UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Federal Center, Denver, Colorado 80225

In reply refer to:

Technical Letter

Dribble-52

May 6, 1966

Mr. James E. Reeves, Manager
Nevada Operations Office
U.S. Atomic Energy Commission
P. O. Box 1676
Las Vegas, Nevada 89101

Dear Mr. Reeves:

Transmitted herewith are two copies of:

NOTICE

This report was prepared as an account of work sponsored by the United States Government. Neither the United States nor the United States Department of Energy, nor any of their employees, nor any of their contractors, subcontractors, or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness or usefulness of any information, apparatus, product or process disclosed, or represents that its use would not infringe privately owned rights.

TECHNICAL LETTER: DRIBBLE-52

SURFACE-WATER RECORDS IN
LOWER LITTLE CREEK BASIN,
LAMAR AND MARION COUNTIES, MISSISSIPPI

By

R. E. Taylor and D. E. Shattles

USGS-474-302

Additional copies have been distributed as indicated on the attached sheet.

Sincerely yours,

for Sam W. Twenhofel
W. S. Twenhofel, Chief
Special Projects Branch

Attachment

Enclosures (2)

THIS DOCUMENT IS UNLIMITED

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

Distribution:

Technical Library, NVOO (4)
R. F. BEERS, Inc., Alexandria (8)
R. F. BEERS, Inc., Las Vegas
DTIE, Oak Ridge, Tenn.
AEC, DPNE
D. Crowson, DMA
B. Petrie, Jr., DMA
HNS (3)
J. F. Philip, SAN
R. H. Goeckermann, LRL
C. Bendix, LRL
D. E. Rawson, LRL (2)
S. Hansen, LRL
R. D. McArthur, LRL, Mercury
B. Smith, LRL, Mercury
S. Howell, H&N, Las Vegas
G. Bruesch, Fenix & Scisson, Inc., Mercury (4)
Fenix & Scisson, Inc., Las Vegas
L. Antonides, Fenix & Scisson, Inc., Tulsa
D. Lemmon, USGS

CONTENTS

	Page
Abstract.....	1
Introduction	1
Precipitation.....	3
Discharge.....	5
Quality of water.....	9
References.....	16

ILLUSTRATIONS

Figure 1. Stream-gaging stations in Lower Little Creek basin, Lamar and Marion Counties, Miss.....	2
2. Precipitation, Tatum dome area, Lamar County, Miss.....	4
3. Monthly mean discharge and median monthly discharge, Lower Little Creek (4892.40), near Baxterville, Miss.....	6
4. Discharge hydrograph, Lower Little Creek (4892.40) and precipitation, Tatum dome area, Lamar County, Miss.....	7

CONTENTS--Continued

TABLES

	Page
Table 1. Discharge measurements and water temperature at partial-record stations, Lower Little Creek basin, Miss.....	8
2. Chemical analyses of water samples obtained from Lower Little Creek basin, Miss.....	10
3. Discharge, in cubic feet per second, and specific conductance, in micromhos at 25°C, Lower Little Creek near Baxterville, Miss....	11
4. Specific conductance, in micromhos at 25°C, Half Moon Creek near Baxterville, Miss.....	14

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

In reply refer to:
Technical Letter
Dribble-52
May 6, 1966

Federal Center, Denver, Colorado 80225

SURFACE-WATER RECORDS IN
LOWER LITTLE CREEK BASIN,
LAMAR AND MARION COUNTIES, MISSISSIPPI

By

R. E. Taylor and D. E. Shattles

ABSTRACT

This report presents basic surface-water and precipitation data collected from June 1961 through June 1965 at 10 stations in Lower Little Creek basin of Lamar and Marion Counties, Mississippi. The U.S. Atomic Energy Commission's Tatum dome site of Project Dribble is in Lower Little Creek basin.

The data show a 3.80-inch deficiency in precipitation in the Tatum dome area from April 1964 through June 1965 and an 11.72-inch deficiency from June 1961 through June 1965. The mean monthly discharge at Lower Little Creek (4892.40) was less than the median monthly value during 11 of the 15 months from April 1964 through June 1965. Chemical analyses of water samples collected from five streams in the Tatum Dome area indicate that the water is of generally good quality; for example, dissolved-solids content ranged from 16 to 23 parts per million for samples collected during the period from October 31, 1961, through October 23, 1964.

