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www.saviaperu.com

INTEROFFICE MEMORANDUM
DEVM-007-2014

To: Pedro Alarcon / Jae Hwii Gwag / Jin Seok Yi

From: H.Janampa, V. Delgado, H. Cornejo, J.C.Muñoz, C.Canales, E. Borda

Date: 18th February 2014

Subject: **Proposal to Drill Development Well LO6-30D**

It is recommended to drill the proposed well **LO6-30D to develop 220 MBO** of reserves in the Rio Bravo Formation in the southwest part of Lobitos Field. Programmed TD is 7980' MD (-4300' VSS and well cost estimated is 4,780 MU$ (Figures 1, 2, 3, 4 & 7)

LO6-30D is proposed as a directional well with a maximum angle of 65° towards S 51° W (Figures 1, 2, 3, 4). The chance of success (COS) is 75% (Fig. 8)

The Rio Bravo was deposited as Deep sea Fan complex in the lower section, gradding to shallow marine sands in the upper section, restricted to coast facies with presence of shell fragments which beach sand bars cut by channels. This sequences constitute the main reservoir sands based on production, lithology and petrophysical properties, likewise several cross lines have confirmed the time line during the sedimentation of Rio Bravo, showing several sequences of sands, which act as independent reservoirs, therefore is important to find the zones where these sands were deposited (Figure 3).

The proposed location LO6-30D is located 420 and 400 meters from LO6-31D and LO6-33D respectively. These wells reached initial production of 304 BOPD and 796 BOPD (fig 1).

For a complete evaluation, better understanding and modeling of Rio Bravo reservoir, it is recommended a full logging set of gamma ray, resistivity, and neutron–density (Fig.2).

The main risks associated with this well location are:

- Sedimentary changes that could reduce the net sand thickness and petrophysics properties.
- Non mapped faults could affect the continuity of the sands.

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ECONOMIC SUMMARY

CASE	IP (BOPD)	EUR (MBO)	CAPEX (MUS$)	NPV 10.5% (M$)	PAY OUT (YRS)	AT PIR	ROR (%)
LOW	230	111	4,780	1,051	4.83	0.22	23
BASE	460	220	4,780	5,747	0.92	1.20	>100
HIGH	790	378	4,780	12,519	0.58	2.62	>100

CONSIDERATIONS

Net Revenue Interest %	84%
Discount Rate %	10.5%
Tax	30%
Variable Cost, US$/BL	0.91
Fixed MUS$/Year	36.6
Cost MUS$	4,780
Oil Price according Portfolio MTP 2013: 100 US$/BL from 2013 to 2023	

Base case reserves and IPR for this well are estimated 220 MBO & 460 BOPD respectively, the drilling cost estimated is US$ 4,780 M, NPV is US$ 5,747 M using portafolio parameters with discount rate of 10.5% (Figures 7,8 & Tables A & B)

Proposed well is supported with AFE N° 2214353, EIA with Directional Resolution N° 444-2009-MEM/AAE and risks evaluation according to SIMOP procedure.

Cc:

J. Duarte	J. Chuyes	V. Peralta
J. Garzon	R. Gilabert	E. Borda
B. Kim	A. Agurto	E. Gonzales
G. Idiaquez	C. Ramírez	K. Valencia
C. Valdizan	F. Paredes	Central File

Attached Documents

Fig.1: Top Rio Bravo Fm., showing the proposed well LO6-30D
Fig.2: Geological Prognosis
Fig.3: 3D Seismic showing the proposed well LO6-30D
Fig 4: SW-NE Structural Section for proposed well LO6-30D
Fig.5: Rio Bravo Fm. Gross Sand Map for proposed well LO6-30D
Fig.6: SW-NE Stratigraphic section showing the proposed well LO6-30D
Fig 7: Estimated Oil production of Rio Bravo producers wells
Fig 8: Drilling and Cost Time-Depth Chart of well LO6-30D
Table A: Economic Summary and Oil rate forecast for well LO6-30D
Table B: AFE for Proposed well LO6-30D

