

DL-193-1 ANALYZED COMPOSITES - PPM

D-1			D-2			D-3			D-4																				
4-3-73	4 1/2"	94	3.2	350	0	15	980	1 3/4"	9	3.7	170	0	5.6	300	2 1/2"	22	2.7	840	0	100	1400	2"	12	3.7	90	0	58	200	
5-7-73	3"	34.2	3.1	420	0	25	780	1"	2.2	3.7	160	0	0.5	280	2"	12.4	2.7	700	0	75	1200	2"	12.4	4.2	74	0	1.6	230	
6-4-73	4 3/4"	108	3.2	330	0	19	670	1 1/2"	6	3.7	210	0	0.9	270	2"	12.4	2.8	920	0	86	1300	2 1/4"	16.7	4.5	95	0	0.5	210	
7-3-73	4"	70	3.0	150	0	27	1000	1"	2	3.4	150	0	2.7	270	1 1/2"	6	2.9	680	0	72	1100	1 1/2"	6	4.2	90	0	0.3	290	
8-7-73	2 1/4"	17	2.6	820	0	57	1900	Dry	-	-	-	-	-	-	1/2"	1	2.6	780	0	59	1200	1 1/4"	4	4.0	140	0	0.4	340	
9-5-73	2 1/4"	17	2.8	1100	0	62	1900	Dry	-	-	-	-	-	-	3/4"	2	2.7	1000	0	72	1200	-	-	4.3	130	0	0.2	360	
D-5			D-6			D-7			D-8																				
4-3-73	1 1/2"	6	2.8	700	0	17	980	1 3/4"	9	4.1	140	0	0.3	340	1 1/4"	4	2.8	710	0	20	1400	1 3/4"	9	3.3	420	0	1.6	1100	
5-7-73	1 1/2"	6	2.8	640	0	17	1000	1 1/2"	6	4.0	140	0	0.2	300	1	2.2	2.7	660	0	21	1300	1 1/2"	6	3.3	520	0	2.1	1100	
6-4-73	2"	12.4	2.8	720	0	17	1100	2"	12.4	4.1	150	0	0.2	300	1	2.2	2.8	640	0	15	1200	1 1/4"	4	3.3	510	0	2.2	1100	
7-3-73	1 1/2"	6	2.8	670	0	27	1400	1/2"	1	3.6	90	0	1.8	330	1	2.2	2.9	480	0	24	1400	1"	2	3.3	360	0	2.8	1100	
8-7-73	1"	2	2.6	920	0	20	1600	Dry	-	-	-	-	-	-	1/4"	1	2.5	770	0	24	1600	1/2"	1	3.0	570	0	6.8	1400	
9-5-73	1 1/2"	6	2.9	1100	0	22	1600	Dry	-	-	-	-	-	-	Dry	-	-	-	-	-	-	Dry	-	-	-	-	-	-	
D-9			D-10			D-11			D-12																				
4-3-73	2 1/4"	17	2.9	1100	0	140	2100	1 1/4"	4	3.9	72	0	13	260	1 1/4"	4	4.0	220	0	0.8	1000	1 1/4"	4	2.9	780	0	1.40	1500	
5-7-73	2 1/2"	21.7	2.8	1400	0	190	2600	1"	2.2	3.9	78	0	0.2	270	1 1/2"	6	3.9	240	0	0.3	1100	1 1/4"	3.8	3.0	570	0	1.30	1400	
6-4-73	2 3/4"	27.5	2.8	1800	0	172	2800	1"	2.2	3.9	110	0	0.2	300	1"	2.2	3.9	300	0	0.9	1100	1"	2.2	3.0	820	0	1.10	1300	
7-3-73	1 1/4"	4	2.7	1400	0	210	2900	Dry	-	-	-	-	-	-	Dry	-	-	-	-	-	-	1/2"	1	2.8	700	0	2.30	1300	
8-7-73	1 1/2"	1	2.4	2000	0	190	3300	Dry	-	-	-	-	-	-	Dry	-	-	-	-	-	-	Dry	-	-	-	-	-	-	
9-5-73	1 1/2"	6	2.5	3600	0	320	6800	Dry	-	-	-	-	-	-	Dry	-	-	-	-	-	-	Dry	-	-	-	-	-	-	
D-13			D-14			D-15																							
4-3-73	2 1/4"	17	3.1	420	0	16	590	1 1/8"	3	4.3	60	0	4.0	150	1/2"	2.1	3.1	590	0	4.7	800	1/2"	2.1	3.1	590	0	4.7	800	
5-7-73	1 3/4"	8.9	3.0	490	0	12	1200	1/4"	1	4.2	54	0	0.1	120	1/2"	2	3.2	570	0	4.8	800	1/2"	2	3.2	570	0	4.8	800	
6-4-73	1 3/4"	8.9	3.1	460	0	7.4	870	1 3/4"	8.9	4.3	52	0	4.0	140	3/4"	2	3.2	570	0	4.4	750	3/4"	2	3.2	570	0	4.4	750	
7-3-73	1 3/4"	8.9	3.0	370	0	18	1200	Dry	-	-	-	-	-	-	1/2"	1	3.1	730	0	11	900	1/2"	1	3.1	730	0	11	900	
8-7-73	1"	2	2.7	660	0	22	1600	Dry	-	-	-	-	-	-	1/4"	1	2.7	660	0	14	940	1/4"	1	2.7	660	0	14	940	
9-5-73	1"	2	2.8	1100	0	34	1800	Dry	-	-	-	-	-	-	1/4"	1	2.8	720	0	15	960	1/4"	1	2.8	720	0	15	960	
ABOVE			BELOW																										
4-3-73		6.2	1	34	<0.1	34				3.7	64	0	3.8	190															
5-7-73		5.9	2	26	0.8	26				3.7	60	0	4.0	150															
6-4-73		6.5	6	19	1.1	19				3.9	60	0	3.4	130															
7-3-73		6.3	0	29	4	29				3.4	88	0	2.1	240															
8-7-73		6.7	0	14	0.2	14				2.9	170	0	6.1	460															
9-5-73		6.5	0	26	0.2	26				2.9	210	0	2.4	580															