INTRODUCTION

The U. S. Geological Survey in cooperation with the U. S. Atomic Energy Commission has collected streamflow and quality-of-water data since 1961 in Lower Little Creek basin as part of the water-resources investigative program of Project Dribble at Tatum dome test site, Lamar County, Miss. (fig. 1). To provide a history of some basin conditions during the Atomic Energy Commission's activities at the Tatum dome underground test site, basic data have been collected on precipitation, discharge, and water quality.

Figure 1.—Stream-gaging stations in Lower Little Creek basin, Lamar and Marion Counties, Miss.

The data in this report supplement similar basic surface-water data in four previous reports (Golden and Gaydos, 1964; Humphreys and Taylor, 1965; and Skelton, 1962 and 1963). In addition, this report also briefly reviews the major aspects of the four reports which cover the period June 1961 through June 1965.

PRECIPITATION

The precipitation data are based on precipitation measured at one station that has had different locations but has been maintained within the Tatum dome area. The average monthly precipitation data are from the Columbia, Miss., station whose record began in 1931.

Measurements from April 1964 through June 1965 (fig. 2) show that in 8 of the 15 months there was an excess of precipitation and in 7 months there was a deficiency. A comparison of total precipitation with the sum of the average monthly precipitations shows a 3.80-inch deficiency for this period. Dryness prevailing in the last 4 months of this study period was the determining factor for the net deficiency.

From June to December 1961, there was a 22.70-inch excess of precipitation. Both 1962 and 1963 were dry years, and these years had precipitation deficiencies of 9.66 and 25.04 inches. The year 1964 had a 10.58-inch excess of precipitation. The first half of 1965 had a 10.30-inch deficiency. Net precipitation from June 1961 through June 1965 was deficient by 11.72 inches.

Figure 2. --Precipitation, Tatum dome area, Lamar County, Miss.

DISCHARGE

During the 15-month period covered by this report, the mean monthly discharge at Lower Little Creek (4892.40) exceeded the median monthly discharge in only 4 months (fig. 3). Deficient-discharge months prevailed during most of 1964 and the first half of 1965. Comparison of discharge to precipitation during 1964 is not conclusive in itself, because most of the excessive precipitation in 1964 came during the part of the year that has the highest rate of evaporation and transpiration. Also, 1964 followed two dry years. Thus, even though 1964 was an above-average year for precipitation, the monthly mean discharge was deficient for most of the year.

The discharge from June 1961 through June 1965 is presented along with the precipitation for the same period in figure 4. Discharge is plotted as a mean monthly value and precipitation as a monthly total. These plots only represent measured data and are not intended to suggest or depict any relationship between these two entities. Any attempted relationship is beyond the scope of this report, as it would require a detailed study of many intricate conditions.

Table 1 lists discharge and water-temperature measurements obtained since the measurements presented by Humphreys and Taylor (1965).

Figure 3.--Monthly mean discharge and median monthly discharge,
Lower Little Creek (4892.40) near Baxterville, Miss.

Figure 4.--Discharge hydrograph, Lower Little Creek (4892.40) and precipitation, Tatum Dome area, Lamar County, Miss.

Table 1.--Discharge measurements and water temperature at partial-record stations, Lower Little Creek basin, Miss.

Half Moon Creek near Baxterville, Miss. (4892.25)

Date	Discharge (cfs)	Water Temp. (°F)	Date	Discharge (cfs)	Water Temp. (°F)
7- 8-64	17.3	--	10- 9-64	17.9	--
9-15-64	12.2	68	10-23-64	14.9	57
9-27-64	10.3	71	11- 9-64	15.8	58
9-28-64	12.6	72			

Hurricane Creek near Baxterville, Miss. (4892.30)

Date	Discharge (cfs)	Water Temp. (°F)
9-27-64	7.55	71
10- 9-64	13.5	--
10-23-64	9.58	56

Bay Creek near Baxterville, Miss. (4892.35)

Date	Discharge (cfs)	Water Temp. (°F)
9-28-64	2.09	72
10- 9-64	4.93	--
10-23-64	2.67	56

Gully Creek near Baxterville, Miss. (4892.39)

Date	Discharge (cfs)	Water Temp. (°F)
9-27-64	6.46	74
10- 9-64	11.3	--
10-23-64	7.19	--

Lower Little Creek at Hub, Miss. (4892.50)

Date	Discharge (cfs)	Water Temp. (°F)
7- 9-64	46.2	--

QUALITY OF WATER

The source of nearly all surface water in the Tatum dome area is precipitation entering the streams either as direct runoff or as ground-water seepage that has percolated through the soils to the water table.