Z-2B LOBITOS FIELD

TOP RIO BRAVO FM. – DEPTH STRUCTURE MAP

H. Cornejo / E. Borda Feb 2014

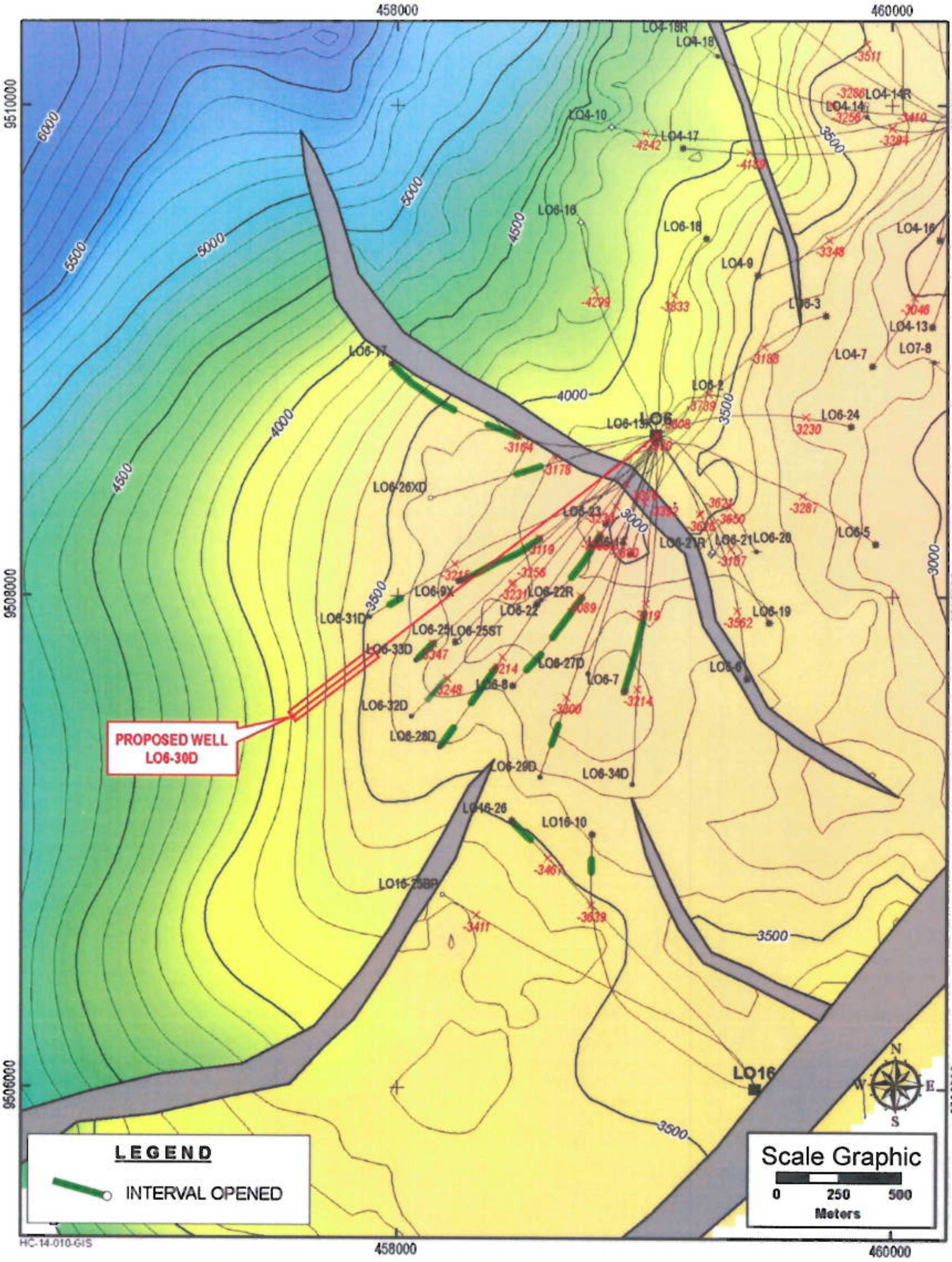


Figure 1

SAVIA PERÚ

GEOLOGIC PROGNOSIS

AREA	OFFICIAL WELL NUMBER	SAVIA PERU SA.	TYPE OF WELL	RIG Nº
LOBITOS OFFSHORE		LO6-30D	DEVELOPMENT	PEPESA-40

PRIMARY OBJECTIVE	SECONDARY OBJECTIVE
RIO BRAVO	

SURFACE COORDINATES (UTM)	(WGS-84)	TARGET COORDINATES (UTM)	(WGS-84)
9'508,658.51 MN	459,043.47 ME	9'507,757.26 MN	457,900.10 ME

ELEV.		WELL		TARGET		TOT. DEP.	
KB:	50 FT	DIRECTION OF DEVIATE WELL	S 50.8° W	DRILLED DEPTH	6397 FT	ESTIMATED FINAL	7,980 FT
WATER DEPTH	335 FT	ANGLE CONDUCTOR FROM VERTICAL	VERT.	VERTICAL DEPTH	3530 FT	HORIZONTAL DRIFT	6,127 FT
GROUND LEVEL	FT	RECOMENDED DEPTH OF K.O.P.	450 FT	HORIZONTAL DRIFT	4778 FT	MAX. ANGLE	65°
		BUILD UP ANGLE AT	4°/100 FT.	LIMITS (DIAMETER) TO MAIN OBJECTIVE (LOW. BS) TOP:	100 ft.	BASE:	100ft.

STRATIGRAPHIC SEQUENCE

FORMATION / MEMBER	DRILLED TOP (MD/FT)	VERT. TOP (VD/FT)	SUBSEA TOP (SS/FT)	OBSERVATIONS
TALARA	AT SEA BOTTOM			
CHACRA	3000	2,042	1,992	
RIO BRAVO	6397	3,530	3,480	MAIN OBJECTIVE
TD.	7,980	4,350	4,300	

CONVENTIONAL LOGGING EVAL.

BIT SAMPLES TO BE TAKEN	EVERY 30 FT.FROM SURFACE TO 5500' EVERY 10 FT. FROM 5500' TO TOTAL DEPTH	
RECOMMENDED FOR PALEO-PALYNOLOGY	PALEONTOLOGY AT REQUEST BY LEADER OFFICE	
RECOMMENDED OPEN HOLE	DLL-MSFL-GR; FDC-CNL-GR.	
RECOMMENDED AFTER CASING	GR-CCL	
NEARBY WELLS FOR CORRELATION	LO6-9X, LO6-29D, LO6-33D,LO6-28D,LO6-31D,LO6-32D	
SIDEWALL CORES	SWC * NOT CONSIDERED	HRCT
CONVENTIONAL CORES	NOT CONSIDERED	
GAS LOGGER	MUD LOGGING UNIT.	
FORMATION TESTING	NOT CONSIDERED	

