PETROLITE

TRETOLITE DIVISION

WATER ANALYSIS REPORT

Mid-Continent Region
Technical Services
5801 West 10th Street
Great Bend, Kansas 67530
(316) 792-7728

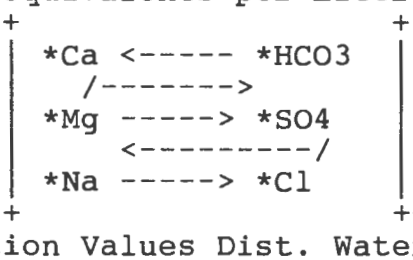
Company : Mull Drilling Co.
Address :
Lease : Zeigler
Well : A-1
Sample Pt. :

Date : 10/22/93
Date Sampled : 10/21/93
Analysis No. :

	ANALYSIS		mg/L		* meq/L
1.	pH	6.8			
2.	H2S	10			
3.	Specific Gravity	1.056			
4.	Total Dissolved Solids		83613.2		
5.	Suspended Solids				
6.	Dissolved Oxygen				
7.	Dissolved CO2				
8.	Oil In Water				
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)		178.0		
11.	Bicarbonate	HCO3	217.2	HCO3	3.6
12.	Chloride	Cl	50544.4	Cl	1425.8
13.	Sulfate	SO4	1025.0	SO4	21.3
14.	Calcium	Ca	4000.0	Ca	199.6
15.	Magnesium	Mg	1050.2	Mg	86.4
16.	Sodium (calculated)	Na	26776.4	Na	1164.7
17.	Iron	Fe	0.0		
18.	Barium	Ba	0.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		14312.9		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter



Saturation Values Dist. Water 20 C

CaCO3	13 mg/L
CaSO4 * 2H2O	2090 mg/L
BaSO4	2.4 mg/L

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	3.6	288
CaSO4	68.1	21.3	1453
CaCl2	55.5	174.7	9694
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	86.4	4113
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	1164.7	68065

REMARKS: Rob Bowman
Sales Engineer

Respectfully submitted,

R. Rush Blaz

Petrolite Oilfield Chemicals Group
Mid-Continent Region
5601 Northwest 72nd, Suite 324
Oklahoma City, OK 73132

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SCALE TENDENCY REPORT

Company	: Mull Drilling Co.	Date	: 10/22/93
Address	:	Date Sampled	: 10/21/93
Lease	: Zeigler	Analysis No.	:
Well	: A-1	Analyst	: R. Rush Blaz
Sample Pt.	:		

STABILITY INDEX CALCULATIONS
(Stiff-Davis Method)
CaCO3 Scaling Tendency

S.I. = 0.4 at 80 deg. F or 27 deg. C
S.I. = 0.5 at 100 deg. F or 38 deg. C
S.I. = 0.6 at 125 deg. F or 52 deg. C
S.I. = 0.7 at 150 deg. F or 66 deg. C
S.I. = 0.9 at 180 deg. F or 82 deg. C

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CALCIUM SULFATE SCALING TENDENCY CALCULATIONS
(Skillman-McDonald-Stiff Method)
Calcium Sulfate

S = 3086 at 80 deg. F or 27 deg C
S = 3237 at 100 deg. F or 38 deg C
S = 3312 at 125 deg. F or 52 deg C
S = 3322 at 150 deg. F or 66 deg C
S = 3247 at 180 deg. F or 82 deg C

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