Chemical analyses of water samples collected from five streams in the Tatum dome area indicate water of good quality. Analyses of samples collected in the Tatum dome area (table 2) show that the dissolved-solids content ranged from 16 to 23 ppm (parts per million) on Half Moon Creek near Baxterville. The dissolved-solids content of each of the other samples from the five streams is within this same range of values.

Because the specific conductance of water depends on the degree of ionization of the mineral constituents dissolved in the water, this property is indicative of the dissolved-solids content. Although the relationship is not exact, the dissolved-solids content expressed in parts per million is usually 55-75 percent of the conductance expressed in micromhos at 25°C. The distribution of daily specific-conductance values shown in tables 3 and 4 shows that most of the time the dissolved solids are low.

A specific-conductance recorder was installed at the Lower Little Creek gage (4892.40) in March 1963 and was discontinued in September 1964. The specific-conductance recorder was moved to Half Moon Creek station and installed in September 1964. In December 1964, the station was discontinued. The recorder was reinstalled at the Lower Little Creek gage (4892.40) in January 1965 and was discontinued in June 1965. The average daily specific conductance of the Lower Little Creek station is listed in table 3 and the Half Moon Creek station is shown

Table 2.--Chemical analyses of water samples obtained from Lower Little Creek basin, Miss.
(Analyses given in parts per million)

