

PETRO-TECH



PERUANA S.A.

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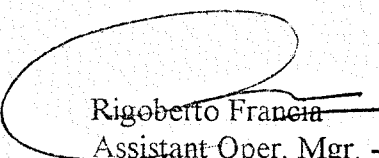
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PTP-IDPE-338-95

TO : Operations Manager
FROM : Assistant Operations Manager - Engineering
SUBJECT : **LO16-14 WELL BASAL SALINA COMPLETION AND TESTING**
INTERVAL 10184-9942^{FT} & 9666-9458^{FT}
DATE : April 17, 1995

Enclosed please find the LO16-14 Well Final Completion Report where Basal Salina, Intervals 10184-9942 ft and 9666-9458 ft, were perforated and tested after running a CBL-PET cement evaluation logs. Lower Basal Salina tested approximately 98% of water which was isolated and then opened Upper Basal Salina which is producing in the last day 1200 BOPD and 205 BWPD. Next step will be to run a production log to identify where water is coming, isolate the interval if it is possible, and reshoot the oil sands to improve communication between reservoir and the well.


Rigoberto Francia
Assistant Oper. Mgr. - Engineering

RFG/yth

c.c.: Assistant General Manager
PEPM
File

LO16-14 WELL FINAL COMPLETION REPORT

- This well was completed with 5 1/2" N-80 17 #/ft/20 #/ft casing. The float collar was set to 10,240 ft and the float shoe at 10,330 ft.

Two slurries were used to cement this well, the lead slurry from 5600 ft to 9100 ft and tail slurry from 9100 ft to 10,330 ft. The tail slurry was designed to cover the main objective Basal Salina formation - Intervals: Lower Basal Salina (10204-9942) and Upper Basal Salina (9666-9458).

- Cement Evaluation.- To evaluate the cement job the CBL and PET logs were run, the CBL showed good cement bonding between cement and casing, this log was run with 1000 psi to eliminate possible microannulus. The information got from VDL showed a good cement adherence to the formation. The PET log no showed any cement channeling throughout the cement column. The only part where the logs showed and rarely signals was from 9560 to 9520 ft. In general we can say that the pay zones have a good isolation.
- Lower Basal Salina Evaluation - Interval (10182-9942 ft), April 09/10-95

Run in the hole unit with 2 7/8" tubing and set RTTS packer at 9378 ft, the circulating valve was opened and were pumped 55 Bbl of diesel. Then was perforated interval 10176-10166 with 12 shots (2 spf) using 1 11/16 capsules.

The well was opened with 1300 psi and the pressure dropped immediately to cero psi. The well was swabbed and the fluid recovery amounts were:

Diesel 55 Bbl

Water 83 Bbl (Chamber Volume 20 Bbl)

The lab analysis of the water recovery showed:

Water (%)	100
Salinity as cl (mg/l)	12,490
Salinity as NaCl (mg/l)	20,609
Resistivity (ohms/mt) @ 75° F	0.25
PH	8.1

The tubing was pulled out of the well and the drillable bridge plug was set at 10,100ft.

- Lower Basal Salina Interval (10068-9942 ft)

This zone was perforated using 4" O.D. selective gun according with the following program:

<u>Interval (ft)</u>	<u>MNS (ft)</u>	<u>Shots N°</u>
10066 - 10060	6	4
10044 - 10012	32	13
9955 - 9944	<u>11</u>	<u>12</u>
	49	29

Run tubing 2 7/8" with Hydro-Spring and set packer at 9382 ft. The well produced 35 Bbl of water and 2% of oil (Note: The tubing was run empty).

The water analysis showed: (10068-9942)

Water	(%)	98
Oil	(%)	2
Salinity as Cl	(ppm)	10,000
Salinity as NaCl	(ppm)	16,500
Resistivity @ 75°F		0.35
PH		6.82

According to results was decided to set the packer at 9981 ft to test interval (10,068-10,002 ft) through tubing and (9958-9942 ft) by annulus.

The annulus did not flow. It was recovery 34 Bbl of fluid and samples were taken from the tubing. The water analysis showed (10,068-10,002 ft)

Water	(%)	98
Oil	(%)	2
Salinity as Cl	(ppm)	8485
Salinity as NaCl	(ppm)	14,000
Resistivity .@ 77°F		0.41
PH		7.2

The Lower Basal Salina formation was isolated with a bridge plug set at 9750 ft.

- Upper Basal Salina - Interval (9666-9458 ft)

This interval was opened using 4" O.D. gun, 1 spf according to the following program:

<u>Interval (ft)</u>	<u>MNS (ft)</u>	<u>Shots N°</u>
9964-9660	4	4
9648-9632	16	16
9602-9586	16	16
9558-9532	26	26
9518-9490	28	28
9478-9460	<u>18</u>	<u>18</u>
	108	108

After shooting these intervals the well had 1100 psi at the well head. It was opened and its production recorder to date was:

DATE	TIME	DIESEL BBL	OIL BO	WATER BW *	PRESS. PSI	CHOKE	GOR	% WATER
Apr-12	21:20	76	--	--	70	3/4		
	21:45	--	--	35	90	3/4		
	22:45	--	--	35	300	3/4		
	24:00	--	--	50	300	3/4		
Apr-13	01:00	--	63	80	300	1/2		
	02:00	--	16	51	350	1/2		
	03:00	--	33	58	375	1/2		
	04:00	--	38	51	430	1/2		
	05:00	--	40	54	470	1/2		
Apr-13	(24 hrs)	--	839	(710)	720	1/2		44
Apr-14	(24 hrs)	--	1119	(335)	700	1/2	1421	23
Apr-15	(24 hrs)	--	1200	(205)	700	1/2	694	15
Apr-16	(24 hrs)	--	1176	(208)	660	1/2		15

* See Table II Water Analysis Results.

TABLE II
WATER ANALYSIS RESULTS

INTERVAL (ft)	10182-9942	10068-9942	10068-10002	9664-9460
Water	100	98	98	50
Oil (%)	--	2	2	50
Salinity as Cl (ppm)	12,490 *	10,000	8485	11200
Salinity as NaCl (ppm)	20,609 *	16,500	14,000	18,500
Resistivity (ohm-mt) @75°F	0.25	0.35	0.41	0.32
PH	8.1	6.82	7.2	7.8

* Reported as mg/lit