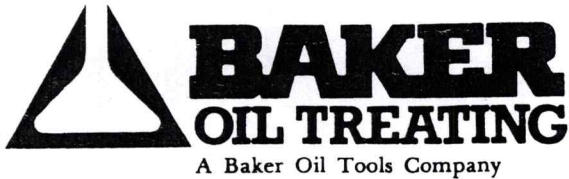


17-17-24W
Dickman 1



27 May 1988

Walters Drilling Co Inc.
100 S. Main, #420
Wichita, Ks. 67202

Attention: Mr. Walter Zimmerman

Dear Mr. Zimmerman:

Enclosed is the water analysis requested by you on the Dickman #1. The last water analysis on this well was the 20th of January 1987 and the water is still indicating that it is still Mississippi formation water. The chlorides have changed from 20,000 to 19,000 and calcium and magnesium have varied also. The only noticeable change is in the H₂S and Carbon Dioxide and is presently being treated with Magnicide 461 once a month to control the bacteria which will cause a iron sulfide and corrosion problem .

If you have any questions , please call.

Sincerely,

BAKER OIL TREATING

Ken Knight

enc: 2

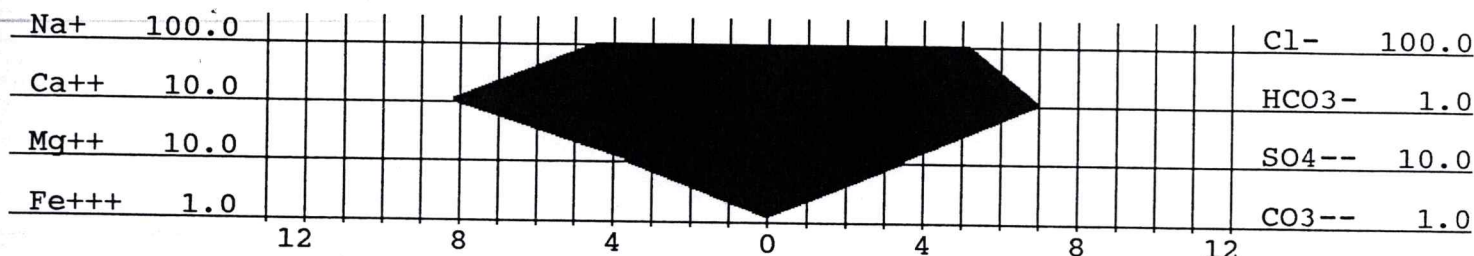
WATER ANALYSIS
for
WALTERS DRILLING CO



Date of Analysis:	MAY 26, 1988	Analysis #:	N/D
Company:	WALTERS DRILLING CO	Company Address:	GREAT BEND KS 67530
State:	KANSAS	Field:	NESS COUNTY
Lease:	DICKMAN	Well #:	1
Oil (bbl/day):	N/D	Water (bbl/day):	N/D
Type of Water:	MISSISSIPPI	Temp.,C:	N/D
Sample Source:	BLEEDER	Date of Sampling:	MAY 26, 1988
Representative:	KEN KNIGHT	Analysis By:	GALEN UHRICH

WATER ANALYSIS PATTERN

(number beside ion symbol indicates me/l scale unit)



DISSOLVED SOLIDS

CATIONS	me/l	mg/l
Total Hardness :	122.00	
Calcium, (Ca++) :	84.00	1684.04
Magnesium, (Mg++):	38.00	461.75
Iron, (Fe+++):	0.00	0.00
Barium, (Ba++) :	0.00	0.00
Sodium, Na+(calc):	459.35	10564.99
Manganese, (Mn++):	0.00	0.00

ANIONS

Chloride, Cl-	:	535.23	19000.00
Sulfate, SO4--	:	36.42	1750.00
Carbonate, CO3--	:	0.00	0.00
Bicarbonate, HCO3-	:	7.20	439.29
Hydroxyl, OH-	:	0.00	0.00
Sulfide, S--	:	2.50	40.12

TOTAL SOLIDS (quant.): N/D

DISSOLVED GASES

Hydrogen sulfide:	25.00	mg/l
Carbon dioxide :	40.00	mg/l
Oxygen :	N/D	mg/l

PHYSICAL PROPERTIES

pH : 6.80
Spec Grav. : 1.018
TDS (calc.) : 33909.78

SCALE STABILITIES

Temp.,C	CaCO3	CaSO4	BaSO4
32.0	0.13	3859	0
38.0	0.27	3924	0
43.0	0.39	3981	0
Max entity, (calc.)		2503	0

RESIDUAL HYDROCARBONS: N/D

N/D = not determined

BAKER**OIL TREATING**

A Baker Oil Tools Company

17-17-24W

WATER ANALYSIS REPORT

Walters Drilling Co.

ANALYSIS NUMBER

DATE

1-20-87

STATE

LEASE OR UNIT

Dickman

WELL(S) NAME OR NO.

#1

COUNTY OR PARISH

WATER SOURCE (FORMATION)

DEPTH, FT.

