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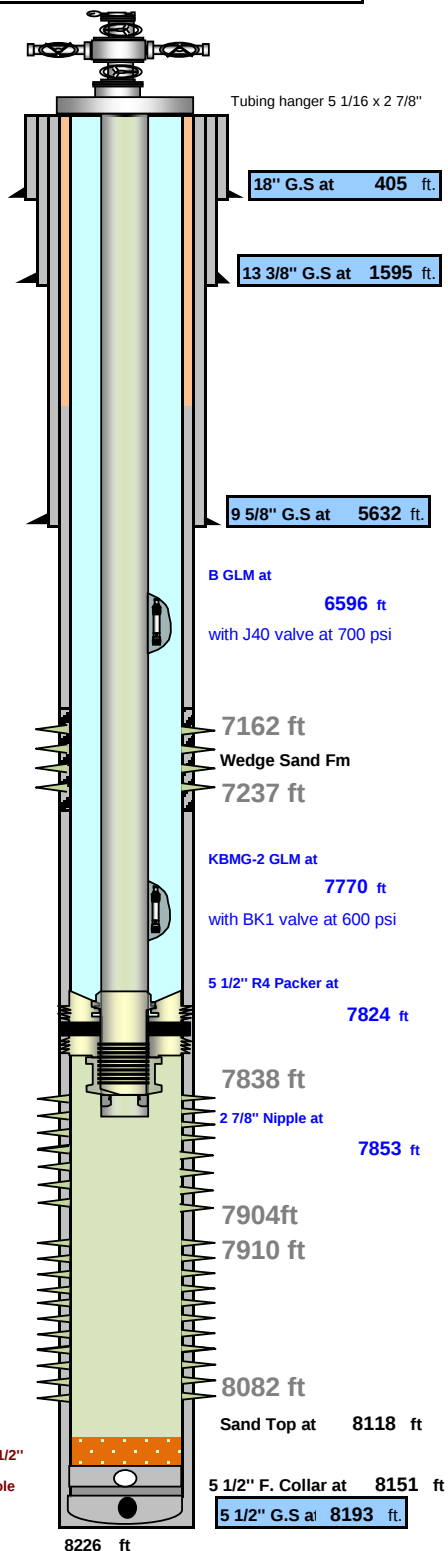
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WELL : LO16-8

RIG LESS ACIDIZING TREATMENT IN BASAL SALINA FM



CURRENT COMPLETION STRING



TD: 8226 ft

CASING						
OD	ID	GRADE	Wt (PPF)	THREAD	TOP	DEPTH (ft)
18"	17.250	ASTM-A53B	70.6	WELD	-	405
13 3/8"	12.615	K-55	54.5	BUTT	-	1595
9 5/8"	8.835	K-55	40.0	BUTT	-	5632
5 1/2"	4.892	N-80	17.0	BUTT	-	8193

TUBING						
OD	ID	GRADE	Wt (PPF)	THREAD	TOP	BOTTOM
2.875	2.441	N-80	6.5	EUE	-	7834

PROCEDURE

- 1) Test Halliburton lines with 3000 psi.
- 2) Test master valve with 3000 psi.
- 3) Pump as follow:
 - 60 bbl of Clayfix
 - 110 bbl Fe Acid,
 - 140 bbl of Displacement with Clayfix,

Q: 1-4 bpm. P_{máx} on surface: 1000 psi
- 4) Wait acid reaction for 1 hour.
- 5) Kick off well with Gas Lift
- 6) Neutralize recovered fluids on surface.
- 7) Monitor production and well head pressure.

BASAL SALINA INTERVALS				
	Base	Top	Ft	Shots (4 SPF)
II	7904	7898	6	24
	7891	7887	4	16
	7858	7846	12	48
	7844	7838	6	24
TOTAL	08-may-04		28	112

Wireline: 4" Gun, OWEN DML XIII, 90°
Shot Net Sand: 28' (25' TVD)

	Base	Top	Ft	Shots (4 SPF)
I	8082	8080	2	8
	8074	8066	8	32
	8058	8046	12	48
	8020	8008	12	48
	8000	7976	24	96
	7968	7964	4	16
	7956	7949	7	28
	7940	7937	3	12
	7928	7910	18	72
TOTAL	03- Apr - 93		90	360

TCP: 3 3/8" Gun, Jet RDX, 90°, 25 gr.
Shot Net Sand: 124' (113' TVD)

Production Eng. Dept.

