq/l			
Total Anions	5.74	meq/l			

Aanlyst: David A Ramsey

Respectfully submitted 10-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7582
Date Rec'd 10-11-85
Date Sampled 10-10-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
Jerk Water

Temp. 40° Flow 1.9 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total 10-14	352	mg/l $CaCO_3$
Alkalinity, Bicarbonate	429	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride 10-11	7.6	mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 10-14	706	umhos/cm
Fluoride 10-15	0.21	mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 10-14	7.45	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	386	mg/l
Solids, Total Suspended 10-11	2.0	mg/l
Sulfate 10-18	24	mg/l
Sulfide		mg/l
Turbidity 10-14	0.7	NTU
Total Cations	7.37	meq/l
Total Anions	7.76	meq/l

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 10-22	76.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron		mg/l
Lead		mg/l
Magnesium 10-22	31.6	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 10-18	0.7	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 10-18	22.0	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Janusz

Respectfully submitted [signature] 10-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7586
Date Rec'd 10-11-85
Date Sampled 10-09-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
Sheba Springs

Temp. 43° Flow 2.4 GPM

Acidity			mg/l $CaCO_3$
Alkalinity, Total	10-14	236	mg/l $CaCO_3$
Alkalinity, Bicarbonate		288	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate			mg/l $CaCO_3$
Chloride	10-11	2.4	mg/l
Coliform, Fecal			MPN/100 ml
Coliform, Total			MPN/100 ml
Conductivity	10-14	450	umhos/cm
Fluoride	10-15	0.15	mg/l
Hardness, Total			mg/l $CaCO_3$
Nitrogen, Ammonia			mg/l
Nitrogen, Nitrate			mg/l
Nitrogen, Nitrite			mg/l
Oil & Grease			mg/l
pH	10-14	7.60	Units
Phosphorus, Ortho			mg/l
Phosphorus, Total			mg/l
Solids, Total Dissolved		240	mg/l
Solids, Total Suspended	10-11	13.0	mg/l
Sulfate		8	mg/l
Sulfide			mg/l
Turbidity	10-14	2.5	NTU
Total Cations		4.33	meq/l
Total Anions		4.96	meq/l

Aluminum			mg/l
Arsenic			mg/l
Barium			mg/l
Beryllium			mg/l
Boron			mg/l
Cadmium			mg/l
Calcium	10-22	66.0	mg/l
Chromium			mg/l
Copper			mg/l
Iron			mg/l
Lead			mg/l
Magnesium	10-22	10.9	mg/l
Manganese			mg/l
Mercury			ug/l
Nickel			mg/l
Potassium	10-18	0.2	mg/l
Selenium			mg/l
Silica			mg/l
Sodium	10-18	3.1	mg/l
Vanadium			mg/l
Zinc			mg/l

Analyst: David A. Janus

Respectfully submitted [signature] 10-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7580
Date Rec'd 10-11-85
Date Sampled 10-10-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
Ted's Tub

Temp. 39° Flow 16.2 GPM

Acidity			mg/l $CaCO_3$
Alkalinity, Total	10-14	259	mg/l $CaCO_3$
Alkalinity, Bicarbonate		316	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate			mg/l $CaCO_3$
Chloride	10-11	3.3	mg/l
Coliform, Fecal			MPN/100 ml
Coliform, Total			MPN/100 ml
Conductivity	10-14	515	umhos/cm
Fluoride	10-15	0.16	mg/l
Hardness, Total			mg/l $CaCO_3$
Nitrogen, Ammonia			mg/l
Nitrogen, Nitrate			mg/l
Nitrogen, Nitrite			mg/l
Oil & Grease			mg/l
pH	10-14	7.40	Units
Phosphorus, Ortho			mg/l
Phosphorus, Total			mg/l
Solids, Total Dissolved		297	mg/l
Solids, Total Suspended	10-11	3.0	mg/l
Sulfate	10-18	10	mg/l
Sulfide			mg/l
Turbidity	10-14	1.0	NTU
Total Cations		5.73	meq/l
Toal Anions		5.50	meq/l

Aluminum			mg/l
Arsenic			mg/l
Barium			mg/l
Beryllium			mg/l
Boron			mg/l
Cadmium			mg/l
Calcium	10-22	76.0	mg/l
Chromium			mg/l
Copper			mg/l
Iron			mg/l
Lead			mg/l
Magnesium	10-22	20.6	mg/l
Manganese			mg/l
Mercury			ug/l
Nickel			mg/l
Potassium	10-18	0.4	mg/l
Selenium			mg/l
Silica			mg/l
Sodium	10-18	5.1	mg/l
Vanadium			mg/l
Zinc			mg/l

Analyst: David A Janney

Respectfully submitted [signature] 10-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7588
Date Rec'd 10-11-85
Date Sampled 10-10-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
79-2

Temp. 41° Flow 2.6 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total 10-14	283	mg/l $CaCO_3$
Alkalinity, Bicarbonate	345	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride 10-11	2.9	mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 10-14	595	umhos/cm
Fluoride 10-15	0.18	mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 10-14	7.50	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	295	mg/l
Solids, Total Suspended 10-11	4.0	mg/l
Sulfate 10-18	12	mg/l
Sulfide		mg/l
Turbidity 10-14	0.5	NTU
Total Cations	5.70	meq/l
Total Anions	5.90	meq/l

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 10-22	66.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron		mg/l
Lead		mg/l
Magnesium 10-22	24.3	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 10-18	0.3	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 10-18	8.9	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Janney

Respectfully submitted [signature] 10-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7587
Date Rec'd 10-11-85
Date Sampled 10-10-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
79-3

Temp. 40° Flow 0.5 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total 10-14	280	mg/l $CaCO_3$
Alkalinity, Bicarbonate	342	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride 10-11	5.9	mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 10-14	610	umhos/cm
Fluoride 10-15	0.19	mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 10-14	7.30	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	315	mg/l
Solids, Total Suspended 10-11	6.0	mg/l
Sulfate 10-18	25	mg/l
Sulfide		mg/l
Turbidity 10-14	4.0	NTU
Total Cations	6.31	meq/l
Total Anions	6.30	meq/l

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 10-22	66.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron		mg/l
Lead		mg/l
Magnesium 10-22	25.5	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 10-18	1.5	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 10-18	20.0	mg/l
Vanadium		mg/l
Zinc.		mg/l

Analyst: David A Janusz

Respectfully submitted [signature] 10-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7581
Date Rec'd 10-11-85
Date Sampled 10-09-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
79-15

Temp. 41° Flow 6.3 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total 10-14	261	mg/l $CaCO_3$
Alkalinity, Bicarbonate	318	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride 10-11	3.7	mg/l
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity 10-14	515	umhos/cm
Fluoride 10-15	0.18	mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH 10-14	7.50	Units
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved 10-11	275	mg/l
Solids, Total Suspended	4.0	mg/l
Sulfate 10-18	10	mg/l
Sulfide		mg/l
Turbidity 10-14	0.8	NTU
Total Cations	5.23	meq/l
Total Anions	5.54	meq/l

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 10-22	64.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron		mg/l
Lead		mg/l
Magnesium 10-22	22.0	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 10-18	0.4	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 10-18	5.1	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Ganuss

Respectfully submitted [signature] 10-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7583
Date Rec'd 10-11-85
Date Sampled 10-10-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
79-28

Temp. 40° Flow 5.4 GPM

Acidity			mg/l $CaCO_3$
Alkalinity, Total	10-14	236	mg/l $CaCO_3$
Alkalinity, Bicarbonate		288	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate			mg/l $CaCO_3$
Chloride	10-11	17.3	mg/l
Coliform, Fecal			MPN/100 ml
Coliform, Total			MPN/100 ml
Conductivity	10-14	703	umhos/cm
Fluoride	10-15	0.34	mg/l
Hardness, Total			mg/l $CaCO_3$
Nitrogen, Ammonia			mg/l
Nitrogen, Nitrate			mg/l
Nitrogen, Nitrite			mg/l
Oil & Grease			mg/l
pH	10-14	7.40	Units
Phosphorus, Ortho			mg/l
Phosphorus, Total			mg/l
Solids, Total Dissolved		414	mg/l
Solids, Total Suspended	10-11	2.0	mg/l
Sulfate	10-18	68	mg/l
Sulfide			mg/l
Turbidity	10-14	0.9	NTU
Total Cations		6.56	meq/l
Total Anions		6.63	meq/l

Aluminum			mg/l
Arsenic			mg/l
Barium			mg/l
Beryllium			mg/l
Boron			mg/l
Cadmium			mg/l
Calcium	10-22	44.0	mg/l
Chromium			mg/l
Copper			mg/l
Iron			mg/l
Lead			mg/l
Magnesium	10-22	29.2	mg/l
Manganese			mg/l
Mercury			ug/l
Nickel			mg/l
Potassium	10-18	2.0	mg/l
Selenium			mg/l
Silica			mg/l
Sodium	10-18	44.0	mg/l
Vanadium			mg/l
Zinc			mg/l