BHT, °F

SAMPLE SOURCE

TEMP, °F

WATER, BBL/DAY

OIL, BBL/DAY

GAS, MMCF/DAY

DATE SAMPLED

TYPE OF WATER

☐

PRODUCED

☐

SUPPLY

☐

WATERFLOOD

☐

SALT WATER DISPOSAL

WATER ANALYSIS PATTERN
(NUMBER BESIDE ION SYMBOL INDICATES me/l* SCALE UNIT)

Na ⁺ 20	15	10	5	0	5	10	15	20	Cl ⁻
Ca ⁺⁺									HCO ₃ ⁻
Mg ⁺⁺									SO ₄ ⁼
Fe ⁺⁺⁺									CO ₃ ⁼

DISSOLVED SOLIDS

CATIONS

Total Hardness

Calcium, Ca⁺⁺Magnesium, Mg⁺⁺Iron (Total) Fe⁺⁺⁺Barium, Ba⁺⁺Sodium, Na⁺ (calc.)

Total

me/l*

116

88

28

0

0

490

606

mg/l*

1760

342

0

0

11,270

13,372

DISSOLVED GASES

Hydrogen Sulfide, H₂SCarbon Dioxide, CO₂Oxygen, O₂

3 mg/l*

110 mg/l*

mg/l*

PHYSICAL PROPERTIES

pH

Specific Gravity

• Total Dissolved Solids (calc.)

• Stability Index @ °C

@ °C

CaSO₄ Solubility @ °C

@ °C

Max. CaSO₄ Possible (calc.)Max. CaSO₄ Possible (calc.)

6.9

1.020

mg/l*

me/l*

me/l*

me/l*

me/l*

Residual Hydrocarbons

ppm(Vol/Vol)

TOTAL SOLIDS (QUANTITATIVE)

REMARKS AND RECOMMENDATIONS:

Bacterial bottles being incubated

*NOTE: me/l and mg/l are commonly used interchangeably for ppm and ppm respectively. Where ppm and ppm are used, corrections should be made for specific gravity.

MS 1-2

ANALYZED BY:

Carl Patton

ADDRESS

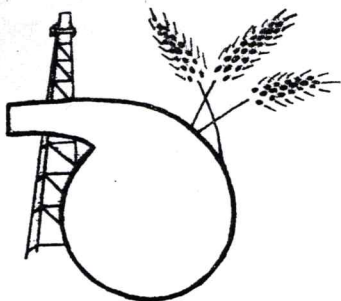
DATE

DISTRIBUTION

TELEPHONE

OFF

RFS



GORDON LAB, INC.

514 Washington

GREAT BEND, KANSAS

Gladstone 3-4808

17-17-24W
Dickman 1

LABORATORY REPORT

NO. 948

DATE August 26, 1965

TO Walters Drilling Company
510 Orpheum Bldg.
Wichita, Kansas

AUG 27 1965

WE GIVE BELOW RESULTS OF OUR EXAMINATION OF water from the Dickman #1.

SUBMITTED BY Mr. Rumbaugh

MARKED Ness Co. 17-17S-24W

Specific Gravity	1.023	
Chlorides	16,840	mg/l
Calcium	1,780	mg/l
Magnesium	452	mg/l
Bicarbonates	427	mg/l
Sulfates	1,950	mg/l
pH	8	
Hydrogen Sulfide	0	
Iron	3	mg/l

mg/l = Milligrams per liter

RESPECTFULLY SUBMITTED

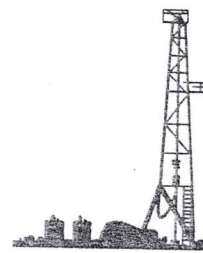
LABORATORY ANALYST

Gordon-Gunn

cc: Mr. Fred Rumbaugh

BY

T. J. Gordon



**WALTERS
DRILLING
CO.**

316-265-6683

400 INSURANCE BUILDING / WICHITA, KANSAS 67202

January 19, 1971

To: Owners

Re: Operations
Dickman Field
Ness County, Kansas

SUMMARY - OPERATOR'S RECOMMENDATIONS

Most wells are operating in a satisfactory manner but the Dickman #2 and Elmore #1 should be reacidized at an estimated cost of \$1,000 each. Consideration should be given to drilling the Dickman #5 in the C SW/4 NE/4 of Section 17, to test the Ft. Scott, the Cherokee Sands and the Mississippian dolomite.

PRODUCTION - DICKMAN FIELD (Bbls.)

<u>MISSISSIPPIAN</u>	<u>Year 1969</u>	<u>Year 1970</u>	<u>Cumulative to January 1, 1971</u>
Dickman #1	14,658	11,916	162,082
Dickman #2	5,282	4,479	78,548
Dickman #3	2,978	-----	39,765
Elmore #1	2,382	2,379	27,826
Tilley #1	4,615	5,010	55,038
Tilley #2	<u>2,508</u>	<u>4,386</u>	<u>54,263</u>
Totals	32,423	28,170	417,522