JUN 12th, 2012

LO16-8

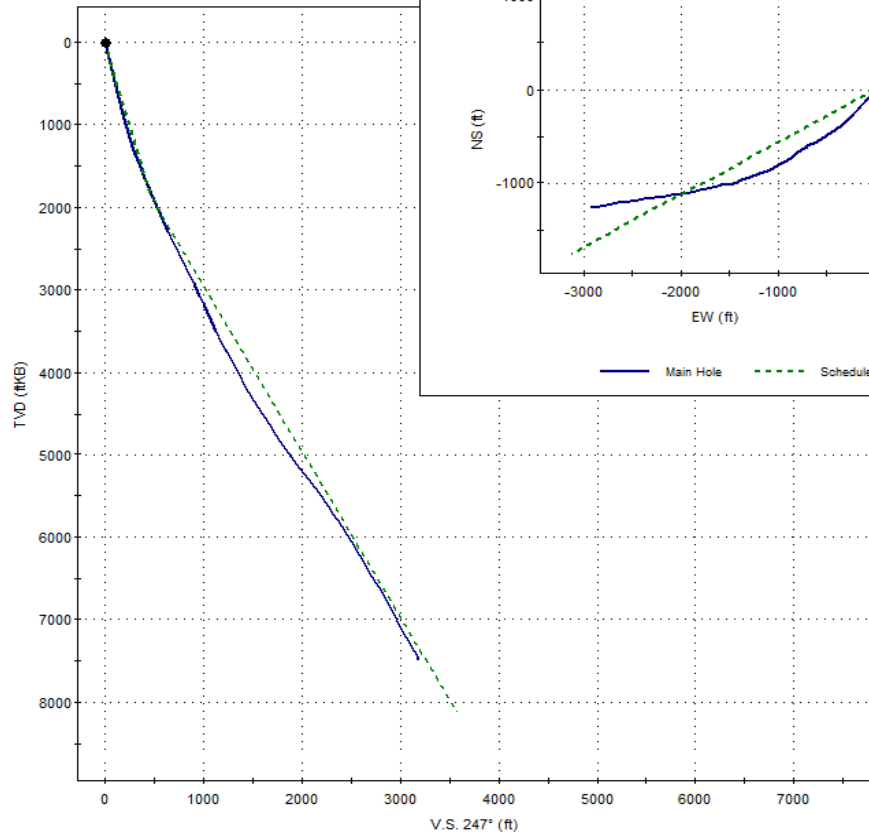
Directional Survey

API/Well	Producing Formation	Area	County	State/Province	Operator	Edit	
960-43-01-xxx-84708	Basal Salina	Lobitos	Piura	Talara	Petro-Tech Peruana	008	
RB Elevation (ft)	CF Elev (ft)	Spud Date	Surface Legal Location	N/S Dist. (ft)	N/S Ref.	E/W Dist. (ft)	E/W Ref.
50.00	17.00	14/01/1993	Z-2A-21-820-D-LO16	1267.2	S	2929.0	W

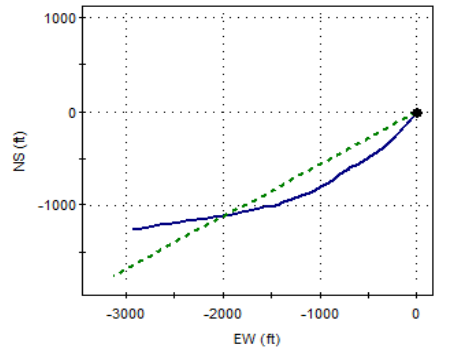
Directional Surveys: Surveys

Description	Survey Company	Job
Surveys	Anadrill Schlumberger	

Vertical Section



Plan



LO16-8

Directional Survey

API/UWI 960-43-01-xxx-84708	Producing Formation Basal Salina	Area Lobitos	County Piura	State/Province Talara	Operator Petro-Tech Peruana	LR 008
KB Elevation (ft) 50.00	CF Elev (ft) 17.00	Spud Date 14/01/1993	Surface Legal Location Z-2A-21-820-D-LO16	N/S Dist. (ft) 1267.2	N/S Ref. S	East/West Distance (ft) 2929.0
						E/W Ref. W

Directional Surveys: Surveys

Description Surveys	Survey Company Anadrill Schlumberger	Job
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Survey Data

