Oficina principal
Av. Rivera
Navarrete 501,
Piso 11, San Isidro
Lima-Perú
T (511) 513 7500
F (511) 441 4217

Oficina Talara
Av. Jorge Chávez s/n
La Brea-Negritos,
Talara-Perú
Apartado 5-C Talara
T (51) (073) 284 000
F (51) (073) 393 137

SAVIA Perú S.A.
www.saviaperu.com

SAVIA PERÚ

INTEROFFICE MEMORANDUM
DEVM-026-2014

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

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

Date: 10th April 2014

Subject: **Proposal to Drill Development Well LO6-35D**

It is recommended to drill the development well LO6-35D to develop 192 MBO of reserves in Basal Salina Formation in the southwest of LO6 platform. Programmed TD is 9581' MD (-7580' VSS) and well cost estimated is 5,054 MU$ (Figures 1, 2, 3, 4).

LO6-35D is proposed as a directional well; with a maximum vertical angle of 54° towards S 04° W (Fig.1).

The chance of success (COS) is 68% (Table A).

The proposed location LO6-35D for Basal Salina is located 900 meters toward Northwest of LO6-25ST which had an IPR of 866 BOPD and had accumulated 882 MBO. Other well in the same block is LO6-22R which penetrated only 10 feet of Basal Salina with an accumulated 330 MBO (Fig.7).

The depositional model of the Basal Salina, based on cores and sedimentary studies, indicates that this formation was deposited as Turbidity submarine fans. Lithologically, the Basal Salina formation is composed of medium to coarse grained sandstones and conglomerates, interbedded with thin shale breaks, and according to sedimentary deposition trend, it is expected to find lithological characteristics similar to well LO16-14 with porosities ranging from 7.5 to 8.5%.

The Mogollon formation is considered as a secondary objective where the most recent wells completed LO6-27D, LO6-29D and LO6-34D had an initial rate of 219 BOPD, 834 BOPD and 465 BOPD respectively (Fig. 4, 8, 9, 10).

For a complete evaluation, better understanding and modeling of Basal Salina 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:

- Lateral sedimentary changes that could reduce the net sand thickness and petrophysics properties.

Oficina principal
Av. Rivera
Navarrete 501,
Piso 11, San Isidro
Lima-Perú
T (511) 513 7500
F (511) 441 4217

Oficina Talara
Av. Jorge Chávez s/n
La Brea-Negritos,
Talara-Perú
Apartado 5-C Talara
T (51) (073) 284 000
F (51) (073) 393 137

SAVIA Perú S.A.
www.saviaperu.com

SAVIA PERÚ

ECONOMIC SUMMARY

CASE	IP (BOPD)	EUR (MBO)	CAPEX (MUS$)	NPV 10.5% (M$)	PAY OUT (YRS)	AT PIR	ROR (%)
LOW	250	91	5,054	291	6.42	0.06	14
BASE	530	192	5,054	4,891	1.33	0.97	>100
HIGH	1,050	381	5,054	13,435	0.75	2.66	>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$	5,054
Oil Price according Portfolio MTP 2012: 100 US$/BL from 2014 to 2023	

Base case reserves and IPR for this well are estimated 192 MBO & 530 BOPD respectively, the drilling cost estimated is US$ 5,054 M, and NPV is US$ 4,891 M using portfolio parameters with discount rate of 10.5% (Figures 11, 12 & Tables A & B)

Proposed well is supported with AFE N° 2214357, EIA with Directorial 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
M. Chavez		

Attached Documents

Fig.1: Top Basal Salina Fm., showing the proposed well LO6-35D
Fig.2: Geological Prognosis
Fig.3: Seismic Line showing the proposed well LO6-35D
Fig 4: NW-SE Structural section for proposed well LO6-35D
Fig.5: Upper BS Fm. Gross Sand Map for proposed well LO6-35D
Fig.6: Lower BS Fm. Gross Sand Map for proposed well LO6-35D
Fig.7: NW-SE Stratigraphic correlation of Basal Salina Fm. for proposed well LO6-35D
Fig.8: Top Mogollon Fm., showing the proposed well LO6-35D
Fig.9: Mogollon Fm. Gross Sand Map for proposed well LO6-35D
Fig.10: NW-SE Stratigraphic correlation of Mogollon Fm. for proposed well LO6-35D
Fig 11: Estimated Oil production of Basal Salina and closest producers wells
Fig 12: Drilling and Cost Time-Depth Chart of well LO6-35D
Table A: Economic Summary and Oil rate forecast for well LO6-35D
Table B: AFE for Proposed well LO6-35D