Analyst: David A Janusz

Respectfully submitted [signature] 10-23-85

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7584

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
80-46

Date Rec'd 10-11-85

Date Sampled 10-10-85

Time Sampled _____

Temp. 42° Flow 7.1 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total	10-14	282 mg/l $CaCO_3$	
Alkalinity, Bicarbonate		344 mg/l $CaCO_3$ HCO_3	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride	10-11	4.0 mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	10-14	590 umhos/cm	
Fluoride	10-15	0.19 mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	10-14	7.30 Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	10-11	298 mg/l	
Solids, Total Suspended		4.0 mg/l	
Sulfate	10-18	18 mg/l	
Sulfide		mg/l	
Turbidity	10-14	1.0 NTU	
Total Cations		6.36 meq/l	
Total Anions		6.14 meq/l	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium	10-22	64.0 mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron		mg/l	
Lead		mg/l	
Magnesium	10-22	32.8 mg/l	
Manganese		mg/l	
Mercury		ug/l	
Nickel		mg/l	
Potassium	10-18	0.6 mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium	10-18	10.4 mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Analyst: David A Ramsey

Respectfully submitted [signature] 10-23-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7578
Date Rec'd 10-11-85
Date Sampled 10-10
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
80-47

Temp. 41° Flow 8.0 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total 10-14	297	mg/l $CaCO_3$	
Alkalinity, Bicarbonate	362	mg/l ~~$CaCO_3$~~ HCO_3	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride 10-11	4.0	mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity 10-14	600	umhos/cm	
Fluoride 10-15	0.20	mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH 10-14	7.25	Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	316	mg/l	
Solids, Total Suspended 10-11	2.0	mg/l	
Sulfate 10-18	17	mg/l	
Sulfide		mg/l	
Turbidity 10-14	0.9	NTU	
Total Cations	6.35	meq/l	
Totan Anions	6.41	meq/l	

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium 10-22	64.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron		mg/l
Lead		mg/l
Magnesium 10-22	30.4	mg/l
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 10-18	0.7	mg/l
Selenium		mg/l
Silica		mg/l
Sodium 10-18	14.6	mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Ramsey

Respectfully submitted 10-23-85

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CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7585
Date Rec'd 10-11-85
Date Sampled 10-10-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: East Mountain Springs
82-52

Temp. 40° Flow 12.0 GPM

Acidity			mg/l $CaCO_3$
Alkalinity, Total	10-14	342	mg/l $CaCO_3$
Alkalinity, Bicarbonate		417	mg/l ~~$CaCO_3$~~ HCO_3
Alkalinity, Carbonate			mg/l $CaCO_3$
Chloride	10-11	10.3	mg/l
Coliform, Fecal			MPN/100 ml
Coliform, Total			MPN/100 ml
Conductivity	10-14	703	umhos/cm
Fluoride	10-15	0.25	mg/l
Hardness, Total			mg/l $CaCO_3$
Nitrogen, Ammonia			mg/l
Nitrogen, Nitrate			mg/l
Nitrogen, Nitrite			mg/l
Oil & Grease			mg/l
pH	10-14	7.45	Units
Phosphorus, Ortho			mg/l
Phosphorus, Total			mg/l
Solids, Total Dissolved	10-14	363	mg/l
Solids, Total Suspended		2.5	mg/l
Sulfate		24	mg/l
Sulfide			mg/l
Turbidity	10-14	0.9	NTU
Total Cations		7.66	meq/l
Total Anions		7.64	meq/l

Aluminum			mg/l
Arsenic			mg/l
Barium			mg/l
Beryllium			mg/l
Boron			mg/l
Cadmium			mg/l
Calcium	10-22	62.0	mg/l
Chromium			mg/l
Copper			mg/l
Iron			mg/l
Lead			mg/l
Magnesium	10-22	38.0	mg/l
Manganese			mg/l
Mercury			ug/l
Nickel			mg/l
Potassium	10-18	0.9	mg/l
Selenium			mg/l
Silica			mg/l
Sodium	10-18	33.0	mg/l
Vanadium			mg/l
Zinc			mg/l

Analyst: David A. Janusz

Respectfully submitted [signature] 10-23-85

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APPENDIX E

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7659
Date Rec'd 11-19-85
Date Sampled 11-18-85
Time Sampled 1400

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Wilberg In-Mine
2nd S XC 11-1L

Temp. 52° Flow 0.06 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total	11-21	389 mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride	11-25	13.5 mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	11-21	1405 umhos/cm	
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	11-21	7.40 Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved		901 mg/l	
Solids, Total Suspended	11-22	8.0 mg/l	
Sulfate		385 mg/l	
Sulfide		mg/l	
Turbidity		NTU	
Total Cations		16.03 meq/l	
Total Anions		16.19 meq/l	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium	11-25	126.0 mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron		mg/l	
Lead		mg/l	
Magnesium	11-25	104.5 mg/l	
Manganese		mg/l	
Mercury		ug/l	
Nickel		mg/l	
Potassium	11-21	4.4 mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium	11-21	23.5 mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Analyst: David Davis

Respectfully submitted

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7670

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Wilberg In-Mine
4th East XC 40 2L

Date Rec'd 11-20-85

Date Sampled 11-19-85

Time Sampled 1400

Temp. 53° Flow 0.28 GPM

Acidity	____ mg/l $CaCO_3$	Aluminum	____ mg/l
Alkalinity, Total 11-21	524 mg/l $CaCO_3$	Arsenic	____ mg/l
Alkalinity, Bicarbonate	____ mg/l $CaCO_3$	Barium	____ mg/l
Alkalinity, Carbonate	____ mg/l $CaCO_3$	Beryllium	____ mg/l
Chloride 11-25	17.0 mg/l	Boron	____ mg/l
Coliform, Fecal	____ MPN/100 ml	Cadmium	____ mg/l
Coliform, Total	____ MPN/100 ml	Calcium 11-25	210.0 mg/l
Conductivity 11-21	2080 umhos/cm	Chromium	____ mg/l
Fluoride	____ mg/l	Copper	____ mg/l
Hardness, Total	____ mg/l $CaCO_3$	Iron	____ mg/l
Nitrogen, Ammonia	____ mg/l	Lead	____ mg/l
Nitrogen, Nitrate	____ mg/l	Magnesium 11-25	156.8 mg/l
Nitrogen, Nitrite	____ mg/l	Manganese	____ mg/l
Oil & Grease	____ mg/l	Mercury	____ ug/l
pH 11-21	6.70 Units	Nickel	____ mg/l
Phosphorus, Ortho	____ mg/l	Potassium 11-21	5.1 mg/l
Phosphorus, Total	____ mg/l	Selenium	____ mg/l
Solids, Total Dissolved	1502 mg/l	Silica	____ mg/l
Solids, Total Suspended 11-22	5.0 mg/l	Sodium 11-21	24.0 mg/l
Sulfate	650 mg/l	Vanadium	____ mg/l
Sulfide	____ mg/l	Zinc	____ mg/l
Turbidity	____ NTU		
Total Cations	24.57 meq/l		
Total Anions	24.51 meq/l		