SL 193-1 POUNDS/DAY COMPOSITE

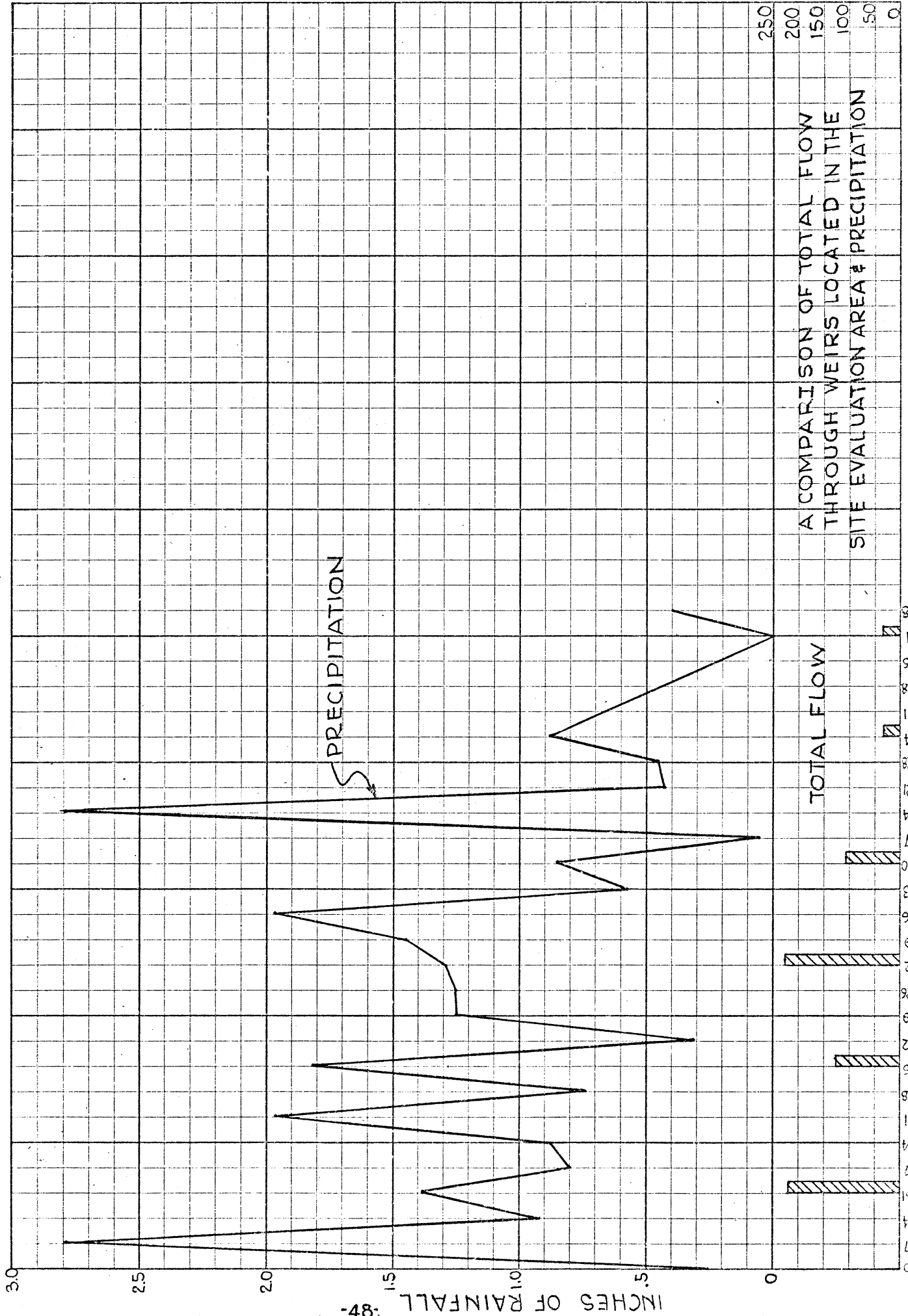
DATE	D-1			D-2			D-3			D-4			D-5			D-6			
	ACID	Fe	SULP.	ACID	Fe	SULP.	ACID	Fe	SULP.	ACID	Fe	SULP.	ACID	Fe	SULP.	ACID	Fe	SULP.	
4-3-73	394.8	16.9	1105.4	18.4	0.6	32.4	221.8	26.4	369.6	13.0	8.4	28.8	50.4	1.2	70.6	15.1	0.02	36.7	
5-7-73	171.4	10.2	318.2	3.8	0.01	6.7	108.0	10.8	172.8	10.7	0.2	33.1	46.1	1.2	72.0	10.1	0.01	21.6	
6-4-73	427.7	24.6	868.3	15.0	0.06	19.4	132.5	12.4	187.2	14.6	0.96	40.3	103.7	2.6	165.0	21.6	0.03	43.2	
7-3-73	126.0	22.6	840.0	3.6	0.6	6.5	49.0	5.2	79.2	6.5	0.02	20.9	48.2	2.0	100.9	2.2	0.04	7.9	
8-7-73	167.28	11.62	387.6	DRY	-	-	9.36	0.708	14.4	6.72	0.01	16.32	22.08	0.48	38.4	DRY	-	-	
9-5-73	224.4	12.65	399.6	DRY	-	-	24.0	1.73	28.8	6.72	0.01	16.32	79.20	1.58	115.2	DRY	-	-	
Ave	1571.58	257.9	D-7	40.8	D-8	544.66	58.24	D-9	90.8	9.7	D-10	349.68	581.3	D-11	49	D-12	121.2	67	72.0
4-3-73	34.1	1.0	67.2	45.4	0.2	118.8	224.4	28.6	428.4	3.5	0.6	12.5	10.6	0.04	48.0	37.4	6.7	72.0	
5-7-73	15.8	0.5	31.2	37.4	0.15	79.2	369.6	50.2	686.4	1.9	0.00	6.5	17.3	0.02	79.2	27.4	6.2	67.2	
6-4-73	15.4	0.4	28.8	24.5	1.06	52.8	583.2	55.7	907.2	2.6	0.00	7.2	43.2	0.12	158.4	19.7	2.6	31.2	
7-3-73	11.5	0.6	33.7	8.6	0.67	26.4	67.2	10.1	139.2	DRY	-	-	DRY	-	-	16.8	5.5	31.2	