FT. SCOTT

Dickman #3	-----	<u>28,428</u>	<u>28,428</u>
Totals	32,423	56,598	445,950

INDIVIDUAL WELL TESTS

	<u>Date</u>	<u>BO</u>		<u>BW</u>		<u>WATER</u>	<u>SPM</u>	<u>Pump Size</u>	<u>Length of Stroke</u>
Dickman #1	12-21	39	+	177	or	82%	16½	1½"	54"
Dickman #2	12-21	15	+	70	or	82%	12	1½"	54"
Elmore #1	12-21	6.6	+	104	or	94%	16	1½"	48"
Tilley #1	12-21	18	+	342	or	95%	16	2¼"	54"
Tilley #2	12-21	<u>11</u>	+	<u>277</u>	or	96%	15	2¼"	54"
		90	+	970	or	91.5% water for Mississippian Reservoir			

Dickman #4 Injection Well - CP 320 psi

Dickman #3	12-30	<u>111</u>	+	<u>tr.</u>	---	11	1½"	54"
Totals		201	+	970				

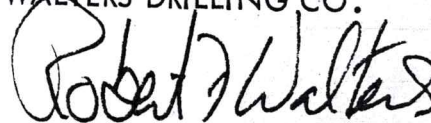
CRUDE OIL PRICE

	<u>Gravity</u>	<u>Price</u>		<u>Pipeline Charge</u>	<u>NET</u>
Dickman Lease	39°	\$ 3.58	less	10¢	\$ 3.48
Elmore Lease	33°	3.40	less	10¢	3.30
Tilley Lease	35°	3.48	less	10¢	3.38

APPROVAL

This summary was prepared for your information. Reacidization of the Elmore #1 and Dickman #2 are considered as routine production procedures; we need to hear from the owners only if they disapprove. No action is required at the present time on our suggestion that consideration be given to the drilling of the Dickman #5.

WALTERS DRILLING CO.


Robert F. Walters

RFW:jg

HC, INC.
401 W. Fowler
MEDICINE LODGE, KANSAS

FLUID LEVEL TESTS

Company Walters Drilling Co.
Address 400 Insurance Bldg.
Wichita, Kansas 67202
Attention Mr. Walter Zimmerman

Date August 8, 1971 Page 1 of 1
Field Work By Weldon W. Hickey

Fluid levels measured at the request of _____ are reported below.

Pool Operator Lease	Well No.	Date Time	Avg. Tubing Length Ft./Jt.	Depth to Fluid		Top of Exposed Interval		Csghd. Press. psig	Production B/D		Remarks
				No. of Jts.	Feet	Depth in Ft.	Ft. of Fluid		Oil	Wtr.	
Walters Drilling Co. Dickman Elmore Dickman Tilley		7/31/71									
	3	9:45	31.8	134.5	4277	4308	31	260	-	-	P
	(1) 3	5:25	31.8	130.8	4159	4308	149	260	-	-	S.I.
	1	10:05	30.9	140.8	4351	4390	39	0	-	-	P
	1	1:25	30.9	140.4	4338	4390	52	0	-	-	S.I.
	1	10:15	31.4	42.1	1322	4429	3107	0	-	-	P
	1	1:35	31.4	39.0	1225	4429	3204	0	-	-	S.I.
	2	10:20	30.8	129.4	3986	4449	463	0	-	-	P
	2	1:45	30.8	119.0	3665	4449	784	0	-	-	S.I.
	(1) 2	10:30	30.8	86.2	2655	4442	1787	0	-	-	P
(1) 2	2	12:20	30.8	54.0	1663	4442	2779	0	-	-	S.I.
	1	10:45	31.2	75.7	2362	4465	2103	0	-	-	P
	(1) 1	12:15	31.2	53.3	1663	4465	2802	0	-	-	S.I.
Dickman		7/29/71									
	(3) 3	9:45	31.8	134.9	4290	4308	18	260	-	-	P
Note (1) These wells were shut in at 8:00 A.M. on 8/2/71 and fluid levels were taken at the times noted on that day.											

AUG 10 1971

800 ADAMS AVE W. Fowler 886-4536
MEDICINE LODGE, KANSAS

Robert J. Luther

Company Walters Drilling Co.
Address 400 Insurance Bldg.
Wichita, Kansas 67202
Attention Mr. Walter Zimmerman

Date Oct. 13, 1972 Page of
Field Work By Dean McLemore

Fluid levels measured at the request of _____ are reported below.

Pool Operator Lease	Well No.	Date Time	Avg. Tubing Length Ft./Jt.	Depth to Fluid		Top of Exposed Interval		Csghd. Press. psig	Production B/D		Remarks
				No. of Jts.	Feet	Depth in Ft.	Ft. of Fluid		Oil	Wtr.	
Walters Drilling Co.		10/13/72									Status
Dickman	1	1:30	31.1	50.5	1570	4427	3603	0	-	-	PMP.
	1	6:05	31.1	46.5	1446	4427	2981	0	-	-	S.I.
Dickman	2	1:20	30.5	136.4	4160	4449	289	0	-	-	PMP.
	2	6:00	30.5	121.4	3703	4449	746	0	-	-	S.I.
Dickman	3	1:35	31.8	134.0	4261	4308	47	180	-	-	PMP.
	3	6:10	31.8	133.0	4229	4308	79	200	-	-	S.I.
Tilley	1	1:05	31.1	76.0	2363	4465	2102	0	-	-	PMP.
	1	5:50	31.1	53.0	1648	4465	2817	0	-	-	S. I.
Tilley	2	1:15	30.9	85.3	2635	4442	1807	0	-	-	PMP.
	2	5:55	30.9	52.5	1622	4442	2820	0	-	-	S. I.