Analyst: David L Crowson

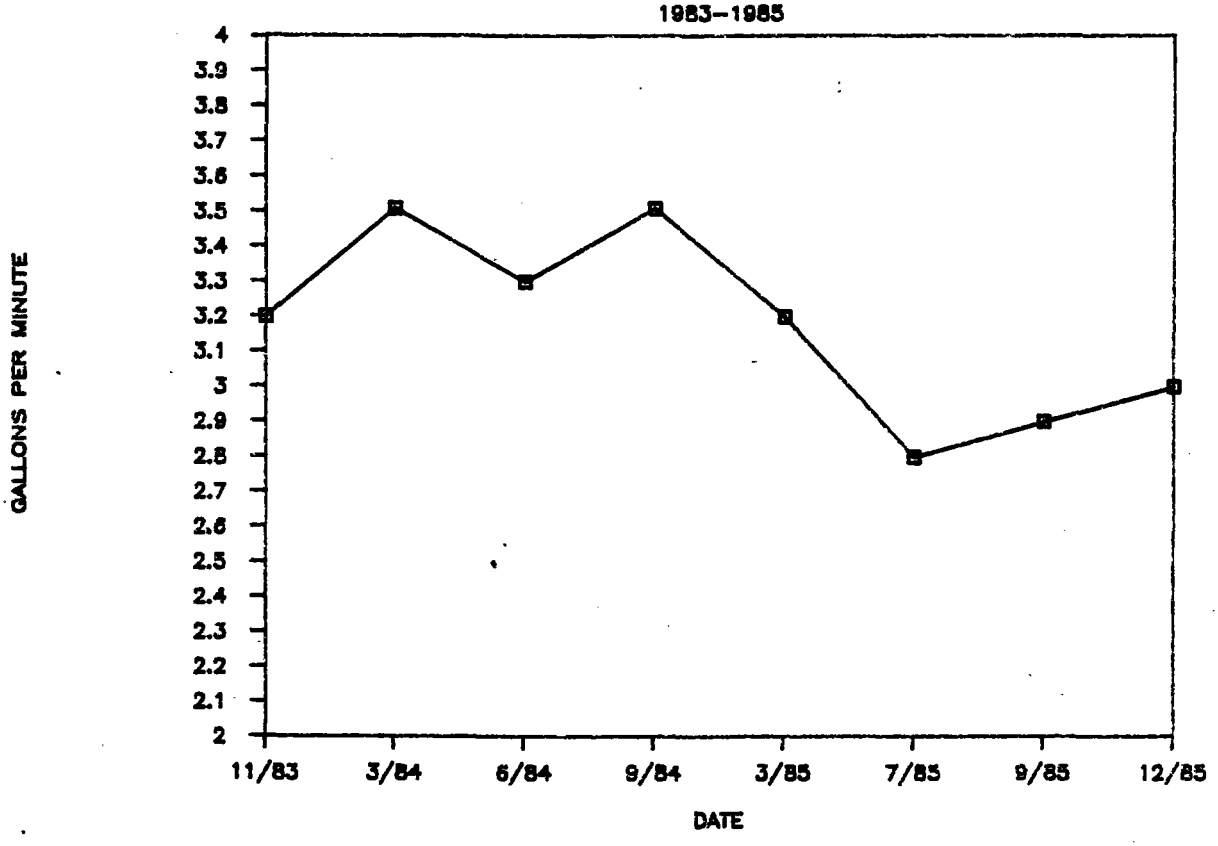
Respectfully submitted David L Crowson

Certified Environmental Laboratory

APPENDIX F

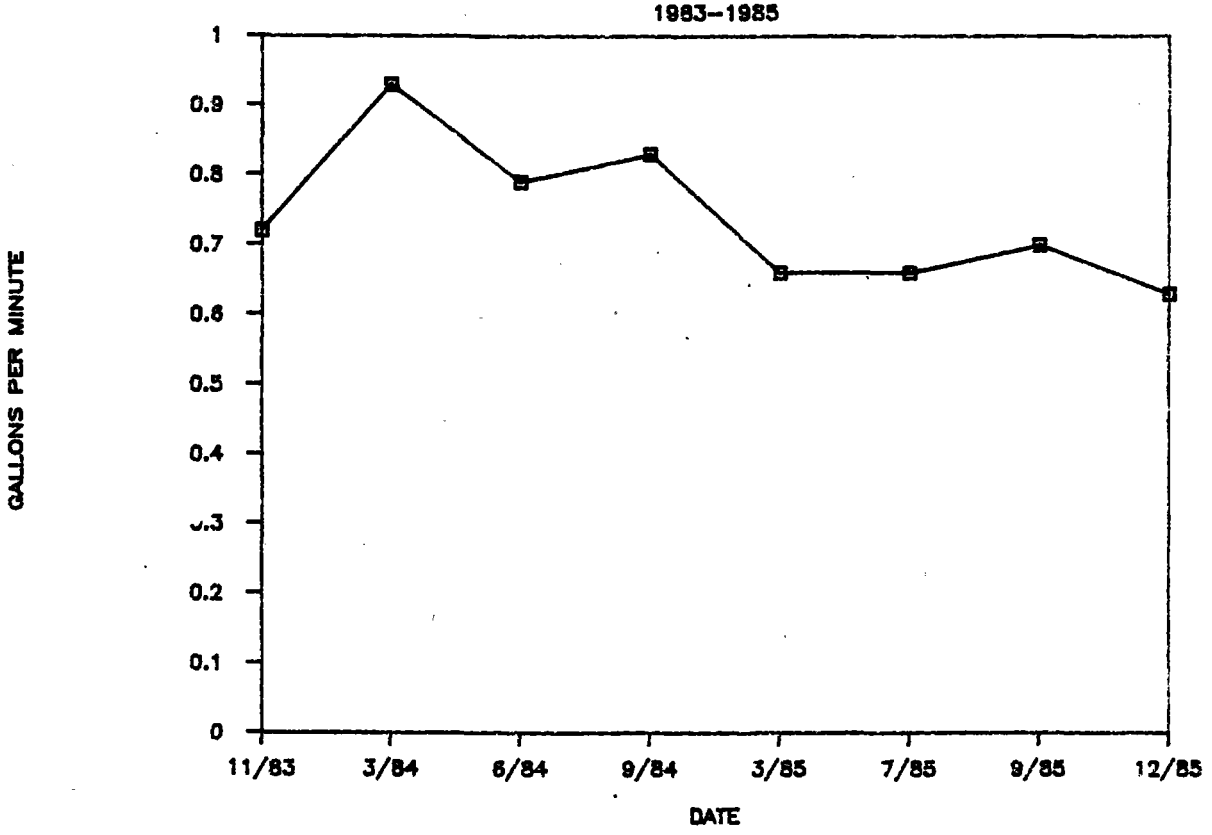
DEER CREEK IN–MINE MON. LOCATION 1

1983–1985



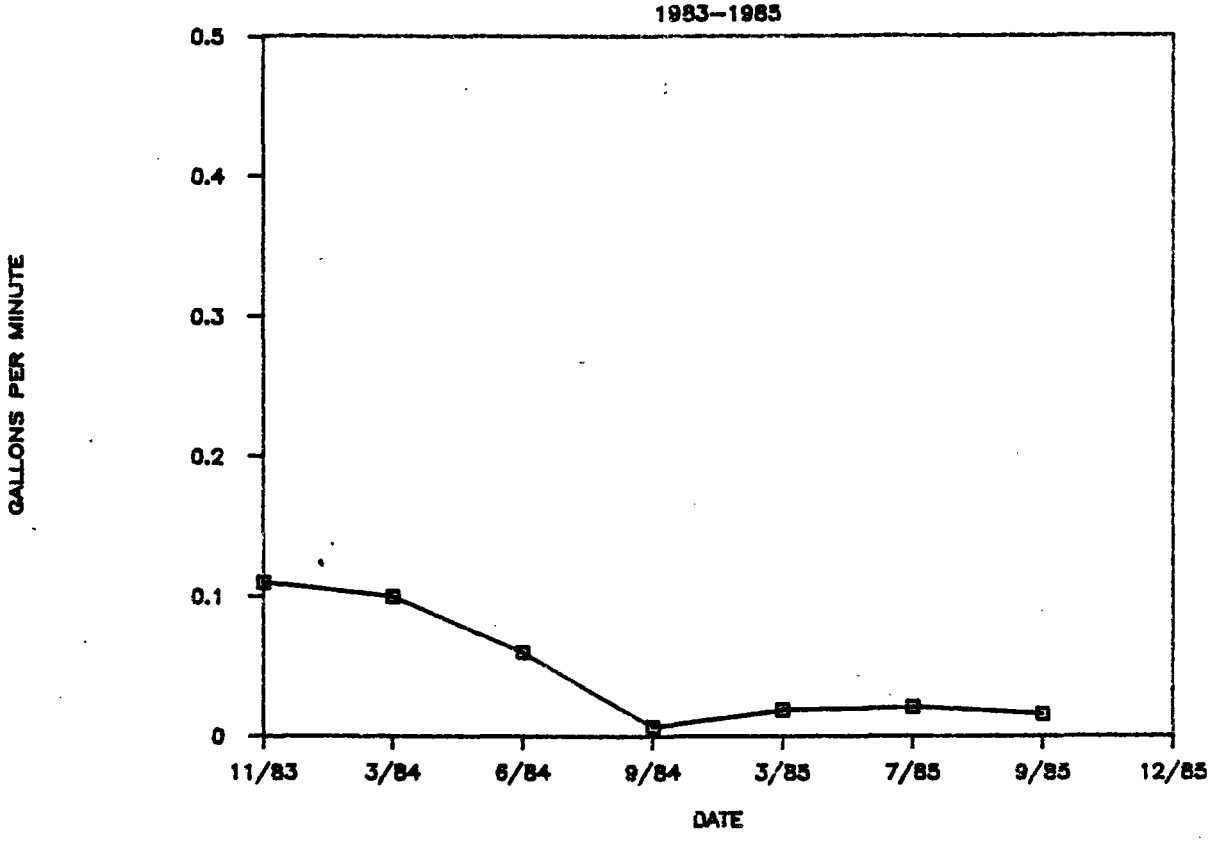
DEER CREEK IN–MINE MON. LOCATION 2

1983–1985



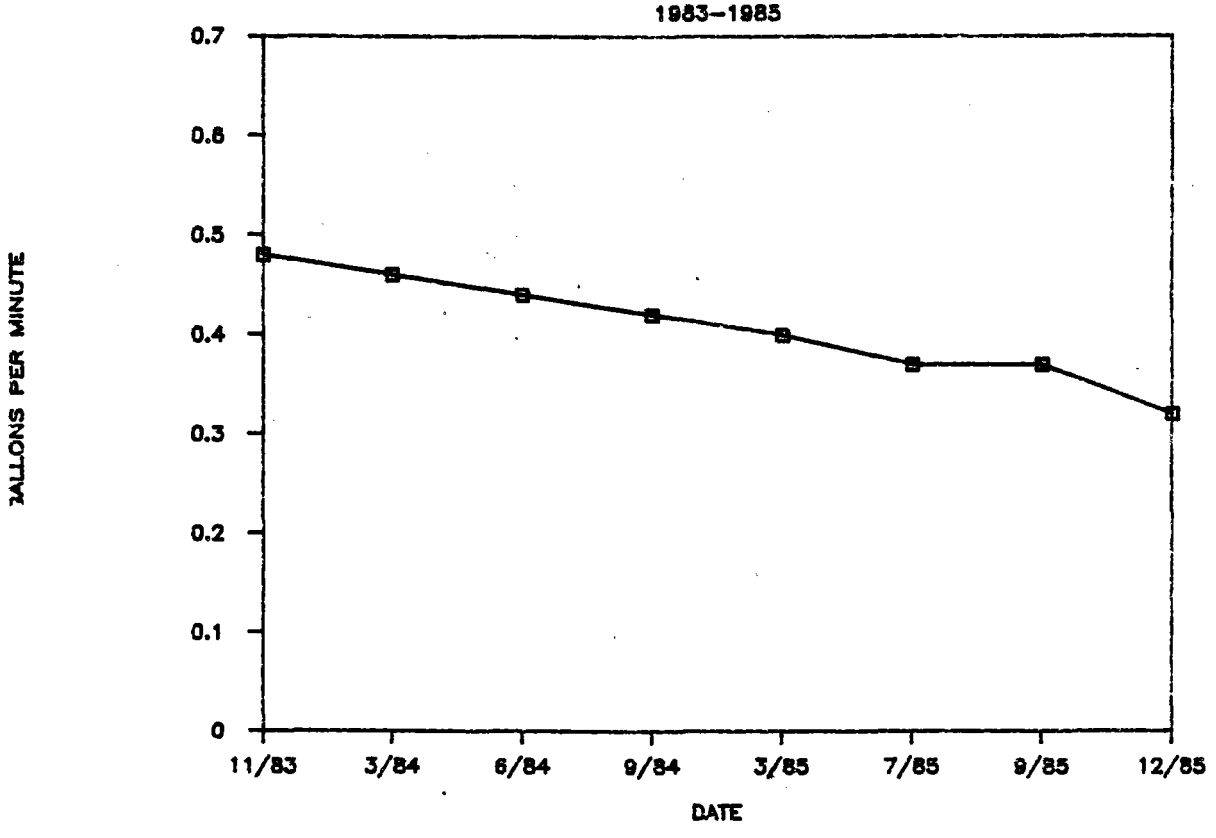
DEER CREEK IN–MINE MON. LOCATION 3

1983–1985



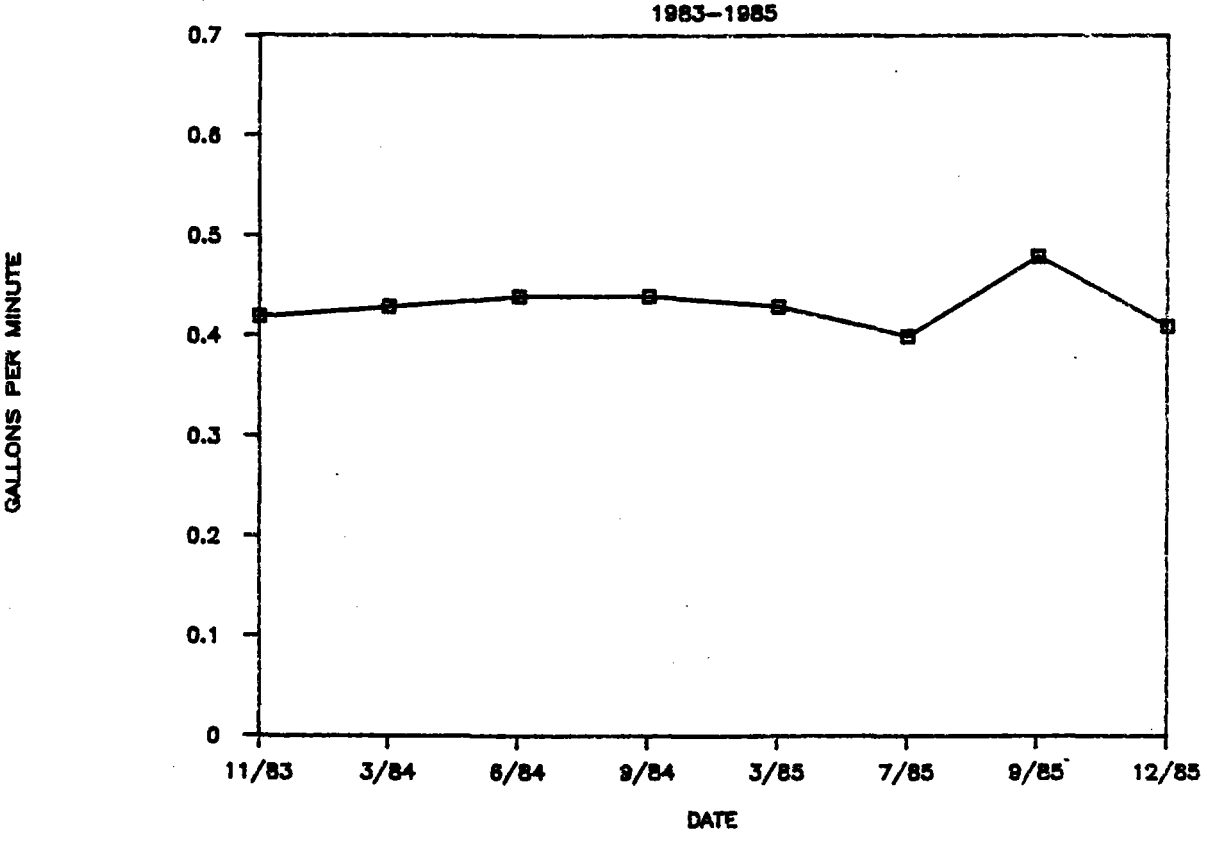
DEER CREEK IN–MINE MON. LOCATION 4

1983–1985



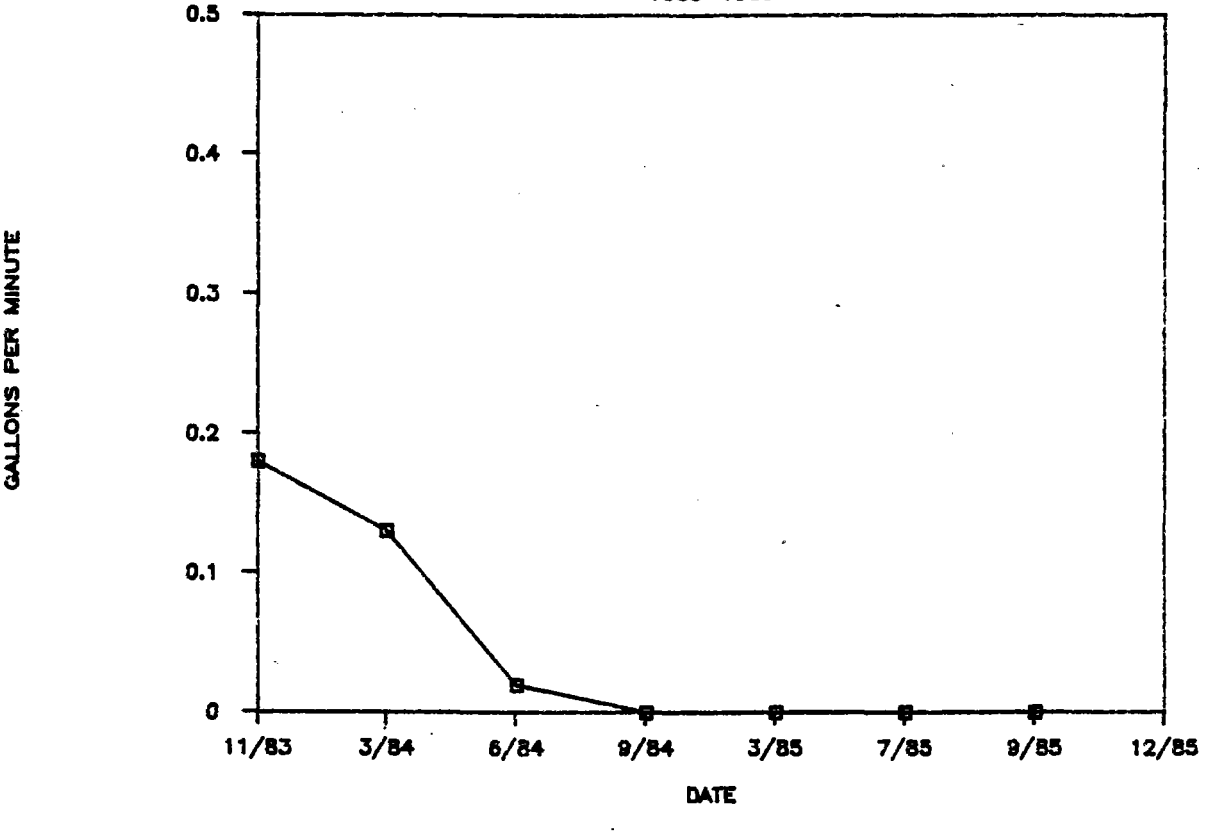
DEER CREEK IN-MINE MON. LOCATION 5

1983-1985



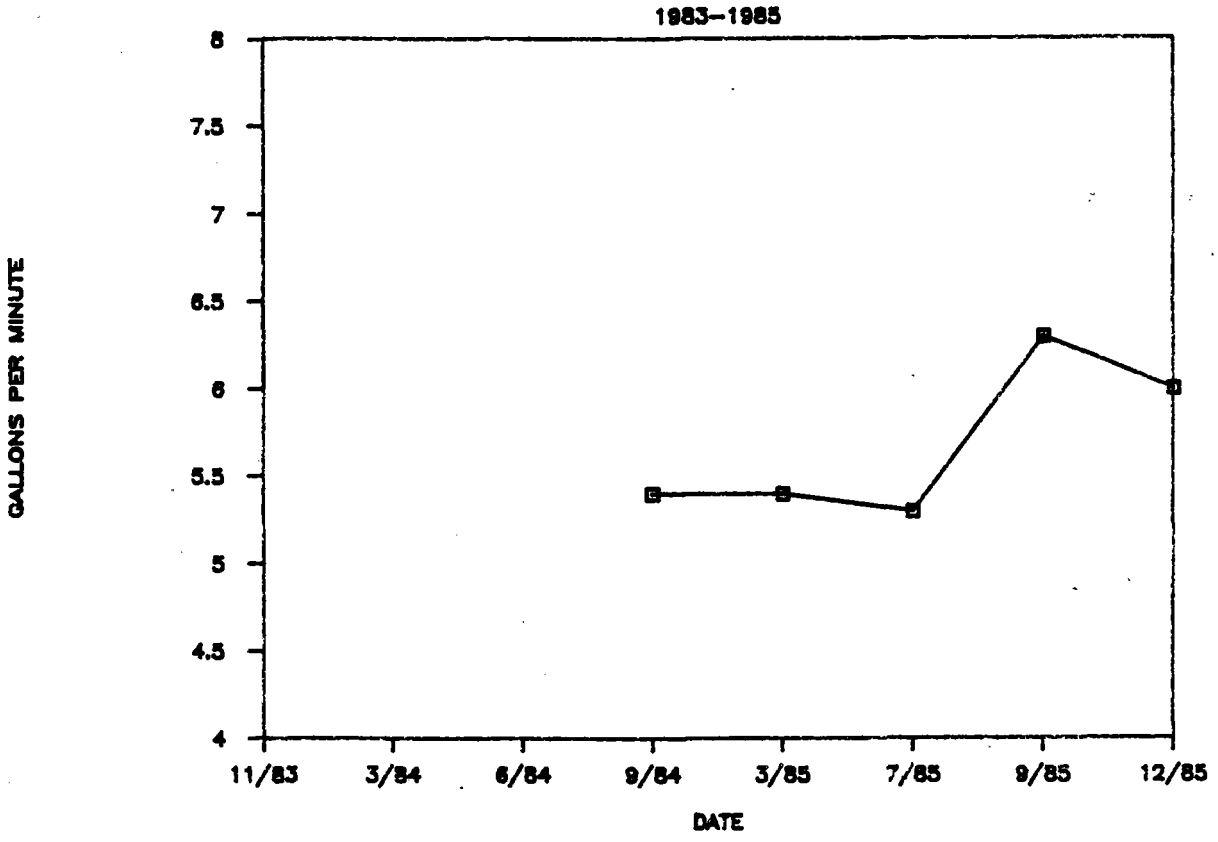
DEER CREEK IN-MINE MON. LOCATION 6

1983-1985



DEER CREEK IN–MINE MON. LOCATION 7

1983–1985



CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6736
Date Rec'd 3-22-85
Date Sampled 3-20-85
Time Sampled 1240

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek In-Mine
EM-3 3rd S xc - 77 1R
Temp. 55°
Flow 3.2 GPM

Acidity	< 1.0	mg/l $CaCO_3$ 3/22	Aluminum	< 0.05	mg/l 3/27
Alkalinity, Total	376	mg/l $CaCO_3$ 3/22	Arsenic	< 0.001	mg/l 4/3
Alkalinity, Bicarbonate	459	mg/l ~~$CaCO_3$~~ HCO_3 3/22	Barium	< 0.1	mg/l 3/27
Alkalinity, Carbonate	< 1.0	mg/l $CaCO_3$ 3/22	Beryllium	< 0.005	mg/l 3/27
Chloride	10.7	mg/l 3/22	Boron	0.08	mg/l 3/25
Coliform, Fecal		MPN/100 ml	Cadmium	< 0.005	mg/l 3/27
Coliform, Total		MPN/100 ml	Calcium	111.2	mg/l 3/22
Conductivity	972	umhos/cm 3/22	Chromium	< 0.05	mg/l 3/27
Fluoride	0.35	mg/l 3/25	Copper	< 0.02	mg/l 3/27
Hardness, Total	497	mg/l $CaCO_3$ 3/22	Iron	0.46	mg/l 3/27
Nitrogen, Ammonia	< 0.05	mg/l 3/25	Lead	< 0.05	mg/l 3/27
Nitrogen, Nitrate	0.03	mg/l 3/25	Magnesium	53.3	mg/l 3/22
Nitrogen, Nitrite	< 0.01	mg/l 3/25	Manganese	0.02	mg/l 3/27
Oil & Grease		mg/l	Mercury	< 0.2	ug/l 3/25
pH	7.25	Units 3/22	Nickel	< 0.04	mg/l 3/27
Phosphorus, Ortho	< 0.01	mg/l 3/25	Potassium	3.0	mg/l 3/22
Phosphorus, Total	0.02	mg/l 3/25	Selenium	< 0.005	mg/l 3/25