8-7-73	9.24	0.28	19.2	6.84	0.08	16.8	24	2.28	39.6	DRY	-	-	DRY	-	-	DRY	-	-	
9-5-73	DRY	-	-	DRY	-	-	259.21	23.04	489.6	DRY	-	-	DRY	-	-	DRY	-	-	
Ave	36.04	D-13	122.74	20.5	D-14	1554.6	259.1	D-15	380	2.7	D-16	711	D-BELOW	23.7	101.3	25.3	-	-	-
4-3-73	85.7	3.3	120.4	2.9	0.0	7.2	14.2	0.11	19.2	37.0	14.8	481.4	230.11	1534	5752.8				
5-7-73	52.9	1.3	129.6	0.7	0.00	14	13.7	0.12	19.2										
6-4-73	49.7	0.8	93.9	5.6	0.01	15.1	13.7	0.11	18.0										
7-3-73	40.0	0.10	130.0	DRY	-	-	17.5	0.3	21.0										
8-7-73	15.84	0.52	38.4	DRY	-	-	7.92	0.16	11.28										
9-5-73	26.4	2.45	129.6	DRY	-	-	8.64	0.18	11.52										
Ave	45.1	D-17	121.6	12.16	D-18	121.6	12.16	D-19	12.16	12.16	D-20	12.16	12.16	D-21	12.16	12.16	12.16	12.16	12.16
4-3-73	1171.7	94.07	2537.2	34%	18%	44%	19%	28%	15%	19%	30%	17%	19%	30%	17%	19%	30%	17%	
5-7-73	886.8	80.91	1724.3	19%	13%	18%	12%	13%	10%	42%	62%	40%	42%	62%	40%	42%	62%	40%	
6-4-73	1472.7	101.45	2636.0	29%	24%	33%	9%	12%	7%	40%	55%	34%	40%	55%	34%	40%	55%	34%	
7-3-73	397.1	47.73	1436.9	32%	47%	58%	12%	11%	6%	17%	21%	10%	17%	21%	10%	17%	21%	10%	
8-7-73	269.28	16.14	582	62%	72%	67%	3%	4%	2%	9%	14%	7%	9%	14%	7%	9%	14%	7%	
9-5-73	628.57	41.64	1190.64	36%	30%	34%	4%	4%	2%	41%	55%	41%	41%	55%	41%	41%	55%	41%	

