PETROLITE

TRETOLITE DIVISION

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WATER ANALYSIS REPORT

Company : YATES PETROLEUM
Address : ARTESIA
Lease : SLINKARD
Well : #4
Sample Pt. : WELLHEAD

Date : 12/20/94
Date Sampled : 12/20/94
Analysis No. : 979

	ANALYSIS		mg/L		* meq/L
1.	pH	5.8			
2.	H2S	0			
3.	Specific Gravity	1.100			
4.	Total Dissolved Solids		146762.6		
5.	Suspended Solids		NR		
6.	Dissolved Oxygen		NR		
7.	Dissolved CO2		NR		
8.	Oil In Water		NR		
9.	Phenolphthalein Alkalinity (CaCO3)				
10.	Methyl Orange Alkalinity (CaCO3)				
11.	Bicarbonate	HCO3	73.0	HCO3	1.2
12.	Chloride	Cl	90099.0	Cl	2541.6
13.	Sulfate	SO4	125.0	SO4	2.6
14.	Calcium	Ca	9640.0	Ca	481.0
15.	Magnesium	Mg	710.8	Mg	58.5
16.	Sodium (calculated)	Na	46114.8	Na	2005.9
17.	Iron	Fe	NR		
18.	Barium	Ba	NR		
19.	Strontium	Sr	NR		
20.	Total Hardness (CaCO3)		27000.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter

481	*Ca <----- *HCO3	1
	/------->	
58	*Mg -----> *SO4	3
	<---------/	
2006	*Na -----> *Cl	2542

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	1.2	97
CaSO4	68.1	2.6	177
CaCl2	55.5	477.2	26482
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	58.5	2784
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	2005.9	117223

REMARKS:

Petrolite Oilfield Chemicals Group

Respectfully submitted,
S. TIGERT

SCALE TENDENCY REPORT

Company	: YATES PETROLEUM	Date	: 12/20/94
Address	: ARTESIA	Date Sampled	: 12/20/94
Lease	: SLINKARD	Analysis No.	: 979
Well	: #4	Analyst	: S. TIGERT
Sample Pt.	: WELLHEAD		

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

S.I. = -0.6 at 60 deg. F or 16 deg. C
S.I. = -0.6 at 80 deg. F or 27 deg. C
S.I. = -0.5 at 100 deg. F or 38 deg. C
S.I. = -0.5 at 120 deg. F or 49 deg. C
S.I. = -0.4 at 140 deg. F or 60 deg. C

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

S = 1531 at 60 deg. F or 16 deg C
S = 1696 at 80 deg. F or 27 deg C
S = 1803 at 100 deg. F or 38 deg C
S = 1854 at 120 deg. F or 49 deg C
S = 1890 at 140 deg. F or 60 deg C

Petrolite Oilfield Chemicals Group

Respectfully submitted,
S. TIGERT

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