Solids, Total Dissolved	571	mg/l 3/25	Silica	2.4	mg/l 4/3
Solids, Total Suspended	2.0	mg/l 3/25	Sodium	18.7	mg/l 3/22
Sulfate	145	mg/l 3/26	Vanadium	< 0.2	mg/l 3/27
Sulfide	< 0.1	mg/l 3/25	Zinc	< 0.005	mg/l 3/27
Turbidity	1.2	NTU 3/22			
Cation, Total	10.83	meq/l			
Anion, Total	10.86	meq/l			

Analyst: David A Janus

Respectfully submitted 4-4-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6735
Date Rec'd 3-22-85
Date Sampled 3-21-85
Time Sampled 1330

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek In-Mine
3rd S xc - 33 1 L
Temp. 56°
Flow 0.40

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total	310	mg/l $CaCO_3$ 3/22	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride	8.6	mg/l 3/22	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium	78.0	mg/l 3/22
Conductivity	756	umhos/cm 3/22	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron		mg/l
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium	41.6	mg/l 3/
Nitrogen, Nitrite		mg/l	Manganese		mg/l
Oil & Grease		mg/l	Mercury		ug/l
pH	7.05	Units 3/22	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium	5.0	mg/l 3/22
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	415	mg/l 3/25	Silica		mg/l
Solids, Total Suspended	< 0.5	mg/l 3/25	Sodium	22.5	mg/l 3/22
Sulfate	95	mg/l 3/26	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			
Cation, Total	8.42	meq/l			
Anion, Total	8.43	meq/l			

Analyst: David L Ramsey

Respectfully submitted 3-27-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6735

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek In-Mine
3rd S xc - 33 1 L
Temp. 56°
Flow 0.40

Date Rec'd 3-22-85

Date Sampled 3-21-85 3/22

Time Sampled 1330

Acidity		mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total		mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium	mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium	mg/l
Chloride		mg/l	Boron	mg/l
Coliform, Fecal		MPN/100 ml	Cadmium	mg/l
