

ANALYSIS - BONE SPRING (UP)
PRODUCED WATER

POGO PRODUCING COMPANY
RED TANK "28" FEDERAL #3
Section 28, TWP 22-S, R 32-E
Lea County, New Mexico

TER ANALYSIS REPORT

Date : 1-23-93
Date Sampled : 1-22-93
Analysis No. : 006

Lease : RED TANK FED.
Well : 23-1 Bone Spring
Sample Pt. : WELL

ANALYSIS		mg/L	* meq/L	
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1.	pH	5.9		
2.	H2S	0		
3.	Specific Gravity	1.155		
4.	Total Dissolved Solids	243572.9		
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	48.8	HCO3	0.8
12.	Chloride Cl	151230.0	Cl	4266.0
13.	Sulfate SO4	250.0	SO4	5.2
14.	Calcium Ca	16840.0	Ca	840.3
15.	Magnesium Mg	4140.2	Mg	340.6
16.	Sodium (calculated) Na	71063.9	Na	3091.1
17.	Iron Fe	0.0		
18.	Barium Ba	0.0		
19.	Strontium Sr	0.0		
20.	Total Hardness (CaCO3)	59100.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter				Compound	Equiv wt	X meq/L	= mg/L
+-----+				-----			
840	*Ca <-----	*HCO3	1	Ca(HCO3)2	81.0	0.8	65
-----	/----->	-----	-----	CaSO4	68.1	5.2	354
341	*Mg ----->	*SO4	5	CaCl2	55.5	834.3	46296
-----	<----->	/	-----	Mg(HCO3)2	73.2		
3091	*Na ----->	*Cl	4266	MgSO4	60.2		
+-----+				MgCl2	47.6	340.6	16215
Saturation Values Dist. Water 20 C				NaHCO3	84.0		
CaCO3 13 mg/L				Na2SO4	71.0		
CaSO4 * 2H2O 2090 mg/L				NaCl	58.4	3091.1	180643
BaSO4 2.4 mg/L							

REMARKS: L. MALLET -FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
L. MALLET