REMARKS

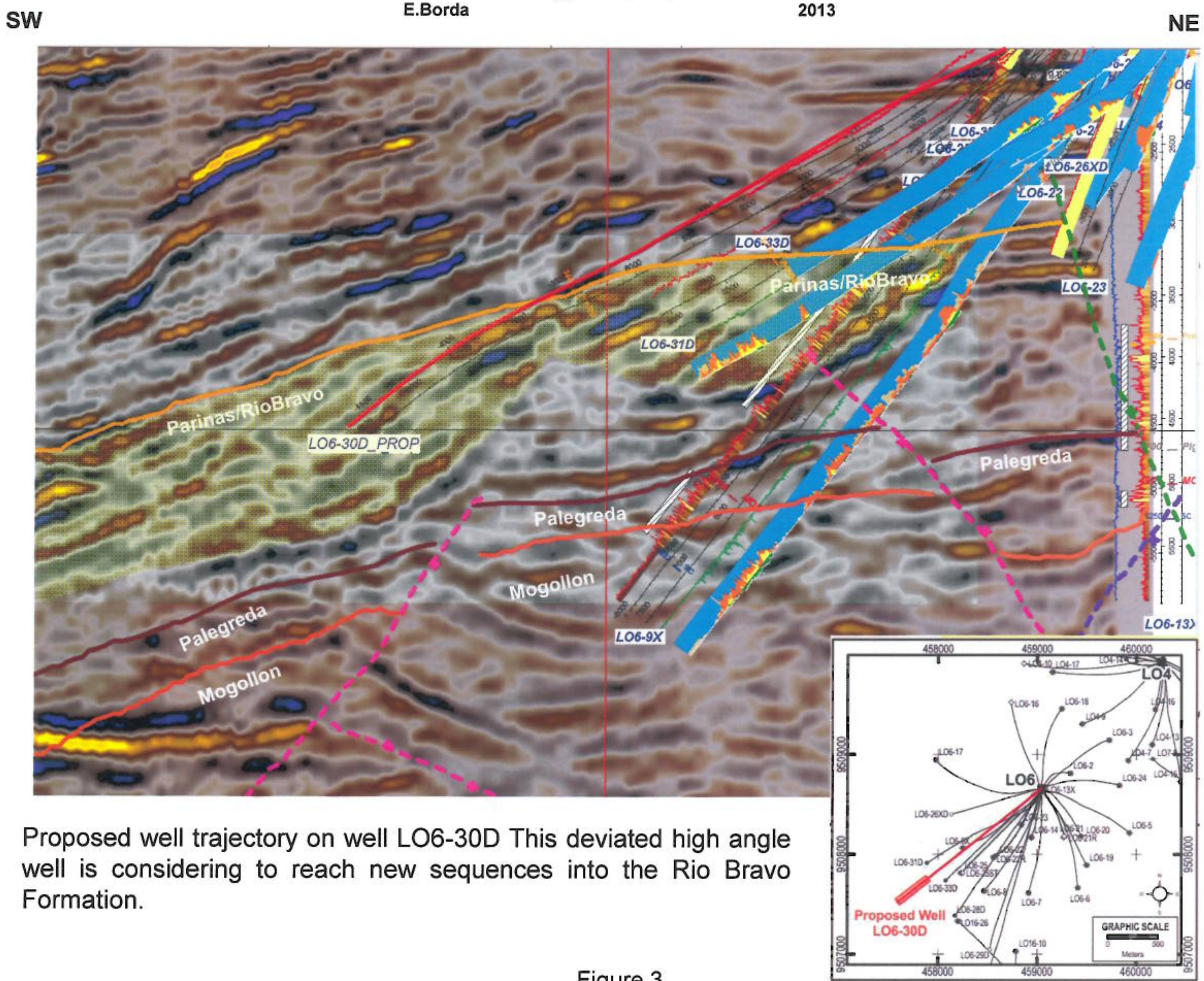
At 6500 ft. MD. Drop vertical angle 1°/100 ft. To reach 52° to TD.

RECOMMENDED BY	DATE	REVISED BY	DATE	APPROVED BY	DATE
H.Cornejo / J.C. Muñoz/E. Borda	Feb. 2014	V Delgado / H. Janampa	Feb. 2014	P. Alarcon	Feb. 2014

Figure 2

Block Z-2B
LO6 Project
3D Seismic showing the proposed well LO6-30D

E.Borda 2013



Proposed well trajectory on well LO6-30D This deviated high angle well is considering to reach new sequences into the Rio Bravo Formation.

