MASTER

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Federal Center, Denver, Colorado 80225

RADIOCHEMICAL ANALYSES OF GROUND-WATER AND SURFACE-
WATER SAMPLES COLLECTED AFTER THE SALMON EVENT IN
THE VICINITY OF TATUM SALT DOME,
LAMAR COUNTY, MISSISSIPPI

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By

W. A. Beetem and D. B. Grove

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CONTENTS

	Page
Abstract	1
Introduction	1
Procedures and results	3
Summary	9
Laboratory analyses	10

ILLUSTRATIONS

Figure 1. Map of Tatum salt dome area	2
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TABLES

Table 1. Radiochemical analyses of ground-water samples in the vicinity of Tatum salt dome, Lamar County, Mississippi	5
2. Radiochemical analyses of surface-water samples in the vicinity of Tatum salt dome, Lamar County, Mississippi	8

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ABSTRACT

Samples of ground water and surface water have been collected in the vicinity of Tatum salt dome, Mississippi, the U.S. Atomic Energy Commission Project Test Site. These samples were collected in conjunction with facilities operated by Isotopes, Inc., and Reynolds Electrical & Engineering Co. or from the streams of the area. The samples tabulated herein were analyzed by the U.S. Geological Survey as part of the Salmon Event evaluation program.

INTRODUCTION

This is the fifth release of radiochemical data obtained by analyzing water samples collected cooperatively with Isotopes, Inc., or through the use of AEC facilities operated by Reynolds Electrical & Engineering Co. (REECo). The continued cooperation of Isotopes, Inc., is gratefully acknowledged. R. E. Taylor and W. T. Oakley, U.S. Geological Survey, have provided field support by obtaining and defining the water samples.

Locations of the hydrologic test wells, the exploratory holes, and the streams sampled are shown on figure 1.

Brand names given in this report are included to identify specific equipment used, and do not constitute an endorsement of these products by the U.S. Geological Survey.

Figure 1.— MAP OF TATUM DOME AREA

PROCEDURES AND RESULTS

Water samples received for analysis at the Denver laboratory are first assigned a laboratory number. The sample bottles are then marked with these numbers and all pertinent information supplied with the sample is typed on data cards. All identifying information written on the bottle is removed before the sample is submitted to the analysts for analysis. These procedures have been adopted as a quality control measure and are standard for all incoming water samples.

Gross alpha, gross beta, and tritium determinations are made on all samples submitted. In addition, a gross gamma scan was made when so indicated on the analytical sheets. When anomalously high gross beta or gross alpha counts are obtained, sample planchets are recounted and a duplicate sample prepared to substantiate the data. If the duplicate tritium determination indicates concentrations near normal background levels but with discrepancy of data, aliquots of the samples are sent to a laboratory in Washington, D.C., for electrolytic concentration and subsequent low-level liquid scintillation counting. Various other radiochemical determinations may be made, depending on the results obtained for gross alpha and gross beta determinations and the gross gamma scan.

The determination of the tritium concentration is made on part of the distillate obtained from a small volume of the sample, which is distilled to dryness. For counting, a 4.0-ml (milliliter) aliquot of the sample distillate is mixed with 18.0-ml of a dioxane-base liquid scintillation "cocktail" in a polyethylene counting vial. The vial is

placed in a refrigerated sample changer and associated Packard Model 314E liquid scintillation spectrometer, and the sample is counted three times over a period of 2 days. The entire procedure is repeated after an interval of at least 7 days and the six values averaged and reported.

Beta activity of the water samples analyzed is determined on sample aliquots ranging in volume from 5 to 1,000 ml. Aliquot volumes chosen for analyses are dependent upon the total dissolved solids in the samples and are chosen to yield deposits within certain weight tolerances, which will standardize self-absorption of the samples.

Gross alpha values are reported for aliquots of sufficient size to give significant counts above background. For aliquots too small to give significant counts above background, gross alpha values are reported as "sought but not detected by method used."

Analytical data obtained on the samples analyzed for this report have been obtained according to these procedures and are summarized in tables 1 and 2.

Table 1.--Radiochemical analyses of ground-water samples in the vicinity of
Tatum salt dome, Lamar County, Mississippi

Well	Date of collection	Laboratory number	Aquifer	Gross alpha as $\text{Sr}^{90}-\text{Y}^{90}$ ($\mu\text{c}/\text{ml}$)	Gross alpha as U equivalent ($\mu\text{g}/\text{l}$)	Date determined	Tritium ($\mu\text{c}/\text{ml}$)
HT-2c	09-13-65	660187	Local	9.0×10^{-10}	<1.9	11-20-65	ND
Do.	09-16-65	660192	do.	3.8×10^{-9}	3.1	03-16-66	ND
Do.	10-21-65	660385	do.	2.8×10^{-9}	4.4	03-02-66	ND
Do.	10-28-65	660479	do.	3.2×10^{-9}	3.9	03-02-66	ND
Do.	11-04-65	660510	do.	2.4×10^{-9}	<2.5	03-03-66	ND
Do.	11-15-65	660550	do.	5.1×10^{-9}	2.8	03-03-66	ND
Do.	11-26-65	660629	do.	3.8×10^{-9}	4.5	03-03-66	ND
Do.	12-03-65	660640	do.	1.5×10^{-9}	<2.2	03-04-66	ND
Do.	12-10-65	660672	do.	2.4×10^{-9}	4.8	02-28-66	ND
Do.	12-15-65	660677	do.	1.6×10^{-9}	<2.7	03-01-66	ND
Do.	01-20-66	660772	do.	1.0×10^{-8}	4.3	03-16-66	ND
HT-4	11-26-65	660631	1	6.2×10^{-9}	<2.7	03-03-66	ND
HT-2a	09-09-65	660185	2a	4.1×10^{-9}	<1.2	02-06-66	ND
Do.	09-16-65	660186	do.	$<4.0 \times 10^{-10}$	<.7	11-20-65	ND
Do.	10-21-65	660384	do.	4.0×10^{-9}	1.3	03-01-66	ND
Do.	10-28-65	660481	do.	3.9×10^{-9}	1.7	03-02-66	ND
Do.	11-04-65	660509	do.	4.0×10^{-9}	<1.0	03-04-66	ND
Do.	11-15-65	660549	do.	5.4×10^{-9}	<1.0	03-04-66	ND
Do.	11-26-65	660638	do.	6.0×10^{-9}	8.1	03-17-66	ND
Do.	12-03-65	660639	do.	3.8×10^{-9}	1.8	03-05-66	ND
Do.	12-10-65	660673	do.	3.4×10^{-9}	2.2	02-28-66	ND
Do.	12-15-65	660678	do.	3.6×10^{-9}	2.2	03-01-66	ND
Do.	01-20-66	660771	do.	4.4×10^{-9}	3.2	03-17-66	ND
HT-5	11-26-65	660632	do.	4.1×10^{-9}	<1.3	03-05-66	ND

Table 1.--Radiochemical analyses of ground-water samples in the vicinity of
Tatum salt dome, Lamar County, Mississippi--Continued

Well	Date of collection	Laboratory number	Aquifer	Gross alpha as $\text{Sr}^{90}-\text{Y}^{90}$ ($\mu\text{c}/\text{ml}$)	Gross alpha as U equivalent ($\mu\text{g}/\text{l}$)	Date determined	Tritium ($\mu\text{c}/\text{ml}$)
HT-6	10-28-65	660483	2b	1.2×10^{-8}	<12	03-02-66	ND
Do.	11-15-65	660547	do.	9.7×10^{-8}	16	03-03-66	ND
Do.	11-26-65	660633	do.	1.0×10^{-8}	<12	03-02-66	ND
E-1	09-16-65	660188	3a	4.4×10^{-9}	<8.2	11-20-65	ND
Do.	10-28-65	660480	do.	5.5×10^{-9}	<15	03-02-66	ND
Do.	11-15-65	660552	do.	$<4.8 \times 10^{-9}$	<16	03-04-66	ND
Do.	11-29-65	660628	do.	$<2.8 \times 10^{-9}$	<15	03-04-66	ND
E-14b (U)	11-29-65	660635	do.	6.1×10^{-9}	<16	03-02-66	ND
Do.	12-11-65	660676	do.	4.8×10^{-9}	<6.8	03-04-66	ND
HT-1 (3)	09-16-65	660190	3	3.5×10^{-9}	1.2	03-17-66	ND
Do.	10-28-65	660477	do.	5.7×10^{-9}	7.8	03-01-66	ND
HT-2 (3)	09-29-65	660234	do.	1.7×10^{-9}	<1.4	11-20-65	ND
Do.	10-22-65	660440	do.	4.6×10^{-9}	<1.3	03-01-66	ND
HT-3	10-28-65	660482	Calcite caprock	2.1×10^{-8}	<36	03-02-66	ND
Do.	11-15-65	660548	do.	1.3×10^{-8}	<30	03-03-66	ND
Do.	11-26-65	660630	do.	1.4×10^{-8}	<30	03-04-66	ND
E-9	11-29-65	660634	do.	8.5×10^{-9}	<21	03-02-66	ND
Do.	12-10-65	660674	do.	$<7.1 \times 10^{-9}$	<21	02-28-66	ND
E-14b (L)	10-28-65	660478	do.	1.2×10^{-8}	<26	03-02-66	ND
Do.	11-15-65	660551	do.	8.2×10^{-8}	<30	03-04-66	ND
Do.	11-29-65	660636	do.	$<7.2 \times 10^{-9}$	<26	03-02-66	ND
Do.	12-11-65	660675	do.	$<7.2 \times 10^{-9}$	<30	02-28-66	ND

Table 1.--Radiochemical analyses of ground-water samples in the vicinity of
Tatum salt dome, Lamar County, Mississippi--Continued

Well	Date of collection	Laboratory number	Aquifer	Gross alpha as $\text{Sr}^{90}-\text{Y}^{90}$ ($\mu\text{c}/\text{ml}$)	Gross alpha as U equivalent ($\mu\text{g}/\text{l}$)	Date determined	Tritium ($\mu\text{c}/\text{ml}$)
HT-1(4)	10-28-65	660484	4	2.1×10^{-8}	<17	03-02-66	ND
HT-2(4)	11-15-65	660605	do.	4.2×10^{-9}	<5.9	03-04-66	1.1×10^{-4}
Do.	11-16-65	660625	do.	$<6.9 \times 10^{-9}$	40	03-04-66	5.0×10^{-6}
Do.	01-20-66	660773	do.	2.1×10^{-7}	25	03-16-66	1.1×10^{-5}
HT-1(5)	09-16-65	660191	5	9.7×10^{-8}	<240	03-16-66	ND
Do.	09-30-65	660222	do.	$<8.9 \times 10^{-8}$	<190	11-19-65	ND
Do.	10-14-65	660355	do.	8.9×10^{-8}	<180	11-25-65	ND
Do.	10-28-65	660476	do.	$<8.9 \times 10^{-8}$	290	03-01-66	ND

ND Sought but not detected by method used.

(U) Upper.

(L) Lower.

Table 2.--Radiochemical analyses of surface-water samples in the vicinity of
Tatum salt dome, Lamar County, Mississippi

Stream	Date of collection	Laboratory number	Gross beta as $\text{Sr}^{90}-\text{Y}^{90}$ ($\mu\text{c}/\text{ml}$)	Gross alpha as U equivalent ($\mu\text{g}/\text{l}$)	Date determined	Tritium ($\mu\text{c}/\text{ml}$)	Uranium ($\mu\text{g}/\text{l}$)	Radium as Ra^{226} ($\mu\text{c}/\text{ml}$)
Half Moon Creek	10-23-64	650254	2.0×10^{-9}	<1.2	12-08-64	--	<0.4	0.2
	10-30-64	650366	5.1×10^{-9}	<.7	04-28-65	ND	.5	.1
	09-09-65	660166	2.3×10^{-9}	1.5	11-09-65	ND	<.4	.1
	10-21-65	660386	1.9×10^{-9}	.9	03-01-66	ND	--	--
	12-15-65	660679	3.4×10^{-9}	<1.4	03-01-66	ND	--	--
Grantham Creek	09-09-65	660165	1.8×10^{-9}	<.6	11-09-65	ND	<.4	.1
	10-21-65	660388	2.4×10^{-9}	<.8	03-01-66	ND	--	--
	12-15-65	660681	3.8×10^{-9}	5.6	03-01-66	ND	--	--
Lower Little Creek	10-23-64	650253	4.0×10^{-9}	4.5	12-08-64	--	<.4	.2
	10-30-64	650368	7.0×10^{-9}	4.3	05-17-65	ND	<.4	.2
	09-09-65	660167	7.4×10^{-9}	29	11-09-65	ND	<.4	.1
	09-09-65	660167	^{1/} 1.2×10^{-8}	48	03-17-66	--	--	--
	10-21-65	660387	1.9×10^{-9}	1.8	03-01-66	ND	--	--
	12-15-65	660680	3.4×10^{-9}	<.7	03-01-66	ND	--	--

ND Sought but not detected by method used.

^{1/} Sample recounted on date indicated. Insufficient sample remaining for rerun.

SUMMARY

Water samples were collected periodically for 16 months after the Salmon Event. Isotopes, Inc., discontinued its study efforts in the area in December 1965. As a result of this program termination and because the level of radioactive concentrations indicate no significant change when compared to preshot sample analyses, the sampling frequency and network size has been reduced.

All samples from the wells in the vicinity of the Salmon Event that were collected after the event and before or during December 1965 and that have not been previously reported are contained herein.

The supply wells, HT-2a and HT-2c, are being sampled on a monthly basis. The HT-2 multiple completion well used as a disposal well in number 5 aquifer is being sampled to follow any cross flow or contamination by other means in the upper potable aquifers 3 and 4.