MD (ft)	Incl (°)	Azm (°)	TVL (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	VS (ft)	Tie-In EW (ft)
0.00	14.00	217.18	0.00	0.00	0.00	0.00	0.00	
1.00	14.00	217.18	0.97	-0.19	-0.15	0.00	0.21	
405.00	14.00	217.18	392.97	-78.06	-59.21	0.00	85.34	
484.00	13.75	219.18	469.67	-92.95	-70.92	0.68	102.00	
696.00	12.25	223.18	676.23	-128.89	-102.23	0.82	145.00	
954.00	14.50	219.18	927.22	-173.89	-141.37	0.94	198.79	
1,140.00	15.75	222.18	1,106.78	-210.65	-173.03	0.79	242.45	
1,354.00	17.75	223.18	1,311.69	-255.96	-214.86	0.94	298.83	
1,354.00	17.75	223.18	1,311.69	-255.96	-214.86	0.94	298.83	
1,571.00	19.50	227.18	1,517.32	-304.71	-264.06	1.00	363.35	
1,663.00	20.00	228.18	1,603.91	-325.64	-287.05	0.66	392.76	
1,880.00	20.25	230.18	1,807.66	-374.43	-343.55	0.34	463.99	
2,127.00	21.00	233.18	2,038.84	-428.33	-411.82	0.52	548.04	
2,404.00	23.00	237.18	2,295.67	-487.42	-497.04	0.90	649.72	
2,582.00	23.00	238.18	2,459.52	-524.60	-555.81	0.22	718.43	
2,799.00	23.00	241.18	2,659.28	-567.39	-628.98	0.54	802.57	
2,981.00	21.75	244.18	2,827.58	-599.22	-690.49	0.93	871.66	
3,019.00	21.50	241.18	2,862.90	-605.64	-702.93	2.98	885.63	
3,079.00	22.00	239.18	2,918.63	-616.70	-722.22	1.49	907.72	
3,237.00	22.00	233.68	3,065.14	-649.39	-771.48	1.30	965.92	
3,346.00	22.25	233.68	3,166.12	-673.71	-804.56	0.23	1005.93	
3,513.00	22.00	233.18	3,320.82	-711.18	-855.07	0.19	1067.17	
3,699.00	21.00	239.18	3,493.90	-749.14	-911.59	1.30	1134.12	
3,848.00	23.25	242.18	3,631.92	-776.55	-960.54	1.69	1189.92	
3,944.00	23.75	241.18	3,719.96	-794.71	-994.23	0.67	1228.06	
3,976.00	24.00	237.18	3,749.22	-801.35	-1005.35	5.12	1240.89	
4,172.00	24.50	243.18	3,927.96	-841.29	-1075.13	1.28	1320.80	
4,264.00	25.00	246.18	4,011.51	-857.75	-1109.94	1.47	1359.28	
4,452.00	26.50	248.18	4,180.84	-889.39	-1185.22	0.92	1440.94	
4,700.00	27.00	249.18	4,402.30	-929.96	-1289.21	0.27	1552.48	
4,885.00	27.75	251.18	4,566.58	-958.78	-1369.23	0.64	1637.37	
5,008.00	27.75	251.68	4,675.44	-977.02	-1423.52	0.19	1694.44	
5,170.00	29.75	253.18	4,817.46	-1000.51	-1497.80	1.31	1771.94	
5,324.00	30.50	254.18	4,950.66	-1022.22	-1571.98	0.59	1848.64	
5,536.00	31.75	255.68	5,132.14	-1050.69	-1677.79	0.69	1957.06	
5,628.00	33.00	257.18	5,209.84	-1062.23	-1725.68	1.61	2005.59	
5,776.00	33.00	257.18	5,333.96	-1080.12	-1804.27	0.00	2084.83	
5,961.00	33.00	260.18	5,489.13	-1099.89	-1903.04	0.88	2183.33	
6,146.00	31.00	261.18	5,646.01	-1115.79	-1999.77	1.12	2278.42	
6,304.00	30.00	264.18	5,782.15	-1126.03	-2079.28	1.15	2355.46	
6,319.00	30.25	263.18	5,795.13	-1126.86	-2086.77	3.74	2362.66	
6,350.00	29.75	261.18	5,821.97	-1128.97	-2102.12	3.61	2377.58	
6,465.00	29.00	256.68	5,922.20	-1139.77	-2157.45	2.03	2432.65	
6,682.00	28.00	261.18	6,112.92	-1159.70	-2258.99	1.09	2533.76	

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Report generated on 12/06/2012