Figure 3

LOBITOS FIELD
SW-NE STRUCTURAL SECTION FOR PROPOSED WELL LO6-30D

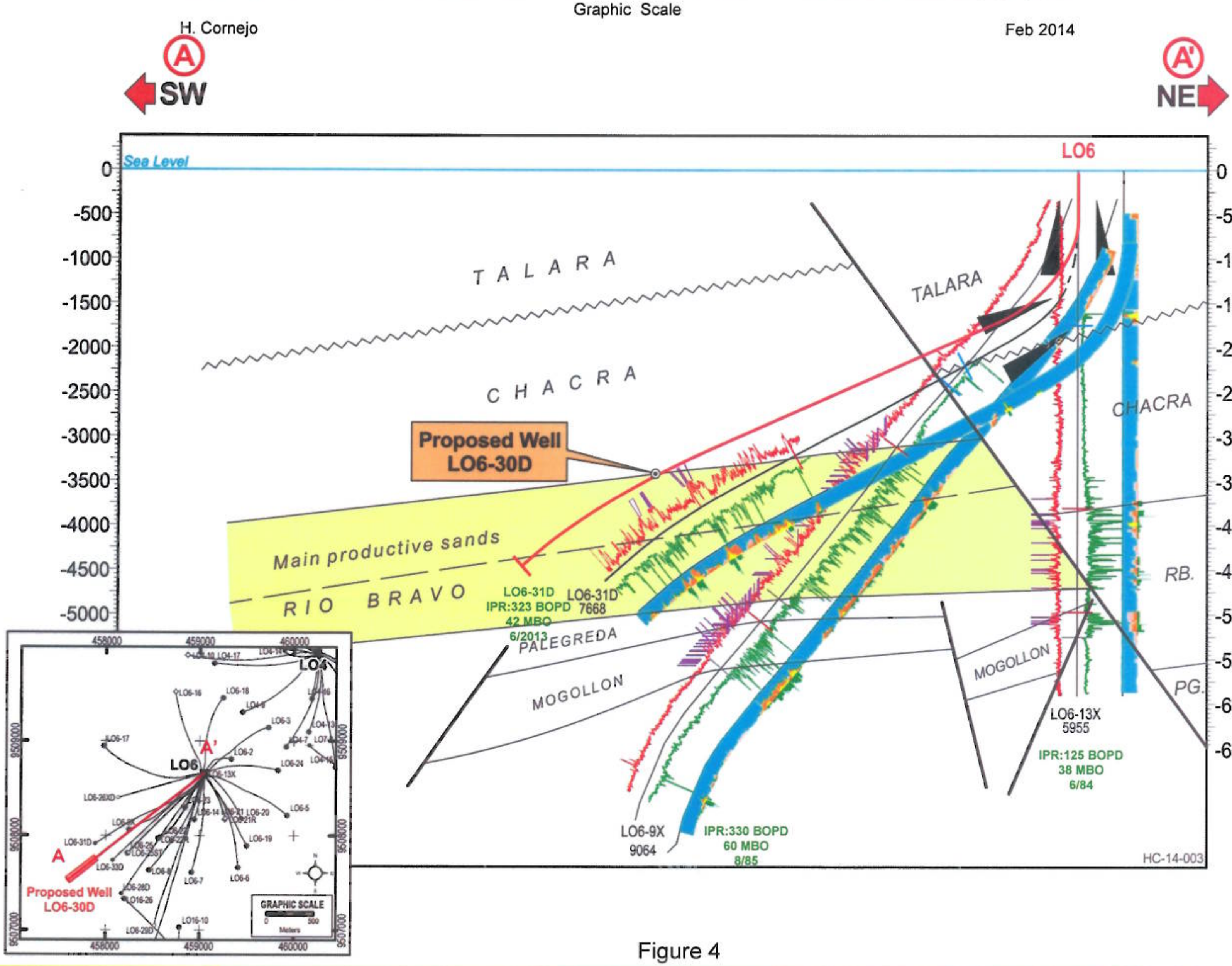


Figure 4

Z-2B LOBITOS FIELD

TOP RIO BRAVO FM. – GROSS SAND MAP

C. Canales/ E. Coronado Feb. 2014