4826.2 - Av = 804.4

INCHES PRECIPITATION

<u>DAY</u>	<u>APR.</u>	<u>MAY</u>	<u>JUNE</u>	<u>JULY</u>	<u>AUG.</u>	<u>SEP.</u>
1	0.12	-----	0.08	-----	0.42	-----
2	0.29	0.04	0.22	-----	0.02	-----
3	0.07	0.34	-----	-----	-----	-----
4	-----	0.30	0.87	0.73	-----	-----
5	0.89	0.03	0.22	0.15	-----	-----
6	0.02	-----	0.02	-----	-----	0.28
7	-----	-----	0.21	-----	-----	0.08
8	0.23	-----	0.02	-----	-----	-----
9	0.18	0.61	-----	-----	-----	-----
10	0.30	0.41	0.05	-----	0.02	-----
11	0.04	0.61	-----	-----	0.85	-----
12	0.03	0.17	-----	-----	0.32	-----
13	-----	0.15	1.30	-----	-----	-----
14	-----	-----	0.09	0.04	-----	0.03
15	-----	0.01	-----	0.71	2.64	0.12
16	-----	-----	-----	0.04	-----	-----
17	0.03	0.10	0.60	-----	-----	-----
18	0.79	0.01	-----	-----	0.16	-----
19	0.03	-----	0.28	-----	-----	<u>0.51</u>
20	-----	0.42	-----	2.04	0.16	-----
21	-----	0.41	0.55	0.02	1.03	-----
22	-----	-----	0.10	-----	0.11	-----
23	0.26	0.13	0.44	-----	-----	-----
24	0.18	0.09	-----	-----	-----	-----
25	-----	0.20	0.15	0.20	-----	-----
26	0.14	-----	-----	0.21	-----	-----
27	-----	0.03	-----	0.01	-----	-----
28	1.38	0.41	0.20	-----	-----	-----
29	-----	0.18	0.18	0.01	-----	-----
30	-----	0.01	-----	-----	-----	-----
31	×	0.31	×	-----	-----	-----
TOTAL	4.98	4.97	5.22	4.16	5.73	
YEAR TO DATE	13.62	18.59	24.11	28.27	34.00	

Information obtained from Pennsylvania Electric Company; Piney Dam Gauging Station (located approximately 7 miles south of study area).