GORDON LAB, INC.

925 PATTON ROAD • P. O. BOX 605 • GREAT BEND, KANSAS 67530

WATER ANALYSIS

DATE September 17, 1973

TO Walters Drilling Company
c/o Walter Zimmerman
Box 751

Great Bend, Kansas 67530

OCT 1 1973

1. Dickman #1

2. Dickman #2 ✓

	1.	2.	3.	
Specific Gravity	1.025	1.025		Milligrams per liter
Chlorides	18,300	18,300		Milligrams per liter
Calcium	2,500	2,400		Milligrams per liter
Magnesium	474	391		Milligrams per liter
Sulfates	1,880	2,590		Milligrams per liter
Bicarbonates	354	390		Milligrams per liter
Iron	4	0		Milligrams per liter
Hydrogen Sulfide	0	34		Milligrams per liter
Barium	0	0		Milligrams per liter
pH	7.5	7.5		
Sulfate Reducing Bacteria	None	None		

cc: Wichita

RESPECTFULLY SUBMITTED

LABORATORY ANALYST

Pivonka

BY

T. J. Gordon

To convert to parts per million, divide by specific gravity.

H C, Inc.

300 N. Adams
Medicine Lodge, Kansas 67104

FLUID LEVEL TESTS

Company Walters Drilling Co.
Address 400 Insurance Bldg.
Wichita, Kansas
Attention Mr. Robert Walters

Date Nov. 6, 1973
Field Work By Dean Mc Lemore

Page _____ of _____

Fluid levels measured at the request of Mr. Walter Zimmerman are reported below.

Pool Operator Lease	Well No.	Date Time	Avg. Tubing Length Ft./Jt.	Depth to Fluid		Top of Exposed Interval		Csgd. Press. psig.	Production B/D		Remarks
				No. of Jts.	Feet	Depth in Ft.	Ft. of Fluid		Oil	Wtr.	
Dickman	1	10:40	31.1	51.5	1602	4427	2825	0	-	-	PMP.
	1	3:20	31.1	47.8	1487	4427	2940	0	-	-	S.I.
Dickman	2	10:50	30.5	136	4148	4449	301	0	-	-	PMP.
	2	3:25	30.5	125.5	3828	4449	621	0	-	-	S.I.
Dickman	3	11:00	31.8	134.5	4277	4308	31	130	-	-	PMP.
	3	3:35	31.8	135	4293	4308	15	144	-	-	S.I.
Tilley	1	10:25	31.1	76.5	2379	4465	2086	0	-	-	PMP.
	1	3:00	31.1	54	1679	4465	2786	0	-	-	S.I.
Tilley	2	10:35	30.9	123.2	3807	4442	635	0	-	-	PMP.
	2	3:15	30.9	69.5	2148	4442	2294	0	-	-	S.I.
Humphery	1	11:20	31.3	100.5	3146	4379	1233	0	-	-	PMP.
	1	4:00	31.3	79.5	2488	4379	1891	0	-	-	S.I.



GORDON LAB, INC.

925 PATTON ROAD • P. O. BOX 605 • GREAT BEND, KANSAS 67530

WATER ANALYSIS

DATE October 7, 1974TO Walters Drilling CompanyBox 751Great Bend, Kansas1. Dickman #12. Dickman #2 ✓

	1.	2.	3.	
Specific Gravity	1.025	1.024		Milligrams per liter
Chlorides	18,800	18,000		Milligrams per liter
Calcium	2,500	2,600		Milligrams per liter
Magnesium	540	550		Milligrams per liter
Sulfates	1,900	2,100		Milligrams per liter
Bicarbonates	370	400		Milligrams per liter
Iron	0	0		Milligrams per liter
Hydrogen Sulfide	68	34		Milligrams per liter
Barium	0	0		Milligrams per liter
pH	7.5	7.5		
Sulfate Reducing Bacteria	None	None		

OCT 8 1974

RESPECTFULLY SUBMITTED

LABORATORY ANALYST

Gordon

BY

T. J. Gordon

To convert to parts per million, divide by specific gravity.

cc: *Slider*



GORDON LAB, INC.

925 PATTON ROAD • P. O. BOX 605 • GREAT BEND, KANSAS 67530

WATER ANALYSIS

DATE May 13, 1975

TO Walters Drilling Company
Mr. Walter Zimmerman
Box 751, Great Bend, Kansas

1. Dickman #1

2. Dickman #2

	1.	2.	3.	
Specific Gravity	1.025	1.023		Milligrams per liter
Chlorides	18,200	17,700		Milligrams per liter
Calcium	2,450	2,550		Milligrams per liter
Magnesium	520	550		Milligrams per liter
Sulfates	1,900	2,100		Milligrams per liter
Bicarbonates	360	395		Milligrams per liter
Iron	0	0		Milligrams per liter
Hydrogen Sulfide	68	34		Milligrams per liter
Barium	0	0		Milligrams per liter
pH	7.5	7.5		
Sulfate Reducing Bacteria	None	None		

cc: Larry Benedict
 Ness City, Kansas

Note: Dickman #3 - No Water

RESPECTFULLY SUBMITTED

LABORATORY ANALYST

Gordon/Manning

BY

T. J. Gordon

To convert to parts per million, divide by specific gravity.