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Directional Survey

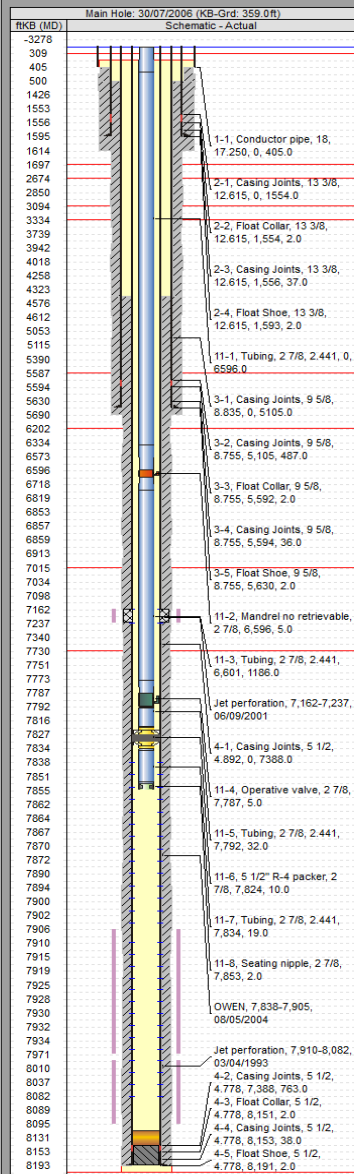
API/UWI 960-43-01-xxx-84708	Producing Formation Basal Salina	Area Lobitos	County Piura	State/Province Talara	Operator Petro-Tech Peruana	LH 008
KB Elevation (ft) 50.00	CF Elev (ft) 17.00	Spud Date 14/01/1993	Surface Legal Location Z-2A-21-820-D-LO16	N/S Dist (ft) 1267.2	N/S Ref S	East/West Distance (ft) 2929.0
						E/W Ref W

Survey Data

MD (ftKB)	Incl (°)	Azim (°)	TVD (ftKB)	NS (ft)	EW (ft)	DLS (°/100ft)	VS (ft)	Tie-in EW (ft)
6,928.00	27.00	266.18	6,331.15	-1172.28	-2371.78	1.02	2642.27	
7,074.00	28.00	261.18	6,460.67	-1179.74	-2438.73	1.72	2706.68	
7,262.00	27.50	261.18	6,627.05	-1193.16	-2525.23	0.27	2791.39	
7,540.00	25.50	262.18	6,875.83	-1211.15	-2647.95	0.74	2911.17	
7,821.00	24.50	258.18	7,130.52	-1231.32	-2764.91	0.70	3026.52	
8,200.00	24.50	257.18	7,475.40	-1264.85	-2918.46	0.11	3180.76	
8,226.00	24.50	257.18	7,499.05	-1267.24	-2928.97	0.00	3191.36	

Perforation Detail Report

API/ULI	Producing Formation	Area	County	State/Province	Operator	License No.	Edit
960-43-01-xxx-84708	Basal Salina	Lobitos	Piura	Talara	Petro-Tech Peruana	008	
KB Elevation (ft)	Gr Elev (ft)	KB-CF (ft)	KB-TH (ft)	PBTD (ftKB)	Spud Date	Rig Release Date	
50.00	-309.00	33.00		8,151.0	14/01/1993	04/04/1993	

Perforations: 7,162.0-7,237.0ftKB on 06/09/2001 00:00 [Edit](#)

Date	06/09/2001 00:00	Top (ftKB)	7,162.0	Bottom (ftKB)	7,237.0	Shot Density (shots/ft)	3.0	Phasing (*)	
Perf Comp	Schlumberger	Type	Jet perforation	Gun Sz (in)	4	Carrier Make	Schlumberger	Carrier Description	Gun
Charge Type	Jet	Charge Make	Schlumberger	Chg Sz (g)					
Over/Under Bal	P (init surf)	P (final surf)	160.0	Fluid Type	Oil	Fluid Density (lb/gal)	6.2	FL MD before (ftKB)	FL MD after (ftKB)

Perforation Statuses [Edit](#)

Date	Status	Comment
05/05/2004 11:00	Squeezed	Squeezed Wedge Sand fm. 7237'-7162'.