Lab. No. 660187U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2c
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 9-13-65 Time 1500
Col. By U.S.G.S.
Field detns: Temp. (°F) 71° pH _____
Sp. Cond. (μmhos) _____ Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) 366 Cased to 344 ft.
Diam. (in) 6-5/8 OD Date Drilled 4-61
Water level (ft) _____
Discharge _____
W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., local aquifer, 344 to 366 ft.
Owner U.S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>	<u><0.4</u>		
Radium as Ra ²²⁶	<u>.4</u>		
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>.9</u>		<u>11-20-65</u>
Gross α as U equivalent <u>μg/l</u>	<u><1.9</u>		<u>11-20-65</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>160</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Stainless steel wire-wrapped screen from 344 to 366 ft.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	Sampled after pumping 2,500 gallons.
Chromium ⁵⁷	
Cobalt ⁶⁰	ND: Sought but not detected by method used 11-23-65.
Ruthenium-rhodium ¹⁰⁶	
Tritium	ND
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 9-24-65
Date data released 1-31-66
Program classification _____Analyst P.K.Roscio; T.Sinconis; E.Villasana
Date checked 1-31-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660192U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2cLocation Tatum Salt Dome, Lamar Co., MississippiNE 1/4 SW 1/4 SW 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No. _____Date Col. 9-16-65 Time 1415Col. By USGSField detns: Temp. (°F) 70 pH _____Sp. Cond. (μmhos) 240 Eh _____Appearance ClearWell Type Drilled Use ObservationDepth (ft) 366 Cased to 344 ft.Diam. (in) 6-5/8 OD Date Drilled 4-61Water level (ft) 130 below l.s.d.Discharge 100 gpmW.B.F. Pascagoula and Hattiesburg Fms.,
undiff., local aquifer, 344 to 366 ft.Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>3.8</u>		<u>3-16-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>3.1</u>		<u>3-16-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>190</u>		

Isotopic Analysis

Barium-lanthanum¹⁴⁰Cerium-praseodymium¹⁴⁴Cesium¹³⁷Chromium⁵⁷Cobalt⁶⁰Ruthenium-rhodium¹⁰⁶

Tritium

Zinc⁶⁵Zirconium-niobium⁹⁵

ND

Remarks:

Stainless steel wire-wrapped screen
from 344 to 366 ft.Sample collected after 1 hr. of
pumping at 100 gpm.ND: Sought but not detected by
method used 9-27-65.Date sample received 9-27-65Date data released 3-18-66Program classification Project DribbleSalmon Event

*Analyzed only when indicated by gross β count.

Analyst E. Villasana; P.K. RoscioDate checked 3-18-66Checked by V. J. Janzer

Lab. No. 660385U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2cLocation Tatum Salt Dome, Lamar Co., MississippiNE 1/4 SW 1/4 SW 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No. _____Date Col. 10-21-65 Time 1330Col. By USGSField detns: Temp. (°F) 70 pH _____Sp. Cond. (μmhos) 305 Eh _____Appearance ClearWell Type Drilled Use ObservationDepth (ft) 366 Cased to 344 ft.Diam. (in) 6-5/8 OD Date Drilled 4-61Water level (ft) 130 below l.s.d. 9-16-65Discharge 100 gpm on 10-21-65W.B.F. Pascagoula and Hattiesburg Fms.undiff., local aquifer, 344 to 366 ft.Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra^{226}			
Gross β (as $Sr^{90} - Y^{90}$)	<u>2.8</u>		<u>3-2-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>4.4</u>		<u>3-2-66</u>
Net extr. α , U equivalent <u>μg/l</u>			
Gross γ (as Cs^{137})			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>170</u>		

Isotopic Analysis

Barium-lanthanum¹⁴⁰Cerium-praseodymium¹⁴⁴Cesium¹³⁷Chromium⁵⁷Cobalt⁶⁰Ruthenium-rhodium¹⁰⁶

Tritium

Zinc⁶⁵Zirconium-niobium⁹⁵

Remarks:

Stainless steel wire-wrapped screen
from 344 to 366 ft.Sampled after pumping 24,000 gallons
at 100 gpm.ND: Sought but not detected by method
used 11-8-65.Date sample received 10-21-65
Date data released 3-7-66
Program classification Project Dribble
Salmon EventAnalyst E. Villasana; H.C. Claassen; P.K. Roscio
Date checked 3-7-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

Lab. No. 660479

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well HT-2c
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 SW 1/4 SW 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No. _____

Date Col. 10-28-65 Time 1400
Col. By USGS
Field detns: Temp. (°F) 70 pH _____
Sp. Cond. (μmhos) 325 Eh _____
Appearance Clear

Well Type Drilled Use Observation
Depth (ft) 366 Cased to 344 ft.
Diam. (in) 6-5/8 OD Date Drilled 4-61
Water level (ft) _____
Discharge 50 gpm
W.B.F. Pascagoula and Hattiesburg Fms.
undiff., local aquifer, 344 to 366 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>3.2</u>		<u>3-2-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>3.9</u>		<u>3-2-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>170</u>		

Isotopic Analysis	
Barium-lanthanum ¹⁴⁰	
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	
Titanium	<u>ND</u>
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Remarks:

Stainless steel wire-wrapped screen
from 344 to 366 ft.

Sampled after 4 hours pumping at
50 gpm.

ND: Sought but not detected by
method used 11-23-65.

Date sample received 11-9-65
Date data released 3-9-66
Program classification Project Dribble
Salmon Event

Analyst H.C. Claassen; E. Villasana; P.K. Roscio
Date checked 3-9-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660510U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2cLocation Tatum Salt Dome, Lamar Co., MississippiNE 1/4 SW 1/4 SW 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No. _____Date Col. 11-4-65 Time 1130
Col. By USGS
Field detns: Temp. (°F) 70 pH _____
Sp. Cond. (μmhos) 235 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) 366 Cased to 344 ft.
Diam. (in) 6-5/8 OD Date Drilled 4-61
Water level (ft) _____
Discharge 50 gpm
W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., local aquifer, 344 to 366 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra^{226}			
Gross β (as $Sr^{90} - Y^{90}$)	<u>2.4</u>		<u>3-3-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><2.5</u>		<u>3-3-66</u>
Net extr. α , U equivalent <u>μg/l</u>			
Gross γ (as Cs^{137})			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>170</u>		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		<u>Stainless steel wire-wrapped screen</u> <u>from 344 to 366 ft.</u>
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		<u>Sampled after pumping for 3 hours</u> <u>at 50 gpm.</u>
Chromium ⁵⁷		
Cobalt ⁶⁰		<u>ND: Sought but not detected by</u> <u>method used.</u>
Ruthenium-rhodium ¹⁰⁶		
Tritium (<u>μc/ml 2-14-66</u>)	<u>ND</u>	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project Dribble
Salmon EventAnalyst H.C. Claassen; P.K. Roscio
Date checked 3-9-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

Lab. No. 660550

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well HT-2c
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No.

Date Col. 11-15-65 Time 1445
Col. By U.S.G.S.
Field detns: Temp. (°F) 70 pH
Sp. Cond. (μmhos) 360 Eh
Appearance

Well Type Drilled Use Observation
Depth (ft) 366 Cased to 344 ft.
Diam. (in) 6 5/8 OD Date Drilled 4-61
Water level (ft)
Discharge
W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., local aquifer, 344 to 366 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>5.1</u>		<u>3-3-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>2.8</u>		<u>3-3-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>170</u>		

Isotopic Analysis	
Barium-lanthanum ¹⁴⁰	
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	
Tritium (μc/ml <u>2-4-66</u>)	<u>ND</u>
Manganese ⁵⁵	
Zirconium-niobium ⁹⁵	

Remarks:

Stainless steel wire-wrapped screen
from 344 to 366 ft.

ND: Sought but not detected by
method used.

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project Dribble

Analyst H.C.Claassen; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer

Salmon Event
*Analyzed only when indicated by gross β count.

Lab. No. 660629U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2cLocation Tatum Salt Dome, Lamar Co., MississippiNE 1/4 SW 1/4 SW 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No. _____Date Col. 11-26-65 Time 0930
Col. By USGS
Field detns: Temp. ($^{\circ}$ F) 72 pH _____
Sp. Cond. (μ mhos) 180 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) 366 Cased to 344 ft.
Diam. (in) 6-5/8 OD Date Drilled 4-61
Water level (ft) 130.65 below l.s.d. 7-5-63
Discharge 50 gpm-measured.
W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., local aquifer, 344 to 366 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium μ g/l			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	3.8		3-3-66
Gross α as U equivalent μ g/l	4.5		3-3-66
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	170		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Stainless steel wire-wrapped screen from 344 to 366 ft.
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		Sampled after pumping for 1 hour and 30 minutes at 50 gpm.
Chromium ⁵⁷		
Cobalt ⁶⁰		ND: Sought but not detected by method used.
Ruthenium-rhodium ¹⁰⁶		
Tritium (μ c/ml 2-4-66)	ND	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project Dribble
Salmon EventAnalyst H.C.Claassen; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

Lab. No. 660640U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2cLocation Tatum Salt Dome, Lamar Co., MississippiNE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 12-3-65 Time _____Col. By U.S.G.S.Field detns: Temp. ($^{\circ}$ F) 70 pH _____Sp. Cond. (μ mhos) 205 Eh _____Appearance ClearWell Type Drilled Use ObservationDepth (ft) 366 Cased to 344 ft.Diam. (in) 6-5/8 OD Date Drilled 4-61

Water level (ft) _____

Discharge _____

W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., local aquifer, 344 to 366 ft.Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium μ g/l			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>1.5</u>		<u>3-4-66</u>
Gross α as U equivalent μ g/l	<u><2.2</u>		<u>3-4-66</u>
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>160</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Stainless steel wire-wrapped screen from 344 to 366 ft.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	ND: Sought but not detected by method used.
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	
Tritium (uc/ml 1-28-66)	
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 12-20-65Date data released 3-9-66Program classification Project DribbleAnalyst H.C.Claassen; P.K.RoscioDate checked 3-9-66Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

Lab. No. 660672U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2cLocation Tatum Salt Dome, Lamar Co., MississippiNE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 12-10-65 Time 1030Col. By U.S.G.S.Field detns: Temp. (°F) 70 pH _____Sp. Cond. (µmhos) 215 Eh _____Appearance ClearWell Type Drilled Use ObservationDepth (ft) 366 Cased to 344 ft.Diam. (in) 6-5/8 OD Date Drilled 4-61

Water level (ft) _____

Discharge _____

W.B.F. Pascagoula and Hattiesburg Fms.
undiff., local aquifer, 344 to 366 ft.Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>µg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>2.4</u>		<u>2-28-66</u>
Gross α as U equivalent <u>µg/l</u>	<u>4.8</u>		<u>2-28-66</u>
Net extr. α, U equivalent <u>µg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>180</u>		
Isotopic Analysis			
Barium-lanthanum ¹⁴⁰			Remarks: Stainless steel wire-wrapped screen from 344 to 366 ft.
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			ND: Sought but not detected by method used.
Chromium ⁵⁷			
Cobalt ⁶⁰			
Ruthenium-rhodium ¹⁰⁶			
Tritium (<u>µc/ml 2-9-66</u>)	<u>ND</u>		
Zinc ⁶⁵			
Zirconium-niobium ⁹⁵			

Date sample received 12-28-65Date data released 3-4-66Program classification Project DribbleSalmon Event

*Analyzed only when indicated by gross β count.

Analyst H. C. Claassen, P. K. RoscioDate checked 3-4-66Checked by V. J. Janzer

Lab. No. 660677U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2cLocation Tatum Salt Dome, Lamar Co., MississippiNE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R16 W. Field/Office No. _____Date Col. 12-15-65 Time 1345Col. By U.S.G.S.Field detns: Temp. (°F) 70 pH _____Sp. Cond. (μmhos) 220 Eh _____Appearance ClearWell Type Drilled Use ObservationDepth (ft) 366 Cased to 344 ft.Diam. (in) 6-5/8 OD Date Drilled 4-61

Water level (ft) _____

Discharge _____

W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., local aquifer, 344 to 366 ft.Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>1.6</u>		<u>3-1-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><2.7</u>		<u>3-1-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>180</u>		
Isotopic Analysis			
Barium-lanthanum ¹⁴⁰			Stainless steel wire-wrapped screen from 344 to 366 ft.
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			ND: Sought but not detected by method used.
Chromium ⁵⁷			
Cobalt ⁶⁰			
Ruthenium-rhodium ¹⁰⁶			
Tritium (uc/ml <u>3-1-66</u>)	<u>ND</u>		
Zinc ⁶⁵			
Zirconium-niobium ⁹⁵			

Date sample received 12-28-65Date data released 3-4-66Program classification Project DribbleAnalyst P. K. Roscio; H.C. ClaassenDate checked 3-4-66Checked by V. J. Janzer*Analyzed only when indicated by gross β count.
Salmon Event

Lab. No. 660772

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well NT-2c
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____

Date Col. 1-20-66 Time 1415
Col. By W. T. Oakley
Field detns: Temp. (°F) 69 pH _____
Sp. Cond. (μmhos) 235 Eh _____
Appearance Clear

Well Type _____ Drilled _____ Use _____ Observation _____
Depth (ft) 366 Cased to 344 ft.
Diam. (in) 6-5/8 OD Date Drilled 4-61
Water level (ft) _____
Discharge _____
W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., local aquifer, 344 to 366 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>10</u>		<u>3-16-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>4.3</u>		<u>3-16-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>190</u>		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Stainless steel wire-wrapped screen from 344 to 366 ft.
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		ND: Sought but not detected by method used.
Chromium ⁵⁷		
Cobalt ⁶⁰		
Ruthenium-rhodium ¹⁰⁶		
Tritium (<u>μc/ml 2-25-66</u>)	<u>ND</u>	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		

Date sample received 1-27-66
Date data released 3-18-66
Program classification Project Dribble

Analyst P.K. Roscio; H.C. Claassen
Date checked 3-18-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660631U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-4
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 1/4 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No. _____Date Col. 11-26-65 Time 1000 (est.)
Col. By USGS
Field detns: Temp. (°F) 80 pH _____
Sp. Cond. (µmhos) 250 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) 474 Cased to See Remarks
Diam. (in) See Remark Date Drilled April 1963
Water level (ft) 93.74 below l.s.d. (static)
Discharge 18 gpm measured
W.B.F. Pascagoula and Hattiesburg Fms.
undiff. Producing aquifer 1, 361 to 421 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>µg/l</u>	.		
Radium as Ra ²²⁸			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>6.2</u>		<u>3-3-66</u>
Gross α as U equivalent <u>µg/l</u>	<u><2.7</u>		<u>3-3-66</u>
Net extr. α, U equivalent <u>µg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>240</u>		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Diam. (in.) and Cased to:
Cerium-praseodymium ¹⁴⁴		<u>8 5/8 OD, 0 to 356 ft.;</u>
Cesium ¹³⁷		<u>5 1/2 OD, 350 to 474 ft.</u>
Chromium ⁵⁷		
Cobalt ⁶⁰		
Ruthenium-rhodium ¹⁰⁶		
Tritium (µc/ml <u>2-9-66</u>)	<u>ND</u>	Sampled after pumping for 8 hours at 18 gpm.
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		
		ND: Sought but not detected by method used.