SAVIA PERÚ

Z-2B LOBITOS FIELD

TOP UPPER BASAL SALINA FM. – DEPTH STRUCTURE MAP

H. Cornejo / E. Borda Apr 2014

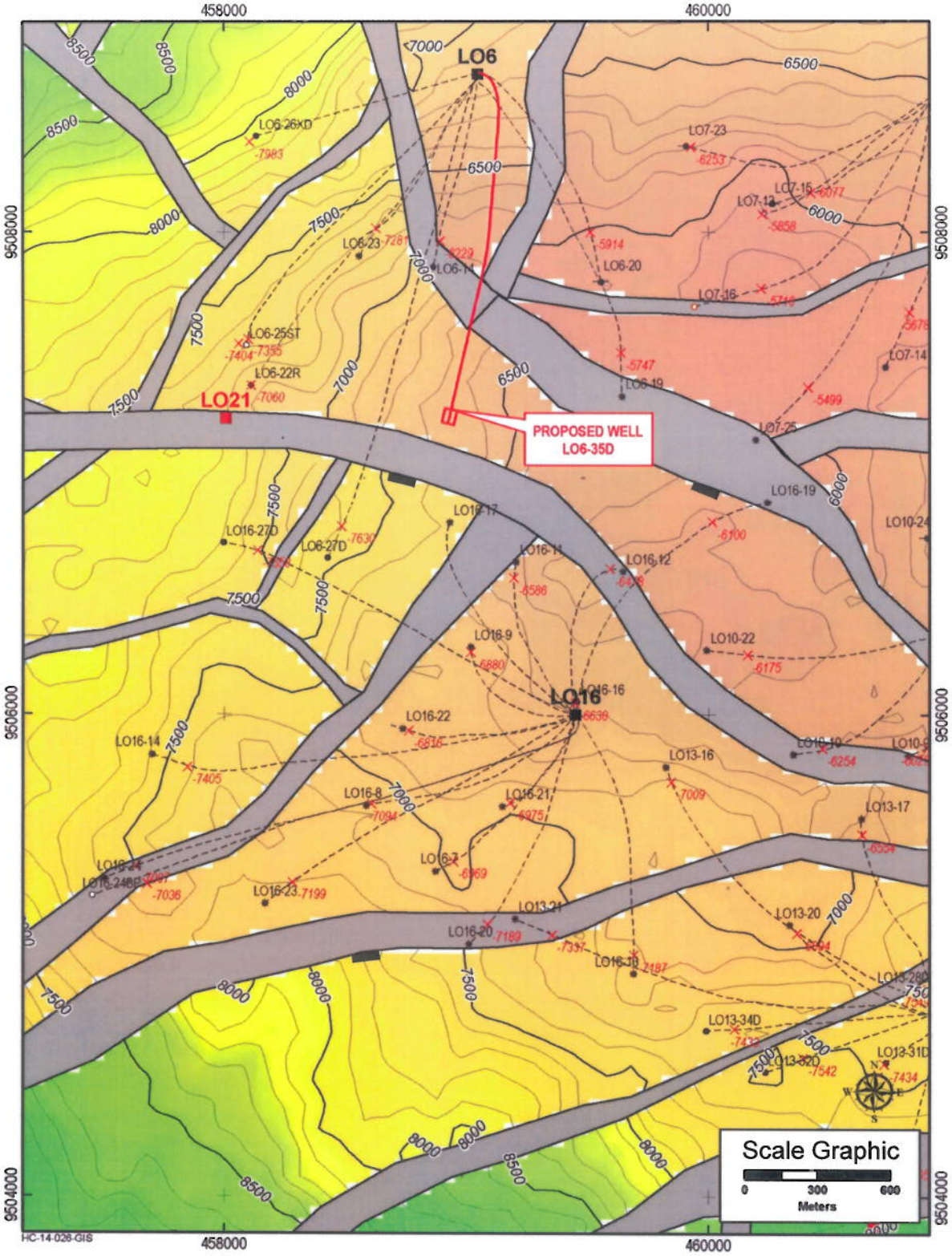


Figure 1

GEOLOGIC PROGNOSIS

AREA	OFFICIAL WELL NUMBER	SAVIA PERU SA.	TYPE OF WELL	RIG N°
LOBITOS OFFSHORE		LO6-35D	DEVELOPMENT	PEPESA-40

PRIMARY OBJECTIVE	SECONDARY OBJECTIVE
BASAL SALINA	RIO BRAVO, MOGOLLON

SURFACE COORDINATES (UTM) (WGS-84)	TARGET COORDINATES (UTM) (WGS-84)
9'508,661.53 MN 459,049.27 ME	9'507,264.39 MN 458,937.62 ME

ELEVATION: KB:	50 FT	DIRECTION OF DEVIATE WELL	S 4.56° W	DRILLED DEPTH	8,630 FT	ESTIMATED FINAL TO	9,581 FT
WATER DEPTH	335 FT	ANGLE CONDUCTOR FROM VERTICAL	VERT.	VERTICAL DEPTH	6,700 FT	HORIZONTAL DRIFT T.D	4,796 FT
GROUND LEVEL	FT	RECOMENDED DEPTH OF K.O.P.	480 FT	HORIZONTAL DRIFT	4,600 FT	MAX. ANGLE	54.20°
		BUILD UP ANGLE AT	Drop vert. Angle 3.5°/100 FT.	LIMITS (DIAMETER) TO MAIN OBJECTIVE. (MOGOLLON)	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	1,861	1,750	1,700	
	RIO BRAVO	4,156	3,150	3,100	
	PALEGREDA	6,093	4,400	4,350	
	MOGOLLON	6,587	4,800	4,750	N 9'507,475.65 E: 458,986.28.00 SECONDARY OBJECTIVE
	SAN CRISTOBAL	7,542	5,650	5,600	
	BASAL SALINA	8,630	6,700	6,650	MAIN OBJECTIVE
	BALCONES	9,346	7,400	7,350	
	TD	9,581	7,630	7,580	

CORING	BIT SAMPLES TO BE TAKEN	EVERY 30 FT.FROM SURFACE TO 4000' EVERY 10 FT. FROM 4000' TO TOTAL DEPTH
	RECOMMENDED FOR PALEO-PALYNOLOGY	PALEONTOLOGY AT REQUEST BY LEADER OFFICE
LOGGING	RECOMMENDED OPEN HOLE	GR-DLL-DEN-NEUT Pressure Test (10 Points in Basal Salina)
	RECOMMENDED AFTER CASING	GR-CCL
	NEARBY WELLS FOR CORRELATION	LO6-29D, LO6-27D,LO6-7,LO6-34D ,LO6-27D,LO16-27D
EVALUATION	SIDEWALL CORES	SWC * HRCT NOT CONSIDERED
	CONVENTIONAL CORES	NOT CONSIDERED
	GAS LOGGER	MUD LOGGING UNIT.
	FORMATION TESTING	NOT CONSIDERED

REMARKS

At 4156 ft. MD, drop vertical angle 1°/100 ft. to reach 12° to TD.
It necessary to keep the well to left of the prognosis line, due to proximity of well LO6-7 at Rio Bravo level.

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

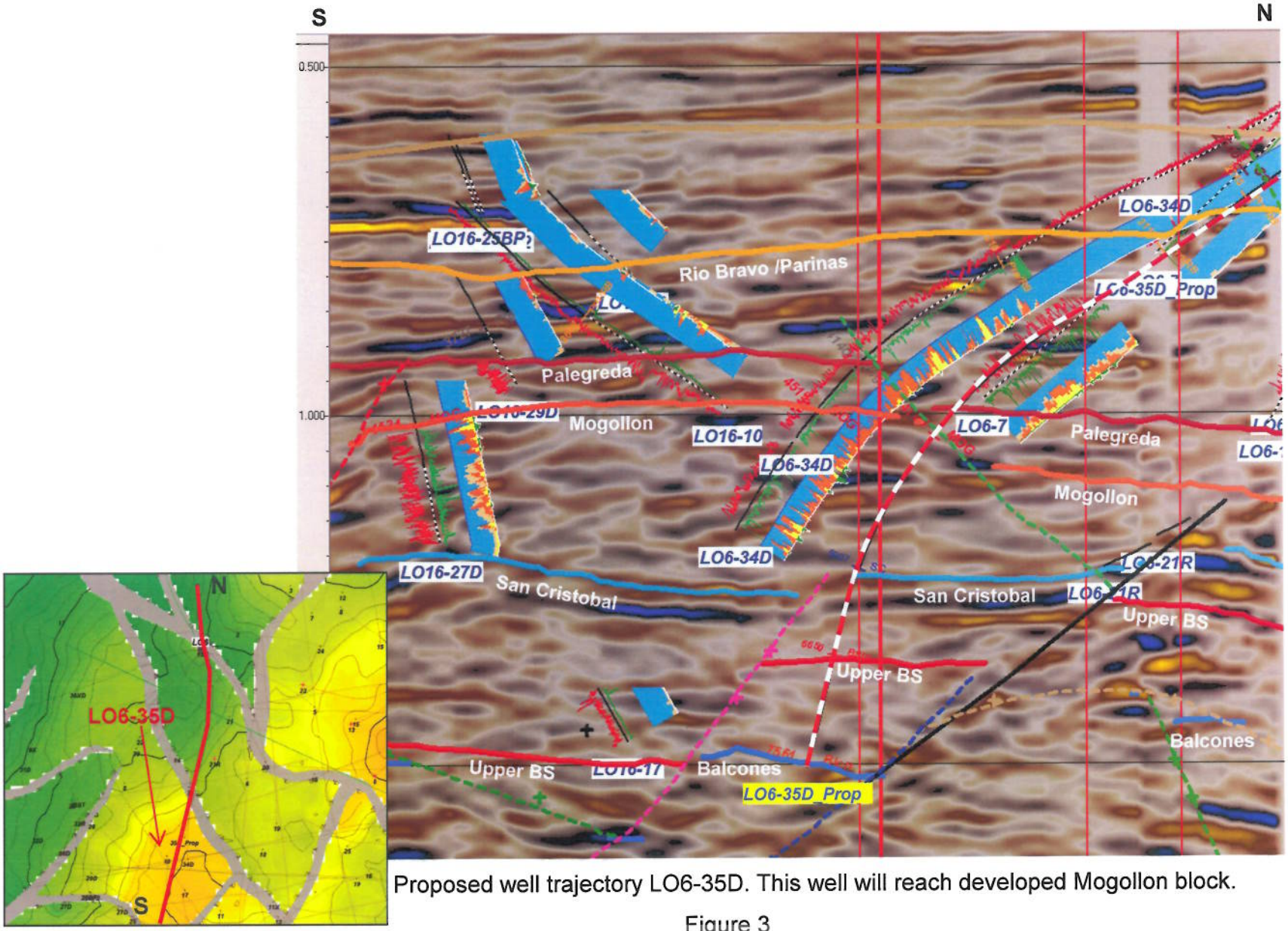
Figure 2

Block Z-2B

LO6 Project

3D Seismic showing the proposed well LO6-35D

E.Borda Apr 2014



Proposed well trajectory LO6-35D. This well will reach developed Mogollon block.

