

MITCHELL ANALYTICAL LABORATORY

2638 Faudree
Odessa, Texas 79765-8538
561-5579

Water Analysis

Company.... Nalco/Exxon Energy Chemicals
Well # WIS DISCHARGE PUMP
Lease..... ALTURA NHU
Location...
Date Run... 11/08/1999
Lab Ref #... 99-NOV-N05126

Sample Temp... 70.0
Date Sampled.. 11/05/1999
Sampled by... Mike Athey
Employee # ... 27-008
Analyzed by... DANIEL

Dissolved Gasses

		Mg/L	Eq. Wt.	MEq/L
Hydrogen Sulfide	(H ₂ S)	486.00	16.00	30.38
Carbon Dioxide	(CO ₂)	Not Analyzed		
Dissolved Oxygen	(O ₂)	Not Analyzed		

Cations

Calcium	(Ca++)	804.00	20.10	40.00
Magnesium	(Mg++)	195.20	12.20	16.00
Sodium	(Na+)	3,459.66	23.00	150.42
Barium	(Ba++)	Not Analyzed		
Manganese	(Mn++)	Not Analyzed		

Anions

Hydroxyl	(OH-)	Not Analyzed		
Carbonate	(CO ₃ =)	0.00	30.00	0.00
Bicarbonate	(HCO ₃ -)	1,869.66	61.10	30.60
Sulfate	(SO ₄ =)	1,700.00	48.80	34.84
Chloride	(Cl-)	5,005.50	35.50	141.00
Total Iron	(Fe)	0.30	18.60	0.02
Total Dissolved Solids		13,520.32		
Total Hardness As CaCO ₃		2,810.32		
Conductivity MICROMHOS/CM		23,500		

pH 6.500

Specific Gravity 60/60 F. 1.009

CaSO₄ Solubility @ 80 F. 46.63 MEq/L, CaSO₄ scale is unlikely

CaCO₃ Scale Index

70.0	0.190
80.0	0.310
90.0	0.530
100.0	0.530
110.0	0.790
120.0	0.790
130.0	1.090
140.0	1.090
150.0	1.370

Nalco/Exxon Energy Chemicals

**Laboratory Services, Inc.**

4016 Fiesta Drive
Hobbs, New Mexico 88240
Telephone: (505) 397-3713

Water Analysis

COMPANY Altura Energy Ltd,

SAMPLE Fresh Water Well for Well NHU 28332

SAMPLED BY

DATE TAKEN 8/8/00

REMARKS T18S-R38E-Sec28; Qtr Sec 2,3,2

Barium as Ba	0	
Carbonate alkalinity PPM	60	
Bicarbonate alkalinity PPM	212	
pH at Lab	7.44	
Specific Gravity @ 60°F	1	
Magnesium as Mg	169	
Total Hardness as CaCO ₃	292	
Chlorides as Cl	127	
Sulfate as SO ₄	120	
Iron as Fe	0.1	
Potassium	0.1	
Hydrogen Sulfide	0	
Rw	13	@ 23° C
Total Dissolved Solids	815	
Calcium as Ca	123	
Nitrate	3	

Results reported as Parts per Million unless stated

Langelier Saturation Index -0.23

Analysis by: Vickie Walker

Date: 8/11/00



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SAMPLED BY _____

DATE TAKEN 8/8/00

REMARKS T18S-R38E-Sec28; Qtr Sec 2,3,2

Barium as Ba	0	
Carbonate alkalinity PPM	36	
Bicarbonate alkalinity PPM	228	
pH at Lab	7.52	
Specific Gravity @ 60°F	1	
Magnesium as Mg	162	
Total Hardness as CaCO3	280	
Chlorides as Cl	118	
Sulfate as SO4	165	
Iron as Fe	0	
Potassium	0.1	
Hydrogen Sulfide	0	
Rw	14	@ 23° C
Total Dissolved Solids	831	
Calcium as Ca	118	
Nitrate	4	

Results reported as Parts per Million unless stated

Langelier Saturation Index -0.05

Analysis by: Vickie Walker
Date: 8/11/00