Coliform, Total		MPN/100 ml	Calcium	mg/l
Conductivity		umhos/cm	Chromium	mg/l
Fluoride		mg/l	Copper	mg/l
Hardness, Total		mg/l $CaCO_3$	Iron	mg/l
Nitrogen, Ammonia		mg/l	Lead	mg/l
ogen, Nitrate		mg/l	Magnesium	41.3 mg/l 3/29
Nitrogen, Nitrite		mg/l	Manganese	mg/l
Oil & Grease		mg/l	Mercury	ug/l
pH		Units	Nickel	mg/l
Phosphorus, Ortho		mg/l	Potassium	mg/l
Phosphorus, Total		mg/l	Selenium	mg/l
Solids, Total Dissolved		mg/l	Silica	mg/l
Solids, Total Suspended		mg/l	Sodium	mg/l
Sulfate		mg/l	Vanadium	mg/l
Sulfide		mg/l	Zinc	mg/l
Turbidity		NTU		

Analyst: David A Janusz

Respectfully submitted 4-1-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7201
Date Rec'd 7-5-85
Date Sampled 7-3-85
Time Sampled 0940

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek In-Mine
1st S xc-40 1L
Temp. 52°
Flow 0.40 GPM

Acidity		____	mg/l $CaCO_3$
Alkalinity, Total	7-8	352	mg/l $CaCO_3$
Alkalinity, Bicarbonate		____	mg/l $CaCO_3$
Alkalinity, Carbonate		____	mg/l $CaCO_3$
Chloride	7-9	7.4	mg/l
Coliform, Fecal		____	MPN/100 ml
Coliform, Total		____	MPN/100 ml
Conductivity	7-8	900	umhos/cm
Fluoride		____	mg/l
Hardness, Total		____	mg/l $CaCO_3$
Nitrogen, Ammonia		____	mg/l
Nitrogen, Nitrate		____	mg/l
Nitrogen, Nitrite		____	mg/l
Oil & Grease		____	mg/l
pH	7-8	7.05	Units
Phosphorus, Ortho		____	mg/l
Phosphorus, Total		____	mg/l
Solids, Total Dissolved	7-12	499	mg/l
Solids, Total Suspended		6.0	mg/l
Sulfate	7-15	120	mg/l
Sulfide		____	mg/l
Turbidity		____	NTU
Total Cations		10.02	meq/l
Total Anions		9.76	meq/l

Aluminum		____	mg/l
Arsenic		____	mg/l
Barium		____	mg/l
Beryllium		____	mg/l
Boron		____	mg/l
Cadmium		____	mg/l
Calcium	7-8	102.0	mg/l
Chromium		____	mg/l
Copper		____	mg/l
Iron		____	mg/l
Lead		____	mg/l
Magnesium	7-8	49.9	mg/l
Manganese		____	mg/l
Mercury		____	ug/l
Nickel		____	mg/l
Potassium	7-15	3.8	mg/l
Selenium		____	mg/l
Silica		____	mg/l
Sodium	7-15	16.6	mg/l
Vanadium		____	mg/l
Zinc		____	mg/l

