

EL DORADO MICELLAR POLYMER PROJECT

TECHNICAL LETTER FOR JULY, 1977

MASTER

Summary of Activities for July, 1977

Preflush injection in the Chesney Pattern averaged 1535 barrels per day at 190 psi plant pressure during the month of July. Combined micellar water and micellar oil injection in the Hegberg pattern was 75.6 barrels per day during July.

Diatomaceous earth filtration was set up in efforts to improve filterability of Hegberg soluble oil.

Acid treatments were performed on four injection wells in the Hegberg pattern.

The selection of polymer and low equivalent weight sulfonate to be used in the Chesney Pattern was completed.

ENGINEERING AND OPERATIONS

Pattern Injection

Treatments of hydrochloric - hydroflouric - hydrochloric acids were performed of wells 203, 205, 222, 225 to prepare them for injection of micellar oil which had been filtered through diatomaceous earth.

After installation of the diatomaceous earth filter was completed, tests were run to determine the type of filter aid and quantity of body feed to use in the filtering process.

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Filtration of the micellar oil has significantly increased the filterability of this fluid as a result of the removal of solids, however, injection rates have not improved. Wax contained in the crude used for blending the soluble oil solution, appears to represent the major cause of low injection rates. More study and tests are planned to combat this wax problem.

RESEARCH SUPPORT

Chemical Selection

Evaluation of Kelzan SS-4000 and Abbott broth biopolymers was completed. Abbott broth showed good filterability and higher viscosity than Kelzan SS-4000 at the same concentration. Results were forwarded to Shell Oil Company for consideration.

A draft of the final report on evaluation of low equivalent weight sulfonate to substitute in the chemical system recommended by Shell was written.

Phase behavior work done to aid in the selection of a replacement low molecular weight sulfonate was reported.

Interfacial tension maps were developed for the original Shell system and the modified Shell system using salinities such that the monovalent cation to divalent cation concentration was 4.0. This ratio approximates the ratio for Chesney produced brine. The data should be ready for reporting next month.

Performance Prediction

The data base was modified to allow output of the injection summary tables on either the Wichita Office computer terminal, the Tulsa laboratory computer printer, or the Laboratory Xerox 1700 terminal.

Modifications were begun to output additional tables and to allow greater flexibility in selection of output.

A study of monovalent - divalent ion exchange and dispersion in a linear porous medium was begun. The intercomp Finite Difference Chemical Flood Model is being used to simulate the behavior of core floods.

MONTHLY PRODUCTION REPORT

<u>Well No.</u>	<u>Monthly Volumes, Bbls.</u>		<u>Days Prod.</u>	<u>Cumul. Since Start</u>		<u>Date Started</u>
	<u>Oil</u>	<u>Water</u>		<u>Oil</u>	<u>Water</u>	
MP 112	0	11997	31	251	155492	11/17/75
MP 114	91	4216	31	1902	60910	"
MP 122	91	9083	31	1202	115621	"
MP 124	0	13144	31	333	196539	"
Chesney	182	38440		3688	528562	
MP 207	55	1829	31	1230	42169	"
MP 209	0	2883	31	421	105131	"
MP 217	0	2919	31	465	108856	"
MP 219	55	2263	31	1165	77397	"
Hegberg	110	9894		3281	333553	

MONTHLY INJECTION REPORT

<u>Well No.</u>	<u>Barrels Injected</u> (Preflush)	<u>Injection Press. psig</u>	<u>Days on</u>	<u>Cummulative Inj. bbls.</u>	<u>Date Started</u>
MP 106	3934	190	31	57774	11/17/75
MP 108	5930	190	31	68521	"
MP 110	4453	190	31	62708	"
MP 116	5174	190	31	71753	"
MP 118	5474	190	31	69793	"
MP 120	6173	190	31	83381	"
MP 126	4137	190	31	62561	"
MP 128	6329	190	31	78694	"
MP 130	6001	190	31	72697	"
Chesney	47605			627882	

Cum. Inj.
Micellar Bbls.