WATER SUPPLY SYSTEMS

An investigation of present water supply locations in the immediate area was conducted. Individual water supplies were sampled and analyzed in our laboratory.

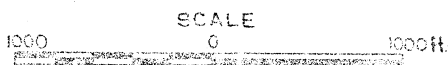
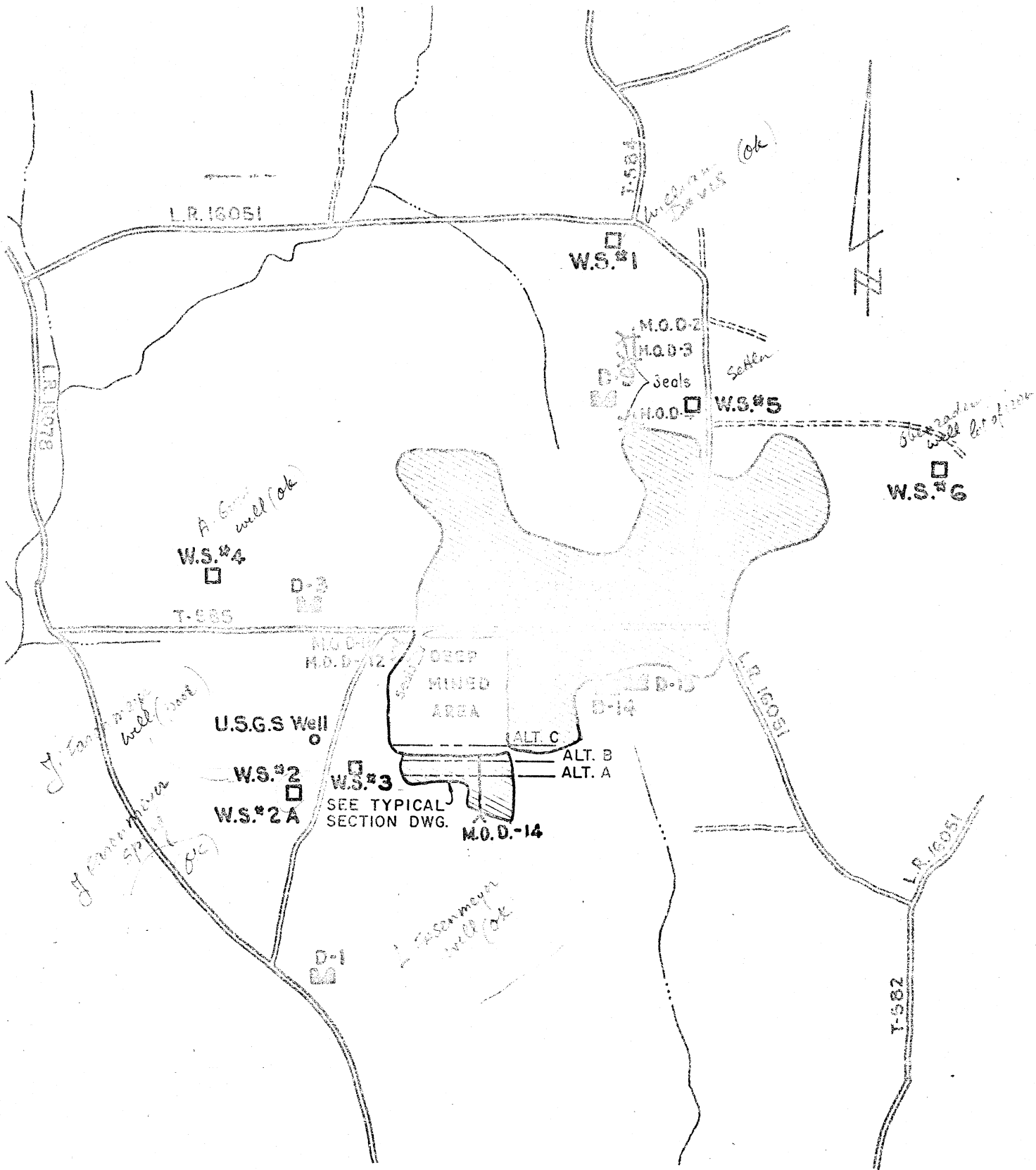
The following individuals were contacted and samples of their water were taken: (See page 51 for location map).