Analyst: David K Danum

Respectfully submitted [signature] 7-17-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7200
Date Rec'd 7-5-85
Date Sampled 7-3-85 7/4
Time Sampled 1150

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek
In-Mine
3rd S "B" xc-21 1R
Temp. 52°
Flow 0.66 GPM

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total 7-8	346	mg/l $CaCO_3$ 7/8	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride	8.3	mg/l 7/9	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium	100.0	mg/l 7/8
Conductivity	900	umhos/cm 7/8	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron		mg/l
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium	51.1	mg/l 7/8
Nitrogen, Nitrite		mg/l	Manganese		mg/l
Oil & Grease		mg/l	Mercury		ug/l
pH	6.95	Units 7/8	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium	4.6	mg/l 7/15
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	488	mg/l 7/12	Silica		mg/l
Solids, Total Suspended	1.0	mg/l 7/12	Sodium	21.0	mg/l 7/15
Sulfate	135	mg/l 7/15	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			
Cation, Total	10.23	meq/l			
Anion, Total	9.98	meq/l			

Analyst: David L. Brown

Respectfully submitted 7-17-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7497
Date Rec'd 9-24-85
Date Sampled 9-24-85
Time Sampled

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek
In-Mine
EM-3
Temp. 56°
Flow 2.9 GPM

Acidity		mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total	372	mg/l $CaCO_3$ 9/25	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride	9.5	mg/l 9/25	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium	114.0	mg/l 9/25
Conductivity	1008	umhos/cm 9/25	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron		mg/l
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium	54.7	mg/l [illegible]
Nitrogen, Nitrite		mg/l	Manganese		mg/l
Oil & Grease		mg/l	Mercury		ug/l
pH	6.85	Units 9/25	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium	3.1	mg/l 9/26
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	560	mg/l 9/25	Silica		mg/l
Solids, Total Suspended	8.0	mg/l 9/25	Sodium	18.3	mg/l 9/26
Sulfate	163	mg/l 9/25	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			
Cation, Total	11.06	meq/l			
Anion, Total	11.11	meq/l			

Analyst: David K Janney

Respectfully submitted [signature] 9-30-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7496
Date Rec'd 9-24-85
Date Sampled 9-24-85 1/25
Time Sampled

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek
In-Mine
3rd N. xc-41 2R
Temp. 54°
Flow 6.3 GPM

Acidity		mg/l $CaCO_3$
Alkalinity, Total	304	mg/l $CaCO_3$ 9/25
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride	4.2	mg/l 9/25
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity	672	umhos/cm 9/25
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease		mg/l
pH	6.80	Units 9/25
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	352	mg/l 9/25
Solids, Total Suspended	< 0.5	mg/l 9/25
Sulfate	55	mg/l 9/25
Sulfide		mg/l
Turbidity		NTU
Cation, Total	7.41	meq/l
Anion, Total	7.35	meq/l

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium	72.0	mg/l 9/25
Chromium		mg/l
Copper		mg/l
Iron		mg/l
Lead		mg/l
Magnesium	37.1	mg/l 9/25
Manganese		mg/l
Mercury		ug/l
Nickel		mg/l
Potassium	2.4	mg/l 9/26
Selenium		mg/l
Silica		mg/l
Sodium	16.0	mg/l 9/26
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Janusz

Respectfully submitted [signature] 9-30-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7719
Date Rec'd 12-16-85
Date Sampled 12-16-85
Time Sampled 12:10

Client: UTAH POWER & LIGHT CO.
P.O. Box 899
Salt Lake City, Utah 84110

Sample ID: DEER CREEK IN-MINE
3rd S XC-33 IL

Temp: 57° Flow: 0.32 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total 12-17	306	mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride 12-18	7.9	mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity 12-17	750	umhos/cm	
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH 12-17	7.10	Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved 12-18	423	mg/l	
Solids, Total Suspended "	< 0.5	mg/l	
Sulfate 12-18	90	mg/l	
Sulfide		mg/l	
Turbidity		NTU	
Aluminum			mg/l
Arsenic			mg/l
Barium			mg/l
Beryllium			mg/l
Boron			mg/l
Cadmium			mg/l
Calcium 12-18	78.0		mg/l
Chromium			mg/l
Copper			mg/l
Iron			mg/l
Lead			mg/l
Magnesium 12-18	40.1		mg/l
Manganese			mg/l
Mercury			ug/l
Nickel			mg/l
Potassium 12-18	4.8		mg/l
Selenium			mg/l
Silica			mg/l
Sodium 12-18	19.4		mg/l
Vanadium			mg/l
Zinc			mg/l

Total Cations: 8.16 Meq/L
Total Anions: 8.22 Meq/L

Analyst: [signature]

Respectfully submitted [signature] 12-20-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7720

Client: UTAH POWER & LIGHT CO.
P.O. Box 899
Salt Lake City, Utah 84110

Sample ID: DEER CREEK IN-MINE
EM-3

Date Rec'd 12-16-85

Date Sampled 12-16-85 12/17

Time Sampled 11:25

Temp: 58° Flow: 3.0 GPM

Acidity		mg/l $CaCO_3$	
Alkalinity, Total	12-17	384 mg/l $CaCO_3$	
Alkalinity, Bicarbonate		mg/l $CaCO_3$	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride	12-18	10.2 mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity	12-17	950 umhos/cm	
Fluoride		mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite		mg/l	
Oil & Grease		mg/l	
pH	12-17	7.10 Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total		mg/l	
Solids, Total Dissolved	12-18	563 mg/l	
Solids, Total Suspended	"	2.0 mg/l	
Sulfate	12-18	150 mg/l	
Sulfide		mg/l	
Turbidity		NTU	

Aluminum		mg/l	
Arsenic		mg/l	
Barium		mg/l	
Beryllium		mg/l	
Boron		mg/l	
Cadmium		mg/l	
Calcium	12-18	112.0 mg/l	
Chromium		mg/l	
Copper		mg/l	
Iron		mg/l	
Lead		mg/l	
Magnesium	12-18	52.3 mg/l	
Manganese		mg/l	
Mercury		ug/l	
Nickel		mg/l	
Potassium	12-18	2.9 mg/l	
Selenium		mg/l	
Silica		mg/l	
Sodium	12-18	18.3 mg/l	
Vanadium		mg/l	
Zinc		mg/l	

Total Cations: 10.76 Meq/L

Total Anions: 11.10 Meq/L

Analyst: [illegible]

Respectfully submitted [signature] 12-20-85

Certified Environmental Laboratory

APPENDIX G

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6627
Date Rec'd 1-30-85
Date Sampled 1-28-85
Time Sampled 1550

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Discharge

Flow .25 Staff

Acidity	< 1.0	mg/l $CaCO_3$ 1/30	Aluminum		mg/l
Alkalinity, Total	286	mg/l $CaCO_3$ 1/30	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride	11.7	mg/l 1/30	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium		mg/l
Conductivity	1000	umhos/cm 1/30	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron	0.18	mg/l 1/31
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium		mg/l
Nitrogen, Nitrite		mg/l	Manganese	0.02	mg/l 1/31
Oil & Grease	< 0.5	mg/l 1/31	Mercury		ug/l
pH	7.25	Units 1/30	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium		mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	648	mg/l 1/30	Silica		mg/l
Solids, Total Suspended	1.0	mg/l 1/30	Sodium		mg/l
Sulfate	253	mg/l 1/30	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			
Dissolved Oxygen	7.0	mg/l 1/30			

Analyst: David A Janus

Respectfully submitted 1-31-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6668
Date Rec'd 2-21-85
Date Sampled 2-20-85
Time Sampled 1230

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Discharge
Temp. 50°
Flow (Staff Only) 0.20

Acidity	< 1.0	mg/l $CaCO_3$ 2/21	Aluminum		mg/l
Alkalinity, Total	308	mg/l $CaCO_3$ 2/21	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride	14.0	mg/l 2/25	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium		mg/l
Conductivity	1000	umhos/cm 2/21	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron	0.45	mg/l 2/25
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium		mg/l
Nitrogen, Nitrite		mg/l	Manganese	0.02	mg/l 2/25
Oil & Grease	0.9	mg/l 2/22	Mercury		ug/l
pH	7.10	Units 2/21	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium		mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	577	mg/l 2/21	Silica		mg/l
Solids, Total Suspended	67.0	mg/l 2/21	Sodium		mg/l
Sulfate	210	mg/l 2/25	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			
Dissolved, Oxygen	6.8	mg/l 2/21			

Analyst: David S Jones

Respectfully submitted

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6759
Date Rec'd 3-28-85
Date Sampled 3-27-85
Time Sampled 310 PM

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Discharge
Temp. 50°
Flow 0.1/93.4 GPM (Staff Only)