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project DribbleAnalyst H.C. Claassen; P.K. Roscio
Date checked 3-9-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.
Salmon Event

Lab. No. 660185U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource HT-2aLocation Tatum Salt Dome, Lamar Co., MississippiNE 1/4 SW 1/4 SW 1/4 Sec. 14, T. 2 N. R. 16 W. Field/Office No. _____Date Col. 9-6-65 Time 1400Col. By USGSField detns: Temp. (°F) 76 pH _____Sp. Cond. (µmhos) 95 Eh _____Appearance ClearWell Type Drilled Use ObservationDepth (ft) 1,079 Cased to See RemarksDiam. (in) See Remark Date Drilled 4-30-61Water level (ft) 134.53 below l.s.d.Discharge 24 gpmW.B.F. Pascagoula and Hattiesburg Fms.,
undiff., aquifer 2a; 935 to 1,016 ft.Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>µg/l</u>	<u><0.4</u>		
Radium as Ra ²²⁶	<u>.2</u>		
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>4.1</u>		<u>2-6-66</u>
Gross α as U equivalent <u>µg/l</u>	<u><1.2</u>		<u>2-6-66</u>
Net extr. α, U equivalent <u>µg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>78</u>		

Isotopic Analysis

Remarks:

Slotted pipe 935.64--1,016 ft.

Diam.(in.) and Cased to: 5 OD,
0-943 ft.; 3½ OD, 892.83--1,080 ft.

Sampled after pumping 25,820 gallons.

ND: Sought but not detected by
method used 10-1-65.Barium-lanthanum¹⁴⁰Cerium-praseodymium¹⁴⁴Cesium¹³⁷Chromium⁵⁷Cobalt⁶⁰Ruthenium-rhodium¹⁰⁶

Tritium

Zinc⁶⁵Zirconium-niobium⁹⁵Date sample received 9-24-65Date data released 2-11-66Program classification Project DribbleSalmon Event

*Analyzed only when indicated by gross β count.

Analyst P. K. Roscio; T. Curran; E. VillasDate checked 2-11-66Checked by V. J. Janzer

Lab. No. 660186U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource HT-2a
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 9-16-65 Time 1300
Col. By U.S.G.S.
Field detns: Temp. (°F) 73° pH _____
Sp. Cond. (µmhos) 140 Eh _____
Appearance ColoredWell Type Drilled Use Observation
Depth (ft) 1,079 Cased to See Remarks
Diam. (in) See Remark Date Drilled 4-30-61
Water level (ft) _____
Discharge _____
W.B.F. Pascagoula and Hattiesburg Fms.
undiff., aquifer 2a; 935 to 1,016 ft.
Owner U.S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>µg/l</u>	<u>0.4</u>		
Radium as Ra ²²⁶	<u>.1</u>		
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u><.4</u>		<u>11-20-65</u>
Gross α as U equivalent <u>µg/l</u>	<u><.7</u>		<u>11-20-65</u>
Net extr. α, U equivalent <u>µg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>51</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Slotted pipe 935.64--1,016 ft.
Cerium-praseodymium ¹⁴⁴	Diam.(in.) and Cased to: 5 OD,
Cesium ¹³⁷	0-943 ft.; 3½ OD, 892.83--1,080 ft.
Chromium ⁵⁷	Sampled after pumping approximately
Cobalt ⁶⁰	24 hrs. at 23.6 gpm.
Ruthenium-rhodium ¹⁰⁶	ND: Sought but not detected by method
Tritium	used 10-1-65.
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 9-24-65
Date data released 1-31-66
Program classification _____Analyst P.K.Roscio; T.Sinconis; E.Villasana
Date checked 1-31-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source HT-2a

Location Tatum Salt Dome, Lamar Co., Mississippi

NE 1/4 SW 1/4 SW 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No.

Date Col. 10-21-65 Time 1100

Col. By USGS

Field detns: Temp. (°F) 76 pH

Sp. Cond. (μmhos) 125 Eh

Appearance Clear

Well Type Drilled Use Observation

Depth (ft) 1,079 Cased to See Remarks

Diam. (in) See Remark Date Drilled 4-30-61

Water level (ft) 134.53 below l.s.d. 10-21-65

Discharge 23 gpm on 10-21-65

W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., aquifer 2a; 935 to 1,016 ft.

Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium μg/l			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	4.0		3-1-66
Gross α as U equivalent μg/l	1.3		3-1-66
Net extr. α, U equivalent μg/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	75		
Isotopic Analysis			
Barium-lanthanum ¹⁴⁰			
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			
Chromium ⁵²			
Cobalt ⁶⁰			
Europium-samarium ¹⁵²			
Tridium	ND		
Manganese			
Zirconium-niobium ⁹⁵			

Remarks:

Slotted pipe 935.64--1,016 ft.

Diam.(in.) and Cased to: 5 OD,
0-943 ft.; 3½ OD, 892.83--1,080 ft.Sampled after pumping 30,360 gallons
at 23 gpm.ND: Sought but not detected by
method used 11-8-65.

Date sample received 10-21-65

Date data released 3-7-66

Program classification Project Dribble

Salmon Event

*Analyzed only when indicated by gross β count.

Analyst E. Villasana; H.C. Claassen; P.K. Roscio

Date checked 3-7-66

Checked by V. J. Janzer

Lab. No. 660481U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2a
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 SW 1/4 SW 1/4 Sec. 14, T. 2 N. R. 16 W. Field/Office No. _____Date Col. 10-28-65 Time 1545
Col. By USGS
Field detns: Temp. (°F) 76 pH _____
Sp. Cond. (μmhos) 205 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) 1,079 Cased to See Remarks
Diam. (in) See Remark Date Drilled 4-30-61
Water level (ft) 134.53 below l.s.d.
Discharge 23 gpm
W.B.F. Pascagoula and Hattiesburg Fms.
undiff., aquifer 2a; 935 to 1,016 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>3.9</u>		<u>3-2-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>1.7</u>		<u>3-2-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>66</u>		
Isotopic Analysis			
Barium-lanthanum ¹⁴⁰			Remarks: Slotted pipe 935.64--1,016 ft. Diam.(in.) and Cased to: 5 OD, 0-943 ft.; 3½ OD, 892.83--1,080 ft. Sampled after 2 hours pumping at 23 gpm. ND: Sought but not detected by method used 11-23-65.
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			
Chromium ⁵⁷			
Cobalt ⁶⁰			
Ruthenium-rhodium ¹⁰⁶			
Tritium	<u>ND</u>		
Zinc ⁶⁵			
Zirconium-niobium ⁹⁵			

Date sample received 11-9-65
Date data released 3-7-66
Program classification Project DribbleAnalyst H.C.Claassen; E. Villasana; P.K. Roscio
Date checked 3-7-66
Checked by V. I. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660509U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2aLocation Tatum Salt Dome, Lamar Co., MississippiNE 1/4 SW 1/4 SW 1/4 Sec. 14, T. 2 N. R. 16 W. Field/Office No. _____Date Col. 11-4-65 Time 1445
Col. By USGS
Field detns: Temp. (°F) 76 pH _____
Sp. Cond. (μmhos) 100 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) 1,079 Cased to See Remarks
Diam. (in) See Remark Date Drilled 4-30-61
Water level (ft) _____
Discharge 23 gpm
W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., aquifer 2a; 935 to 1,016 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>4.0</u>		<u>3-4-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><1.0</u>		<u>3-4-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>74</u>		
Isotopic Analysis			
Barium-lanthanum ¹⁴⁰			Remarks: Slotted pipe 935.64--1,016 ft. Diam.(in.) and Cased to: 5 OD, 0-943 ft.; 3½ OD, 892.83--1,080 ft. Sampled after pumping for 3 hours and 15 minutes at 23 gpm.
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			
Chromium ⁵⁷			
Cobalt ⁶⁰			
Ruthenium-rhodium ¹⁰⁶			
Tritium (uc/ml 2-14-66)	<u>ND</u>		
Zirconium-niobium ⁹⁵			

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project DribbleAnalyst H.C.Claassen; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

Lab. No. 660549U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2a
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 11-15-65 Time 1425
Col. By U.S.G.S.
Field detns: Temp. (°F) 76 pH _____
Sp. Cond. (μmhos) 150 Eh _____
Appearance _____Well Type Drilled Use Observation
Depth (ft) 1,079 Cased to See Remarks
Diam. (in) See Remark Date Drilled 4-30-61
Water level (ft) _____
Discharge _____
W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., aquifer 2a; 935 to 1,016 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>5.4</u>		<u>3-4-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><1.0</u>		<u>3-4-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>74</u>		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Slotted pipe 935.64--1,016 ft.
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		Diam. (in.) and Cased to: 5 OD,
Chromium ⁵⁷		0-943 ft.; 3½ OD, 892.83--1,080 ft.
Cobalt ⁶⁰		
Ruthenium-rhodium ¹⁰⁶		
Tritium (μc/ml 2-4-66)	<u>ND</u>	ND: Sought but not detected by
Zinc ⁶⁵		method used.
Zirconium-niobium ⁹⁵		

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project Dribble
Salmon EventAnalyst H.C.Claassen; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660638U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2aLocation Tatum Salt Dome, Lamar Co., MississippiNE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 11-26-65 Time _____Col. By U.S.G.S.Field detns: Temp. (°F) 78 pH _____Sp. Cond. (μmhos) 70 Eh _____Appearance ClearWell Type Drilled Use ObservationDepth (ft) 1,079 Cased to See RemarksDiam. (in) See Remark Date Drilled 4-30-61

Water level (ft) _____

Discharge _____

W.B.F. Pascagoula and Hattiesburg Fms., undiff., aquifer 2a; 935 to 1,016 ft.Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra^{226}			
Gross β (as $Sr^{90} - Y^{90}$)	<u>6.0</u>		<u>3-17-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>8.1</u>		<u>3-17-66</u>
Net extr. α , U equivalent <u>μg/l</u>			
Gross γ (as Cs^{137})			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>70</u>		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Slotted pipe 935.64--1,016 ft.
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		Diam. (in.) and Cased to: 5 OD,
Chromium ⁵⁷		0-943 ft.; 3 $\frac{1}{2}$ OD, 892.83--1,080 ft.
Cobalt ⁶⁰		
Ruthenium-rhodium ¹⁰⁶		ND: Sought but not detected by
Tritium (<u>μc/ml 2-9-66</u>)	<u>ND</u>	method used.
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		

Date sample received 12-20-65Date data released 3-9-66Program classification Project DribbleSalmon Event*Analyzed only when indicated by gross β count.Analyst H.C.Claassen; P.K.RoscioDate checked 3-9-66Checked by V. J. Janzer

Lab. No. 660639U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2a
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 12-3-65 Time _____
Col. By U.S.G.S.
Field detns: Temp. (°F) 75 pH _____
Sp. Cond. (μmhos) 80 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) 1,079 Cased to See Remarks
Diam. (in) See Remark Date Drilled 4-30-61
Water level (ft) _____
Discharge _____
W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., aquifer 2a; 935 to 1,016 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>3.8</u>		<u>3-5-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>1.8</u>		<u>3-5-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>73</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Slotted pipe 935.64--1,016 ft.
Cerium-praseodymium ¹⁴⁴	Diam. (in.) and Cased to: 5 OD,
Cesium ¹³⁷	0-943 ft.; 3 1/2 OD, 892.83--1,080 ft.
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	ND: Sought but not detected by
Tritium (μc/ml 1-25-66)	method used.
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project DribbleAnalyst H.C.Claassen; P.K.Roscio
Date checked 3-2-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660673

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well HT-2a
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____

Date Col. 12-10-65 Time 1015
Col. By U.S.G.S.
Field Notes: Temp. (°F) 76 pH _____
Sp. Cond. (µmhos) 75 Eh _____
Appearance Clear

Well Type Drilled Use Observation
Depth (ft) 1,073 Cased to See Remarks
Diam. (in) See Remark Date Drilled --30-61
Water level (ft) _____
Discharge _____
W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., aquifer 2a; 935 to 1,016 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>µg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>3.4</u>		<u>2-28-66</u>
Gross α as U equivalent <u>µg/l</u>	<u>2.2</u>		<u>2-28-66</u>
Net extr. α, U equivalent <u>µg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>75</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Slotted pipe 935.64--1,016 ft.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	Diam. (in.) and Cased to: 5 OD,
Chromium ⁵⁷	0-943 ft.; 3½ OD, 892.83--1,080 ft.
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	ND: Sought but not detected by
Tritium (µc/ml 3-1-66)	method used.
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 12-28-65
Date data released 3-4-66
Program classification Project Dribble

Analyst P. K. Roscio; H.C. Claassen
Date checked 3-4-66
Checked by V. J. Janzer

Salmon Event
*Analyzed only when indicated by gross β count.