	<u>Approximate Surface Elevation</u>
1. William Davis (House) Well 20' Dug	1550'
2. Jacob Fasenmyer (House) Well 15' Dug	1510'
2A. Jacob Fasenmyer (Spring)	1505'
3. Lawrence Fasenmyer (House) Well 50' Drilled	1543'
4. Alfred Guth (Two Houses) Spring	1460'
5. James F. Schettler Cistern, no sample	
6. James Obenrader Cistern and Wells 45' Surface cased.	1555'

All the above are located on the same hill with only one water supply (W.S. #3) outletting (L. Fasenmyer) above the coal measure. All other sources are below the coal measure where the abatement construction work is contemplated. We do not expect any adverse effects from the proposed construction. It should be noted that the quality of the water sampled is not good. We also wish to call to your attention that the United States Geological Survey drilled a well (See page 51) in this area. This well is located approximately 100 yards south of Test Hole #4; the total depth was 235 feet. The coal measure was cased and cemented. The water encountered below the coal interval was also acidic.

It is our determination that the anticipated inundations will not adversely affect any of the water supplies within the proposed project area based on available information at this time.

This opinion is based on conditions as they exist at this time. The quality and the quantity of water can change with the season. Our opinion was drawn from a limited amount of information (one (1) water sample per site). Other factors, unknown to us at this time can and will influence changes in ground water conditions



**WATER SUPPLY LOCATIONS
DEER CREEK WATERSHED
KNOX TOWNSHIP, CLARION CO.**

GWIN, DOBSON & FOREMAN, INC.

Eighth Avenue and Twelfth Street

P.O. Box 1589

Altoona, Pa. 16603

Phone (814) 943-5214

4-19

Date Time

Sample received 4/19/74

Sample Analyzed

Case Name

William Davis

Project No.

Region

County

Municipality

Source

Receiving Stream

Tributary to

House (WELL)

Collected

Sample No.

Chemist

Date: Time:

Collected by

SEND RESULTS TO:

pH 4.2

Acidity 88 mg/l

Alkalinity 0 mg/l

Iron (total) 0.2 mg/l

Iron (ferrous) --- mg/l

Sulfates 380 mg/l

Other (specify)

- Planning & Dev. Research
- Ebensburg
- Reynoldsville
- Uniontown
- Pottsville
- Wilkes-Barre
- Other (specify)

REMARKS:

Eighth Avenue and Twelfth Street

P.O. Box 1589

Altoona, Pa. 16603

Phone (814) 943-5214

Date _____ Time _____

Sample received _____

Sample Analyzed _____

Case Name Jake Fasenmyer		Project No.
Region	County	Municipality
Source	Receiving Stream House (WELL)	Tributary to
Collected	Sample No.	Chemist
Date: _____ Time: _____	Collected by	

SEND RESULTS TO:

- Planning & Dev. Research
- Ebensburg
- Reynoldsville
- Uniontown
- Pottsville
- Wilkes-Barre
- Other (specify)

pH _____ 3.5

Acidity _____ 50 mg/l

Alkalinity _____ 0 mg/l

Iron (total) _____ 1.1 mg/l

Iron (ferrous) _____ --- mg/l

Sulfates _____ 300 mg/l

Other (specify) _____

REMARKS:

GWIN, DOBSON & FOREMAN, INC.
 Eighth Avenue and Twelfth Street
 P.O. Box 1589
 Altoona, Pa. 16603
 Phone (814) 943-5214