Acidity	<1.0	mg/l $CaCO_3$ 4/1
Alkalinity, Total	265	mg/l $CaCO_3$ 4/1
Alkalinity, Bicarbonate		mg/l $CaCO_3$
Alkalinity, Carbonate		mg/l $CaCO_3$
Chloride	26.8	mg/l 4/1
Coliform, Fecal		MPN/100 ml
Coliform, Total		MPN/100 ml
Conductivity	1200	umhos/cm 4/1
Fluoride		mg/l
Hardness, Total		mg/l $CaCO_3$
Nitrogen, Ammonia		mg/l
Nitrogen, Nitrate		mg/l
Nitrogen, Nitrite		mg/l
Oil & Grease	13.3	mg/l 4/1
pH	7.45	Units 4/1
Phosphorus, Ortho		mg/l
Phosphorus, Total		mg/l
Solids, Total Dissolved	792	mg/l 3/29
Solids, Total Suspended	1248.0	mg/l 3/29
Sulfate	320	mg/l 4/1
Sulfide		mg/l
Turbidity		NTU
Dissolved Oxygen	6.1	mg/l 3/29

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron	6.70	mg/l 4/3
Lead		mg/l
Magnesium		mg/l
Manganese	0.10	mg/l 4/3
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: David A Janusz

Respectfully submitted [illegible]

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 6950
Date Rec'd 5-6-85
Date Sampled 5-6-85
Time Sampled 13:45

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84527

Sample ID: Deer Creek Discharge

Temp. 54° Flow 0.15(Staff Only) Meter Reading 704944

Acidity	< 1.0	mg/l $CaCO_3$	5-7	Aluminum	mg/l
Alkalinity, Total	338	mg/l $CaCO_3$		Arsenic	mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$		Barium	mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$		Beryllium	mg/l
Chloride	9.8	mg/l	5-10	Boron	mg/l
Coliform, Fecal		MPN/100 ml		Cadmium	mg/l
Coliform, Total		MPN/100 ml		Calcium	mg/l
Conductivity	850	umhos/cm	5-7	Chromium	mg/l
Fluoride		mg/l		Copper	mg/l
Hardness, Total		mg/l $CaCO_3$		Iron	0.90 mg/l 5-9
Nitrogen, Ammonia		mg/l		Lead	mg/l
Nitrogen, Nitrate		mg/l		Magnesium	mg/l
Nitrogen, Nitrite		mg/l		Manganese	< 0.01 mg/l 5-9
Oil & Grease	< 0.5	mg/l	5-9	Mercury	ug/l
pH	7.55	Units	5-7	Nickel	mg/l
Phosphorus, Ortho		mg/l		Potassium	mg/l
Phosphorus, Total		mg/l		Selenium	mg/l
Solids, Total Dissolved	470	mg/l		Silica	mg/l
Solids, Total Suspended	41.0	mg/l	5-9	Sodium	mg/l
Sulfate	105	mg/l	5-13	Vanadium	mg/l
Sulfide		mg/l		Zinc	mg/l
Turbidity		NTU			
Dissolved Oxygen	7.90	mg/l	5-7		

Analyst: David A Janus

Respectfully submitted [signature] 5-13-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7021
Date Rec'd 5-29-85
Date Sampled 5-29-85
Time Sampled 1325

Client: Utah Power & Light Co.
P.O. Box 1005
Huntington, Utah 84528
Field Office

Sample ID: Deer Creek Discharge

Temp. 52° C Flow (Staff)0.18 Meter Reading 715030

Acidity	< 1.0	mg/l $CaCO_3$	Aluminum		mg/l
Alkalinity, Total 5-30	311	mg/l $CaCO_3$	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride 5-30	15.3	mg/l	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium		mg/l
Conductivity 5-30	1050	umhos/cm	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron 5-30	1.66	mg/l
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium		mg/l
Nitrogen, Nitrite		mg/l	Manganese 5-30	0.03	mg/l
Oil & Grease 5-30	5.3	mg/l	Mercury		ug/l
pH	7.40	Units	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium		mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	664	mg/l	Silica		mg/l
Solids, Total Suspended 5-30	180.5	mg/l	Sodium		mg/l
Sulfate 5-31	240	mg/l	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			
Dissolved Oxygen 5-30	8.20	mg/l			

Analyst: David A Janney

Respectfully submitted 5-31-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7141

Client: Utah Power & Light Co.
P.O. Box 1005
Huntington, Utah 84528
FIELD OFFICE

Sample ID: Deer Creek Discharge

Date Rec'd 6-17-85

Date Sampled 6-17-85

Time Sampled 1015

Temp 54° Flow 0.17

Acidity 6-20	<1.0 mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total	265 mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	mg/l $CaCO_3$	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride 6-24	21.8 mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium	mg/l
Conductivity 6-20	1100 umhos/cm	Chromium	mg/l
Fluoride	mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron 6-18	0.34 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
Nitrogen, Nitrate	mg/l	Magnesium	mg/l
Nitrogen, Nitrite	mg/l	Manganese 6-18	0.02 mg/l
Oil & Grease 6-20	<0.5 mg/l	Mercury	ug/l
pH	7.30 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium	mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved	759 mg/l	Silica	mg/l
Solids, Total Suspended 6-20	42.0 mg/l	Sodium	mg/l
Sulfate 6-24	310 mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity	NTU		
Dissolved Oxygen	7.80 mg/l		

Respectfully submitted

Analyst:

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7322
Date Rec'd 7-31-85
Date Sampled 7-31-85
Time Sampled 1052

Client: Utah Power & Light Co.
P.O. Box 1005
Huntington, Utah 84528
Field Office

Sample ID: Deer Creek Discharge

Temp. 54°

Flow 300 GPM (Est.)

Acidity	7-31	<1.0	mg/l $CaCO_3$
Alkalinity, Total		292	mg/l $CaCO_3$
Alkalinity, Bicarbonate			mg/l $CaCO_3$
Alkalinity, Carbonate			mg/l $CaCO_3$
Chloride	8-30	13.7	mg/l
Coliform, Fecal			MPN/100 ml
Coliform, Total			MPN/100 ml
Conductivity	7-31	1000	umhos/cm
Fluoride			mg/l
Hardness, Total			mg/l $CaCO_3$
Nitrogen, Ammonia			mg/l
ogen, Nitrate			mg/l
Nitrogen, Nitrite			mg/l
Oil & Grease	8-5	<0.5	mg/l
pH	7-31	7.00	Units
Phosphorus, Ortho			mg/l
Phosphorus, Total			mg/l
Solids, Total Dissolved	8-2	674	mg/l
Solids, Total Suspended		38.0	mg/l
Sulfate	8-20	310	mg/l
Sulfide			mg/l
Turbidity			NTU
Dissolved Oxygen	7-31	7.55	mg/l

Aluminum			mg/l
Arsenic			mg/l
Barium			mg/l
Beryllium			mg/l
Boron			mg/l
Cadmium			mg/l
Calcium			mg/l
Chromium			mg/l
Copper			mg/l
Iron	7-31	0.31	mg/l
Lead			mg/l
Magnesium			mg/l
Manganese	7-31	0.01	mg/l
Mercury			ug/l
Nickel			mg/l
Potassium			mg/l
Selenium			mg/l
Silica			mg/l
Sodium			mg/l
Vanadium			mg/l
Zinc			mg/l

Analyst: David H Jones

Respectfully submitted

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7375
Date Rec'd 8-21-85
Date Sampled 8-21-85
Time Sampled 1430

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Discharge
Temp. 54°
Flow 171.1 GPM
Meter Reading 765,693

Acidity	< 1.0	mg/l $CaCO_3$ 8/23	Aluminum		mg/l
Alkalinity, Total	280	mg/l $CaCO_3$ 8/23	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride	12.9	mg/l 8/26	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium		mg/l
Conductivity	980	umhos/cm 8/23	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron	0.44	mg/l 8/23
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium		mg/l
Nitrogen, Nitrite		mg/l	Manganese	0.01	mg/l 8/23
Oil & Grease	0.9	mg/l 8/23	Mercury		ug/l
pH	7.80	Units 8/23	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium		mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	624	mg/l 8/23	Silica		mg/l
Solids, Total Suspended	52.0	mg/l 8/23	Sodium		mg/l
Sulfate	230	mg/l 8/17	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			
Dissolved Oxygen	8.10	mg/l 8/22			

Analyst: David A Parsons

Respectfully submitted [signature] 9-27-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7498
Date Rec'd 9-24-85
Date Sampled 9-24-85
Time Sampled 1410

Client: Utah Power & Light Co.
Field Office
P. O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Discharge
Temp 56°
Flow 476.4 GPM

Acidity	< 1.0	mg/l $CaCO_3$ 9/25	Aluminum		mg/l
Alkalinity, Total	278	mg/l $CaCO_3$ 9/25	Arsenic		mg/l
Alkalinity, Bicarbonate		mg/l $CaCO_3$	Barium		mg/l
Alkalinity, Carbonate		mg/l $CaCO_3$	Beryllium		mg/l
Chloride	11.7	mg/l 9/25	Boron		mg/l
Coliform, Fecal		MPN/100 ml	Cadmium		mg/l
Coliform, Total		MPN/100 ml	Calcium		mg/l
Conductivity	1120	umhos/cm 9/25	Chromium		mg/l
Fluoride		mg/l	Copper		mg/l
Hardness, Total		mg/l $CaCO_3$	Iron	3.00	mg/l 9/25
Nitrogen, Ammonia		mg/l	Lead		mg/l
Nitrogen, Nitrate		mg/l	Magnesium		mg/l
Nitrogen, Nitrite		mg/l	Manganese	0.04	mg/l 9/25
Oil & Grease	4.0	mg/l 9/25	Mercury		ug/l
pH	7.30	Units 9/25	Nickel		mg/l
Phosphorus, Ortho		mg/l	Potassium		mg/l
Phosphorus, Total		mg/l	Selenium		mg/l
Solids, Total Dissolved	680	mg/l 9/25	Silica		mg/l
Solids, Total Suspended	743.0	mg/l 9/25	Sodium		mg/l
Sulfate	295	mg/l 9/25	Vanadium		mg/l
Sulfide		mg/l	Zinc		mg/l
Turbidity		NTU			
Dissolved, Oxygen	7.60	mg/l 9/24			