Perforations: 7,838.0-7,905.0ftKB on 08/05/2004 12:00 [Edit](#)

Date	08/05/2004 12:00	Top (ftKB)	7,838.0	Bottom (ftKB)	7,905.0	Shot Density (shots/ft)	4.0	Phasing (*)	120
Perf Comp	Geowell	Type	OWEN	Gun Sz (in)	4	Carrier Make	Geowell	Carrier Description	Geowell
Charge Type	Owen	Charge Make	Geowell	Chg Sz (g)					
Over/Under Bal	P (init surf)	P (final surf)	0.0	Fluid Type		Fluid Density (lb/gal)		FL MD before (ftKB)	FL MD after (ftKB)

Perforation Statuses [Edit](#)

Date	Status	Comment
08/05/2004 12:00	Open - Flowing	Re-shooting Upper Basal Salina fm. interval <7905'-7838'>, 4 spf, 112 shots.

Perforations: 7,910.0-8,082.0ftKB on 03/04/1993 18:00 [Edit](#)

Date	03/04/1993 18:00	Top (ftKB)	7,910.0	Bottom (ftKB)	8,082.0	Shot Density (shots/ft)	4.0	Phasing (*)	90
Perf Comp	Halliburton	Type	Jet perforation	Gun Sz (in)	3 3/8	Carrier Make	Halliburton	Carrier Description	Gun
Charge Type	RDX	Charge Make	Halliburton	Chg Sz (g)	25.0				
Over/Under Bal	P (init surf)	P (final surf)		Fluid Type	Diesel	Fluid Density (lb/gal)	6.9	FL MD before (ftKB)	FL MD after (ftKB)

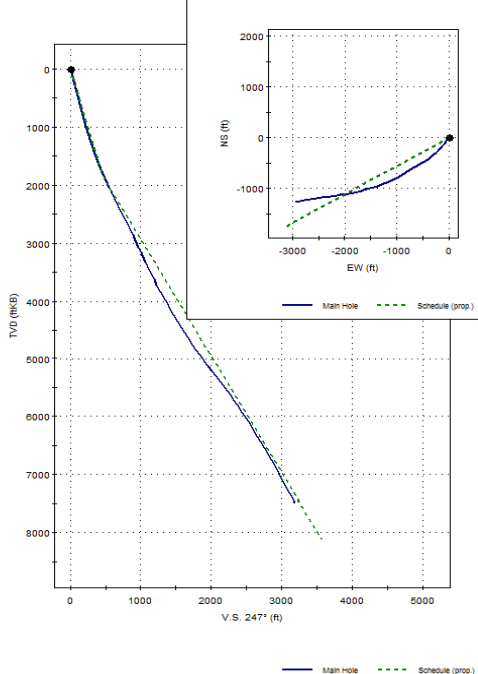
Perforation Statuses [Edit](#)

Date	Status	Comment
03/04/1993 18:00	Open - Flowing	

Engineering Data

Wellbore						Perforations						Logs											
Name		Profile Type		VS		Date		Top (ftKB)		Btm (ftKB)		Shot Dens (shots/ft)		Shot Total		Gun Sz (in)		Prop?		Date		Type	
Schedule		Directional		VS		06/09/2001		7,162.0		7,237.0		3.0		84		4				27/03/1993		Cyberdip	
Main Hole		Directional		VS		08/05/2004		7,838.0		7,905.0		4.0		112		4				27/03/1993		DLL - GR	
Size (in)		Top (ftKB)		Btm (ftKB)		Start Date		End Date												27/03/1993		DLL - CNL - GR	
17		375.0		440.0		14/01/1993		14/01/1993												03/04/1993		CCL - GR-TCP	
17		440.0		1,614.0		15/01/1993		19/01/1993												05/04/1993		GR-CCL	
12 1/4		1,614.0		5,690.0		22/01/1993		23/02/1993															
8 1/2		5,690.0		8,226.0		04/03/1993		27/03/1993															
Matrix Acid on 24/10/1997																							
Zone Basal Salina, Main Hole Comment Treatment in 3 stages w/71 bbls of acid. Used Pin Point Injection Packers w/65' of spacing P(s-post) (ps) Prop?																							
Acidizing on 06/09/2001 09:15:00 p.m.																							
Zone Wedge Sand, Main Hole Comment Treatment w/48 bbls. P(s-post) (ps) Prop?																							
Zones																							
Zone		Top (ftKB)		Bottom (ftKB)																			
Wedge Sand		7,162.0		7,237.0																			
Zone		Top (ftKB)		Bottom (ftKB)																			
Basal Salina		7,910.0		8,082.0																			
Other In Hole																							
Des		Run Date		Top																			
Sand top		09/06/1997		8,118.0																			
Casing																							
Des		Run Date		Btm (ftKB)		Grade		Wt (lbs/ft)		Min ID (in)													
Conductor 18"		14/01/1993		405.0																			
Surface 13 3/8"		20/01/1993		1,595.0																			
Intermediate 9 5/8"		24/02/1993		5,632.0																			
Production 5 1/2"		29/03/1993		8,193.0																			
Tubing Strings																							
Des		Run Date		Btm (ftKB)																			
Tubing Conveyed Perforating		02/04/1993		8,090.0																			
Conventional gas lift installation		29/06/1994		7,955.0																			
Conventional gas lift installation		09/06/1997		7,894.0																			
Conventional gas lift installation		25/10/1997		7,934.0																			
Conventional gas lift installation		04/11/1997		7,932.0																			
Conventional gas lift installation		23/04/1998		7,931.0																			
Tubing - Workstring		06/09/2001		7,034.0																			
Tubing 1 1/4"		12/09/2001		7,908.0																			
BLT gas lift installation		12/09/2001		7,919.0																			
Conventional gas lift installation		09/05/2004		7,816.0																			
Conventional gas lift installation		30/07/2006		7,855.0																			