Lab. No. 660678U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2a
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 12-15-65 Time 1400
Col. By U.S.G.S.
Field detns: Temp. (°F) 75 pH _____
Sp. Cond. (μmhos) 75 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) 1,079 Cased to See Remarks
Diam. (in) See Remarks Date Drilled 4-30-61
Water level (ft) _____
Discharge _____
W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., aquifer 2a; 935 to 1,016 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>3.6</u>		<u>3-1-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>2.2</u>		<u>3-1-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>76</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Slotted pipe 935.64--1,016 ft.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	Diam. (in.) and Cased to: 5 OD,
Chromium ⁵⁷	0-943 ft.; 3½ OD, 892.83--1,080 ft.
Cobalt ⁶⁰	ND: Sought but not detected by
Ruthenium-rhodium ¹⁰⁶	method used.
Tritium (μc/ml <u>3-1-66</u>)	ND
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 12-28-65
Date data released 3-4-66
Program classification Project DribbleAnalyst P. K. Roscio; H.C.Claassen
Date checked 3-4-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660771U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2a
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 1-20-66 Time 1345
Col. By W. T. Oakley
Field detns: Temp. ($^{\circ}$ F) 75 pH _____
Sp. Cond. (μ mhos) 85 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) 1,079 Cased to See Remarks
Diam. (in) See Remark Date Drilled 4-30-61
Water level (ft) _____
Discharge _____
W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., aquifer 2a; 935 to 1,016 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium μ g/l			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	4.4		3-17-66
Gross α as U equivalent μ g/l	3.2		3-17-66
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	74		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Slotted pipe 935.64--1,016 ft.
Cerium-praseodymium ¹⁴⁴	Diam. (in.) and Cased to: 5 OD,
Cesium ¹³⁷	0-943 ft.; 3 $\frac{1}{2}$ OD, 892.83--1,080 ft.
Chromium ⁵⁷	ND: Sought but not detected by method
Cobalt ⁶⁰	used.
Ruthenium-rhodium ¹⁰⁶	
Tritium (uc/ml 2-25-66)	ND
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 1-27-66
Date data released 3-18-66
Program classification Project DribbleAnalyst P.K. Roscio; H.C. Claassen
Date checked 3-18-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

Lab. No. 660632U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-5
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 1/4 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No. _____Date Col. 11-26-65 Time 1000 (est.)
Col. By USGS
Field detns: Temp. ($^{\circ}$ F) 86 pH _____
Sp. Cond. (μ mhos) 80 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) See Remarks Cased to See Remarks
Diam. (in) See Remarks Date Drilled 4-63
Water level (ft) 106.25 below l.s.d.
Discharge 25 gpm measured
W.B.F. Pascagoula and Hattiesburg Fms.
undiff., aquifer 2a, 590 to 680 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium μ g/l			
Radium as Ra^{226}			
Gross β (as $Sr^{90} - Y^{90}$)	4.1		3-5-66
Gross α as U equivalent μ g/l	<1.3		3-5-66
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs^{137})			
Potassium 40			
Strontium 90 *			
Dissolved solids mg/l	84		

Isotopic Analysis		Remarks:
Barium-lanthanum 140		Depth (ft.): 680.
Cerium-praseodymium 144		Diam. (in.) and Cased to:
Cesium 137		8-5/8 OD, 0 to 569 ft.;
Chromium 57		5-1/2 OD screen and liner,
Cobalt 60		557 to 678 ft.
Ruthenium-rhodium 106		ND: Sought but not detected by
Tritium (μ c/ml 2-9-66)	ND	method used.
Zinc 65		
Zirconium-niobium 95		

Date sample received 12-20-65
Date data released 3-9-66
Program classification _____Analyst H.C.Claassen; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

Lab. No. 660483U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-6
Location Tatum Salt Dome, Lamar Co., Mississippi
SW 1/4 NE 1/4 NE 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No. _____Date Col. 10-28-65 Time 1445
Col. By USGS
Field detns: Temp. (°F) 89 pH _____
Sp. Cond. (μmhos) 1,700 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) 812 Cased to See Remarks
Diam. (in) See Remark Date Drilled March 1963
Water level (ft) 110.76 below l.s.d.
Discharge 27 gpm
W.B.F. Pascagoula and Hattiesburg Fms.
undiff., aquifer 2b, 762 to 802 ft.
Owner U. S. Atomic Energy Commission
Driller: Porter Well Service

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra^{226}			
Gross β (as $Sr^{90} - Y^{90}$)	<u>12</u>		<u>3-2-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><12</u>		<u>3-2-66</u>
Net extr. α , U equivalent <u>μg/l</u>			
Gross γ (as Cs^{137})			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>790</u>		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Diam. (in.) and Cased to: <u>12 1/4</u> OD, 0 to 741 ft.; 8 OD, blank liner, 732 to 762 ft.; 8 OD screen, 762 to 802 ft.; 8 OD blank liner, 802 to 812 ft.
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		
Chromium ⁵⁷		
Cobalt ⁶⁰		
Ruthenium-rhodium ¹⁰⁶		Sampled after 6 hours 45 minutes pumping at 27 gpm. ND: Sought but not detected by method used.
Tritium (<u>μc/ml</u> <u>11-23-65</u>)	<u>ND</u>	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		

Date sample received 11-9-65
Date data released 3-9-66
Program classification Project Dribble
Salmon EventAnalyst H.C. Claassen; E. Villasana; P.K. Roscio
Date checked 3-9-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

660547

Lab. No. _____

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well HT-6
Location Tatum Salt Dome, Lamar Co., Mississippi
SW 1/4 NE 1/4 NE 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____

Date Col. 11-15-65 Time 1439
Col. By U.S.G.S.
Field detns: Temp. ($^{\circ}$ F) 87 pH _____
Sp. Cond. (μ mhos) 1400 Eh _____
Appearance Clear

Well Type Drilled _____ Use Observation _____
Depth (ft) 812 Cased to See Remarks
Diam. (in) See Remark Date Drilled March 1963
Water level (ft) _____
Discharge _____
W.B.F. Pascagoula and Hattiesburg Fms.,
undiff., aquifer 2b, 762 to 802 ft.
Owner U. S. Atomic Energy Commission
Driller: Porter Well Service

Elements	pc/l	pc/g	Date determined
Uranium μ g/l			
Radium as Ra^{226}			
Gross β (as $Sr^{90} - Y^{90}$)	9.7		3-3-66
Gross α as U equivalent μ g/l	16		3-3-66
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs^{137})			
Potassium 40			
Strontium 90 *			
Dissolved solids mg/l	780		

Isotopic Analysis		Remarks:
Barium-lanthanum 140		Diam. (in.) and Cased to: $12\frac{1}{4}$ OD, 0 to 741 ft.; 8 OD, blank liner, 732 to 762 ft.; 8 OD screen, 762 to 802 ft.; 8 OD blank liner, 802 to 812 ft.
Cerium-praseodymium 144		
Cesium 137		
Chromium 57		
Cobalt 60		
Ruthenium-rhodium 106		ND: Sought but not detected by method used.
Tritium (μ c/ml 2-4-66)	ND	
Zinc 65		
Zirconium-niobium 95		

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project Dribble

Analyst H.C.Claassen; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660633U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-6Location Tatum Salt Dome, Lamar Co., MississippiSW 1/4 NE 1/4 NE 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No. _____Date Col. 11-26-65 Time 1000 (est.)Col. By USGSField detns: Temp. (°F) 92 pH _____Sp. Cond. (µmhos) 650 Eh _____Appearance ClearWell Type Drilled Use ObservationDepth (ft) 812 Cased to See RemarksDiam. (in) See Remark Date Drilled March 1963Water level (ft) 110.76 below l.s.d.Discharge 24 gpm measuredW.B.F. Pascagoula and Hattiesburg Fms.undiff. aquifer 2b, 762 to 802 ft.Owner U. S. Atomic Energy CommissionDriller: Porter Well Service

Elements	pc/l	pc/g	Date determined
Uranium <u>µg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>10</u>		<u>3-2-66</u>
Gross α as U equivalent <u>µg/l</u>	<u><12</u>		<u>3-2-66</u>
Net extr. α, U equivalent <u>µg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>780</u>		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Diam. (in.) and Cased to: <u>12 1/4</u> OD, 0 to 741 ft.; 8 OD, blank liner, 732 to 762 ft.; 8 OD screen, 762 to 802 ft.; 8 OD blank liner, 802 to 812 ft.
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		
Chromium ⁵⁷		
Cobalt ⁶⁰		
Ruthenium-rhodium ¹⁰⁶		ND: Sought but not detected by method used.
Tritium (<u>µc/ml</u> <u>2-9-66</u>)	<u>ND</u>	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		

Date sample received 12-20-65Date data released 3-9-66Program classification Project DribbleSalmon Event

*Analyzed only when indicated by gross β count.

Analyst H.C.Claassen; P.K.RoscioDate checked 3-9-66Checked by V. J. Janzer

Lab. No. 660188U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well E-1
Location Tatum Salt Dome, Lamar Co., Mississippi
SW 1/4 NW 1/4 NE 1/4 Sec 14. T 2 N., R 16 W. Field/Office No. _____Date Col. 9-16-65 Time _____
Col. By USGS
Field detns: Temp. (°F) 78 pH _____
Sp. Cond. (µmhos) 1,090 Eh _____
Appearance ColoredWell Type Drilled Use Observation
Depth (ft) See Remarks Cased to See Remarks
Diam. (in) 4 1/2 Date Drilled See Remarks
Water level (ft) _____
Discharge _____
W.B.F. Catahoula Sandstone, upper part,
aquifer 3a
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium µg/l	<0.4		
Radium as Ra ²²⁶	<.1		
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	4.4		11-20-65
Gross α as U equivalent µg/l	<8.2		11-20-65
Net extr. α, U equivalent µg/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	630		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Depth (ft.): 2,200 (originally 4,517 ft.)
Cerium-praseodymium ¹⁴⁴		Date drilled: Completed on 7-6-61.
Cesium ¹³⁷		Reworked 3-22-63.
Chromium ⁵⁷		Cased to: 950 ft. Casing is perforated
Cobalt ⁶⁰		from 850 to 900 ft. below l.s.d.
Ruthenium-rhodium ¹⁰⁶		Sampling procedure: Reda submersible
Tritium (µc/ml 12-17-65)	ND	pump is set at 214.81 ft. below l.s.d.
Zinc ⁶⁵		and bridge plug at 922 ft. below l.s.d.
Zirconium-niobium ⁹⁵		Sampled after pumping 1 hr. and 30 min.
		at 2.9 gpm.
		ND: Sought but not detected by method
		used.

Date sample received 9-24-65
Date data released 1-31-66
Program classification Project Dribble
Salmon EventAnalyst P.K. Roscio; T. Sinconis; E. Villasana
Date checked 1-31-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660480U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well E-1Location Tatum Salt Dome, Lamar Co., MississippiSW 1/4 NW 1/4 NE 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 10-28-65 Time _____Col. By USGSField detns: Temp. (°F) 82 pH _____Sp. Cond. (μmhos) 2,000 Eh _____Appearance TurbidWell Type Drilled Use ObservationDepth (ft) See Remarks Cased to See RemarksDiam. (in) 4 1/2 Date Drilled See RemarksWater level (ft) 109.87 below l.s.d.Discharge 2 gpmW.B.F. Catahoula Sandstone, upper part,
aquifer 3aOwner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>5.5</u>		<u>3-2-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><15</u>		<u>3-2-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>960</u>		
Isotopic Analysis			
Barium-lanthanum ¹⁴⁰			Remarks:
Cerium-praseodymium ¹⁴⁴			Depth (ft.): <u>2,200 ft.</u>
Cesium ¹³⁷			Date drilled: <u>Completed on 7-6-61.</u>
Chromium ⁵⁷			<u>Reworked 3-22-63.</u>
Cobalt ⁶⁰			Cased to: <u>950 ft.</u> Casing is perforated
Ruthenium-rhodium ¹⁰⁶			<u>from 850 to 900 ft. below l.s.d.</u>
Tritium (<u>uc/ml 11-23-65</u>)	<u>ND</u>		Sampling procedure: <u>Reda submersible</u>
Zinc ⁶⁵			<u>pump is set at 214.81 ft. below l.s.d.</u>
Zirconium-niobium ⁹⁵			<u>and bridge plug at 922 ft. below</u>
			<u>l.s.d.</u>
			<u>Continuously pumping.</u>
			<u>ND: Sought but not detected by method</u>
			<u>used.</u>

Date sample received 11-9-65Date data released 3-7-66Program classification Project DribbleSalmon Event

*Analyzed only when indicated by gross β count.

Analyst H.C. Claassen; E. Villasana; P.K. RoscioDate checked 3-7-66Checked by V. J. Janzer

Lab. No. 660552U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well E-1
Location Tatum Salt Dome, Lamar Co., Mississippi
SW 1/4 NW 1/4 NE 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 11-15-65 Time _____
Col. By U.S.G.S.
Field detns: Temp. (°F) 81 pH _____
Sp. Cond. (μmhos) 1700 Eh _____
Appearance TurbidWell Type Drilled _____ Use _____ Observation _____
Depth (ft) See Remark Cased to See Remarks
Diam. (in) 4½ Date Drilled See Remarks
Water level (ft) _____
Discharge _____
W.B.F. Catahoula Sandstone, upper part,
aquifer 3a
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u><4.8</u>		<u>3-4-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><16</u>		<u>3-4-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>1,000</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Depth (ft.): <u>2,200</u>
Cerium-praseodymium ¹⁴⁴	Date drilled: Completed on <u>7-6-61</u> .
Cesium ¹³⁷	Reworked <u>3-22-63</u> .
Chromium ⁵⁷	Cased to: <u>950 ft.</u> Casing is perforated
Cobalt ⁶⁰	from <u>850 to 900 ft.</u> below l.s.d.
Ruthenium-rhodium ¹⁰⁶	Sampling procedure: Reda submersible
Tritium (<u>μc/ml 2-4-66</u>)	pump is set at <u>214.81 ft.</u> below l.s.d.
Zinc ⁶⁵	and bridge plug at <u>922 ft.</u> below
Zirconium-niobium ⁹⁵	<u>l.s.d.</u>
	ND: Sought but not detected by
	method used.

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project DribbleAnalyst H.C.Claassen; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer*Analyzed only when indicated by Salmon Event gross β count.

Lab. No. 660628

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well E-1
Location Tatum Salt Dome, Lamar Co., Mississippi
SW 1/4 NW 1/4 NE 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No.

Date Col. 11-29-65 Time 1400 (est.)
Col. By USGS
Field detns: Temp. (°F) 82 pH
Sp. Cond. (µmhos) 800 Eh
Appearance Colored

Well Type Drilled Use Observation
Depth (ft) See Remarks Cased to See Remarks
Diam. (in) 4 1/2 Date Drilled See Remarks
Water level (ft) 109.87 below l.s.d. 6-17-65
Discharge 1.2 gpm measured.
W.B.F. Catahoula Sandstone, upper part,
aquifer 3a
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>µg/l</u>	.		
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u><2.8</u>		<u>3-4-66</u>
Gross α as U equivalent <u>µg/l</u>	<u><15</u>		<u>3-4-66</u>
Net extr. α, U equivalent <u>µg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>1,100</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Depth (ft.): <u>2,200</u>
Cerium-praseodymium ¹⁴⁴	Date drilled: <u>Completed on 7-6-61.</u>
Cesium ¹³⁷	<u>Reworked 3-22-63.</u>
Chromium ⁵⁷	Cased to: <u>950 ft. Casing is perforated</u>
Cobalt ⁶⁰	<u>from 850 to 900 ft. below l.s.d.</u>
Ruthenium-rhodium ¹⁰⁶	Sampling procedure: <u>Reda submersible</u>
Tritium (µc/ml <u>2-4-66</u>)	<u>pump is set at 214.81 ft. below l.s.d.</u>
Zinc ⁶⁵	<u>and bridge plug at 922 ft. below</u>
Zirconium-niobium ⁹⁵	<u>l.s.d.</u>
	ND: <u>Sought but not detected by method</u>
	<u>used.</u>

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project Dribble
Salmon Event

Analyst H.C.Claassen; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660635U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well E-14b (upper) Located about 78 feet south and 14 feet east of well E 14.