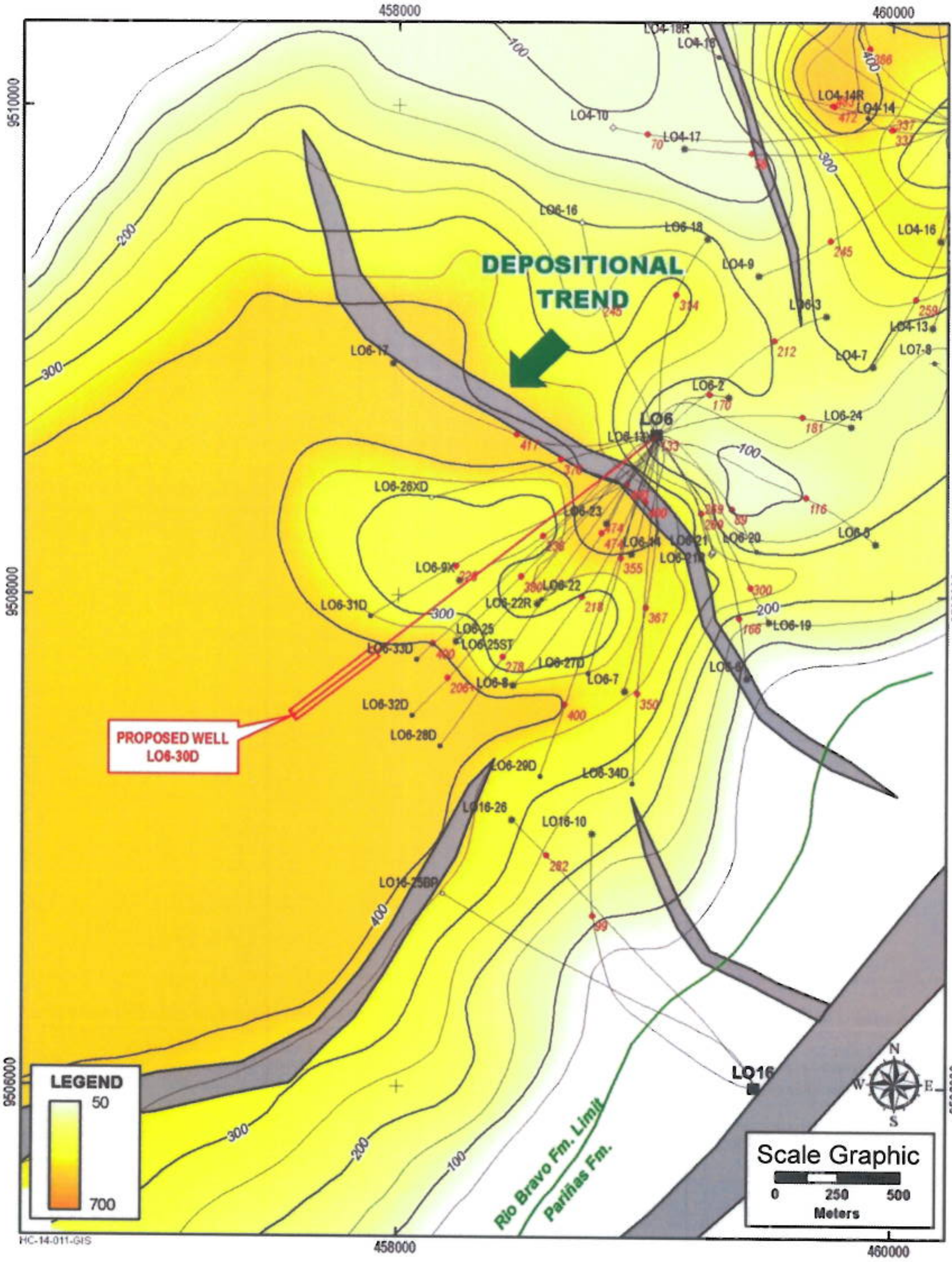


Figure 5

LOBITOS FIELD
WE STRATIGTAPHIC SECTION SHOWING THE PROPOSED WELL LO6-30D

Graphic Scale

H. Cornejo

Feb 2014

SAVIA PERÚ

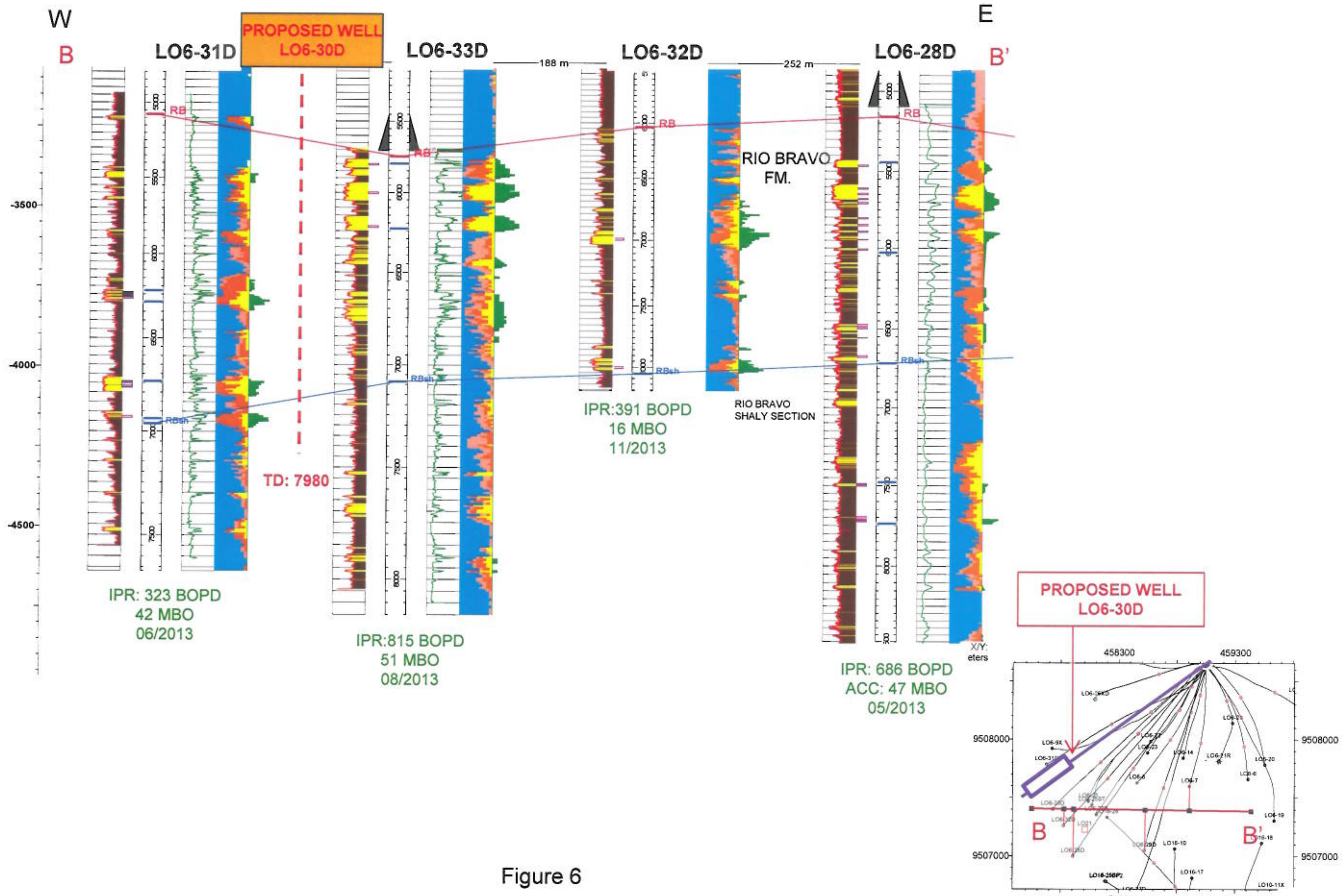
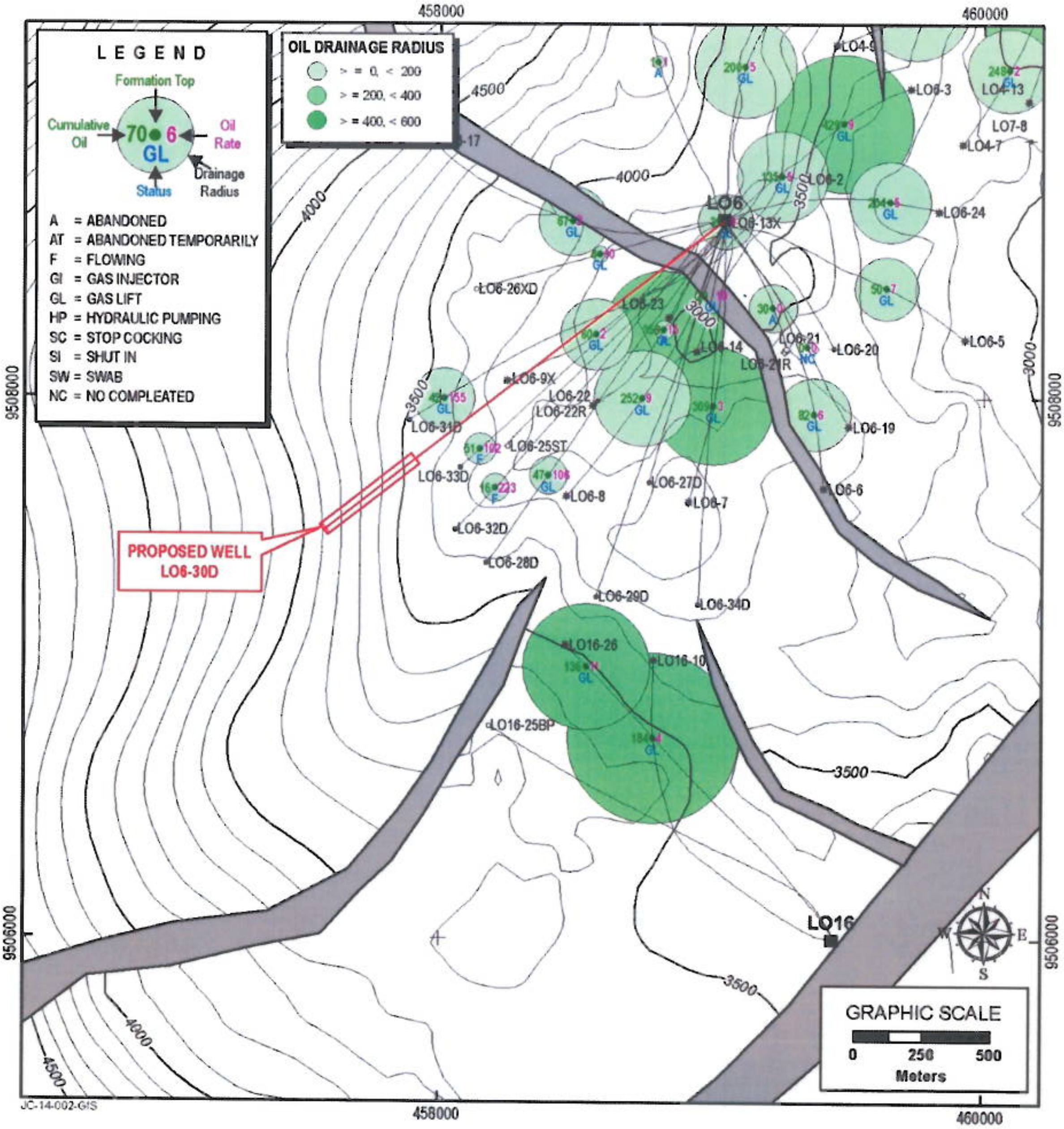