4-22

Date | Time

Sample received

Sample Analyzed

Case Name Jake Fasenmyer		Project No.
Region	County	Municipality
Source	Receiving Stream Spring in Front of House	Tributary to
Collected	Sample No.	Chemist
Date: Time:	Collected by	

pH 5.3

Acidity 2 mg/l

Alkalinity 0 mg/l

Iron (total) <0.1 mg/l

Iron (ferrous) --- mg/l

Sulfates 14 mg/l

Other (specify) _____

SEND RESULTS TO:

- Planning & Dev. Research
- Ebensburg
- Reynoldsville
- Uniontown
- Pottsville
- Wilkes-Barre
- Other (specify)

REMARKS:

Eighth Avenue and Twelfth Street

P.O. Box 1589

Altoona, Pa. 16603

Phone (814) 943-5214

Date | Time

Sample received

Sample Analyzed

Case Name Lawrence Fasenmyer		Project No.
Region	County	Municipality
Source	Receiving Stream House before Well Salt Tank	Tributary to
Collected	Sample No.	Chemist
Date: Time:	Collected by	

SEND RESULTS TO:

pH 5.7

Acidity 0 mg/l

Alkalinity 8 mg/l

Iron (total) 0.2 mg/l

Iron (ferrous) --- mg/l

Sulfates 91 mg/l

Other (specify)

- Planning & Dev. Research
- Ebensburg
- Reynoldsville
- Uniontown
- Pottsville
- Wilkes-Barre
- Other (specify)

REMARKS:

GWIN, DOBSON & FOREMAN, INC.

Eighth Avenue and Twelfth Street

P.O. Box 1589

Altoona, Pa. 16603

Phone (814) 943-5214

4-23

Date

Time

Sample received

Sample Analyzed

Case Name

Alfred Guth

Project No.

Region

County

Municipality

Source

Receiving Stream
Spring in Field

Tributary to

Collected

Sample No.

Chemist

Date:

Time:

Collected by

SEND RESULTS TO:

pH 5.0

Acidity 4 mg/l

Alkalinity 0 mg/l

Iron (total) <0.1 mg/l

Iron (ferrous) --- mg/l

Sulfates 23 mg/l

Other (specify)

- Planning & Dev. Research
- Ebensburg
- Reynoldsville
- Uniontown
- Pottsville
- Wilkes-Barre
- Other (specify)

REMARKS:

819th Avenue and Twelfth Street
P.O. Box 1589
Altoona, Pa. 16603
Phone (814) 943-5214

Date Time
Sample received 5-23-74 9:00 a.m.
Sample Analyzed 5-23-74 1:45 p.m.

Case Name James Obenrader Well		Project No. SL 193-1	
Region	County Clarion	Municipality	
Source	Receiving Stream	Tributary to	
Collected 5-16-74	Sample No. Water Supply 45'	Chemist	
Date: Time:	Collected by J. Ward		

SEND RESULTS TO:

pH 5.4

Acidity 30 mg/l

Alkalinity 0 mg/l

Iron (total) 12 mg/l

Iron (ferrous) mg/l

Sulfates 12 mg/l

Other (specify) _____

- Planning & Dev. Research
- Ebensburg
- Reynoldsville
- Uniontown
- Pottsville
- Wilkes-Barre
- Other (specify)

J. Ward GDF
Surface cased

REMARKS:

REFERENCES AND ACKNOWLEDGEMENTS

1. Geologic and Coal-Bed Map of Clarion County, Pennsylvania by Elmer D. Patterson and J.A. Van Lieu, U.S. Geological Survey Map 1-715, 1972
2. Foxburg-Clarion Folio 178 Geologic Atlas of the United States by E.W. Shaw, E.F. Lines and M.J. Mann, 1911
3. U.S. Geological Survey Water Resources Division-Gamma Ray Logs, Pumping information and information from Gauging Stations.
4. Meterological Information-Pennsylvania Electric Company, Piney Dam Station Clarion Pa.
5. Mine Maps-Bureau of Mines, Department of Interior, Pittsburg, Penna.
6. Mine Maps-Department of Environmental Resources, Bureau of Deep Mine Safety, Harrisburg, Pennsylvania.
7. Mine Maps-Department of Environmental Resources, Division Mine Subsidence Regulation, Murraysville, Pennsylvania.