Location Tatum Salt Dome, Lamar Co., MississippiSW 1/4 SE 1/4 SE 1/4 Sec 11, T 2 N., R 16 W. Field/Office No. _____Date Col. 11-29-65 Time 1400 (est.)Col. By USGSField detns: Temp. (°F) 94 pH _____Sp. Cond. (μmhos) 900 Eh _____Appearance SedimentWell Type Drilled Use ObservationDepth (ft) See Remarks Cased to See RemarksDiam. (in) See Remark Date Drilled See RemarksWater level (ft) 85.96 below l.s.d. 12-10-65Discharge 6 gpm, July 1965W.B.F. Catahoula Sandstone, upper part,
aquifer 3aOwner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>6.1</u>		<u>3-2-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><16</u>		<u>3-2-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>1,200</u>		
Isotopic Analysis			
Barium-lanthanum ¹⁴⁰			Remarks: Big Chief Drilling Co. completed to depth of 3,959 feet July 10, 1963. Hole cased 16" to 904 ft.; 11 3/4 in. to 1,627. Hole reworked and refinished below casing to 3,700 ft. Aug. 29, 1963.
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			Mohon Bros., Inc. reworked hole for observation and sampling well. Frac Jet, four 3/4-in. holes per foot from 950 to 1,014 feet (E-14b lower) and 800 to 865 feet (E-14b upper).
Chromium ⁵⁷			
Cobalt ⁶⁰			ND: Sought but not detected by method used.
Ruthenium-rhodium ¹⁰⁶			
Tritium (μc/ml <u>2-9-66</u>)	<u>ND</u>		
Zinc ⁶⁵			
Zirconium-niobium ⁹⁵			

Date sample received 12-20-65Date data released 3-9-66Program classification Project DribbleSalmon Event

*Analyzed only when indicated by gross β count.

Analyst H.C.Claassen; P.K.RoscioDate checked 3-9-66Checked by V. J. Janzer

Lab. No. 660676U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well E-14b (upper) Located about 78 feet south and 14 feet east of well E 14.

Location Tatum Salt Dome, Lamar Co., MississippiSW 1/4 SE 1/4 SE 1/4 Sec 11, T 2 N., R 16 W. Field/Office No. _____Date Col. 12-11-65 Time 1530
Col. By U.S.C.S.
Field detns: Temp. ($^{\circ}$ F) 98 pH _____
Sp. Cond. (μ mhos) 530 $\bar{m}$ h _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) See Remark Cased to See Remarks
Diam. (in) See Remark Date Drilled See Remarks
Water level (ft) _____
Discharge _____
W.B.F. Catahoula Sandstone, upper part,
aquifer 3a
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium μ g/l			
Radium as Ra^{226}			
Gross β (as Br^{80} - Y^{90})	4.8		3-4-66
Gross α as U equivalent μ g/l	<6.8		3-4-66
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs^{137})			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	480		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Big Chief Drilling Co. completed to depth of 3,959 feet July 10, 1963.
Cerium-praseodymium ¹⁴⁴		Hole cased 16" to 904 ft.; 11 3/4 in. to 1,627. Hole reworked and refinished below casing to 3,700 ft. Aug. 29, 1963.
Cesium ¹³⁷		
Chromium ⁵⁷		
Cobalt ⁶⁰		
Ruthenium-rhodium ¹⁰⁶		
Tritium (μ c/ml 3-1-66)	ND	Mohon Bros., Inc. reworked hole for observation and sampling well. Frac Jet, four 3/4-in. holes per foot from 950 to 1,014 feet (E-14b lower) and 800 to 865 feet (E-14b upper).
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		ND: Sought but not detected by method used.

Date sample received 12-28-65
Date data released 3-4-66
Program classification Project DribbleAnalyst P. K. Roscio; H.C. Claassen
Date checked 3-4-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

Lab. No. 660190U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-1(3)
Location 10 miles west of Purvis, Lamar Co., Mississippi
NW 1/4 NW 1/4 SE 1/4 Sec 12, T 2 N., R 16 W. Field/Office No. _____Date Col. 9-16-65 Time 0345
Col. By U.S.G.S.
Field detns: Temp. (°F) 74 pH _____
Sp. Cond. (μmhos) 190 Eh _____
Appearance ClearWell Type See Remarks Use Observation
Depth (ft) 2,650 Cased to See Remarks
Diam. (in) See Remark Date Drilled 6-61
Water level (ft) _____
Discharge _____
W.B.F. Catahoula Sandstone, aquifer 3,
1,230 to 1,310 ft. and 1,375 to 1,400 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>3.5</u>		<u>3-17-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>1.2</u>		<u>3-17-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>59</u>		

Isotopic Analysis

Barium-lanthanum¹⁴⁰
Cerium-praseodymium¹⁴⁴
Cesium¹³⁷
Chromium⁵⁷
Cobalt⁶⁰
Ruthenium-rhodium¹⁰⁶
Tritium
Zinc⁶⁵
Zirconium-niobium⁹⁵

Remarks:

Well type: Drilled, multiple well--
3 strings of pipe each packing off
a different aquifer.Casing: 16 OD, 0 to 324 ft.; 9-5/8
OD, 300 to 2,246 ft.; 3 1/2" OD
tubing to aquifer 3, 0 to 296 ft.ND: Sought but not detected by method
used 10-1-65.Date sample received 9-29-65
Date data released 3-18-66
Program classification Project Dribble
Salmon EventAnalyst E. Villasana; P. K. Roscio
Date checked 3-18-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660477U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-1(3)
Location Tatum Salt Dome, Lamar Co., Mississippi
NW 1/4 NW 1/4 SE 1/4 Sec 12, T 2 N., R 16 W. Field/Office No. _____Date Col. 10-28-65 Time 1615
Col. By USGS
Field detns: Temp. (°F) 79 pH _____
Sp. Cond. (μmhos) 275 Eh _____
Appearance ClearWell Type See Remarks Use Observation
Depth (ft) 2,650 Cased to See Remarks
Diam. (in) See Remark Date Drilled 6-61
Water level (ft) 149.66 below l.s.d.
Discharge 6.5 gpm
W.B.F. Catahoula Sandstone, aquifer 3,
1,230 to 1,310 ft. and 1,375 to 1,400 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>5.7</u>		<u>3-1-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>7.8</u>		<u>3-1-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>100</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Well type: Drilled, multiple well-- 3 strings of pipe each packering off a different aquifer.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	Casing: 16 OD, 0 to 324 ft.; 9-5/8 OD, 300 to 2,246 ft.; 3 1/2" OD tubing to aquifer 3, 0 to 296 ft.
Chromium ⁵⁷	
Cobalt ⁶⁰	ND: Sought but not detected by method used.
Ruthenium-rhodium ¹⁰⁶	
Tritium (uc/ml 12-14-65)	
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 11-9-65
Date data released 3-7-66
Program classification Project DribbleAnalyst H.C. Claassen; E. Villasana; P.K. Roscio
Date checked 3-7-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660234U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2(3)
Location Tatum Salt Dome, Lamar Co., Mississippi
NE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 9-29-65 Time 0820
Col. By R. E. Taylor
Field detns: Temp. (°F) 72 pH _____
Sp. Cond. (μmhos) 180 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) 2,602.49 Cased to See Remarks
Diam. (in) See Remark Date Drilled 6-18-61
Water level (ft) _____
Discharge 2.31 gpm
W.B.F. Catahoula Sandstone, upper part,
aquifer 3a
Owner _____

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra^{226}			
Gross β (as $Sr^{90} - Y^{90}$)	<u>1.7</u>		<u>11-20-65</u>
Gross α as U equivalent <u>μg/l</u>	<u><1.4</u>		<u>11-20-65</u>
Net extr. α , U equivalent <u>μg/l</u>			
Gross γ (as Cs^{137})			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>110</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Diam. (in.) and Cased to:
Cerium-praseodymium ¹⁴⁴	16 OD, 0 to 327 ft;
Cesium ¹³⁷	9-5/8 OD, 300 to 2,433 ft.;
Chromium ⁵⁷	3-1/2 OD, 0 to 300 ft.
Cobalt ⁶⁰	Sample No. 26; 210 hrs. 30 min.;
Ruthenium-rhodium ¹⁰⁶	30,297 gallons pumped; pump stopped
Tritium (<u>μc/ml 10-11-65</u>)	producing water some time before
Zinc ⁶⁵	1700.
Zirconium-niobium ⁹⁵	ND: Sought but not detected by
	method used.

Date sample received 10-20-65
Date data released 11-24-65
Program classification Project Dribble
Salmon EventAnalyst E. Villasana; T. Sinconis
Date checked 11-23-65
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

Lab. No. _____

660440

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well HT-2(3)Location Tatum Salt Dome, Lamar Co., MississippiNE 1/4 SW 1/4 SW 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____

Date Col. 10-22-65 Time 1735
Col. By USGS
Field detns: Temp. (°F) 71 pH _____
Sp. Cond. (μmhos) 190 Eh _____
Appearance Clear

Well Type Drilled Use Observation
Depth (ft) 2,602.49 Cased to See Remarks
Diam. (in) See Remark Date Drilled 6-18-61
Water level (ft) _____
Discharge 2.30 gpm
W.B.F. Catahoula Sandstone, upper part,
aquifer 3a
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>4.6</u>		<u>3-1-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><1.3</u>		<u>3-1-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>91</u>		

Isotopic Analysis	
Barium-lanthanum ¹⁴⁰	
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	
Tritium (μc/ml 11-20-65)	<u>ND</u>
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Remarks:

Well type: Drilled, multiple well--
3 strings of pipe each packering off
a different aquifer.

Diam.(in.) and Cased to: 16 in. OD,
0 to 319 ft.; 9-5/8 OD, 292 to
2,425 ft.; 3 1/2" OD tubing to
aquifer 3, 0 to 290 ft.

Sample 47. Sampled after pumping 100
hours and 15 minutes at 2.30 gpm.

ND: Sought but not detected by method
used.

Date sample received 11-2-65
Date data released 3-7-66
Program classification _____

Analyst H.C.Claassen; P.K.Roscio
Date checked 3-7-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660482

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well HT-3
Location Tatum Salt Dome, Lamar Co., Mississippi
1/4 1/4 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No. _____

Date Col. 10-28-65 Time 1430
Col. By USGS
Field detns: Temp. (°F) 94 pH _____
Sp. Cond. (μmhos) 3,400 Eh _____
Appearance Clear

Well Type Drilled Use Observation
Depth (ft) 1,064 Cased to See Remarks
Diam. (in) See Remark Date Drilled March 1963
Water level (ft) 104.95 below l.s.d.
Discharge 24 gpm
W.B.F. Calcite Limestone, calcite cap-rock aquifer, 934 to 1,006 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	21		3-2-66
Gross α as U equivalent <u>μg/l</u>	<36		3-2-66
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	2,400		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Diam. (in.) and Cased to: 11-3/4 OD, 0 to 934 ft.; 8-5/8 OD, 934 to 1,026 ft.
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		Sampled after 6 hours 30 minutes pumping at 24 gpm.
Chromium ⁵⁷		
Cobalt ⁶⁰		ND: Sought but not detected by method used.
Ruthenium-rhodium ¹⁰⁶		
Tritium (μc/ml 11-23-65)	ND	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		

Date sample received 11-9-65
Date data released 3-9-66
Program classification Project Dribble

Analyst H.C.Claassen; E.Villasana; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer

Salmon Event
*Analyzed only when indicated by gross β count.

Lab. No. 660548U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-3
Location Tatum Salt Dome, Lamar Co., Mississippi
1/4 1/4 1/4 Sec 14. T 2 N. R 16 W. Field/Office No. _____Date Col. 11-15-65 Time 1435
Col. By U.S.G.S.
Field detns: Temp. (°F) 94 pH _____
Sp. Cond. (μmhos) _____ Eh _____
Appearance TurbidWell Type Drilled _____ Use Observation _____
Depth (ft) 1,064 Cased to See Remarks
Diam. (in) See Remarks Date Drilled March 1963
Water level (ft) _____
Discharge _____
W.B.F. Calcite Limestone, calcite cap-
rock aquifer, 934 to 1,006 ft.
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>13</u>		<u>3-3-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><30</u>		<u>3-3-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>2,600</u>		

Isotopic Analysis
Barium-lanthanum ¹⁴⁰
Cerium-praseodymium ¹⁴⁴
Cesium ¹³⁷
Chromium ⁵⁷
Cobalt ⁶⁰
Ruthenium-rhodium ¹⁰⁶
Tritium (μc/ml <u>2-4-66</u>) <u>ND</u>
Zinc ⁶⁵
Zirconium-niobium ⁹⁵

Remarks:

Diam. (in.) and Cased to: 11-3/4 OD,
0 to 934 ft.; 8-5/8 OD, 934 to
1,026 ft.ND: Sought but not detected by
method used.Date sample received 12-20-65
Date data released 3-9-66
Program classification Project DribbleAnalyst H.C.Claassen; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660630U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-3Location Tatum Salt Dome, Lamar Co., Miss.SW 1/4 NE 1/4 NE 1/4 Sec. 14, T. 2 N., R. 16 W. Field/Office No. _____Date Col. 11-26-65 Time 1000 (est.)Col. By USGSField detns: Temp. (°F) 90 pH _____Sp. Cond. (μmhos) 1,200 Eh _____Appearance ColoredWell Type Drilled Use ObservationDepth (ft) 1,064 Cased to See RemarksDiam. (in) See Remark Date Drilled March 1963Water level (ft) 107.72 below l.s.d. (static)Discharge 16.5 gpm measured.W.B.F. Calcite Limestone, calcite cap-rock aquifer, 934 to 1,006 ft.Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>14</u>		<u>3-4-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><30</u>		<u>3-4-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>2,500</u>		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Diam. (in.) and Cased to: <u>11-3/4 OD, 0 to 934 ft.; 8-5/8 OD, 934 to 1,026 ft.</u> Sampled after pumping for 8 hours at <u>16.5 gpm.</u> ND: Sought but not detected by method used.
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		
Chromium ⁵⁷		
Cobalt ⁶⁰		
Ruthenium-rhodium ¹⁰⁶		
Tritium (μc/ml <u>2-9-66</u>)	<u>ND</u>	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		

Date sample received 12-20-65Date data released 3-9-66Program classification Project DribbleSalmon Event

*Analyzed only when indicated by gross β count.

