

GEL TECHNOLOGIES CORPORATION
TREATMENT SUMMARY REPORT
FOR
HARVARD PETROLEUM CORPORATION
EDDY COUNTY, NEW MEXICO
POKER LAKE STATE NO. 1

December 3, 2011

TREATMENT SUMMARY

SUMMARY

MARA-SEALsm gel technology was used in to treat the Poker Lake State No. 1 to seal off a casing leak. The treatment consumed 264 pounds of MARA-SEALsm polymer to produce 15 barrels of gel solution. The treatment was performed on December 3, 2011.

EQUIPMENT SET-UP AND PERSONNEL

HARVARD PETROLEUM
Apache Corporation supplied the equipment and fresh water for the treatment. Equipment setup and a field safety meeting occurred on December 3, 2011.

Mark McNabb, Operations Manager for Gel-Tec, supervised the MARA-SEALsm treatment. A safety meeting was held prior to the treatment. Topics discussed were safe chemical handling and general safety guidelines.

TREATMENT

Treatment of the Poker Lake State No. 1 started at 0820 hours on December 3, 2011 and was completed by 1615 hours on the same day. 15 barrels (264 pounds of polymer) of gel solution were mixed and spotted across the leak interval. Approximately 2 barrels of gel were squeezed into the leak interval. The final injection pressure was 400-psi and the well was shut in with 400-psi.

Quality Control

Samples of the gel were collected and heated at reservoir temperature. Two samples were heated and graded according to Marathon's Bottle Test Gel Strength Coding System. All samples graded at "J", which is as expected. These samples were retained and are available for Harvard Petroleum Corporation at their request.

Harvard Petroleum Corporation
Poker Lake State No. 1
Eddy County, New Mexico

ACTUAL TREATMENT

<u>Stage</u>	<u>Volume (bbls)</u>	<u>Polymer (ppm)</u>	<u>Polymer (lbA)</u>
Packer Fluid	55.0		
Fresh Water Spacer	2.0		
Gel #1	15.0	50,000	264
Fresh Water Spacer	0.5		
Packer Fluid	0.3		
Water (squeeze)	2.0		

INJECTION LOG

<u>Date</u>	<u>Time</u>	<u>Description</u>	<u>Cum. Vol. (bbls)</u>	<u>Inj. Rate (BPM)</u>	<u>Pressure (psi)</u>
12-03-11	0820	Arrive on location			
	0900	Pump Truck arrive, RU to Mix			
	1030	Release packer and circulate hole			
	1130	Start mix			
	1200	End mix, circulate to hydrate gel			
	1250	Add crosslinker and take samples			
	1300	RU to vac truck			
	1315	Start Packer Fluid down annulus	0.0	1.5	
	1352	Start FW spacer	55.0	1.5	
	1353	Start gel	57.0	0.5	
	1423	Start water	72.0	0.5	
	1424	End Water	72.8	0.5	
	1430	Set packer, RU wellhead for squeeze			
	1500	Start squeeze	72.8	0.3	
		Squeezed multiple times from 280-psi to 400-psi to displace 2 barrels of gel			
	1615	End Squeeze	74.8		400
	1630	Leave location			

GEL TECHNOLOGIES CORPORATION			LOG SHEET #	1	COMPANY	HARVARD PETROLEUM	COUNTRY	USA
TECHNICIANS			M. McNABB		LEASE	POKER LAKE	WELL	STATE #1
ENGINEER			John Gould		PHONE	(432) 683 - 1881	STATE	NEW MEXICO
					COUNTY	EDDY		
DATE		ELP	Description					
12/3/11		MIN						
1	05:00		ARRIVE SHOP LOAD CHEMICALS					
2	06:00		LEAVE FOR LOCATION EDDY COUNTY NM					
3	08:20		ARRIVE LOCATION WOT					
4	09:00		RU 440 UNIT ON KILL TRUCK / WAITING ON VAC TRUCK					
5	10:30		RELEASE PACKER CIRC. HOLE					
6	11:30		START MIX 15 BBLS. 50,000 PPM KIMERA MARA-SEAL					
7	12:00		END MIX / CIRC TANK WITH SNORKEL TO HYDRATE					
8	12:50		ADD CROSS-LINKER 4 1/2 GALLONS 10 % ACCELERATED / CIRC INTO POLYMER					
9	13:00		END CIRC / RU TO VAC TRUCK WITH PACKER FLUID					
10	13:15		START INJECTION REVERSING HOLE					
11			55 BBLS PF @ 1 1/2 BPM - 2 BBLS FW PAD - 15 BBLS POLYMER @ 1/2 BPM - 1/2 BBL FW PAD - 1/3 BBL PF					
12	14:30		SET PACKER - RU WELLHEAD FOR SQUEEZE					
13	15:00		SQUEEZE TO 400 PSI BLEED OFF TO 280 PSI - KEEP SQUEEZING FROM 280 PSI TO 400 PSI					
14	16:15		END SQUEEZE @ APPROXIMATLLY 2 BBLS OF VOLUME / PRESSURE WELL TO 400 PSI AND SHUT-IN / RD EQUIPMENT					
15	16:30		LEAVE LOCATION					
16	19:00		ARRIVE SHOP UNLOAD EQUIPMENT					
17			COST OF TREATMENT					
18			\$4,210.00					
19								
20								
REMARKS								
Material Used								
			KIMERA	264 POUNDS				
			CROSS-LINKER	49.5 SOL/LBS				
			MILEAGE	291 MILES				