

30-015-33622



Memo

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OCD-ARTEDIA

To: William V. Jones

From: Sabra Woody

CC: Bryan Arrant

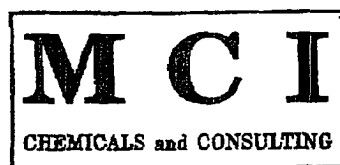
Date: 9/2/2005

Re: Kimball Federal #1 Injection Application – Water Analysis

Attached is a water analysis from the Two Marks "36" State #1. The water was produced from the Indian Basin, Upper Penn Assoc. pool.

Enclosure

30-015-33622

**MILLER CHEMICALS, INC.**

Post Office Box 298
Artesia, N.M. 88211-0298
(505) 746-1919 Artesia Office
(505) 392-2893 Hobbs Office
(505) 746-1918 Fax

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COD-ANTECIMA

WATER ANALYSIS REPORT

Company : LATIGO

Date : JUNE 6th, 2005

Address :

Date Sampled : JUNE 3rd, 2005

Lease :

Analysis No. :

Well :

Sample Pt. :

ANALYSIS		mg/L	* meq/L	
-----		----	-----	
1.	pH	6.9		
2.	H ₂ S	120		
3.	Specific Gravity	1.005		
4.	Total Dissolved Solids	9984.0		
5.	Suspended Solids	NR		
6.	Dissolved Oxygen	NR		
7.	Dissolved CO ₂	NR		
8.	Oil In Water	NR		
9.	Phenolphthalein Alkalinity (CaCO ₃)			
10.	Methyl Orange Alkalinity (CaCO ₃)			
11.	Bicarbonate	HCO ₃ 1464.0	HCO ₃	24.0
12.	Chloride	Cl 4899.0	Cl	138.2
13.	Sulfate	SO ₄ 500.0	SO ₄	10.4
14.	Calcium	Ca 1360.0	Ca	67.9
15.	Magnesium	Mg 753.8	Mg	62.0
16.	Sodium (calculated)	Na 982.1	Na	42.7
17.	Iron	Fe 25.0		
18.	Barium	Ba NR		
19.	Strontium	Sr NR		
20.	Total Hardness (CaCO ₃)	6500.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt X meq/L =		mg/L
+-----+		-----		
68 *Ca <----- *HCO ₃ 24	Ca(HCO ₃) ₂	81.0	24.0	1945
----- /-----> -----	CaSO ₄	68.1	10.4	709
62 *Mg -----> *SO ₄ 10	CaCl ₂	55.5	33.5	1856
----- <-----/ -----	Mg(HCO ₃) ₂	73.2		
43 *Na -----> *Cl 138	MgSO ₄	60.2		
+-----+	MgCl ₂	47.6	62.0	2952
Saturation Values Dist. Water 20 C	NaHCO ₃	84.0		
CaCO ₃ 13 mg/L	Na ₂ SO ₄	71.0		
CaSO ₄ * 2H ₂ O 2090 mg/L	NaCl	58.4	42.7	2497
BaSO ₄ 2.4 mg/L				

REMARKS:

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OCCUPATION

SCALE TENDENCY REPORT

Company	: LATIGO	Date	: JUNE 6th, 2005
Address	:	Date Sampled	: JUNE 3rd, 2005
Lease	: TWO MARKS "36" STATE	Analysis No.	:
Well	: #1	Analyst	: S. TIGERT
Sample Pt.	: WELLHEAD		

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

S.I. =	1.2	at	70 deg. F	or	21 deg. C
S.I. =	1.2	at	90 deg. F	or	32 deg. C
S.I. =	1.2	at	110 deg. F	or	43 deg. C
S.I. =	1.3	at	130 deg. F	or	54 deg. C
S.I. =	1.3	at	150 deg. F	or	66 deg. C

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

S =	1705	at	70 deg. F	or	21 deg C
S =	1765	at	90 deg. F	or	32 deg C
S =	1793	at	110 deg. F	or	43 deg C
S =	1785	at	130 deg. F	or	54 deg C
S =	1763	at	150 deg. F	or	66 deg C

Respectfully submitted,

S. TIGERT