From Edison Lab.

Innote

LABORATORY REPORT

Date July 8, 1976

TO Mr. Walter Zimmerman

Walters Drilling Company

P.O. Box 751, Great Bend, Kansas

We Give Below Results of OUR Exam. Of Water samples (bacteria cultures)

Submitted By Larry Benedict

Marked (see below)

<u>WELL</u>		<u>SULFATE REDUCING BACTERIA</u>
Dickman	#1	Present
	#2	None
	#3	None
Elmore	#1	None
Klitzky	#1	None
Tilley	#1	Present
	#2	None

cc: Larry Benedict

11 12

LABORATORY ANALYST

Respectfully Submitted

Grady Bolding
Grady Bolding



GORDON LAB, INC.

925 PATTON ROAD • P. O. BOX 605 • GREAT BEND, KANSAS 67530

PHONE 316-792-2549

17-17-24W

WATER ANALYSIS

DATE January 5, 1977

TO Walters Drilling Co.

Attn: Walter Zimmerman

Box 751, Great Bend, Kansas 67530

1. Dickman #1 (12/17/76)

2. Dickman #1 (5/13/75)

	1.	2.	3.	
Specific Gravity				Milligrams per liter
Chlorides	16,800	18,200		Milligrams per liter
Calcium	2,100	2,450		Milligrams per liter
Magnesium	480	520		Milligrams per liter
Sulfates	1,120	1,900		Milligrams per liter
Bicarbonates	320	360		Milligrams per liter
Iron	0	0		Milligrams per liter
Hydrogen Sulfide	26	68		Milligrams per liter
Barium	0	0		Milligrams per liter
pH	7.2	7.5		
Sulfate Reducing Bacteria	None	None		

cc: Wichita Office
Larry Benedict

RESPECTFULLY SUBMITTED

LABORATORY ANALYST

Manning/Medlock

BY

R. H. Hausler
R. H. Hausler

To convert to parts per million, divide by specific gravity.



GORDON LAB, INC.

925 PATTON ROAD • P. O. BOX 605 • GREAT BEND, KANSAS 67530

WATER ANALYSIS

DATE June 1, 1977TO Walters Drilling Co.Attn: Walter ZimmermanBox 751 Great Bend, Kansas 67530

1. Dickman #1
2. Dickman #2
3. Dickman #6

	# 1.	# 2.	3. #6	#3 FS No Water
Specific Gravity				Milligrams per liter
Chlorides	17,200	17,200	18,200	Milligrams per liter
Calcium	2,200	2,400	1,880	Milligrams per liter
Magnesium	520	560	500	Milligrams per liter
Sulfates	1,920	1,770	1,830	Milligrams per liter
Bicarbonates	340	360	160	Milligrams per liter
Iron	0	0	0	Milligrams per liter
Hydrogen Sulfide	30	30	0	Milligrams per liter
Barium	0	0		Milligrams per liter
pH	7.1	7.2	6.6	
Sulfate Reducing Bacteria	positive	positive	negative	

The above water analyses on your Dickman lease represent regular checks. The mineral analyses are essentially the same as observed on January 5, 1977. Please note that Dickman #1 and Dickman #2 gave positive bacteria tests. Larry Benedict will be in contact to discuss the application of Gordon Lab Bactericide #3 in these two wells.

The sample from Dickman #3 contained no water.

cc: Don Froelich
Larry Benedict
Wichita Office
LABORATORY ANALYST

RESPECTFULLY SUBMITTED

Manning/MedlockBY R. H. Hausler

To convert to parts per million, divide by specific gravity.
R. H. Hausler



GORDON LAB, INC.

925 PATTON ROAD • P. O. BOX 605 • GREAT BEND, KANSAS 67520

WATER ANALYSIS

DATE May 5, 1978

TO Walters Drilling Co.
Attn: Walt Zimmerman
Box 751 Great Bend, Kansas

1. Dickman #1
 2. Dickman #2
 3. Dickman #6
Dickman #3 (no water)

	1.	2.	3.	
Specific Gravity				Milligrams per liter
Chlorides	15,300	17,300	17,900	Milligrams per liter
Calcium	2,050	2,350	2,280	Milligrams per liter
Magnesium	490	610	595	Milligrams per liter
Sulfates	1,820	1,830	1,650	Milligrams per liter
Bicarbonates	360	340	322	Milligrams per liter
Iron	2	5	2	Milligrams per liter
Hydrogen Sulfide	0	0	0	Milligrams per liter
Barium	0	0	0	Milligrams per liter
pH	7.1	7.2	7.1	
Sulfate Reducing Bacteria	positive	none	none	

cc: Wichita
 Larry Benedict

RESPECTFULLY SUBMITTED

LABORATORY ANALYST

Manning/Medlock

BY

R. H. Hausler

To convert to parts per million, divide by specific gravity.