Vertical Section



WellView ©

Last Jobs & Procedure Summary of Proposal Job

Run Date	Comment
12/09/2001	
12/09/2001	Petrex 117, bled off well, unset RTTS packer, M/D xmas tree, N/U BOP, POOH w/RTTS pkr, during trip well came out three times, RIH w/fishing tool, fished & POOH RBP, RIH BLT gas lift installation @ 7919', N/D BOP, installed bonnet, swab well @ 6000', recov.18.5 Bo, kick off well, test installation, OK.
09/05/2004	PTX-313 : M/U lines to rig tank; Bled off well; removed surface lines; took out bonnet bolts; pumped 50 BW treated to control well, negative; bled off well; pumped 70 BW treated; pulled out string w/ 70.000# & removed bonnet, N/U BOP's and hopper; POOH BLT inst., during trip swabbed well 3 times to avoid spill (the first 100 jts. came out w/inside & outside hard paraffin; 130 jts. came out w/ outside paraffin); ran scraper to 8111'; POH pumping hot oil by annulus (total 55 BO); ran RBP & arrow packer in tandem; set RBP at 7330'; unset RBP retrieving tool & POH 15 jts. & set arrow packer at 7315'; pumped 33 BW treated and tested w/700 psi; unset arrow packer; dropped 2 sxs of frac sand; POH 14 jts. & set arrow packer at 6870' pumped 48 BW treated & tested w/500 psi, ok.; BJ Co. M/U lines and tested same w/3000 psi; made hermeticity test w/1200 psi; performed squeeze job w/10 bbls of cement (15.6 ppg), rate 2 BPM, press 1880 psi; displaced w/43.5 BW; R/D BJ lines; POH 2 7/8" tbg + arrow packer + retrieving tool; ran 4 5/8" bit; N/D hopper and BOP's; finished ran bit tag at 7034'; M/U power swivel; displaced gas w/treated water; cleaned out cement from 7034' to 7312'; cleaned out w/circulation to 7330'; POH; ran retrieving tool to 7330'; unset RBP & POH; ran scraper to 7978'; N/D hopper and BOP's; installed shooting valve; Geowell Co. logged from 7250' to 7020'; re-shooting Basal Salina Fm. from 7904' to 7838' w/112 shots, WHP=zero (net sand 28"); R/D Geowell equipment; removed shooting valve; N/U BOP's and hopper; RIH Conventional Inst. w/247 jts., S.N. at 7816'; R-4 packer at 7780'; N/D hopper and BOP's; installed tree; M/U surface lines; swabbed well from 6150' to 7600', recov. 15 bbls of emulsioned fluid in 4 runs; kicked off well; test OK.
30/07/2006	PTX-313 : M/U lines to rig tank; Bled off well (dry gas); removed surface lines; took out x-mas tree bolts; unset packer, removed x-mas tree, N/U BOP's, POOH conventional installation, total 247 jts (first 106 jts came out with inside paraffin), RIH with bailer, tag at 8088'; cleaned out to 8118' (hard top), POOH (came out 1 jt with crude oil, 7 jts with water and 2 jts with sand frac), scrapped well to 8118'; RIH conventional installation with 249 jts 2 7/8", N/D BOP's, installed x-mas tree, set R-4 packer at 7824'; M/U surface lines, ran swab cup to 7600', no found fluid level, injected gas and kicked off, tested installation, OK.