Figure 3

LOBITOS FIELD
N-S STRUCTURAL SECTION FOR PROPOSED WELL LO6-35D

Graphic Scale

H. Cornejo

Apr 2014

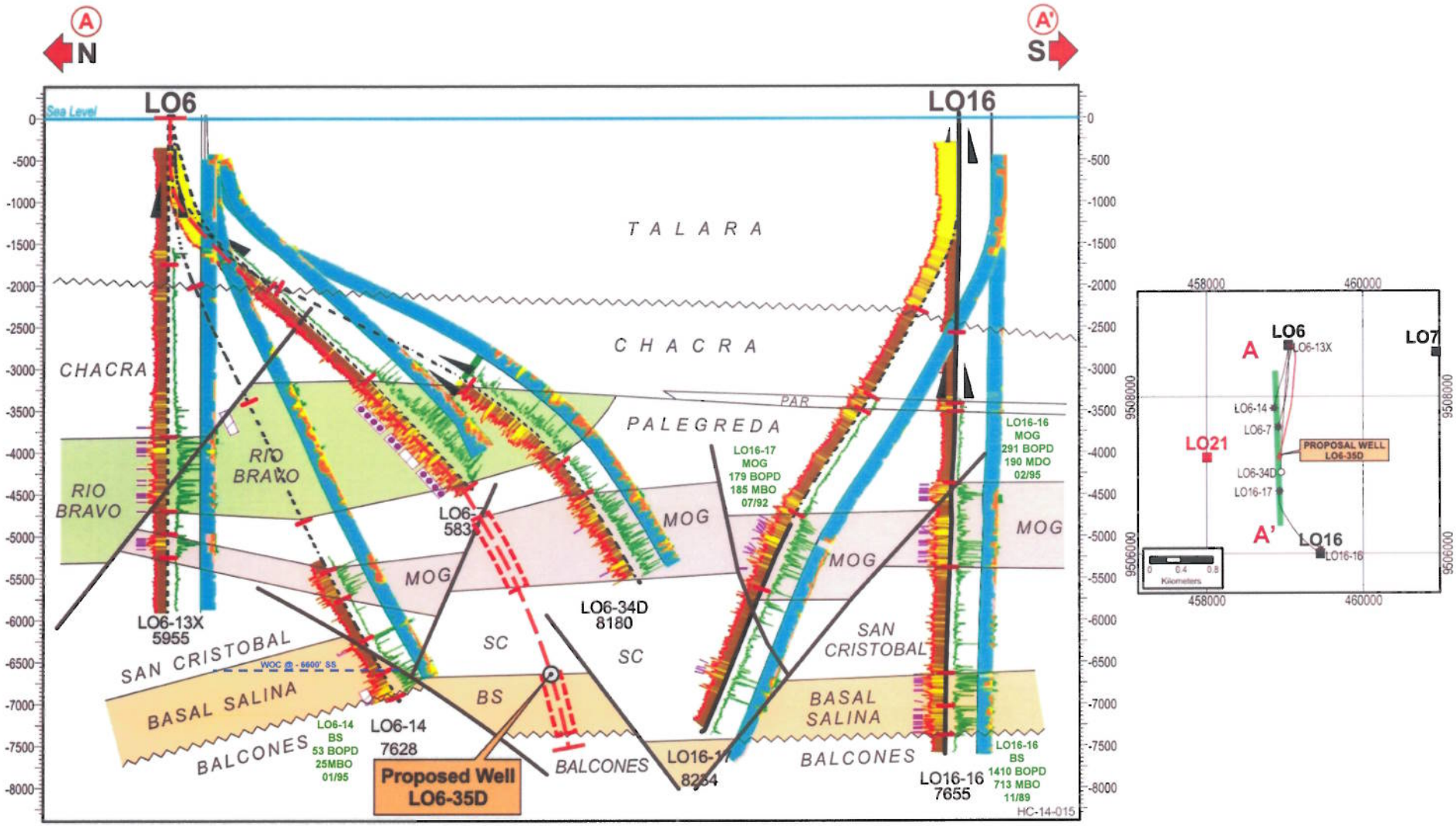


Figure 4

SAVIA PERÚ

Z-2B LOBITOS FIELD

UPPER BASAL SALINA FM. – GROSS SAND MAP

C. Canales/ E. Coronado Apr. 2014

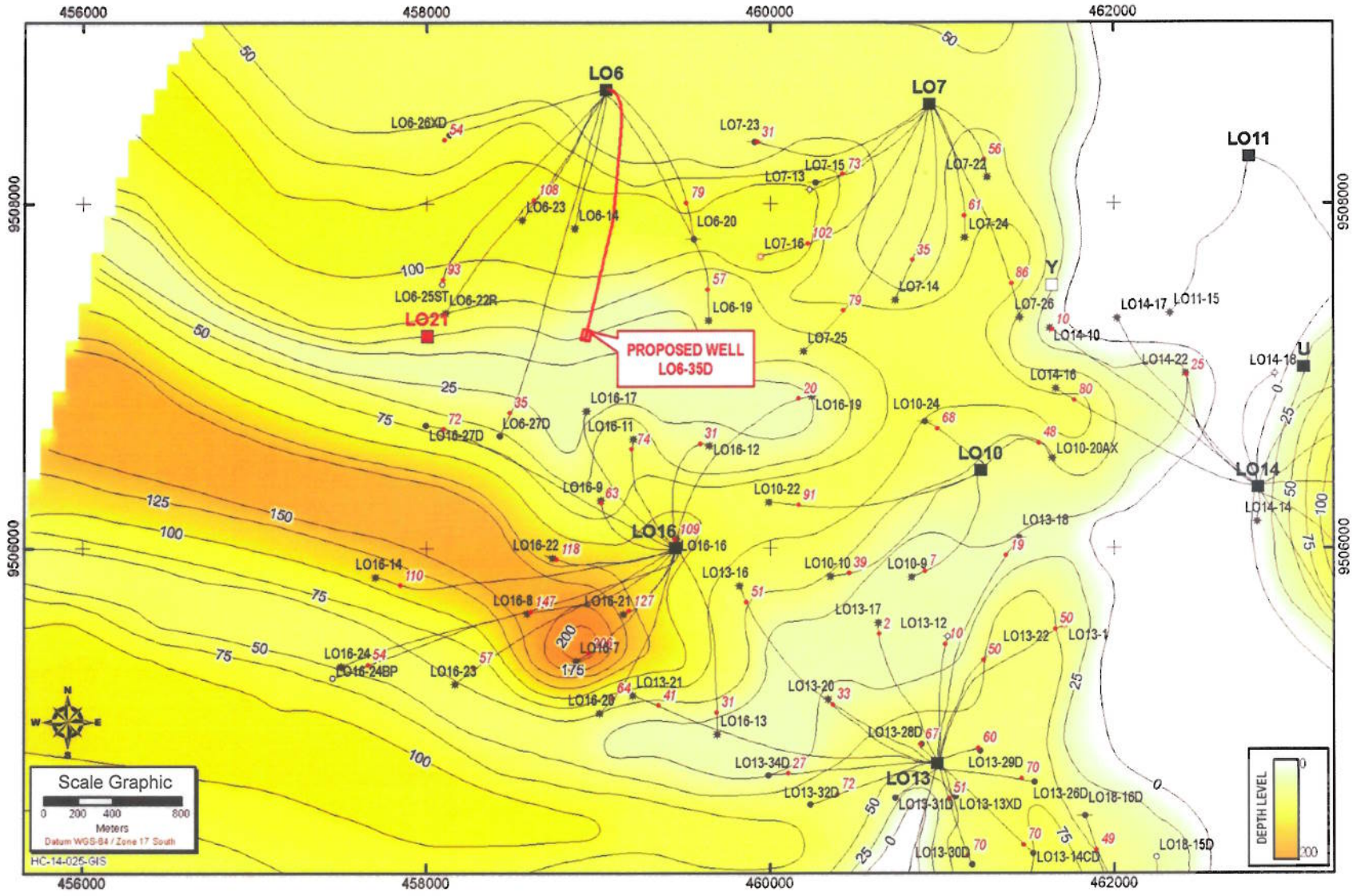


Figure 5

SAVIA PERÚ

Z-2B LOBITOS FIELD

LOWER BASAL SALINA FM. – GROSS SAND MAP

C. Canales/ E. Coronado Apr. 2014

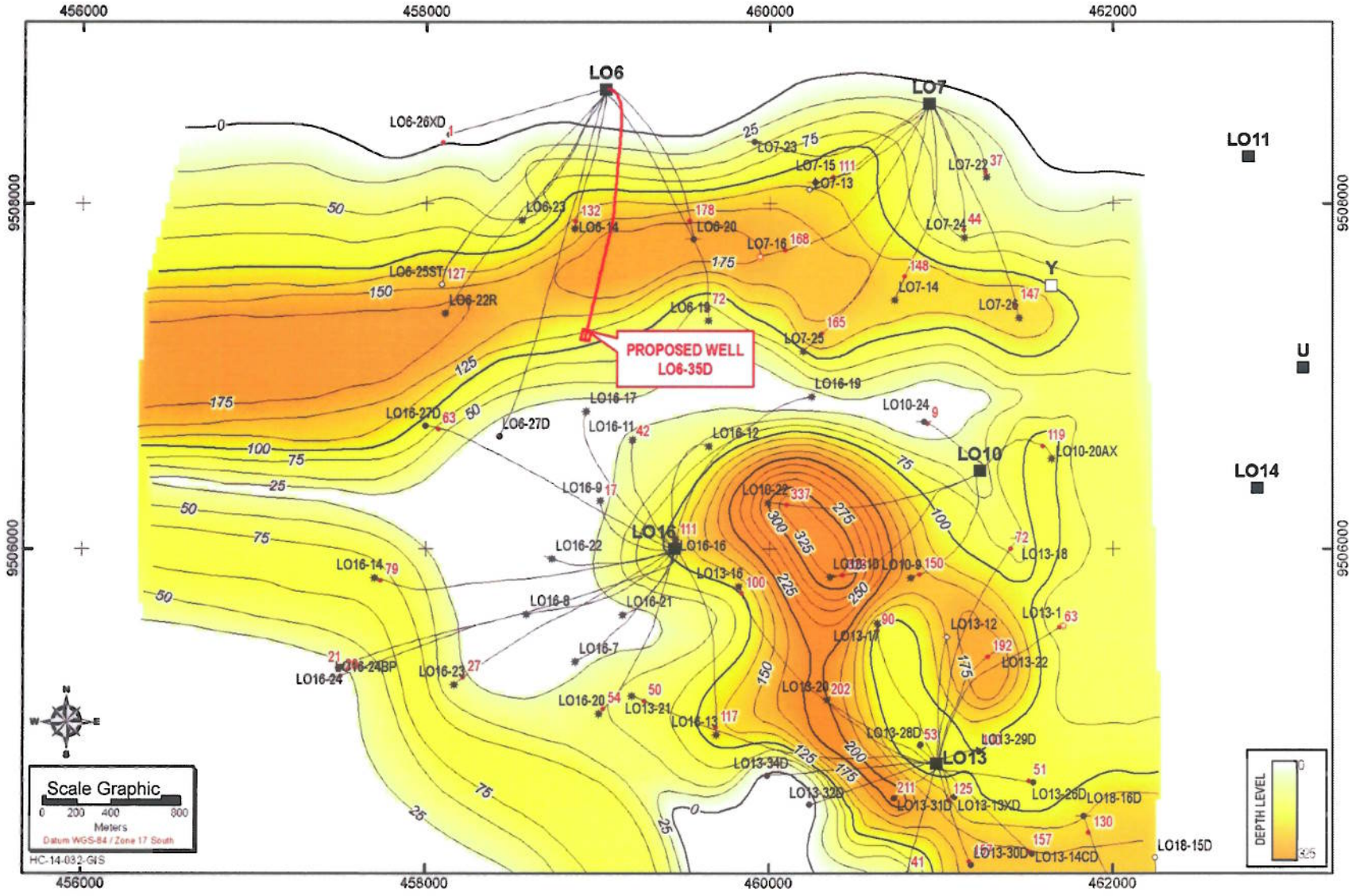


Figure 6

LOBITOS FIELD
WE STRATIGRAPHIC SECTION SHOWING THE PROPOSED WELL LO6-35D BS FM