	<u>Micellar</u>				<u>3/23/77</u>
MP 201	113	300	31	1857	"
MP 203	355	300	31	1741	"
MP 205	281	300	31	1045	"
MP 211	156	300	31	2100	"
MP 213-226	199	300	31	1382	"
MP 215	372	300	31	1555	"
MP 221	325	300	31	1527	"
MP 223	236	300	31	1230	"
MP 225	307	300	31	1234	"
Hegberg	2343			13671	

MONTHLY PRODUCING WELLS TEST REPORT

<u>Well No.</u>	<u>Actual Vo. Produced</u>	<u>Hours Tested</u>	<u>Pump Size</u>	<u>Stroke Length</u>	<u>Strokes Per Min.</u>
	<u>Oil</u>	<u>Water</u>			
MP 112	0	387	24	1 1/2	42
MP 114	5	136	24	1 1/2	32
MP 122	5	293	24	1 1/2	42
MP 124	0	424	24	1 1/2	42
MP 207	3	59	24	1 1/2	22
MP 209	0	93	24	1 1/2	42
MP 217	0	94	24	1 1/2	42
MP 219	3	73	24	1 1/2	42

Figure 3

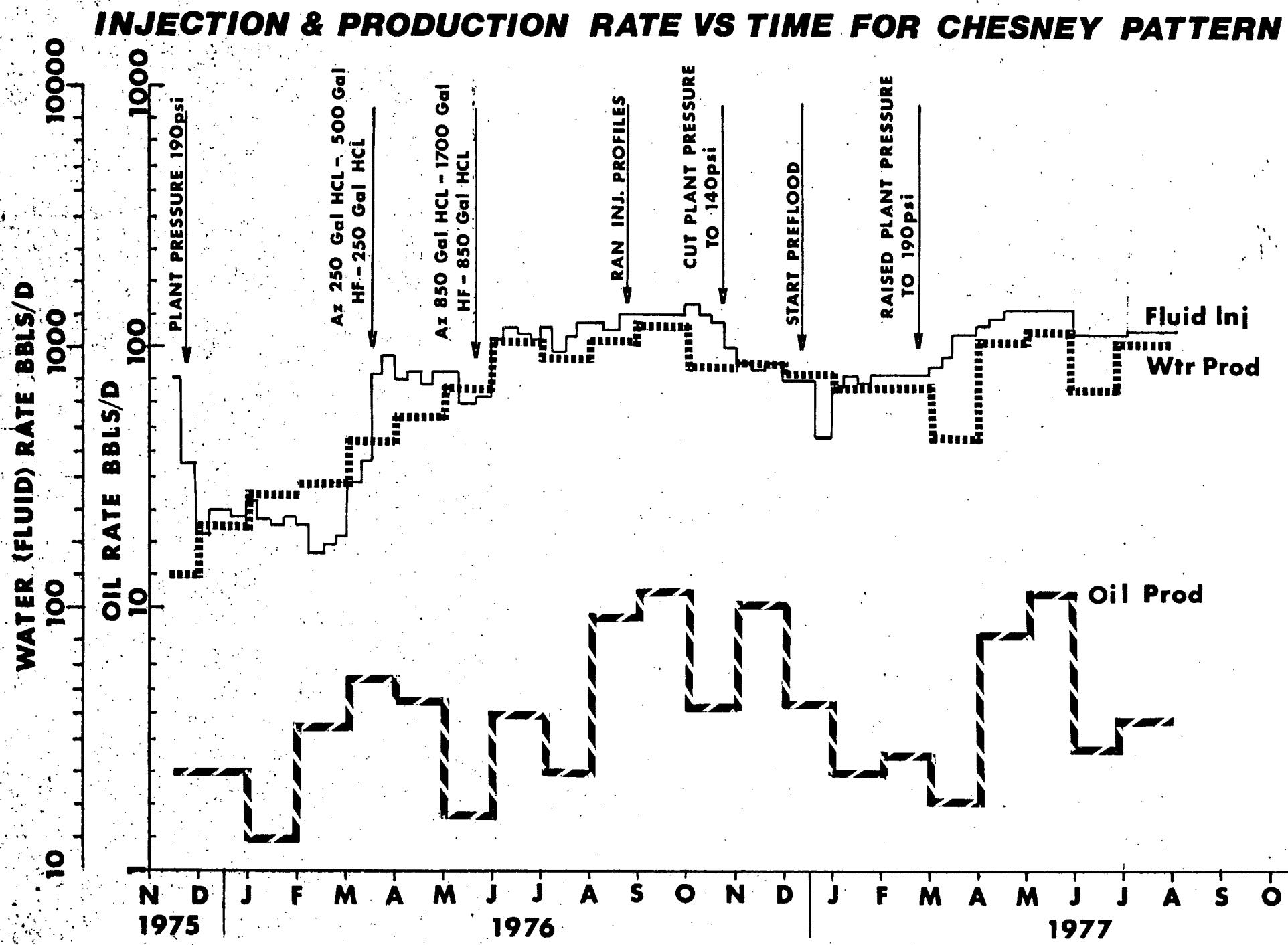


Figure 4

INJECTION & PRODUCTION RATE VS TIME FOR HEGBERG PATTERN