Figure 6

Z-2B LOBITOS FIELD

BUBBLE MAP – RIO BRAVO FORMATION
ESTIMATED OIL PRODUCTION AND RESERVES

J. MUÑOZ Feb 2014



CASO	BASE ft	TOPE ft	Fm.	Pr inic. psi	Pr act. psi	Depl. %	EUR Mbls	Qo bopd
LOW	4350	3530	RIO BRAVO	2128	2128	0%	111	230
BASE	4350	3530	RIO BRAVO	2128	2128	0%	220	460
HIGH	4350	3530	RIO BRAVO	2128	2128	0%	378	790

Figure 7

Z-2B LOBITOS FIELD

DRILLING AND COST TIME-DEPTH CHART

Drilling Department Feb 2014

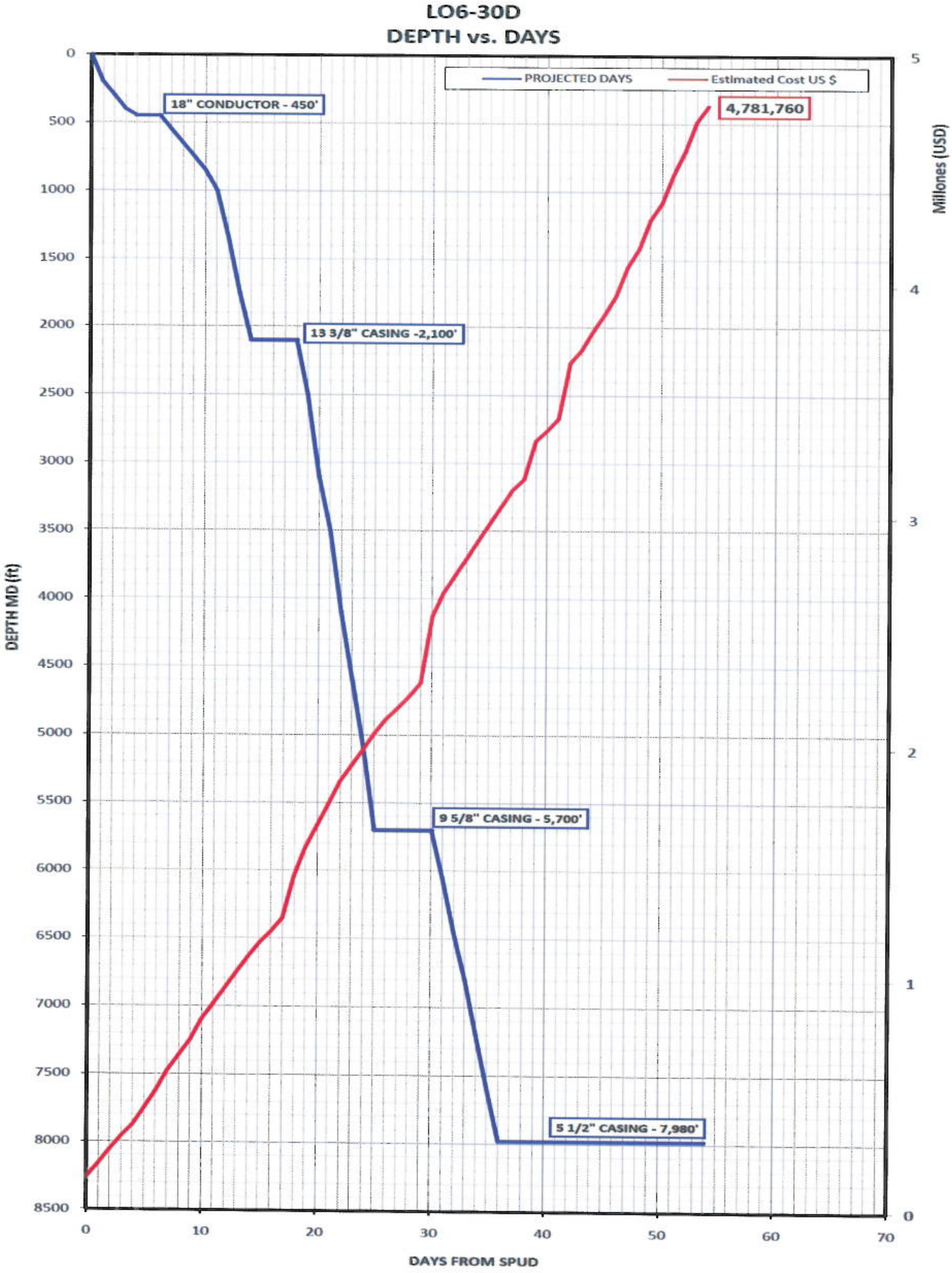


Figure 8

Z-2B LOBITOS FIELD

ECONOMIC SUMMARY AND OIL RATE FORECAST

J. Muñoz Feb. 2014

Economic Summary (Savia)