Graphic Scale

H. Cornejo

Apr 2014

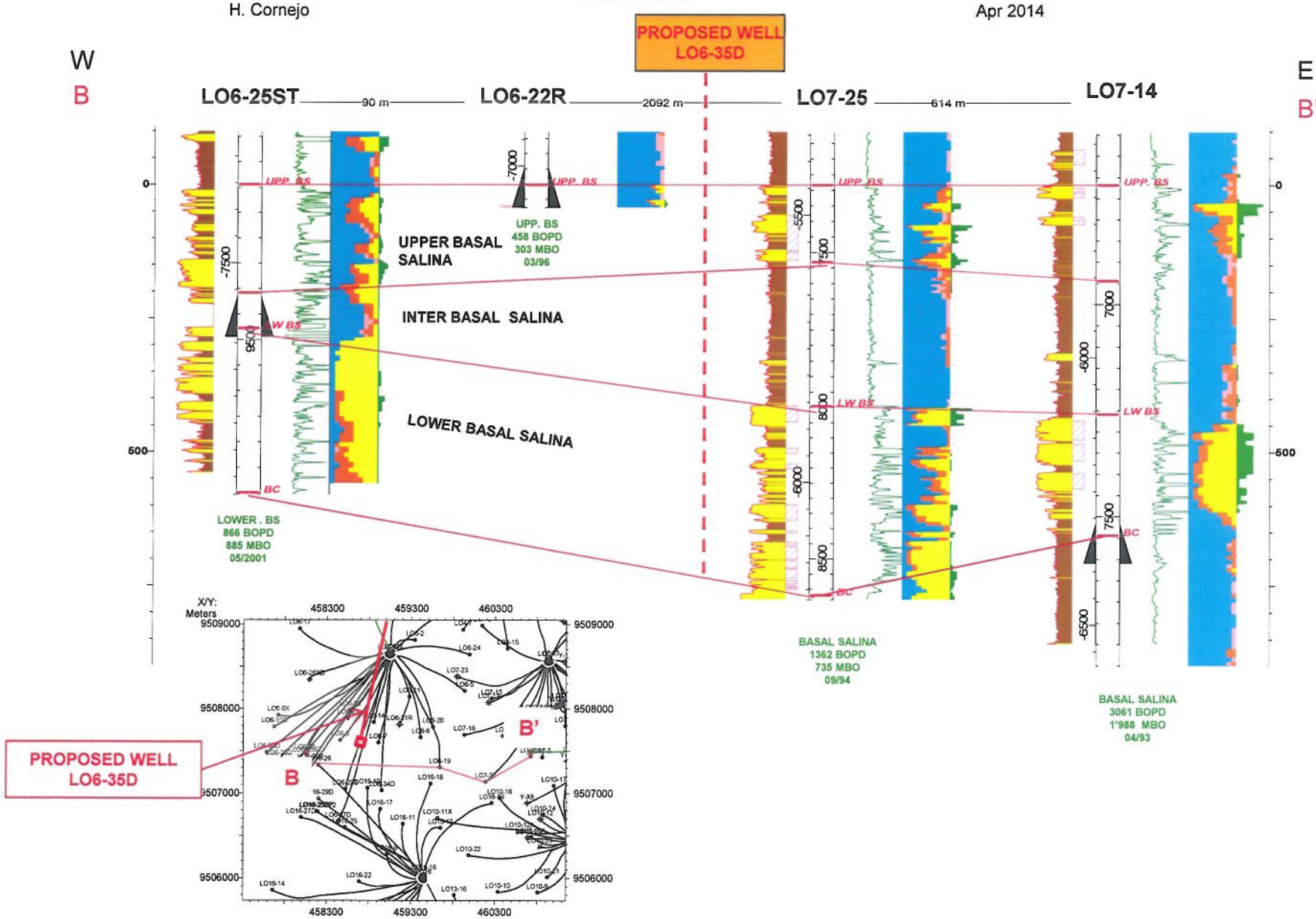


Figure 7

SAVIA
PERÚ

Z-2B LOBITOS FIELD

TOP MOGOLLON FM. – DEPTH STRUCTURE MAP

H. Cornejo / E. Borda Apr 2014

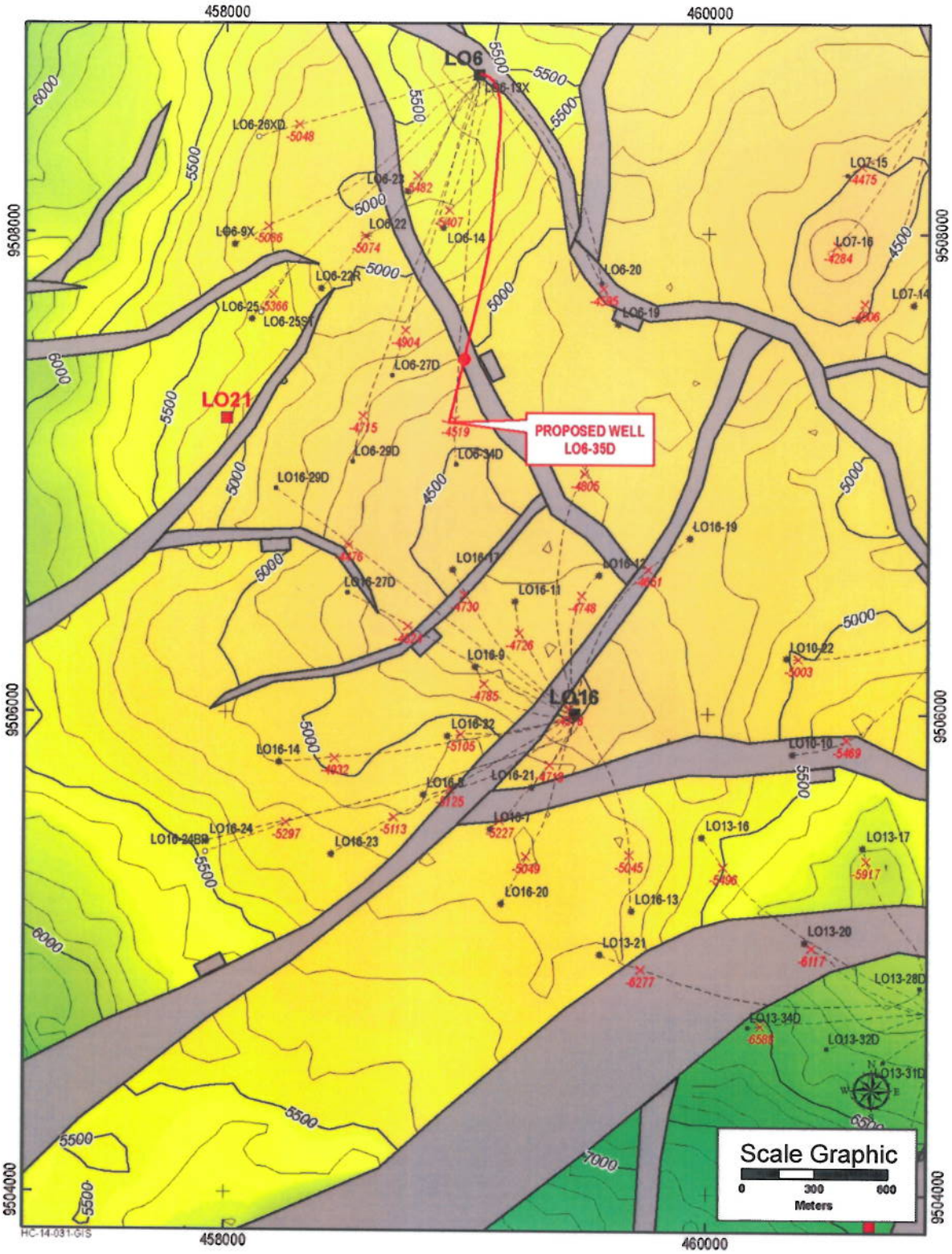


Figure 8

SAVIA
PERÚ

Z-2B LOBITOS FIELD

MOGOLLON FM. – GROSS SAND MAP

C. Canales/ E. Coronado Apr. 2014

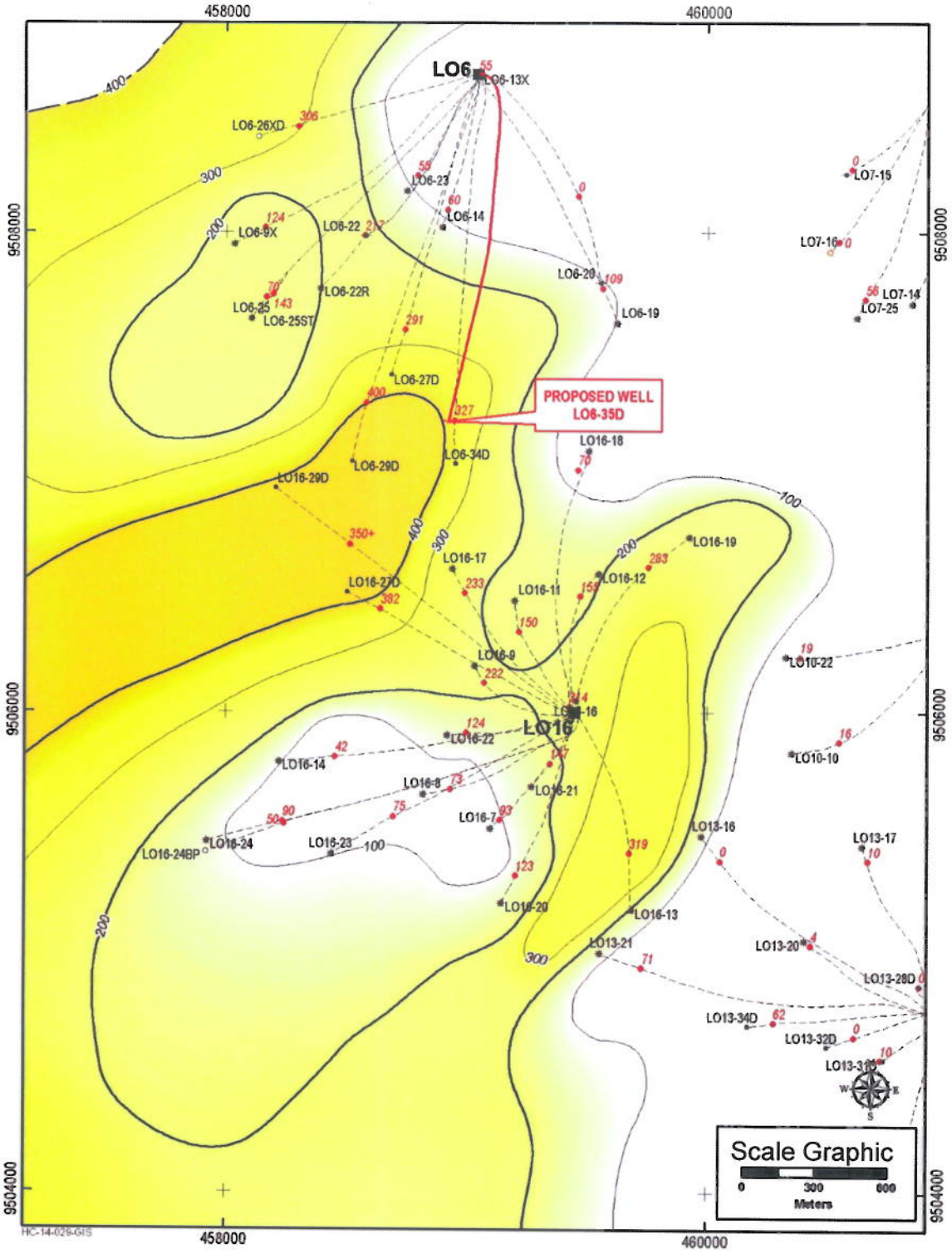


Figure 9

LOBITOS FIELD

NW-SE STRATIGRAPHIC SECTION SHOWING THE PROPOSED WELL LO6-35D MOGOLLON

Graphic Scale

H. Cornejo

Apr 2014

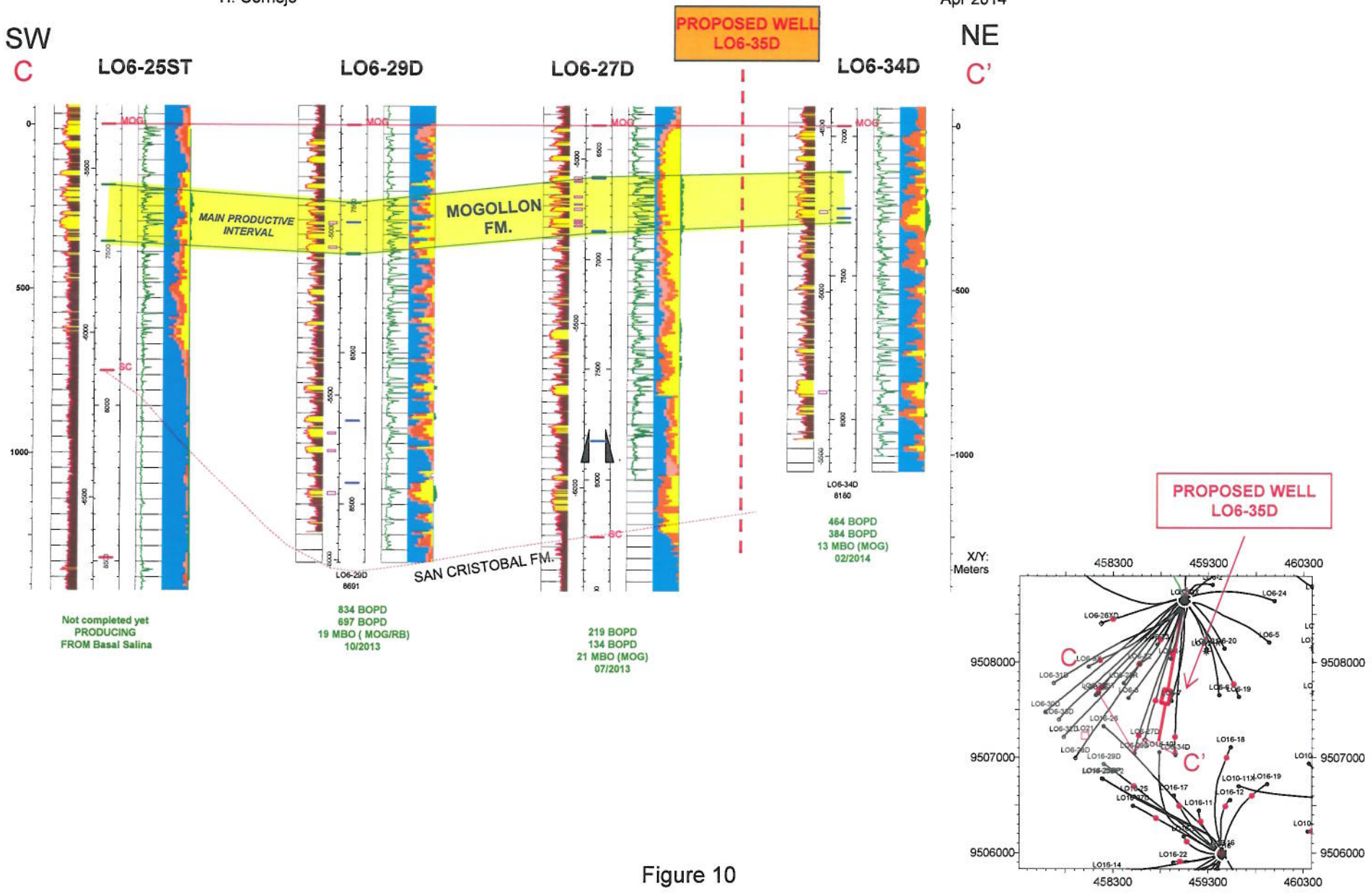