Analyst H.C. Claassen; P.K. RoscioDate checked 3-9-66Checked by V. J. Janzer

Lab. No. 660634

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well E-9
Location Tatum Salt Dome, Lamar Co., Mississippi
SE 1/4 NW 1/4 NW 1/4 Sec. 13, T. 2 N., R. 16 W. Field/Office No. _____

Date Col. 11-29-65 Time 1500 (est.)
Col. By USGS
Field detns: Temp. ($^{\circ}$ F) 85 pH _____
Sp. Cond. (μ mhos) 1,150 Eh _____
Appearance Turbid

Well Type Drilled Use Observation
Depth (ft) See Remarks Cased to See Remarks
Diam. (in) See Remarks Date Drilled Sept. 1961
Water level (ft) 90.22 below l.s.d.
Discharge 23 gpm measured
W.B.F. Calcite Limestone, calcite
caprock aquifer
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium μ g/l	.		
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	8.5		3-2-66
Gross α as U equivalent μ g/l	<21		3-2-66
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	1,500		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Depth (ft.): 3,525; well is plugged at 1,450 ft. (Feb. 65)
Cerium-praseodymium ¹⁴⁴		Diam. (in.) and Cased to: 9-5/8 OD, 0 to 983 ft.; 7 OD, 1,045 to 1,502 ft.
Cesium ¹³⁷		Sampling procedure: A 2 hp Reda pump is set on 5 1/2 in. casing with no. 8 wire and 1 in. plastic hose at 189.43 ft. below l.s.d.
Chromium ⁵⁷		
Cobalt ⁶⁰		
Ruthenium-rhodium ¹⁰⁶		
Tritium (μ c/ml 2-9-66)	ND	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		
		ND: Sought but not detected by method used.

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project Dribble

Analyst H.C.Claassen; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

660674

Lab. No. _____

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well E-9
Location Tatum Salt Dome, Lamar Co., Mississippi
SE 1/4 NW 1/4 NW 1/4 Sec 13, T 2 N., R 16 W. Field/Office No. _____

Date Col. 12-10-65 Time 1640
Col. By U.S.G.S.
Field detns: Temp. (°F) 86 pH _____
Sp. Cond. (μmhos) 1400 Eh _____
Appearance Turbid

Well Type Drilled Use Observation
Depth (ft) See Remark Cased to See Remarks
Diam. (in) See Remark Date Drilled Sept. 1961
Water level (ft) _____
Discharge _____
W.B.F. Calcite Limestone, calcite cap-rock aquifer
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u><7.1</u>		<u>2-28-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><21</u>		<u>2-28-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>1,400</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Depth (ft.): 3,525; well is plugged at 1,450 ft. (Feb. 65)
Cerium-praseodymium ¹⁴⁴	Diam. (in.) and Cased to: 9-5/8 OD, 0 to 983 ft.; 7 OD, 1,045 to 1,502 ft.
Cesium ¹³⁷	Sampling procedure: A 2 hp Reda pump is set on 5 1/2 in. casing with no. 8 wire and 1 in. plastic hose at 189.43 ft. below l.s.d.
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	
Tritium (μc/ml 3-1-66)	ND
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	ND: Sought but not detected by method used.

Date sample received 12-28-65
Date data released 3-4-66
Program classification Project Dribble

Analyst P. K. Roscio; H.C. Claassen
Date checked 3-4-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660478U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well E-14b (lower) Located about 78 feet south and 14 feet east of Well E14.

Location Tatum Salt Dome, Lamar Co., MississippiSW 1/4 SE 1/4 SE 1/4 Sec 11, T 2 N., R 16 W. Field/Office No. _____Date Col. 10-28-65 Time 1515
Col. By USGS
Field detns: Temp. ($^{\circ}$ F) 97 pH _____
Sp. Cond. (μ mhos) 3,000 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) See Remark Cased to See Remarks
Diam. (in) See Remark Date Drilled See Remarks
Water level (ft) _____
Discharge 100 gpm
W.B.F. Calcite Limestone, calcite
caprock aquifer
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium μ g/l			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	12		3-2-66
Gross α as U equivalent μ g/l	<26		3-2-66
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	1,800		
Isotopic Analysis			
Barium-lanthanum ¹⁴⁰			Remarks: Big Chief Drilling Co. completed to depth of 3,959 feet July 10, 1963. Hole cased 16" to 904 ft.; 11 3/4 in. to 1,627. Hole reworked and refinished below casing to 3,700 ft. Aug. 29, 1963.
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			Mohon Bros., Inc. reworked hole for observation and sampling well. Frac Jet, four 3/4-in holes per foot from 950 to 1,014 feet (E-14b lower) and 800 to 865 feet (E-14b upper).
Chromium ⁵⁷			
Cobalt ⁶⁰			ND: Sought but not detected by method used.
Ruthenium-rhodium ¹⁰⁶			
Tritium (μ c/ml 11-23-65)	ND		
Zinc ⁶⁵			
Zirconium-niobium ⁹⁵			

Date sample received 11-9-65
Date data released 3-7-66
Program classification Project DribbleAnalyst H.C. Claassen; E. Villasana; P.K. Roscio
Date checked 3-7-66
Checked by V. J. Janzer*Analyzed only when indicated by Salmon Event Gross β count.

Lab. No. 660551

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well E-14b (lower) Located about 78 feet south and 14 feet east of Well E14.

Location Tatum Salt Dome, Lamar Co., Mississippi

SW 1/4 SE 1/4 SE 1/4 Sec 11, T 2 N., R 16 W. Field/Office No. _____

Date Col. 11-15-65 Time 1510
Col. By U.S.G.S.
Field detns: Temp. (°F) 97 pH _____
Sp. Cond. (µmhos) 2600 Eh _____
Appearance Clear

Well Type Drilled Use Observation
Depth (ft) See Remark Cased to See Remarks
Diam. (in) See Remark Date Drilled See Remarks
Water level (ft) _____
Discharge _____
W.B.F. Calcite Limestone, calcite cap-rock aquifer
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>µg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>8.2</u>		<u>3-4-66</u>
Gross α as U equivalent <u>µg/l</u>	<u><30</u>		<u>3-4-66</u>
Net extr. α, U equivalent <u>µg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>2,100</u>		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Big Chief Drilling Co. completed to depth of 3,959 feet July 10, 1963. Hole cased 16" to 904 ft.; 11 3/4 in. to 1,627. Hole reworked and refinished below casing to 3,700 ft. Aug. 29, 1963.
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		Mohon Bros., Inc. reworked hole for observation and sampling well. Frac Jet, four 3/4-in. holes per foot from 950 to 1,014 feet (E-14b lower) and 800 to 865 feet (E-14b upper).
Chromium ⁵⁷		
Cobalt ⁶⁰		ND: Sought but not detected by method used.
Ruthenium-rhodium ¹⁰⁶		
Tritium (µc/ml <u>2-4-66</u>)	<u>ND</u>	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project Dribble
Salmon Event

Analyst H.C.Claassen; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well E-14b (lower) Located about 78 feet south and 14 feet east of Well E14.

Location Tatum Salt Dome, Lamar Co., Mississippi

SW 1/4 SE 1/4 SE 1/4 Sec 11, T 2 N., R 16 W. Field/Office No. _____Date Col. 11-29-65 Time 1400 (est.)Col. By USGSField detns: Temp. (°F) 97 pH _____Sp. Cond. (µmhos) 1,100 Eh _____Appearance ClearWell Type Drilled Use ObservationDepth (ft) See Remarks Cased to See RemarksDiam. (in) See Remarks Date Drilled See RemarksWater level (ft) 82.00 below l.s.d., June 1966Discharge 100 gpm measuredW.B.F. Calcite Limestone, calcite cap-rock aquiferOwner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>µg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u><7.2</u>		<u>3-2-66</u>
Gross α as U equivalent <u>µg/l</u>	<u><26</u>		<u>3-2-66</u>
Net extr. α, U equivalent <u>µg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>2,000</u>		
Isotopic Analysis			
Barium-lanthanum ¹⁴⁰			
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			
Chromium ⁵⁷			
Cobalt ⁶⁰			
Ruthenium-rhodium ¹⁰⁶			
Tritium (<u>µc/ml</u> <u>2-9-66</u>)	<u>ND</u>		
Zinc ⁶⁵			
Zirconium-niobium ⁹⁵			

Remarks: Big Chief Drilling Co. completed to depth of 3,959 feet July 10, 1963. Hole cased 16" to 904 ft.; 11 3/4 in. to 1,627. Hole reworked and refinished below casing to 3,700 ft. Aug. 29, 1963.

Mohon Bros., Inc. reworked hole for observation and sampling well. Frac Jet, four 3/4-in. holes per foot from 950 to 1,014 feet (E-14b lower) and 800 to 865 feet (E-14b upper).

ND: Sought but not detected by method used.

Date sample received 12-20-65Date data released 3-9-66Program classification Project DribbleSalmon Event

*Analyzed only when indicated by gross β count.

Analyst H.C.Claassen; P.K.RoscioDate checked 3-9-66Checked by V. J. Janzer

Lab. No.

660675

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well E-14b (lower) Located about 78 feet south and 14 feet east of Well E14.
Location Tatum Salt Dome, Lamar Co., Mississippi
SW 1/4 SE 1/4 SE 1/4 Sec 11, T 2 N., R 16 W. Field/Office No.

Date Col. 12-11-65 Time 1640
Col. By U.S.G.S.
Field detns: Temp. (°F) 98 pH
Sp. Cond. (μmhos) 1400 Eh
Appearance Clear

Well Type	Drilled	Use	Observation
Depth (ft)	See Remarks	Cased to	See Remarks
Diam. (in)	See Remarks	Date Drilled	See Remarks
Water level (ft)			
Discharge			
W.B.F.	Calcite Limestone, calcite cap-rock aquifer		
Owner	U. S. Atomic Energy Commission		

Elements	pc/l	pc/g	Date determined
Uranium $\mu\text{g/l}$			
Radium as Ra^{226}			
Gross β (as $\text{Sr}^{90} - \text{Y}^{90}$)	<7.2		2-28-66
Gross α as U equivalent $\mu\text{g/l}$	<30		2-28-66
Net extr. α , U equivalent $\mu\text{g/l}$			
Gross γ (as Cs^{137})			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	2,000		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Big Chief Drilling Co. completed to depth of 3,959 feet July 10, 1963. Hole cased 16" to 904 ft.; 11 3/4 in. to 1,627. Hole reworked and refinished below casing to 3,700 ft. Aug. 29, 1963.
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		
Chromium ⁵⁷		
Cobalt ⁵⁰		
Ruthenium-rhodium ¹⁰⁶		Mohon Bros., Inc. reworked hole for observation and sampling well. Frac Jet, four 3/4-in. holes per foot from 950 to 1,014 feet (E-14b lower) and 800 to 865 feet (E-14b upper).
Tritium (µc/ml 3-1-66)	ND	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		
		ND: Sought but not detected by method used.

Date sample received 12-28-65
Date data released 3-4-66
Program classification Project Dribble

Analyst P. K. Roscio; H.C.Claassen
Date checked 3-4-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660484U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-1(4)Location Tatum Salt Dome, Lamar Co., MississippiNW 1/4 NW 1/4 SE 1/4 Sec. 12, T. 2 N., R. 16 W. Field/Office No. _____Date Col. 10-28-65 Time 1630
Col. By USGS
Field detns: Temp. (°F) 80 pH _____
Sp. Cond. (μmhos) 2,600 Eh _____
Appearance ClearWell Type Drilled Use Observation
Depth (ft) 2,650 Cased to See Remarks
Diam. (in) See Remark Date Drilled 6-9-61
Water level (ft) 127.27 below l.s.d.
Discharge 7 gpm
W.B.F. Limestones of Vicksburg Group,
aquifer 4
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>21</u>		<u>3-2-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><17</u>		<u>3-2-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>1,200</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Well type: Drilled, multiple well-- 3 strings of pipe each packering off a different aquifer.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	Casing: 16 OD, 0 to 324 ft.; 9-5/8 OD, 300 to 2,246 ft.; 3 1/2" OD tubing to aquifer 4, 0 to 284 ft.; 1 1/2" OD, 284 to 1,152.
Chromium ⁵⁷	
Cobalt ⁶⁰	ND: Sought but not detected by method used.
Ruthenium-rhodium ¹⁰⁶	
Tritium (uc/ml <u>11-23-65</u>)	
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 11-9-65
Date data released 3-9-66
Program classification Project DribbleAnalyst H.C. Claassen; E. Villasana; P.K. Roscio
Date checked 3-9-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.
Salmon Event

Lab. No. 660605U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2(4)
Location Tatum Salt Dome, Lamar Co., Mississippi
SW 1/4 1/4 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 11-15-65 Time 1227
Col. By W. T. Oakley
Field detns: Temp. (°F) 71 pH _____
Sp. Cond. (μmhos) 800 Eh _____
Appearance CloudyWell Type Drilled Use Observation
Depth (ft) 2,622 Cased to See Remarks
Diam. (in) See Remark Date Drilled 6-18-61
Water level (ft) _____
Discharge 2.79 gpm
W.B.F. Limestones of Vicksburg Group,
aquifer 4
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra^{226}			
Gross β (as $Sr^{90} - Y^{90}$)	<u>4.2</u>		<u>3-4-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><5.9</u>		<u>3-4-66</u>
Net extr. α , U equivalent <u>μg/l</u>			
Gross γ (as Cs^{137})			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>470</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Well type: Drilled, multiple well-- 3 strings of pipe each packing off a different aquifer.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	Diam. (in.) and Cased to: 16 in. OD, 0 to 319 ft.; 9-5/8 OD, 292 to 2,425 ft.; 3 1/2" OD tubing to aquifer 4, 0 to 282 ft.; 1 1/2" OD tubing, 282 to 1,804 ft.
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	
Tritium (uc/ml <u>1-14-66</u>)	Sample No. 3 taken 0 + 1 hr. 12 min. (200 gallons)
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 12-20-65
Date data released 3-9-66
Program classification Project Dribble
Salmon EventAnalyst H.C.Claassen; P.K.Roscio
Date checked 3-9-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well HT-2(4)
 Location Tatum Salt Dome, Lamar Co., Mississippi
1/4 1/4 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____

Date Col. 11-16-65 Time 2336
 Col. By W. T. Oakley
 Field detns: Temp. ($^{\circ}$ F) 72 pH _____
 Sp. Cond. (μ mhos) 4,500 Eh _____
 Appearance Brown

Well Type Drilled Use Observation
 Depth (ft) 2,622 Cased to See Remarks
 Diam. (in) See Remark Date Drilled 6-18-61
 Water level (ft) _____
 Discharge 2.79 gpm
 W.B.F. Limestones of Vicksburg Group,
aquifer 4
 Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium μ g/l			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<6.9		3-4-66
Gross α as U equivalent μ g/l	40		3-4-66
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	1,400		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Well type: Drilled, multiple well-- 3 strings of pipe each packering off a different aquifer.
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		Diam. (in.) and Cased to: 16 in. OD, 0 to 319 ft.; 9-5/8 OD, 292 to 2,425 ft.; 3 1/2" OD tubing to aquifer 4, 0 to 282 ft.; 1 1/2" OD tubing, 282 to 1,804 ft.
Chromium ⁵⁷		
Cobalt ⁶⁰		
Ruthenium-rhodium ¹⁰⁸		
Tritium (μ c/ml 1-17-66)	5.0×10^{-6}	
Zinc ⁶⁵		Sample No. 23 taken 0 + 36 hr. 21 min. (6,000 gallons)
Zirconium-niobium ⁹⁵		

Date sample received 12-20-65
 Date data released 3-9-66
 Program classification Project Dribble

Analyst H.C. Claassen; P.K. Roscio
 Date checked 3-9-66
 Checked by V. J. Janzer

*Analyzed only when indicated by ^{Salmon Event} gross β count.