LO6_30D_2014_BASE

(Nominal values)

Interests & Settings

	Net Revenue	Net Expl	Net Dev	Net Opex	
Company (% of Total)	84.00	0.00	100.00	100.00	
Company (% of Contr)	100.00	0.00	100.00	100.00	
Partner (% of Contr)	0.00	0.00	0.00	0.00	
Contr	84.00	0.00	100.00	100.00	
NOC	0.00	0.00	0.00		0.00
Model	Peru License R Fact (2003)				
Global Params	Savia Perú				
Escalation Date	2014/01				
Discount Date	2014/01				
Economic Limit	2023/12				

Economic Indicators

Disc. Rate (%)	BT NPV (M$)	AT NPV (M$)	BT PIR (fraction)	AT PIR (fraction)	DPI (fraction)	AT ME (M$)	AT IE (fraction)
0.00	13,171.00	8,759.00	2.76	1.83	2.83	-4,780.00	1.83
10.00	9,323.00	5,853.00	1.95	1.22	2.22	0.00	0
10.50	9,183.00	5,747.00	1.92	1.20	2.20	-4,780.00	1.2
11.1	9,021.00	5,625.00	1.89	1.18	2.18	0	0

	[@10.0 %]	[@10.5 %]	[@11.1%]		
AT ROR (%)	186.97	186.97	186.97	Contr Take (%)	52.46
AT Payout (months)	11.00	11.00	11.00	NOC Take (%)	0.00
F&D ($/BOE)	25.83	25.83	25.83	Gov't Take (%)	47.54
Lifting Costs ($/BOE	2.14	2.1	2.07		

Cash Flow Breakdown

	(M$)	($/BOE)	(M$) [@10.5 %]	($/BOE) [@10.5%]	(%)
Net Revenue	18,509.00	100.00	14,498.00	78.33	100.00
Less:					
Bonuses & Fees	0.00	0.00	0.00	0.00	0.00
Operating Costs	557.00	3.01	395.00	2.14	3.01
Tariffs	0.00	0.00	0.00	0.00	0.00
Prod & Asset Taxes	0.00	0.00	0.00	0.00	0.00
Capital Costs	4,780.00	25.83	4,780.00	25.83	25.83
Plus: Other Income/Expense	0.00	0.00	0.00	0.00	0.00
Before Tax Cash Flow	13,171.00	71.16	9,323.00	50.37	71.16
Less Income Tax	4,412.00	23.84	3,470.00	18.75	23.84
After Tax Cash Flow	8,759.00	47.32	5,853.00	31.62	47.32

Reserves and Investments

		Project	Contr	Comp WI	Company
Oil	(MSTB)	220.00	185.00	220.00	185.00
Gas	(MMSCF)	0.00	0.00	0.00	0.00
NGL	(MSTB)	0.00	0.00	0.00	0.00
Tax	(MSTB)	0.00	0.00	0.00	0.00
Total	(MBOE)	220.00	185.00	220.00	185.00

		Project	Contr	NOC	Company
Acquisition	(M$)	0.00	0.00	0.00	0.00
Exploration	(M$)	0.00	0.00	0.00	0.00
Development	(M$)	4,780.00	4,780.00	0.00	4,780.00
Abandonment	(M$)	0.00	0.00	0.00	0.00
Total	(M$)	4,780.00	4,780.00	0.00	4,780.00

Comp Cash Flow

All values are Company (Comp) Share unless specified otherwise.

Date	Sales Volume Oil MSTB	Price Oil $/Bbl	Net Revenue Oil M$	Sales Volume Total MBOE	Net Price [BOE] $/BOE	Net Revenue [BOE] M$	(-) Operating Costs M$	(-) Capital Costs M$	Amortization M$	Taxable Income M$	(=) Before Tax Cash Flow M$	(-) Income Taxes M$	(=) After Tax Cash Flow M$	= After Tax Cash Flow [10.5 %]
2014(12)	61.00	100.00	5,084.00	61	75.00	5,084.00	83.00	4780	1313	3,689.00	222.00	1236	-1,014.00	-1,014.00
2015(12)	35.00	100.00	2,947.00	35	100	2,947.00	69	---	761	2,117.00	2,878.00	709	2,169.00	1,963.00
2016(12)	25.00	100.00	2,076.00	25	100	2,076.00	59	---	536	1481	2,017.00	496	1,521.00	1246
2017(12)	20.00	100.00	1,667.00	20	100	1,667.00	55	---	431	1182	1,613.00	396	1217	902
2018(12)	17.00	100.00	1,425.00	17	100	1425	52	---	368	1005	1373	337	1036	695
2019(12)	15.00	100.00	1,259.00	15	100	1259	50	---	325	883	1209	296	913	554
2020(12)	14.00	100.00	1,140.00	14	100	1140	49	---	294	796	1091	267	824	453
2021(12)	12.00	100.00	1,042.00	12	100	1042	48	---	269	725	994	243	751	373
2022(12)	11.00	100.00	966.00	11	100	966	47	---	249	669	919	224	695	312
2023(12)	11.00	100.00	903.00	11	100	903	46	---	233	624	857	209	648	264
Total	220.00	100.00	18,509.00	220.00	---	18,509.00	557.00	4,780.00	4,780.00	13,171.00	13,171.00	4,412.00	8,759.00	5,747.00

Peep Version 2009.1

CONSIDERATIONS

Net Revenue Interest %	84%
Discount Rate %	10.5%
Tax	30%
Variable Cost, US$/BL	0.91
Fixed MUS$/Year	36.6
Cost MUS$	4,780
Oil Price according Portfolio MTP 2013: 100 US$/BL from 2013 to 2023	