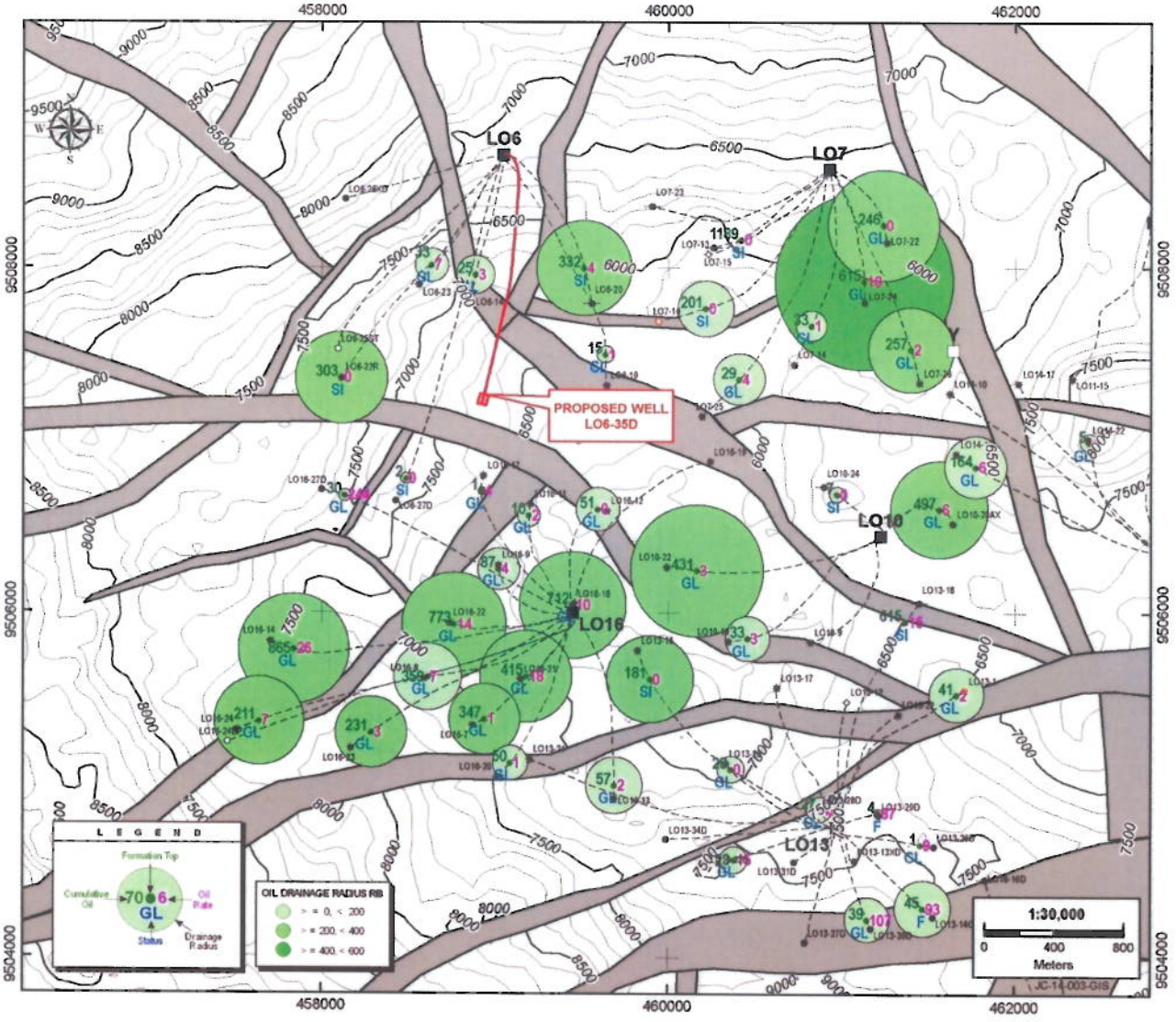
Figure 10

SAVIA PERÚ

Z-2B LOBITOS FIELD

BUBBLE MAP – UPPER BS FORMATION
ESTIMATED OIL PRODUCTION AND RESERVES

J. MUÑOZ Apr 2014



CASO	BASE ft	TOPE ft	Fm.	Pr inic. psi	Pr act. psi	Depl. %	EUR Mbls	Qo bopd
LOW	7400	6700	BASAL SALINA	3948	1974	50%	91	250
BASE	7400	6700	BASAL SALINA	3948	3948	0%	191	530
HIGH	7400	6700	BASAL SALINA	3948	3948	0%	381	1050

Figure 11

Z-2B LOBITOS FIELD

DRILLING AND COST TIME-DEPTH CHART

Drilling Department Apr 2014

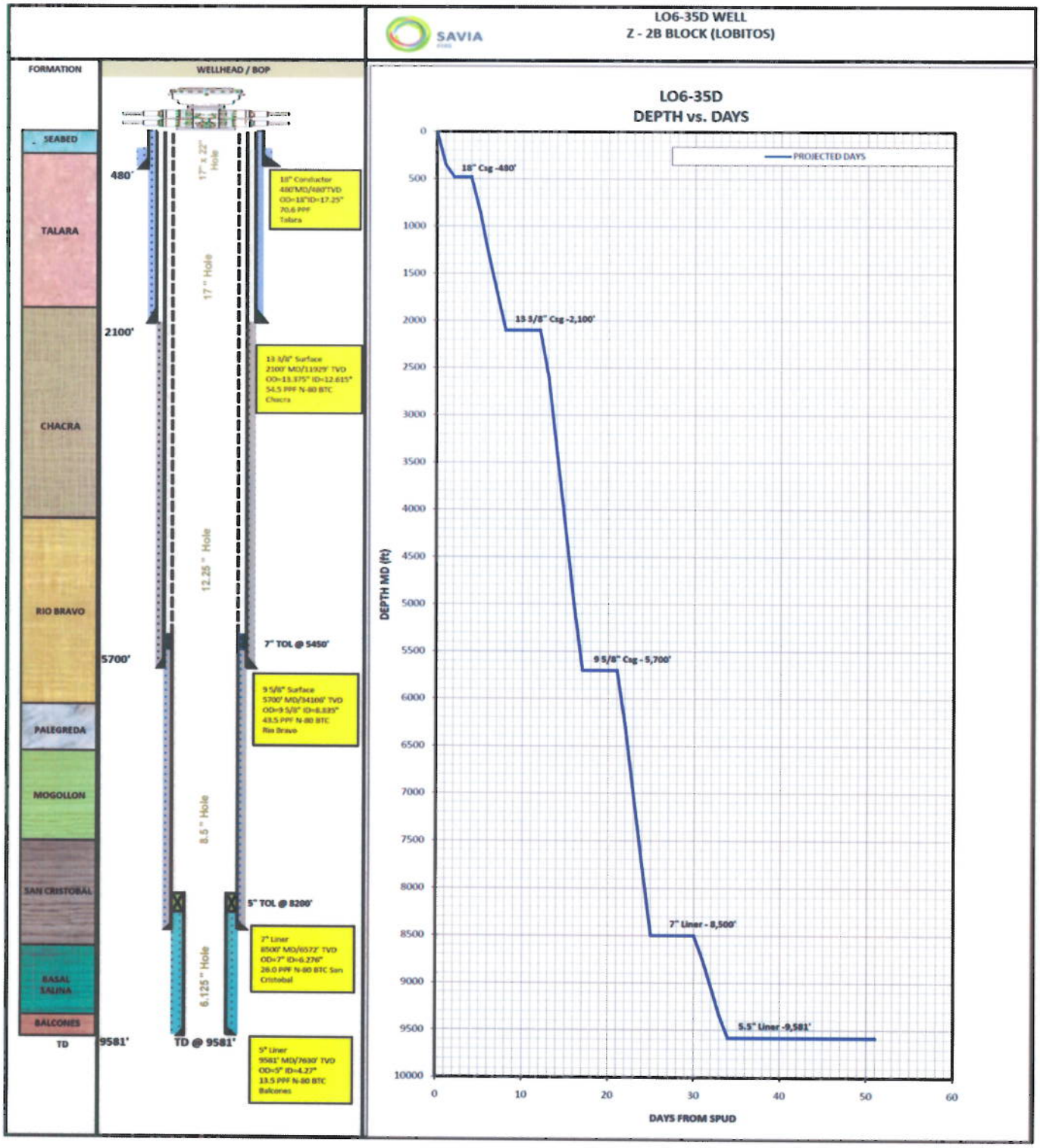


Figure 12