Analyst: David A Ramsey

Respectfully submitted 9-30-85

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7622
Date Rec'd 10-24-85
Date Sampled 10-24-85
Time Sampled 1202

Client: Utah Power & Light Co.
P.O. Box 1005
Huntington, Utah 84528
Field Office

Sample ID: Deer Creek Discharge

Temp. 54° Flow 262.0 GPM

Acidity	<1.0	mg/l $CaCO_3$	
Alkalinity, Total 10-25	296	mg/l $CaCO_3$	
Alkalinity, Bicarbonate	361	mg/l HCO_3	
Alkalinity, Carbonate		mg/l $CaCO_3$	
Chloride 10-28	12.1	mg/l	
Coliform, Fecal		MPN/100 ml	
Coliform, Total		MPN/100 ml	
Conductivity 10-25	975	umhos/cm	
Fluoride 10-28	0.27	mg/l	
Hardness, Total		mg/l $CaCO_3$	
Nitrogen, Ammonia		mg/l	
Nitrogen, Nitrate		mg/l	
Nitrogen, Nitrite 10-28	<0.01	mg/l	
Oil & Grease 10-25	<0.5	mg/l	
pH 10-25	7.50	Units	
Phosphorus, Ortho		mg/l	
Phosphorus, Total 10-28	0.12	mg/l	
Solids, Total Dissolved 10-28	570	mg/l	
Solids, Total Suspended	29.0	mg/l	
Sulfate 10-28	220	mg/l	
Sulfide		mg/l	
Turbidity		NTU	
Dissolved Oxygen 10-24	7.45	mg/l	
B.O.D. 5 10-24	<1	mg/l	
Total Cations	10.68	meq/l	
Total Anions	10.85	meq/l	

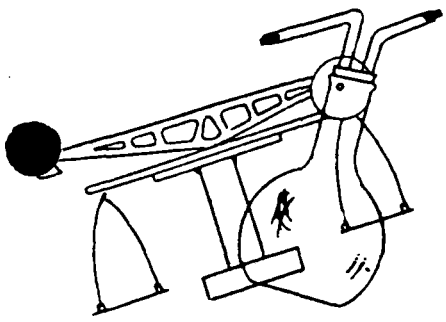
Aluminum		mg/l
Arsenic 10-25	<0.001	mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium 10-30	<0.005	mg/l
Calcium 10-29	92.0	mg/l
Chromium		mg/l
Copper		mg/l
Iron 10-29	0.25	mg/l
Lead 10-30	<0.05	mg/l
Magnesium 10-29	57.1	mg/l
Manganese 10-29	0.01	mg/l
Mercury		ug/l
Nickel		mg/l
Potassium 10-21	4.8	mg/l
Selenium 10-25	<0.005	mg/l
Silica 10-31	3.9	mg/l
Sodium 10-29	29.1	mg/l
Vanadium		mg/l
Zinc 10-28	<0.005	mg/l
TKN 10-28	0.17	mg/l

Respectfully submitted

Analyst:

Certified Environmental Laboratory

L1



Ford Chemical
LABORATORY, INC.
Bacteriological and Chemical Analysis
40 WEST LOUISE AVENUE
SALT LAKE CITY, UTAH 84115
PHONE 466-8761

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ENVIRONMENTAL SERVICES

DATE: 11/20/85

CERTIFICATE OF ANALYSIS

UTAH POWER & LIGHT
FIELD OFFICE
P.O. 1005
HUNTINGTON, UT 84528

85-009890

SAMPLE: DEER CREEK MINE DISCHARGE WATER SAMPLE COLLECTED 10-24-85
RECEIVED 10-25-85 FOR ANALYSIS.

	RESULTS
Gross Alpha pci/l	<2.0
Gross Beta pci/l	<3.0
Tot.Organic Carbon mg/l SM505	6.45

FORD CHEMICAL LABORATORY, INC.

All reports are submitted as the confidental property of clients. Authorization for publication of our reports, conclusions, or, extracts from or regarding them, is reserved pending our written approval as a mutual protection to clients, the public and ourselves.

Controls for Environmental Pollution, Inc.
P.O. BOX 5351 • Santa Fe, New Mexico 87502
OUT OF STATE 800/545-2185

REPORT OF ANALYSIS

LAB # 85-11-0

SAMPLE IDENTIFICATION	DATE COLLECTED	TYPE OF ANALYSIS	pCi/liter
9890	not specified	Gross Alpha	<2
		Gross Beta	<3
9912	not specified	Gross Alpha	<2
		Gross Beta	<3
9930	not specified	Gross Alpha	<2
		Gross Beta	<3
9931	not specified	Gross Alpha	<2
		Gross Beta	4+/-3

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7683
Date Rec'd 11-25-85
Date Sampled 11-25-85
Time Sampled 1020

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Discharge

Temp. 54° Flow 262 GPM

Acidity 11-26	< 1.0 mg/l $CaCO_3$	Aluminum	mg/l
Alkalinity, Total	257 mg/l $CaCO_3$	Arsenic	mg/l
Alkalinity, Bicarbonate	mg/l $CaCO_3$	Barium	mg/l
Alkalinity, Carbonate	mg/l $CaCO_3$	Beryllium	mg/l
Chloride 11-26	13.1 mg/l	Boron	mg/l
Coliform, Fecal	MPN/100 ml	Cadmium	mg/l
Coliform, Total	MPN/100 ml	Calcium	mg/l
Conductivity 11-26	1200 umhos/cm	Chromium	mg/l
Fluoride	mg/l	Copper	mg/l
Hardness, Total	mg/l $CaCO_3$	Iron 11-25	1.17 mg/l
Nitrogen, Ammonia	mg/l	Lead	mg/l
Nitrogen, Nitrate	mg/l	Magnesium	mg/l
Nitrogen, Nitrite	mg/l	Manganese 11-25	0.08 mg/l
Oil & Grease 11-25	5.2 mg/l	Mercury	ug/l
pH 11-25	7.25 Units	Nickel	mg/l
Phosphorus, Ortho	mg/l	Potassium	mg/l
Phosphorus, Total	mg/l	Selenium	mg/l
Solids, Total Dissolved	824 mg/l	Silica	mg/l
Solids, Total Suspended 11-25	2019.0 mg/l	Sodium	mg/l
Sulfate 11-26	400 mg/l	Vanadium	mg/l
Sulfide	mg/l	Zinc	mg/l
Turbidity	NTU		
Dissolved Oxygen 11-25	7.00 mg/l		

Analyst: David A Carver

Respectfully submitted David A Carver

Certified Environmental Laboratory

CERTIFICATE OF ANALYSIS

STANDARD LABORATORIES, INC.
P.O. Box 1140, Huntington, Utah 84528 801-653-2314

Lab. No. 7737
Date Rec'd 12-23-85
Date Sampled 12-23-85
Time Sampled 1245

Client: Utah Power & Light Co.
Field Office
P.O. Box 1005
Huntington, Utah 84528

Sample ID: Deer Creek Discharge

Acidity	12-24	<1.0	mg/l $CaCO_3$
Alkalinity, Total		307	mg/l $CaCO_3$
Alkalinity, Bicarbonate			mg/l $CaCO_3$
Alkalinity, Carbonate			mg/l $CaCO_3$
Chloride	12-30	8.2	mg/l
Coliform, Fecal			MPN/100 ml
Coliform, Total			MPN/100 ml
Conductivity	12-24	810	umhos/cm
Fluoride			mg/l
Hardness, Total			mg/l $CaCO_3$
Nitrogen, Ammonia			mg/l
Nitrogen, Nitrate			mg/l
Nitrogen, Nitrite			mg/l
Oil & Grease	12-30	<0.5	mg/l
pH	12-24	7.20	Units
Phosphorus, Ortho			mg/l
Phosphorus, Total			mg/l
Solids, Total Dissolved		513	mg/l
Solids, Total Suspended	12-30	92.0	mg/l
Sulfate		150	mg/l
Sulfide			mg/l
Turbidity			NTU
Dissolved Oxygen	12-23	7.35	mg/l

Aluminum		mg/l
Arsenic		mg/l
Barium		mg/l
Beryllium		mg/l
Boron		mg/l
Cadmium		mg/l
Calcium		mg/l
Chromium		mg/l
Copper		mg/l
Iron	12-30	1.33 mg/l
Lead		mg/l
Magnesium		mg/l
Manganese	12-30	0.02 mg/l
Mercury		ug/l
Nickel		mg/l
Potassium		mg/l
Selenium		mg/l
Silica		mg/l
Sodium		mg/l
Vanadium		mg/l
Zinc		mg/l

Analyst: [signature]

Respectfully submitted [signature]

Certified Environmental Laboratory