bacteria check

Date ?

	treat	4-14	treat	6-22	treat	7-10	treat	8-15	9-10
DICKMAN #1	/	10-100	/	1-10	/	1-10		neg.	
" #2	/	neg.	/	10-100	/	neg.		10-100	/ *
" #3		no water		no water		no water		no water	
" #6		neg.		10-100		neg.		10-100	/ *
ELMORE #1	/	neg.	/	10-100	/	1-10		1-10	/ *
PHILPS #1	/	neg.	/	10-100	/	10-100		10-100	/ *
TILLEY #1	/	neg.	/	no water	/	neg.		1-10	
" #2	/	neg.	/	neg.	/	neg.		neg.	
Now 'C' #2		2-27 neg.		10-100	/	1-10		10-100	/

* cleanup w/ 11 gal. SF-6105 in 200 gals diesel and batched down the annulus. Left well pumping.



GORDON LAB, INC.

925 PATTON ROAD • P. O. BOX 605 • GREAT BEND, KANSAS 67530

WATER ANALYSIS

DATE Nov. 6, 1978TO Walters Drilling CompanyAttn: Walter ZimmermanBox 751 Great Bend, Kansas 675301. Dickman #12. Dickman #23. Dickman #6

	1.	2.	3.	
Specific Gravity	<u>1.024</u>	<u>1.024</u>	<u>1.024</u>	Milligrams per liter
Chlorides	<u>17,700</u>	<u>17,700</u>	<u>17,700</u>	Milligrams per liter
Calcium	<u>2,100</u>	<u>2,100</u>	<u>2,200</u>	Milligrams per liter
Magnesium	<u>600</u>	<u>650</u>	<u>600</u>	Milligrams per liter
Sulfates	<u>1,520</u>	<u>1,250</u>	<u>1,520</u>	Milligrams per liter
Bicarbonates	<u>400</u>	<u>420</u>	<u>340</u>	Milligrams per liter
Iron	<u>7</u>	<u>4</u>	<u>49</u>	Milligrams per liter
Hydrogen Sulfide	<u>0</u>	<u>0</u>	<u>0</u>	Milligrams per liter
Barium	<u>0</u>	<u>0</u>	<u>0</u>	Milligrams per liter
pH	<u>7.1</u>	<u>7.2</u>	<u>7.2</u>	
Sulfate Reducing Bacteria	<u>positive</u>	<u>positive</u>	<u>none</u>	

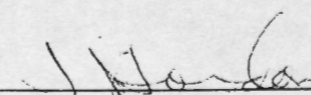
cc: Wichita ✓
 Don Froelich
 Larry Benedict

LABORATORY ANALYST

Manning/Medlock

RESPECTFULLY SUBMITTED

BY


 T. J. Gordon

To convert to parts per million, divide by specific gravity.



GORDON LAB, INC.

925 PATTON ROAD • P. O. BOX 605 • GREAT BEND, KANSAS 67530

WATER ANALYSIS

DATE Dec. 21, 1979TO Walters Drilling Co., Inc.Walt ZimmermanBox 751Great Bend, Kansas 675301. Dickman #12. Dickman #23. Dickman #6

	1.	2.	3.	
Specific Gravity	<u>1.024</u>	<u>1.025</u>	<u>1.024</u>	Milligrams per liter
Chlorides	<u>17,700</u>	<u>18,200</u>	<u>17,200</u>	Milligrams per liter
Calcium	<u>2,150</u>	<u>2,120</u>	<u>2,000</u>	Milligrams per liter
Magnesium	<u>700</u>	<u>675</u>	<u>320</u>	Milligrams per liter
Sulfates	<u>1,960</u>	<u>1,680</u>	<u>1,920</u>	Milligrams per liter
Bicarbonates	<u>400</u>	<u>385</u>	<u>330</u>	Milligrams per liter
Iron	<u>0</u>	<u>0</u>	<u>2</u>	Milligrams per liter
Hydrogen Sulfide	<u>0</u>	<u>30</u>	<u>0</u>	Milligrams per liter
Barium	<u>0</u>	<u>0</u>	<u>0</u>	Milligrams per liter
pH	<u>7.3</u>	<u>7.1</u>	<u>7.2</u>	
Sulfate Reducing Bacteria	<u>none</u>	<u>none</u>	<u>none</u>	

The above analyses were run for your records. They compare with our analyses of May 21, 1979.

cc: Wichita ✓
Larry Benedict

LABORATORY ANALYST

Manning/Medlock

RESPECTFULLY SUBMITTED

BY

Stephen H. Couch
Stephen H. Couch

To convert to parts per million, divide by specific gravity.

Chem-Serv Inc.