Z-2B LOBITOS FIELD

ECONOMIC SUMMARY AND OIL RATE FORECAST

J. Muñoz Apr. 2014

Economic Summary (Savia)
LO6_35D_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	10,562.00	7,024.00	2.09	1.39	2.39	-5,057.00	1.39
10.00	7,913.00	4,968.00	1.57	0.98	1.98	0.00	0
10.50	7,813.00	4,891.00	1.55	0.97	1.97	-5,057.00	0.97
11.1	7,696.00	4,801.00	1.52	0.95	1.95	0	0

	[@10.0 %]	[@10.5 %]	[@11.1%]		
AT ROR (%)	162.46	162.46	162.46	Contr Take (%)	51.51
AT Payout (months)	16.00	16.00	16.00	NOC Take (%)	0.00
F&D ($/BOE)	31.31	31.31	31.31	Gov't Take (%)	48.49
Lifting Costs ($/BOE	2.33	2.3	2.26		

Cash Flow Breakdown

	(M$)	($/BOE)	(M$) [@10.5 %]	($/BOE) [@10.5%]	(%)
Net Revenue	16,141.00	100.00	13,343.00	82.67	100.00
Less:					
Bonuses & Fees	0.00	0.00	0.00	0.00	0.00
Operating Costs	526.00	3.26	377.00	2.33	3.26
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	5,054.00	31.31	5,054.00	31.31	31.31
Plus: Other Income/Expense	0.00	0.00	0.00	0.00	0.00
Before Tax Cash Flow	10,562.00	65.43	7,913.00	49.02	65.43
Less Income Tax	3,538.00	21.92	2,944.00	18.24	21.92
After Tax Cash Flow	7,024.00	43.51	4,968.00	30.78	43.51