Date of collection	Silica (SiO ₂)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH
													Calcium, Magnesium	Non-carbonate		
Half Moon Creek near Baxterville (4892.25)																
Oct. 31, 1961	5.5	0.27	1.0	0.9	2.0	0.7	8	0.0	3.0	0.1	1.1	18	6	0	23	6.4
Nov. 8, 1962	--	--	--	--	--	--	--	--	3.1	.1	1.1	23	6	0	--	6.4
Nov. 20, 1962	7.3	.05	.0	.7	2.3	.8	7	.0	2.1	.0	.2	16	3	0	50	6.7
Dec. 5, 1962	--	--	1.0	.4	--	--	2	--	.2	--	--	--	4	2	< 50	5.9
Jan. 15, 1963	--	--	1.0	.0	--	--	3	--	3.2	--	--	--	2	0	< 50	5.8
Feb. 10, 1963	--	--	1.4	.0	--	--	2	--	2.8	--	--	--	2	0	< 50	5.2
Mar. 12, 1963	--	--	.6	.6	--	--	2	--	3.2	--	--	--	4	0	< 50	4.9
July 17, 1963	9.7	.03	1.0	.6	2.5	.7	6	.0	4.6	.0	.3	22	5	0	24	6.3
Oct. 23, 1964	10	.03	.5	.2	2.1	.5	3	.0	3.0	.0	.1	17	2	0	26	5.8
Hurricane Creek near Baxterville (4892.30)																
Nov. 8, 1962	--	--	--	--	--	--	--	--	2.9	--	--	--	--	--	16	--
Nov. 20, 1962	7.6	0.13	0.9	0.4	2.3	0.8	6	0.0	3.6	0.0	0.3	19	4	0	17	6.8
Dec. 5, 1962	--	--	.4	.7	--	--	4	--	2.0	--	--	--	4	1	< 50	5.9
Jan. 15, 1963	--	--	1.2	.0	--	--	3	--	2.8	--	--	--	2	0	< 50	6.1
Feb. 10, 1963	--	--	1.4	.4	--	--	2	--	2.8	--	--	--	5	3	< 50	4.8
Mar. 12, 1963	--	--	1.4	.1	--	--	2	--	2.8	--	--	--	4	0	< 50	4.8
July 17, 1963	9.2	.06	1.0	1.1	.2	.3	4	.0	3.2	.0	.3	17	7	4	18	6.3
Bay Creek near Baxterville (4892.35)																
Nov. 8, 1962	--	--	--	--	--	--	--	--	3.5	--	--	--	--	--	17	--
Nov. 20, 1962	8.3	0.14	0.7	0.5	2.5	0.8	7	0.0	3.5	0.0	0.3	20	4	0	20	6.5
Dec. 5, 1962	--	--	1.2	.5	--	--	3	--	3.8	--	--	--	5	3	< 50	5.5
Jan. 15, 1963	--	--	1.6	.0	--	--	4	--	4.2	--	--	--	4	1	< 50	5.7
Feb. 10, 1963	--	--	1.0	.4	--	--	2	--	3.0	--	--	--	4	2	< 50	5.1
Mar. 13, 1963	--	--	1.4	.6	--	--	2	--	3.0	--	--	--	6	1	< 50	5.4
July 17, 1963	8.4	.03	.9	.7	2.9	.5	6	.0	4.7	.0	.3	20	5	0	21	6.4
Lower Little Creek near Baxterville (4892.37)																
Nov. 8, 1962	--	--	--	--	--	--	--	--	3.4	--	--	--	--	--	16	--
Gully Creek near Baxterville (4892.39)																
Nov. 8, 1962	--	--	--	--	--	--	--	--	2.4	--	--	--	--	--	16	--
Nov. 20, 1962	6.9	0.07	0.8	0.5	2.3	0.9	7	0.0	3.0	0.0	0.2	18	4	0	20	7.0
Dec. 5, 1962	--	--	1.4	.1	--	--	5	--	2.4	--	--	--	4	0	< 50	5.8
Jan. 15, 1963	--	--	1.4	.1	--	--	3	--	3.2	--	--	--	4	1	< 50	5.9
Feb. 10, 1963	--	--	2.6	.0	--	--	2	--	3.6	--	--	--	4	2	< 50	5.1
Mar. 12, 1963	--	--	.8	.5	--	--	2	--	3.4	--	--	--	4	0	< 50	5.0
July 17, 1963	7.0	.02	.6	.6	2.8	.4	5	.8	3.8	.0	.2	17	4	0	18	6.6
Lower Little Creek near Baxterville (4892.40)																
Oct. 31, 1961	4.6	0.23	1.0	0.9	1.6	0.6	8	0.0	3.0	0.1	0.7	16	6	0	18	6.5
Nov. 8, 1962	--	--	--	--	--	--	--	--	2.9	--	--	--	--	--	16	--
Nov. 20, 1962	6.9	.09	.7	.3	2.5	.8	7	.0	2.8	.0	.2	17	3	0	19	6.8
Dec. 5, 1962	--	--	1.0	.1	--	--	28	--	3.0	--	--	--	3	0	< 50	7.2
Dec. 6, 1962	--	--	1.4	.1	--	--	4	--	2.4	--	--	--	4	1	< 50	5.5
Dec. 6, 1962	--	--	.4	.7	--	--	4	--	2.6	--	--	--	4	1	< 50	5.7
Jan. 15, 1963	--	--	1.4	.0	--	--	2	--	3.6	--	--	--	4	2	< 50	5.8
Feb. 10, 1963	--	--	1.0	.4	--	--	1	--	3.8	--	--	--	4	3	< 50	4.9
Mar. 12, 1963	--	--	.6	.6	--	--	4	--	2.6	--	--	--	4	0	< 50	5.2
July 17, 1963	9.2	.05	1.0	.4	2.3	.5	5	.0	3.7	.0	.2	19	4	0	20	6.4
Lower Little Creek near Pinebur (4892.43)																
Nov. 8, 1962	--	--	--	--	--	--	--	--	2.9	--	--	--	--	--	16	--
Lower Little Creek at Pinebur (4892.46)																
Nov. 8, 1962	--	--	--	--	--	--	--	--	2.8	--	--	--	--	--	17	--
Lower Little Creek at Hub (4892.50)																
Nov. 8, 1962	--	--	--	--	--	--	--	--	3.1	--	--	--	--	--	17	--
Jan. 15, 1963	--	--	3.6	0.0	--	--	4	--	3.0	--	--	--	4	1	< 50	5.8
Feb. 10, 1963	--	--	1.0	.4	--	--	1	--	2.8	--	--	--	4	3	< 50	4.7
Feb. 13, 1963	--	--	1.4	.1	--	--	24	--	3.0	--	--	--	4	0	< 50	6.2
Mar. 12, 1963	--	--	.4	.7	--	--	2	--	2.6	--	--	--	4	0	< 50	5.0