Lab. No. 660773U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-2(4)
Location Tatum Salt Dome, Lamar Co., Mississippi
SW 1/4 1/4 1/4 Sec 14, T 2 N., R 16 W. Field/Office No. _____Date Col. 1-20-66 Time 1400
Col. By W. T. Oakley
Field detns: Temp. ($^{\circ}$ F) 66 pH _____
Sp. Cond. (μ mhos) 2200 Eh _____
Appearance ColoredWell Type Drilled Use Observation
Depth (ft) 2,622 Cased to See Remarks
Diam. (in) See Remark Date Drilled 6-18-61
Water level (ft) See Remarks
Discharge See Remarks
W.B.F. Limestones of Vicksburg Group,
aquifer 4
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium μ g/l			
Radium as Ra^{226}			
Gross β (as $Sr^{90} - Y^{90}$)	210		3-16-66
Gross α as U equivalent μ g/l	25		3-16-66
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs^{137})			
Potassium 40			
Strontium 90 *			
Dissolved solids mg/l	1,400		

Isotopic Analysis	Remarks:
Barium-lanthanum 140	Well type: Drilled, multiple well-- 3 strings of pipe each packering off a different aquifer.
Cerium-praseodymium 144	
Cesium 137	Diam. (in.) and Cased to: 16 in OD, 0 to 319 ft.; 9-5/8 OD, 292 to 2,425 ft.; 3 1/2" OD tubing to aquifer 4, 0 to 282 ft.; 1 1/2" OD tubing, 282 to 1,804 ft.
Chromium 57	
Cobalt 60	
Ruthenium-rhodium 106	
Tritium (μ c/ml 2-25-66)	
Zinc 65	
Zirconium-niobium 95	

Date sample received 1-27-66
Date data released 3-18-66
Program classification Project DribbleAnalyst P.K. Roscio; H.C. Claassen
Date checked 3-18-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

Lab. No. 660191U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-1(5)
Location Tatum Salt Dome, Lamar Co., Mississippi
NW 1/4 NW 1/4 SE 1/4 Sec 12, T 2 N., R 16 W. Field/Office No. _____Date Col. 9-16-65 Time 1530
Col. By USGS
Field detns: Temp. (°F) 72 pH _____
Sp. Cond. (μmhos) >8,000 Eh _____
Appearance ColoredWell Type See Remarks Use Observation
Depth (ft) 2,650 Cased to See Remarks
Diam. (in) See Remark Date Drilled 6-8-61
Water level (ft) 86.30 below l.s.d.
Discharge 2.5 gpm
W.B.F. Cook Mountain Limestone,
aquifer 5
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>97</u>		<u>3-16-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><240</u>		<u>3-16-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>21,000</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Well type: Drilled, multiple well-- 3 strings of pipe each packering off a different aquifer.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	Casing: 16 OD, 0 to 324 ft.; 9-5/8 OD, 300 to 2,246 ft.; 3½" OD tubing to aquifer 5, 0 to 2,400 ft.
Chromium ⁵⁷	
Cobalt ⁶⁰	ND: Sought but not detected by method used.
Ruthenium-rhodium ¹⁰⁶	
Tritium (<u>μc/ml 9-27-65</u>)	<u>ND</u>
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 9-27-65
Date data released 3-18-66
Program classification Project DribbleAnalyst E. Villasana; P. K. Roscio
Date checked 3-18-66
Checked by PKR

*Analyzed only when indicated by gross β count.

660222

Lab. No. _____

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well HT-1(5)
 Location Tatum Salt Dome, Lamar Co., Mississippi
NW 1/4 NW 1/4 SE 1/4 Sec 12, T 2 N., R 16 W. Field/Office No. _____

Date Col. 9-30-65 Time 1410
 Col. By USGS
 Field detns: Temp. (°F) 72 pH _____
 Sp. Cond. (μmhos) >8,000 Eh _____
 Appearance Colored

Well Type See Remarks Use Observation
 Depth (ft) 2,650 Cased to See Remarks
 Diam. (in) See Remark Date Drilled 6-8-61
 Water level (ft) 86.30 below l.s.d. 9-30-65
 Discharge 2.5 gpm on 3-20-65
 W.B.F. Cook Mountain Limestone,
aquifer 5
 Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u><89</u>		<u>11-19-65</u>
Gross α as U equivalent <u>μg/l</u>	<u><190</u>		<u>11-19-65</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>19,000</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Well type: Drilled, multiple well--3 strings of pipe each packered off to a different aquifer.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	Diam. (in.) and Cased to: 16 OD, 0 to 324 ft.; 9-5/8 OD, 300 to 2,246 ft.; 3 1/2 OD, 0 to 2,400 ft.
Tritium (μc/ml 10-11-65)	
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	
	ND: Sought but not detected by method used.

Date sample received 10-20-65
 Date data released 11-24-65
 Program classification Project Dribble

Analyst E. Villasana; T. Sinconis
 Date checked 11-24-65
 Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660355U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Well HT-1(5)Location 10 miles west of Purvis, Lamar Co., MississippiNW 1/4 NW 1/4 SE 1/4 Sec 12, T 2 N., R 16 W. Field/Office No. _____Date Col. 10-14-65 Time 1420Col. By USGSField detns: Temp. (°F) 74 pH _____Sp. Cond. (μmhos) >8,000 EhAppearance ClearWell Type See Remarks Use ObservationDepth (ft) 2.650 Cased to See RemarksDiam. (in) See Remark Date Drilled 6-8-61Water level (ft) 86.30 below l.s.d. 10-14-65Discharge 2.5 gpm on 10-14-65W.B.F. Cook Mountain Limestone,
aquifer 5Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>89</u>		<u>11-25-65</u>
Gross α as U equivalent <u>μg/l</u>	<u><180</u>		<u>11-25-65</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>16,000</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Well type: Drilled, multiple well--3 strings of pipe each packered off to a different aquifer.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	
Chromium ⁵⁷	Diam. (in.) and Cased to: 16 OD, 0 to 324 ft.; 9-5/8 OD, 300 to 2,246 ft.; 3 1/2 OD, 0 to 2,400 ft.
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	
Tritium (<u>μc/ml</u> <u>10-30-65</u>)	Sampled after pumping 5 hrs. and 20 min. at 2.5 gpm.
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	
	ND: Sought but not detected by method used.

Date sample received 10-14-65

Date data released _____

Program classification Project DribbleSalmon Event

*Analyzed only when indicated by gross β count.

Analyst E. Villasana; T. SinconisDate checked 11-22-65

Checked by _____

660476

Lab. No. _____

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Well HT-1(5)
Location Tatum Salt Dome, Lamar Co., Mississippi
NW 1/4 NW 1/4 SE 1/4 Sec. 12. T. 2 N., R. 16 W. Field/Office No. _____

Date Col. 10-28-65 Time 1620
Col. By USGS
Field detns: Temp. (°F) 75 pH _____
Sp. Cond. (μmhos) >8,000 Eh _____
Appearance Clear

Well Type See Remarks Use Observation
Depth (ft) 2,650 Cased to See Remarks
Diam. (in) See Remark Date Drilled 6-8-61
Water level (ft) 86.30 below l.s.d.
Discharge 2.5 gpm
W.B.F. Cook Mountain Limestone,
aquifer 5
Owner U. S. Atomic Energy Commission

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u><89</u>		<u>3-1-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>290</u>		<u>3-1-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>18.000</u>		

Isotopic Analysis		Remarks:
Barium-lanthanum ¹⁴⁰		Well type: Drilled, multiple well-- 3 strings of pipe each packering off a different aquifer.
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		Casing: 16 OD, 0 to 324 ft.; 9-5/8 OD, 300 to 2,246 ft.; 3 1/2" OD tubing to aquifer 5, 0 to 2,400 ft.
Chromium ⁵⁷		
Cobalt ⁶⁰		ND: Sought but not detected by method used.
Ruthenium-rhodium ¹⁰⁶		
Tritium (μc/ml <u>3-3-66</u>)	<u>ND</u>	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		

Date sample received 11-10-65
Date data released 3-7-66
Program classification Project Dribble
Salmon Event

Analyst P. K. Roscio; H.C. Claassen
Date checked 3-7-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 650254U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Half Moon Creek, P/C: at gaging stationLocation See RemarksSW 1/4 1/4 1/4 Sec 2, T 2 N. R 16 W. Field/Office No. _____Date Col. 10-23-64 Time 1130
Col. By M. W. Gaydos
Field detns: Temp. ($^{\circ}$ F) _____ pH _____
Sp. Cond. (μ mhos) _____ Eh _____
Appearance Slightly turbidWell Type _____ Use _____
Depth (ft) _____ Cased to _____
Diam. (in) _____ Date Drilled _____
Water level (ft) _____
Discharge _____
W.B.F. _____
Drainage area (sq. miles): Approx. 20
Owner _____

Elements	pc/l	pc/g	Date determined
Uranium μ g/l	<0.4		
Radium as Ra ²²⁶	.2		
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	2.0		12-8-64
Gross α as U equivalent μ g/l	<1.2		12-8-64
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	32		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Location: Near Baxterville, Lamar Co., Mississippi, 8 miles west of Purvis, off Purvis Salt Dome Road.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	St. Stephens Meridian immediately upstream from confluence with Hurricane Creek and $5\frac{1}{2}$ miles north of Baxterville.
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	
Tritium	
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 11-30-64
Date data released 1-18-65
Program classification Project Dribble
Salmon EventAnalyst P. K. Roscio
Date checked 1-14-65
Checked by SJR*Analyzed only when indicated by gross β count.

Lab. No. 650366

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Half Moon Creek, P/C: at gaging station
Location Near Baxterville, Lamar Co., Mississippi, 8 miles west of Purvis.
1/4 1/4 1/4 Sec T R Field/Office No.

Date Col. 10-30-64 Time
Col. By
Field detns: Temp. (°F) pH
Sp. Cond. (μmhos) Eh
Appearance Clear

Well Type Use
Depth (ft) Cased to
Diam. (in) Date Drilled
Water level (ft)
Discharge
W.B.F.
Drainage area (sq. miles): Approx. 20
Owner

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>	0.5		
Radium as Ra ²²⁶	.1		
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	5.1		4-28-65
Gross α as U equivalent <u>μg/l</u>	<.7		4-28-65
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	44		

Isotopic Analysis	Method	Corrected for decay to:
Barium-lanthanum ¹⁴⁰		
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		
Chromium ⁵⁷		
Cobalt ⁶⁰		
Ruthenium-rhodium ¹⁰⁶		
Tritium (uc/ml 3-3-66)	ND	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		
ND: Sought but not detected by method used.		

Date sample received 2-25-65
Date data released 6-7-65
Program classification Project Dribble
Salmon Event

Analyst P. K. Roscio; E. Villasana
Date checked 5-17-65
Checked by S. J. Rucker

*Analyzed only when indicated by gross β count.

Lab. No. 660166U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Half Moon Creek, P/C: at gaging stationLocation See RemarksSW 1/4 1/4 1/4 Sec 2, T 2 N., R 16 W. Field/Office No. _____Date Col. 9-9-65 Time 1340
Col. By USGS
Field detns: Temp. ($^{\circ}$ F) 72 pH _____
Sp. Cond. (μ mhos) <50 Eh _____
Appearance ClearWell Type _____ Use _____
Depth (ft) _____ Cased to _____
Diam. (in) _____ Date Drilled _____
Water level (ft) _____
Discharge _____
W.B.F. _____
Owner _____

Elements	pc/l	pc/g	Date determined
Uranium μ g/l	<0.4		
Radium as Ra ²²⁶	.1		
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	2.3		11-9-65
Gross α as U equivalent μ g/l	1.5		11-9-65
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	24		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Location: Near Baxterville, Lamar Co., Mississippi, 8 miles west of Purvis, off Purvis Salt Dome Road.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	St. Stephens Meridian immediately upstream from confluence with Hurricane Creek and $5\frac{1}{2}$ miles north of Baxterville.
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	
Tritium	ND: Sought but not detected by method used 12-17-65.
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 9-17-65
Date data released _____
Program classification Project DribbleAnalyst P.K. Roscio; T. Sinconis; E. Villasana
Date checked 12-7-65
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

660386

Lab. No. _____

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Half Moon Creek, P/C: at gaging station
 Location Near Baxterville, Lamar Co., Mississippi, 8 miles west of Purvis
SW 1/4 1/4 1/4 Sec. 2, T. 2 N., R. 16 W. Field/Office No. _____

Date Col. 10-21-65 Time 1145
 Col. By USGS
 Field detns: Temp. (°F) 65 pH _____
 Sp. Cond. (µmhos) <50 Eh _____
 Appearance Clear

Well Type _____ Use _____
 Depth (ft) _____ Cased to _____
 Diam. (in) _____ Date Drilled _____
 Water level (ft) _____
 Discharge _____
 W.B.F. _____
 Drainage area (sq. miles): Approx. 20
 Owner _____

Elements	pc/l	pc/g	Date determined
Uranium <u>µg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>1.9</u>		<u>3-1-66</u>
Gross α as U equivalent <u>µg/l</u>	<u>.9</u>		<u>3-1-66</u>
Net extr. α, U equivalent <u>µg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>23</u>		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	ND: Sought but not detected by method used 11-8-65.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	
Tritium	
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 10-21-65
 Date data released 3-7-66
 Program classification Project Dribble

Analyst E. Villasana; H.C. Claassen; P.K. Roscio
 Date checked 3-7-66
 Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660679

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Half Moon Creek, P/C: at gaging station
Location Near Baxterville, Lamar Co., Mississippi, 8 miles west of Purvis.
1/4 1/4 1/4 Sec T R Field/Office No.

