QUERECHO PLAINS QUEEN ASSOCIATED POOL

FRAC GRADIENT DATA

	QUEEN			PENROSE		
Well	**Perforations**	**ISIP (psi)**	**Flush Fluid**	**Perforations**	**ISIP (psi)**	**Flush Fluid**
F-2	3881'-3916'	2000	KCl water	4090'-4151'	1600	KCl water
H-1	3888'-3924'	1800	Gelled KCl	4124'-4154'	1600	Gelled fresh
C.L. 1	3927'-3949'	2100	Gelled water	4173'-4183'	1900	Fresh water
F-1				4132'-4163'	1700	Gelled KCl
Edith #2*	3958'-3987'	1950	Gelled water	4214'-4224'	1950	Gelled water
Marshall #1				4176'-4190'	1700	Gelled water
Marshall #2	3906'-3931'	2000	Gelled KCl	4106'-4160'	1500	Gelled water
Walker #1	3914'-3947'	1800	Gelled water	4214'-4220'	1500	Gelled water
E-7	3900'-3936'	2000	Gelled water	4151'-4171'	1800	Gelled water
E-6	3879'-3908'	1900	Gelled water	4135'-4154'	1700	Gelled water
E-5	3872'-3904'	2000	Gelled water	4130'-4150'	1600	Gelled water
E-3	3904'-3942'	1860	Gelled water	4148'-4178'	1700	Gelled water
E-2	3910'-4041'	1850	Gelled water			
E-8	3934'-3968'	2050	Gelled water	4170'-4198'	1700	Gelled water
Anad. #2	3888'-4026'	1600	Gelled fresh			
Anad. #3	3620'-4060'	1600	Gelled water			
E-9	3875'-3906'	2300	Gelled water	4128'-4152'	1900	Gelled water

Note: The calculation which generates the most conservative frac gradient is the Penrose treatment in the Marshall Federal No. 2 Well:

$G_f = ((4106*.438) + 1500) \div 4106 = .80$ psi/ft.

Given: Shallowest Penrose perf. in any proposed injector = 4084'**. Specific gravity of the injection water = .44 psi/ft.

Recommend: Maximum Surface Injection Pressure = (.8-.44) * 4084' = 1470 psi

* Commingled Frac 2% KCl = 1.012 = .438
** Bennett Federal No. 5

OIL CONSERVATION DIVISION

EXHIBIT NO. 25

CASE NO. 10959 & 10960