Table 3.--Discharge, in cubic feet per second, and specific conductance, in micromhos at 25°C, Lower Little Creek near Baxterville, Mississippi (4892.40), April 1964 to June 1965, Drainage area, 82.6 square miles

Day	Apr.	May	June		July		Aug.		Sept.	
	a	a	a	b	a	b	a	b	a	b
1	84	295	338		67	15	41	24	36	29
2	81	448	138		107	18	162	30	34	29
3	81	295	78		95	18	203	40	32	29
4	84	143	62		120	20	86	30	31	
5	81	106	53		74	20	54	30	31	
6	223	89	49	15	52	20	46	30	34	
7	654	81	47	15	43	20	44	27	40	
8	268	75	44	15	38	20	146	27	46	
9	141	71	43	15	37	25	69	27	37	
10	101	69	48	15	42	25	50	27	33	
11	89	66	47	15	44	25	52	27	31	
12	83	151	43	15	45	25	47	25	30	
13	98	289	39	15	145	25	41	25	29	
14	195	141	38	15	112	25	49	25	29	
15	172	85	38	15	66	25	128	35	29	
16	103	70	108	15	69	25	75	31	28	
17	80	65	224	40	54	25	99	30	44	
18	74	59	95	20	46	25	65	30	80	
19	72	56	57	20	42	25	52	30	64	
20	66	53	46	19	38	25	47	29	46	
21	60	53	41	18	37	25	42	28	38	
22	57	55	38	18	39	25	44	28	34	
23	54	62	78	17	44	23	80	38	32	
24	52	69	82	15	62	23	57	33	29	
25	56	61	67	15	119	30	76	30	27	
26	5,760	57	58	15	77	31	146	55	26	
27	2,610	51	116	10	64	30	83	31	28	
28	406	47	83	15	57	29	53	30	30	
29	186	44	75	15	54	25	45	30	72	
30	129	47	69	15	48	25	45	30	92	
31		270			44	23	39	29		
Total	12,200	3,523	2,342		1,981		2,266		1,172	
Mean	407	114	78.1		63.9		73.1		39.1	
Cfsm	4.93	1.38	0.946		0.774		0.885		0.473	
In.	5.49	1.59	1.05		0.89		1.02		0.53	

a) Discharge

b) Specific conductance

Table 3.--Discharge, in cubic feet per second, and specific conductance, in micromhos at 25°C, Lower Little Creek near Baxterville, Mississippi (4892.40), April 1964 to June 1965, Drainage area, 82.6 square miles--
Continued.

Day	Oct.	Nov.	Dec.	Jan.		Feb.	
	a	a	a	a	b	a	b
1	63	43	83	112		112	28
2	51	40	71	92		118	38
3	48	39	69	124		107	28
4	232	38	280	123		96	27
5	653	37	199	92		93	26
6	194	37	104	82		320	36
7	81	42	79	79		486	30
8	62	42	72	78		235	75
9	52	40	68	166		184	35
10	47	38	80	331		187	35
11	44	37	2,540	196		199	40
12	43	38	1,200	123		428	45
13	42	38	354	101		328	31
14	41	38	218	94	26	192	29
15	40	39	161	88	26	146	27
16	40	39	136	81	25	345	30
17	39	39	126	75	25	1,920	26
18	37	39	271	71	25	1,030	18
19	35	63	248	71	25	371	19
20	33	174	162	71	25	262	20
21	32	105	136	72	25	237	21
22	34	63	134	181	25	204	22
23	35	49	124	1,840	24	178	22
24	34	103	113	862	22	304	30
25	34	250	113	304	22	386	30
26	33	124	102	222	24	216	25
27	48	76	89	178	25	169	25
28	79	399	82	148	26	157	25
29	75	354	79	136	27		
30	56	127	137	128	26		
31	48		161	118	27		
Total	2,385	2,590	7,791	6,439		9,010	
Mean	76.9	86.3	251	208		322	
Cfsm	0.931	1.04	3.04	2.52		3.90	
In.	1.07	1.17	3.51	2.90		4.06	

^aDischarge

^bSpecific conductance

Table 3.--Discharge, in cubic feet per second, and specific conductance, in micromhos at 25°C, Lower Little Creek near Baxterville, Mississippi (4892.40), April 1964 to June 1965, Drainage area, 82.6 square miles--Continued.