100 South Broadway
Suite 705, Broadway Plaza Bldg.
Wichita, Kansas 67202
Phone (316) 263-3399

17-17-24W
WATER ANALYSIS REPORT

						SHEET NUMBER	
COMPANY Walters Drilling Company						DATE 8/21/84	
FIELD				COUNTY OR PARISH Ness		STATE Kansas	
LEASE OR UNIT Dickman		WELL(S) NAME OR NO. #1		WATER SOURCE (FORMATION)			
DEPTH, FT.	BHT, F	SAMPLE SOURCE bleeder	TEMP, F	WATER, BBL/DAY	OIL, BBL/DAY	GAS, MMCF/DAY	
DATE SAMPLED 8/20/84		TYPE OF WATER ☒ PRODUCED ☐ SUPPLY ☐ WATERFLOOD ☐ SALT WATER DISPOSAL					

DISSOLVED SOLIDS

CATIONS	me/l*	mg/l*	ANIONS		
Total Hardness	134		Chloride, Cl ⁻	479	17,000
Calcium, Ca ⁺⁺	106	2,120	Sulfate, SO ₄ ⁼	42	2,000
Magnesium, Mg ⁺⁺	28	342	Carbonate, CO ₃ ⁼		
Iron (Total) Fe ⁺⁺⁺	0	0	Bicarbonate, HCO ₃ ⁻	6.2	378
Barium, Ba ⁺⁺	0	0	Hydroxyl, OH ⁻		
Sodium, Na ⁺ (calc.)	395	9,085	Sulfide, S ⁼	2	29
			Sulfate Reducing Bacteria	Negative	

PHYSICAL PROPERTIES

pH 6.8
 Eh (Redox Potential) MV
 Specific Gravity 1.019
 Turbidity, JTU Units
 Total Dissolved Solids (calc.) 30,954 mg/l*

DISSOLVED GASES

Hydrogen Sulfide, H₂S 63 mg/l*
 Carbon Dioxide, CO₂ mg/l*
 Oxygen, O₂ mg/l*
 Residual Hydrocarbons ppm(Vol/Vol)

SUSPENDED SOLIDS (QUALITATIVE)

Iron Sulfide ☐ Iron Oxide ☐ Calcium Carbonate ☐ Acid Insoluble ☐

REMARKS AND RECOMMENDATIONS:

This sample has been run for your records to compare to the previously run sample.

BTC ENGINEER Larry L. Lancaster		DIST. NO.	ADDRESS Great Bend		OFFICE PHONE 793-8154	HOME PHONE 792-7430
ANALYZED Becky Banks		DATE 8/21/84	DISTRIBUTION ☐ CUSTOMER ☐ ENGINEER		☐ DISTRICT OFFICE ☐ SALES SUPERVISOR	

CHEMICAL TREATING
SUMMARY SHEET

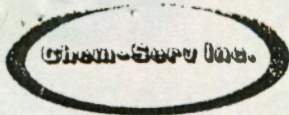
Chem-Serv Inc.

CUSTOMER

Walters Drilling Compar
5-2-84

<u>LEASE</u> <u>WELL</u>	<u>WELL</u> <u>VOLUMES</u>	<u>CHEMICAL</u>	<u>AMOUNT</u>	<u>FREQUENCY</u>	<u>METHOD</u>
Tilley #1 (Miss)	10 bopd 322 bwpd	CI-1092 WC-4010 EB-9425	2 gal. 3 gal. 1 qt.	weekly monthly daily	Prewet, batch & Circulate to bottom. Prewet, batch & circulate ahead of CI treat Continuous injection at leadline
Tilley #2 (Miss)	7 bopd 353 bwpd	CI-1092 WC-4010	2 gal. 3 gal.	weekly monthly	Prewet, batch & circulate to bottom Prewet, batch & circulate ahead of CI treat
Dickman #1 (Miss)	10 bopd 182 bwpd	CI-1092 WC-4010	5 qts. 3 gal.	weekly monthly	Prewet, batch & circulate to bottom. Prewet, batch & circulate ahead of CI treat
Dickman #2 (Miss)	13 bopd 153 bwpd	CI-1092 WC-4010	1 gal. 3 gal.	weekly monthly	Prewet, batch & circulate to bottom. Prewet, batch & circulate ahead of CI treat
Dickman #3 (FS)	8 bopd Tr bwpd	PC-5600 EB-9425	50/50mix @ 2 qts.	daily	Continuous injection at leadline
Dickman #6 (Miss)	4 bopd 136 bwpd	CI-1092	1 gal.	weekly	Prewet, batch, & circulate to bottom.
SWD & Water Holding Tank		PS-5000 SF-6450 WC-4010	5 gal. 5 gal. 5 gal.	weekly weekly monthly	batched directly in SWD batched behind the PC-5430 batched in water holding tank
Elms #1 (Cher)	11 bopd 152 bwpd	CI-1097 WC-4010 EB-9425	1 gal. 3 gal. 1 pint	weekly monthly daily	Prewet, batch & circulate to bottom. Prewet, batch & circulate ahead of CI treat Continuous injection at leadline
Elmore #1 (Miss)	5 bopd 88 bwpd	CI-1092 WC-4010 EB-9425	1 gal. 3 gal. 1/2 pint	weekly monthly daily	Prewet, batch & circulate to bottom Prewet, batch & circulate ahead of CI treat continuous injection at leadline
"					
SWD					