Date Col. 12-15-65 Time 1435
Col. By U.S.G.S.
Field detns: Temp. (°F) 59 pH
Sp. Cond. (μmhos) 45 Eh
Appearance Clear

Well Type Use
Depth (ft) Cased to
Diam. (in) Date Drilled
Water level (ft)
Discharge
W.B.F.
Drainage area (sq. miles): Approx. 20
Owner

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>3.4</u>		<u>3-1-66</u>
Gross α as U equivalent <u>μg/l</u>	<u><1.4</u>		<u>3-1-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	<u>46</u>		

Isotopic Analysis	Method	Corrected for decay to:
Barium-lanthanum ¹⁴⁰		
Cerium-praseodymium ¹⁴⁴		
Cesium ¹³⁷		
Chromium ⁵⁷		
Cobalt ⁶⁰		
Ruthenium-rhodium ¹⁰⁶		
Tritium (μc/ml 3-3-66)	<u>ND</u>	
Zinc ⁶⁵		
Zirconium-niobium ⁹⁵		
ND: Sought but not detected by method used.		

Date sample received 12-28-65
Date data released 3-4-66
Program classification Project Dribble

Analyst P. K. Roscio; H.C.Claassen
Date checked 3-4-66
Checked by V. J. Janzer

*Analyzed only when indicated by Salmon Event gross β count.

Lab. No. 660165U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Grantham Creek at Well E-9Location Tatum Salt Dome 10 miles west of Purvis, Lamar County, Mississippi
1/4 1/4 1/4 Sec 13, T 2 N., R 16 W. Field/Office No. _____Date Col. 9-9-65 Time 1330
Col. By USGS
Field detns: Temp. (°F) 70 pH _____
Sp. Cond. (μmhos) <50 Eh _____
Appearance ClearWell Type _____ Use _____
Depth (ft) _____ Cased to _____
Diam. (in) _____ Date Drilled _____
Water level (ft) _____
Discharge _____
W.B.F. _____
Owner _____

Elements	pc/l	pc/g	Date determined
Uranium $\mu\text{g/l}$	<0.4		
Radium as Ra^{226}	.1		
Gross β (as $\text{Sr}^{90} - \text{Y}^{90}$)	1.8		11-9-65
Gross α as U equivalent $\mu\text{g/l}$	<.6		11-9-65
Net extr. α , U equivalent $\mu\text{g/l}$			
Gross γ (as Cs^{137})			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	24		
Isotopic Analysis			Method Corrected for decay to:
Barium-lanthanum ¹⁴⁰			
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			
Chromium ⁵⁷			
Cobalt ⁶⁰			
Ruthenium-rhodium ¹⁰⁶			
Tritium ($\mu\text{c/ml}$ 12-17-65)	ND		
Zinc ⁶⁵			
Zirconium-niobium ⁹⁵			
ND: Sought but not detected by method used.			

Date sample received 9-17-65
Date data released _____
Program classification Project DribbleAnalyst P.K. Roscio; T. Sinconis; E. Villasana
Date checked 12-7-65
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.
Salmon Event

Lab. No. 660388U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Grantham Creek at Well E-9Location Tatum Salt Dome 10 miles west of Purvis, Lamar County, Mississippi1/4 1/4 1/4 Sec. 13, T. 2 N., R. 16 W. Field/Office No. _____Date Col. 10-21-65 Time 1215
Col. By USGS
Field detns: Temp. (°F) 65 pH _____
Sp. Cond. (μmhos) <50 Eh _____
Appearance ClearWell Type _____ Use _____
Depth (ft) _____ Cased to _____
Diam. (in) _____ Date Drilled _____
Water level (ft) _____
Discharge _____
W.B.F. _____
Owner _____

Sample collected east of station 1.

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	2.4		3-1-66
Gross α as U equivalent <u>μg/l</u>	<.8		3-1-66
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	23		
<hr/>			
Isotopic Analysis			Method Corrected for decay to:
Barium-lanthanum ¹⁴⁰			
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			
Chromium ⁵⁷			
Cobalt ⁶⁰			
Ruthenium-rhodium ¹⁰⁶			
Tritium	ND		
Zinc ⁶⁵			
Zirconium-niobium ⁹⁵			
<hr/>			
ND: Sought but not detected by			
method used 11-8-65.			

Date sample received 10-21-65
Date data released 3-7-66
Program classification _____Analyst E.Villasana;H.C.Claassen;P.K.Roscio
Date checked 3-7-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660681U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Grantham Creek at Well E-9
Location Tatum Salt Dome 10 miles west of Purvis, Lamar County, Mississippi
1/4 1/4 1/4 Sec 13, T 2 N., R 16 W. Field/Office No. _____Date Col. 12-15-65 Time 1445
Col. By U.S.G.S.
Field detns: Temp. ($^{\circ}$ F) 60 pH _____
Sp. Cond. (μ mhos) >25 Eh _____
Appearance ClearWell Type _____ Use _____
Depth (ft) _____ Cased to _____
Diam. (in) _____ Date Drilled _____
Water level (ft) _____
Discharge _____
W.B.F. _____
Owner _____

Elements	pc/l	pc/g	Date determined
Uranium μ g/l			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	3.8		3-1-66
Gross α as U equivalent μ g/l	5.6		3-1-66
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	32		
Isotopic Analysis			
		Method	Corrected for decay to:
Barium-lanthanum ¹⁴⁰			
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			
Chromium ⁵⁷			
Cobalt ⁶⁰			
Ruthenium-rhodium ¹⁰⁶			
Tritium (μ c/ml 3-3-66)	ND		
Zinc ⁶⁵			
Zirconium-niobium ⁹⁵			
ND: Sought but not detected by method used.			

Date sample received 12-28-65
Date data released 3-4-66
Program classification Project DribbleAnalyst P. K. Roscio; H. C. Claassen
Date checked 3-4-66
Checked by V. J. Janzer*Analyzed only when indicated by gross β count.

Lab. No. 650253U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Lower Little Creek, P/C: at gaging station
Location See Remarks
NW 1/4 1/4 1/4 Sec 5, T 2 N., R 16 W. Field/Office No. _____Date Col. 10-23-64 Time 1230
Col. By M. W. Gaydos
Field detns: Temp. ($^{\circ}$ F) _____ pH _____
Sp. Cond. (μ mhos) _____ Eh _____
Appearance Slightly turbidWell Type _____ Use _____
Depth (ft) _____ Cased to _____
Diam. (in) _____ Date Drilled _____
Water level (ft) _____
Discharge _____
W.B.F. _____
Drainage area (sq. miles): Approx. 80
Owner _____

Elements	pc/l	pc/g	Date determined
Uranium μ g/l	<0.4		
Radium as Ra ²²⁶	.2		
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	4.0		12-8-64
Gross α as U equivalent μ g/l	4.5		12-8-64
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	35		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	Location: Near Baxterville, Lamar Co., Mississippi, 11 miles west of Purvis, off Purvis Salt Dome Road.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁸	
Tritium	
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 11-30-64
Date data released 1-18-65
Program classification Project Dribble
Salmon EventAnalyst P. K. Roscio
Date checked 1-14-65
Checked by SJR*Analyzed only when indicated by gross β count.

Lab. No. 650368U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Lower Little Creek, P/C: at gaging station
Location Near Baxterville, Lamar Co., Mississippi, 11 miles west of Purvis.
1/4 1/4 1/4 Sec 5, T 2 N., R 16 W. Field/Office No. _____Date Col. 10-30-64 Time _____
Col. By _____
Field detns: Temp. (°F) _____ pH _____
Sp. Cond. (μmhos) _____ Eh _____
Appearance ClearWell Type _____ Use _____
Depth (ft) _____ Cased to _____
Diam. (in) _____ Date Drilled _____
Water level (ft) _____
Discharge _____
W.B.F. _____
Drainage area (sq. miles); Approx. 80
Owner _____

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>	<0.4		
Radium as Ra ²²⁶	.2		
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	7.0		5-17-65
Gross α as U equivalent <u>μg/l</u>	4.3		5-17-65
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	48		
Isotopic Analysis			Method
Barium-lanthanum ¹⁴⁰			Corrected for decay to:
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			
Chromium ⁵⁷			
Cobalt ⁶⁰			
Ruthenium-rhodium ¹⁰⁶			
Tritium (μc/ml 3-3-66)	ND		
Zinc ⁶⁵			
Zirconium-niobium ⁹⁵			
ND: Sought but not detected by method used.			

Date sample received 2-25-65
Date data released 7-14-65
Program classification Project DribbleAnalyst P. K. Roscio; E. Villasana
Date checked 6-22-65
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660167U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - RadiochemicalSource Lower Little Creek P/C: at gaging station
Location See Remarks
NW 1/4 1/4 1/4 Sec 5, T 2 N., R 16 W. Field/Office No. _____Date Col. 9-9-65 Time 1300
Col. By USGS
Field detns: Temp. (°F) 74 pH _____
Sp. Cond. (µmhos) <50 Eh _____
Appearance ClearWell Type _____ Use _____
Depth (ft) _____ Cased to _____
Diam. (in) _____ Date Drilled _____
Water level (ft) _____
Discharge _____
W.B.F. _____
Drainage area (sq. miles): Approx. 80
Owner _____

Elements	pc/l	pc/g	Date determined
Uranium µg/l	<0.4	.	
Radium as Ra ²²⁶	.1		
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	1/ 7.4		11-9-65
Gross α as U equivalent µg/l	29		11-9-65
Net extr. α, U equivalent µg/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	29		

Isotopic Analysis	Remarks:
Barium-lanthanum ¹⁴⁰	<u>Location:</u> Near Baxterville, Lamar Co., Mississippi, 11 miles west of Purvis, off Purvis Salt Dome Road.
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	
Chromium ⁵⁷	ND: Sought but not detected by method used 12-17-65.
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	1/ Sample recounted on 03-17-66. Insufficient sample for rerun. Re-count gross beta value is 12 pc/l and the gross alpha recount value is 48 µg/l.
Tritium	
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Date sample received 9-17-65
Date data released _____
Program classification Project DribbleAnalyst P.K. Roscio; T. Sinconis; E. Villasana
Date checked 12-7-65
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

Lab. No. 660387

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Lower Little Creek P/C: at gaging station
Location Near Baxterville, Lamar Co., Mississippi. 11 miles west of Purvis.
NW 1/4 1/4 1/4 Sec. 5, T. 2 N., R. 16 W. Field/Office No.

Date Col. 10-21-65 Time 1500
Col. By USGS
Field detns: Temp. (°F) 66 pH
Sp. Cond. (μmhos) 60 Eh
Appearance

Well Type Use
Depth (ft) Cased to
Diam. (in) Date Drilled
Water level (ft)
Discharge
W.B.F.
Drainage area (sq. miles): Approx. 80
Owner

Elements	pc/l	pc/g	Date determined
Uranium <u>μg/l</u>			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	<u>1.9</u>		<u>3-1-66</u>
Gross α as U equivalent <u>μg/l</u>	<u>1.8</u>		<u>3-1-66</u>
Net extr. α, U equivalent <u>μg/l</u>			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids <u>mg/l</u>	<u>27</u>		

Isotopic Analysis	
Barium-lanthanum ¹⁴⁰	
Cerium-praseodymium ¹⁴⁴	
Cesium ¹³⁷	
Chromium ⁵⁷	
Cobalt ⁶⁰	
Ruthenium-rhodium ¹⁰⁶	
Tritium (μc/ml 11-8-65)	<u>ND</u>
Zinc ⁶⁵	
Zirconium-niobium ⁹⁵	

Remarks:

ND: Sought but not detected by method used.

Date sample received 10-21-65
Date data released 3-7-66
Program classification Project Dribble

Analyst E.Villasana;H.C.Claassen;P.K.Roscio
Date checked 3-7-66
Checked by V. J. Janzer

Salmon Event
*Analyzed only when indicated by gross β count.

Lab. No. 660680

U. S. DEPT. OF THE INTERIOR--GEOLOGICAL SURVEY
Statement of Water Analysis - Radiochemical

Source Lower Little Creek P/C: at gaging station
Location Near Baxterville, Lamar Co., Mississippi, 11 miles west of Purvis.
NW 1/4 1/4 1/4 Sec 5, T 2 N., R 16 W. Field/Office No.

Date Col. 12-15-65 Time 1300
Col. By U.S.G.S.
Field detns: Temp. ($^{\circ}$ F) 57 pH
Sp. Cond. (μ mhos) 32 Eh
Appearance Clear

Well Type Use
Depth (ft) Cased to
Diam. (in) Date Drilled
Water level (ft)
Discharge
W.B.F.
Drainage area (sq. miles): Approx. 80
Owner

Elements	pc/l	pc/g	Date determined
Uranium μ g/l			
Radium as Ra ²²⁶			
Gross β (as Sr ⁹⁰ - Y ⁹⁰)	3.4		3-1-66
Gross α as U equivalent μ g/l	<.7		3-1-66
Net extr. α , U equivalent μ g/l			
Gross γ (as Cs ¹³⁷)			
Potassium ⁴⁰			
Strontium ⁹⁰ *			
Dissolved solids mg/l	41		

Isotopic Analysis		Method	Corrected for decay to:
Barium-lanthanum ¹⁴⁰			
Cerium-praseodymium ¹⁴⁴			
Cesium ¹³⁷			
Chromium ⁵⁷			
Cobalt ⁶⁰			
Ruthenium-rhodium ¹⁰⁶			
Tritium (μ c/ml 3-3-66)	ND		
Zinc ⁶⁵			
Zirconium-niobium ⁹⁵			
ND: Sought but not detected by method used.			

Date sample received 12-28-65
Date data released 3-4-66
Program classification Project Dribble

Analyst P. K. Roscio; H.C. Claassen
Date checked 3-4-66
Checked by V. J. Janzer

*Analyzed only when indicated by gross β count.

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