Day	Mar.		Apr.		May		June	
	a	b	a	b	a	b	a	b
1	484	40	191	27	51	23	33	26
2	724	26	131	25	50	25	33	25
3	360	26	112	24	49	25	33	45
4	240	27	102	24	48	25	32	
5	199	30	92	24	46	25	32	
6	173	29	87	25	44	26	34	
7	157	29	80	25	43	25	48	
8	147	29	76	25	43	25	74	
9	142	29	70	26	42	23	53	
10	136	28	68	25	43	21	42	
11	158	26	67	26	42	20	48	
12	158	23	67	27	42	20	63	
13	170	23	65	28	40	20	48	
14	147	23	60	27	40	20	40	
15	132	23	58	26	39	21	41	
16	124	24	58	26	39	21	50	
17	132	24	56	23	39	21	44	
18	182	24	54	20	39	20	39	
19	137	24	56	20	39	20	34	
20	124	23	55	20	39	21	32	
21	116	23	54	20	39	22	31	
22	108	22	51	21	47	22	31	
23	110	22	53	20	57	25	30	
24	119	21	69	25	51	27	30	
25	113	25	70	22	46	27	47	
26	107	25	64	22	40	27	65	
27	118	26	86	22	39	27	42	
28	195	33	88	22	46	27	41	
29	148	26	63	21	45	26	47	
30	272	30	56	21	40	26	39	
31	302	29			35	26		
Total	5,934		2,259		1,342		1,256	
Mean	191		75.3		43.3		41.9	
Cfsm	2.31		0.912		0.524		0.507	
In.	2.67		1.02		0.60		0.57	

^aDischarge

^bSpecific conductance

Table 4.--Specific conductance, in micromhos at 25°C, Half Moon Creek near Baxterville, Mississippi (4892.25),
September 22, 1964 to December 17, 1964

Day	September	October	November	December
1		95	30	34
2		80	29	31
3		160	28	30
4		125	28	60
5		65	27	40
6		40	27	40
7		39	60	40
8		37	70	40
9		34	25	40
10		32	20	37
11		31	20	50
12		30	20	11
13		30	20	11
14		30	20	12
15		37	21	11
16		28	21	12
17		25	21	12
18		25	20	
19		25	35	
20		25	50	
21		24	36	
22	25	23	31	
23	25	23	27	
24	24	23	50	
25	23	22	55	
26	23	22	38	
27	22	22	33	
28	22	35	45	
29	35	42	36	
30	32	35	35	
31		33		

in table 4. The relation between the discharge and quality of water in this stream is not apparent from the data obtained to date. Specific conductance of Lower Little Creek during the period June-September 1964 and January-June 1965 ranged from 10 to 75 micromhos.

The pH of 40 water samples analyzed ranged from 4.7 to 7.2. Thirty-eight of the 40 samples analyzed had a pH less than 7.0.

Results of a 4-year investigation of the surface water in the Tatum dome area indicate that the streams are free of chemical pollution or contamination. Records of specific conductance on Half Moon Creek (table 4) indicate that streams in the Tatum dome area were not affected chemically by the AEC underground nuclear test of October 22, 1964.

REFERENCES

- Golden, H. G., and Gaydos, M. W., 1964, Surface-water investigations in Lower Little Creek basin, Lamar and Marion Counties, Mississippi: U. S. Geol. Survey Tech. Letter Dribble-41, 15 p.
(Contains streamflow data from December 1962 through May 1964).
- Humphreys, C. P., Jr., and Taylor, R. E., 1965, Streamflow in Lower Little Creek basin affected by the Salmon Event, Lamar County, Mississippi: U. S. Geol. Survey Tech. Letter Dribble-43, 14 p.
(Contains streamflow data spanning the detonation of the 5-KT Salmon Event of October 22, 1964).
- Skelton, John, 1962, Surface-water investigations in Lower Little Creek basin, Lamar and Marion Counties, Mississippi: U. S. Geol. Survey Tech. Letter Dribble-27, 15 p.
(Contains streamflow data from January 1961 through December 1962).
- _____, 1963, Surface-water investigations in Lower Little Creek basin, Lamar and Marion Counties, Mississippi: U. S. Geol. Survey Tech. Letter Dribble-33, 41 p.
(Contains analyses of flow characteristics and water quality, utilizing the data from previous report (Skelton, 1962) and a discussion of the potential of Lower Little Creek for disposal of salt from the dome).