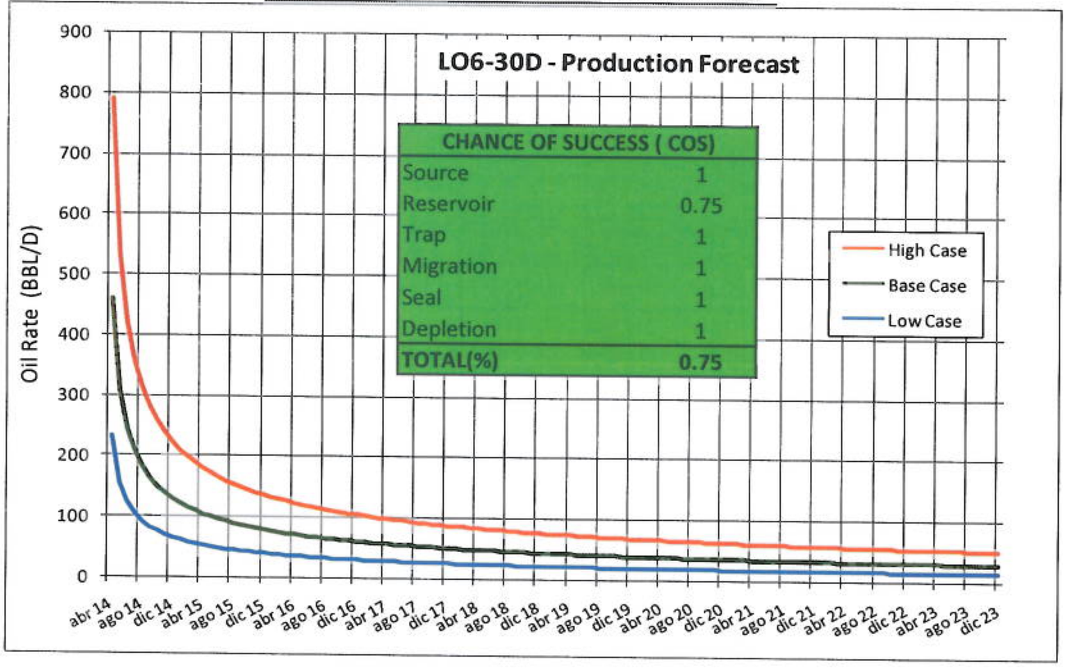


TABLE A

Z-2B LOBITOS FIELD

AFE

Drilling Department Feb. 2014

SAVIA PERÚ

CIA	ACD	BUDGET ITEM
06		

A F E No.

FU	WELL DESCRIPTION	OFICIAL NUMBER	MM / DD / AA
18	LO6-30D	SAVIA-Z2B-24-LO6-30D	

			TOTAL ESTIMATED DAYS			
FU	TYPE OF WELL	MOV / COND	DRILLING	COMPLETION	EST. FOOTAGE	AREA
19	DEVELOPMENT	3	36	18	7980	LOBITOS

FU	GEN	CC	AREA
20		061	

WELL COST BREAKDOWN

SUB	DESCRIPTION	QUANTITY	UNIT COST	SUB-TOTAL	TOTAL US$
	OUTSIDE SERVICES:				
201	DRILLING RIG	21 36			1 219 500
203	DIRECTIONAL DRILLING				389 740
204	MUD LOGGING	35	1450		50 750
205	MUD ENGINEERING				157 330
206	CEMENT CONDUCTOR				16 200
206	CEMENT. SURF. CSG (13 3/8")				22 700
206	CEMENT. INTERM. CSG (9 5/8")				23 200
206	CEMENT. OTHERS				18 200
206	CEMENT 7" CSG.				0
206	CEMENT. 5.5" CSG				24 200
207	ELECTRIC LOGGING				150 000
208	PERFORATING				90 000
209	STIMULATION				120 000
211	TUBULAR INSPECTION				13 250
212	HYDRAULIC TONGS				43 000
213	DIVING				24 000
219	WELL TESTING				15 000
221	TOOL SERVICES				150 000
224	METALIC STRUCTURES CUT & WELD				2 500
228	MACHINE WORK				7 500
229	BARGE OPERATIONS				299 250
231	BOAT OPERATIONS				359 000
237	MATER. & EQUIP. TRANSP.				19 950
240	WATER FURNISHING				5 000
243	CHARTER				0
244	TOOLS RENTAL				40 800
248	CATERING				82 080
249	CONSULTING				51 830
252	ENVIRONMENTAL PROTECTION				9 000
	TOTAL OUTSIDE SERVICES:				**3 403 980**
	MATERIALS & SUPPLIES:				
301	FITTING SCREWED				500
303	VALVES AND PARTS				1 000
304	API FLANGES & RING GASKET				1 000
306	HARDWARE				1 000
323	PROTECTION ENVIROMENTAL				1 000
325	BITS				105 500
326	TOOLS FOR DRILLING				63 790
327	COMPLETION EQUIPMENT				93 500
328	FLOATING EQUIPMENT - CMT.				21 380
329	PRODUCTION FACILITIES EQUIP.				3 000
335	OTHERS TUBULAR CONNECTIONS				12 000
336	STRUCTURAL CONST. MAT.				10 000
340	WELDING MATERIAL				700
341	MAT. CMT. CONDUCT.				2 250
341	MAT. CMT. SURF. CSG. (13 3/8")				15 330
341	MAT. CMT. INTERM. CSG. (9 5/8")				27 000
341	MAT. CMT. 7" CSG.				0
341	MAT. CMT. 5.5" CSG.				25 300
341	MAT. CMT. OTHERS				5 640
342	STIMULATION MATERIAL				120 000
343	DRILLING / COMPLETION FLUIDS				128 710
344	CONDUCTORS	450	37.52		16 880
344	SURFACE CSG. (13 3/8")	2100	35.11		73 730
344	INTERM. CSG. (9 5/8")	5700	28.38		161 770
344	7" CSG.	0	18.33		0
344	5.5" CSG.	7980	11.53		92 010
344	4.5" LINER	0	0.00		0
344	2 7/8" TUBING	7500	4.68		35 100
346	DIESEL-FUEL				354 190
347	OIL & GRASES				7 500
	TOTAL MATERIALS & SUPPLIES:				**1 377 780**
			TOTAL PROJECT COST US $		**4 781 760**

TABLE B