Thanks! Larry



110 South Main, Suite 900
Wichita, Kansas 67202
Phone (316) 263-3399

file per

REPORT OF TEST

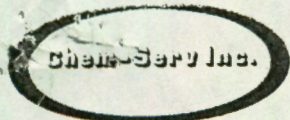
		SHEET NUMBER	
COMPANY Walters Drilling		DATE 1/17/85	
FIELD OR PLANT		COUNTY OR PARISH	STATE Kansas
LEASE OR UNIT Listed Below:	WELL(S) NAME & NO. -----	SAMPLE SOURCE Wellhead	
TYPE SAMPLE Water		TYPE TEST Qualitative-Quantitative	
REASON FOR TEST Monitor WC-4831 treatment for sulfate reducing bacteria			

RESULTS:

Well and No.	1/17/85	4/17/85	6/5/85
Dickman #3		Pos. 1-10	Pos. 10-100
Dickman #1	Negative	Pos. 1-10	Negative
Dickman #2	Negative	Pos. 1-10	Negative
Dickman #6	Pos. 1-10	Pos. 10-100	Negative
Elmore #1	Negative	Negative	
Noll "C" #2	Pos. 1-10	Pos. 1-10	Negative
Phelps #1	Negative	Pos. 1-10	Pos. 10-100
Tilley #1	Negative	Negative	
Tilley #2	Negative	Negative	

REMARKS & RECOMMENDATIONS:

SALES ENGINEER Larry Lancaster	DIST. NO.	ADDRESS Great Bend	OFFICE PHONE 792-2167	HOME PHONE 792-7430
TESTED BY Carl Patton	DATE 1/17/85	DISTRIBUTION: ☐ CUSTOMER ☐ AREA OR ☐ DISTRICT OFFICE ☐ SALES ENGINEER OR ☐ CHEM. LAB ☐ CHEM. SALES SUPERVISOR		



110 South Main, Suite 900
Wichita, Kansas 67202
Phone (316) 263-3399

REPORT OF TEST

COMPANY <u>Walters Drilling</u>		SHEET NUMBER
FIELD OR PLANT		DATE <u>11/14/85</u>
COUNTY OR PARISH		STATE <u>Kansas</u>
LEASE OR UNIT <u>Listed Below</u>	WELL(S) NAME & NO.	SAMPLE SOURCE <u>bleeder</u>
TYPE SAMPLE <u>water</u>		TYPE TEST <u>qualitative-quantitative</u>

REASON FOR TEST

Test for sulfate reducing bacteria.

RESULTS:

Sulfate Reducing Bacteria

<u>Lease</u>	<u>Well #</u>	<u>11/14/85</u>
✓ Dickman	#1	Positive 10-100
	#2	Positive 1-10
	#3	Positive 1-10
	#6	Negative
Elmore	#1	Negative
Phelps	#1	Negative
Tilley	#1	Negative
	#2	Negative

REMARKS & RECOMMENDATIONS:

The results of our most recent set of bacteria culture bottles indicate control is being maintained on all but one well. The Dickman #1 should be re-treated with 2 5 gal. batches 1 week apart in order to get the colony count under control again. Monitoring will continue every three months.

SALES ENGINEER <u>Carl Patton</u>	DIST. NO.	ADDRESS <u>Great Bend</u>	OFFICE PHONE <u>792-2167</u>	HOME PHONE <u>793-7602</u>
TESTED BY <u>Joe Henning</u>	DATE <u>11/14/85</u>	DISTRIBUTION: ☐ CUSTOMER ☐ AREA OR ☐ DISTRICT OFFICE ☐ SALES ENGINEER OR ☐ CHEM. LAB ☐ CHEM. SALES SUPERVISOR		



110 South Main, Suite 900
Wichita, Kansas 67202
Phone (316) 263-3399

REPORT OF TEST

			SHEET NUMBER
COMPANY Walters Drilling Company			DATE —
FIELD OR PLANT		COUNTY OR PARISH Ness	STATE Kansas
LEASE OR UNIT Listed Below:	WELL(S) NAME & NO. -----	SAMPLE SOURCE bleeder	
TYPE SAMPLE water		TYPE TEST qualitative-quantitative	
REASON FOR TEST Test for sulfate reducing bacteria.			

RESULTS:

Lease	Well #	Sulfate Reducing Bacteria 7/18/85	Sulfate Reducing Bacteria 8/22/85
lmore	#1	Negative	
ickman	#1	Positive 10-100	Positive 100-1,000
	#2	Positive 1-10	Negative
	#3	Negative	
	#6	Positive 10-100	Positive 1-10
oll "C"	#2	Positive 10-100	Positive 10-100
elps	#1	Negative	
lley	#1	Positive 10-100	Negative
	#2	Negative	

SALES ENGINEER Carl Patton	DIST. NO.	ADDRESS Great Bend	OFFICE PHONE 792-2167	HOME PHONE 793-7602
TESTED BY Joe Henning	DATE 8/22/85	DISTRIBUTION: ☐ CUSTOMER ☐ AREA OR ☐ DISTRICT OFFICE ☐ SALES ENGINEER OR ☐ CHEM. LAB ☐ CHEM. SALES SUPERVISOR		