Comp Cash Flow

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

Reserves and Investments

		Project	Contr	Comp WI	Company
Oil	(MSTB)	192.00	161.00	192.00	161.00
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)	192.00	161.00	192.00	161.00

		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$)	5,054.00	5,054.00	0.00	5,054.00
Abandonment	(M$)	0.00	0.00	0.00	0.00
Total	(M$)	5,054.00	5,054.00	0.00	5,054.00

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)	57.00	100.00	4,791.00	57	50.00	4,791.00	73.00	5,054.00	1,500.00	3,218.00	-336.00	1,078.00	-1,414.00	-1,414.00
2015(12)	46.00	100.00	3,860.00	46	100	3,860.00	78	---	1,208.00	2,573.00	3,781.00	862	2,919.00	2,642.00
2016(12)	24.00	100.00	2,034.00	24	100	2,034.00	59	---	637	1,338.00	1,975.00	448	1,527.00	1,250.00
2017(12)	16.00	100.00	1,373.00	16	100	1,373.00	51	---	430	892	1,322.00	299	1,023.00	758
2018(12)	12.00	100.00	1,032.00	12	100	1,032.00	48	---	323	661	984	221	763	512
2019(12)	10.00	100.00	824.00	10	100	824	46	---	258	520	778	174	604	367
2020(12)	8.00	100.00	684.00	8	100	684	44	---	214	426	640	143	498	273
2021(12)	7.00	100.00	584.00	7	100	584	43	---	183	358	541	120	421	209
2022(12)	6.00	100.00	509.00	6	100	509	42	---	159	307	467	103	364	164
2023(12)	5.00	100.00	450.00	5	100	450	41	---	141	268	409	90	319	130
Total	192.00	100.00	16,141.00	192.00	---	16,141.00	526.00	5,054.00	5,054.00	10,562.00	10,562.00	3,538.00	7,024.00	4,891.00

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$	5,054

Oil Price according Portfolio MTP 2012: 100 US$/BL from 2014 to 2023

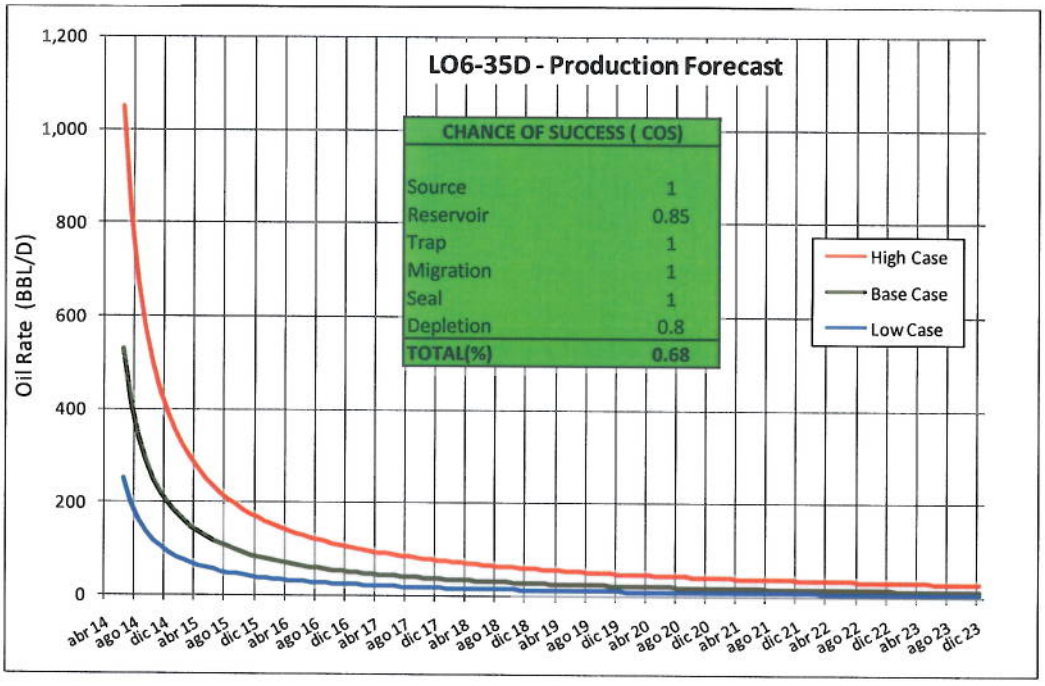


TABLE A

Z-2B LOBITOS FIELD

AFE

Drilling Department Apr. 2014

CIA	ACD	BUDGET ITEM
06		

AFE No.
2214357

FU	WELL DESCRIPTION	OFICIAL NUMBER	MM / DD / AA
18	LO6-35D	SAVIA-Z2B-24-LO6-35D	

TOTAL ESTIMATED DAYS

FU	TYPE OF WELL	MOV / COND	DRILLING	COMPLETION	EST. FOOTAGE	AREA
19	DEVELOPMENT	3	34	17	9581	LOBITOS

FU	GEN	CC	AREA
20		061	

WELL COST BREAKDOWN

SUB	DESCRIPTION	QUANTITY	UNIT COST	SUB-TOTAL	TOTAL US$
	OUTSIDE SERVICES:				
201	DRILLING RIG	20 34			1 155 000
203	DIRECTIONAL DRILLING				440 210
204	MUD LOGGING	35	1450		50 750
205	MUD ENGINEERING				209 010
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.				21 200
206	CEMENT 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				48 000
213	DIVING				24 000
219	WELL TESTING				15 000
221	TOOL SERVICES				50 000
224	METALIC STRUCTURES CUT & WELD				2 500
228	MACHINE WORK				7 500
229	BARGE OPERATIONS				283 500
231	BOAT OPERATIONS				313 200
237	MATER. & EQUIP. TRANSP.				18 900
240	WATER FURNISHING				5 000
243	CHARTER				0
244	TOOLS RENTAL				175 200
248	CATERING				77 760
249	CONSULTING				49 140
252	ENVIRONMENTAL PROTECTION				8 500
	TOTAL OUTSIDE SERVICES:				**3 432 120**
	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				151 000
326	TOOLS FOR DRILLING				63 790
327	COMPLETION EQUIPMENT				155 200
328	FLOATING EQUIPMENT - CMT.				28 430
329	PRODUCTION FACILITIES EQUIP.				3 000
335	OTHERS TUBULAR CONNECTIONS				12 000
336	STRUCTURAL CONST. MAT.				10 000
340	WELDING MATERIAL				1 000
341	MAT. CMT. CONDUCT.				2 400
341	MAT. CMT. SURF. CSG. (13 3/8")				15 330
341	MAT. CMT. INTERM. CSG. (9 5/8")				30 000
341	MAT. CMT. 7" CSG.				25 010
341	MAT. CMT. 5.5" CSG.				14 350
341	MAT. CMT. OTHERS				5 640
342	STIMULATION MATERIAL				120 000
343	DRILLING / COMPLETION FLUIDS				138 590
344	CONDUCTORS	480	37.52		18 010
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.	8500	18.33		155 810
344	5.5" CSG.	0	11.53		0
344	5" LINER	1500	12.61		18 920
344	2 7/8" TUBING	8000	4.68		37 440
346	DIESEL-FUEL				368 260
347	OIL & GRASES				7 500
	TOTAL MATERIALS & SUPPLIES:				**1 621 680**
			TOTAL PROJECT COST US $		**5 053 800**

TABLE B