

Well Identification:

API#	AREA	BLOCK	OPERATOR	WELL NAME	
552200000900000	SELDOVIA	225	Chevron USA Inc.	OCS Y-0243 FALCON 1 ST00BP00	
LATITUDE	LONGITUDE	KB	WATER DEPTH	GEO DATUM	ZONE
59° 46' 45.0"	-152° 36' 0.6"	111	-115	NAD83	5

Overview

The Falcon 1 was spud as an exploratory well on November 12th, 1984 and located in the Cook Inlet. The operator reported no commercial hydrocarbons were discovered at this location, the well was plugged and abandoned. The comprehensive analytical data collection program included well logging and rotary sidewall coring provided by Schlumberger, whole coring, and drill cutting samples collected by EXLOG. Collected samples were analyzed by Core Laboratories for lithology, fluid saturation, pore volume, and hydrocarbon source generation.

Geologic Intervals used for Analysis:

Age/Period	Stratigraphy	Top	Source	Comments
Eocene	WFLD	1027	COK Picks GF.xls	
Cretaceous	BTU-SDLM	1741	COK Picks GF.xls	
	KYKG_Lwr	2520	COK Picks GF.xls	
	PDMR	3140	COK Picks GF.xls	
	MKU_HRND	3690	COK Picks GF.xls	
Jurassic	SKVK	3990	COK Picks GF.xls	
	NKNK_PMR	4559	COK Picks GF.xls	
	NKNK_SGHB	5370	COK Picks GF.xls	

Logging Runs and Parameters:

LOGGED INTERVAL	TOP ft	BASE ft	TEMP degF	BITSIZE in	MWIN ppg	RM ohmm	WIRELINE RUNS											
							RUN#	GR	DLL	DIL	NUC	SON	VSP	DIP	MICRO	SGR	SP	TEMP
1	885	3200	117	12.25	9	1.82	1	X			X							X
							2	X			X							
							3	X			X							
							4	X					X					
							5											X
2	3214	5548	115	12.25	9	1.8	1	X			X	X		X			X	
							2	X			X				X			
							3	X			X							

Cored Intervals and Sample Analysis:

TOP ft	BASE ft	WHOLE CORE		TOP ft	BASE ft	SWS CORE	
		ft	ROUTINE SCAL			#REC	ROUTINE SCAL
1542	1572	30		970	3116	80	
1572	1602	30		3214	5543	114	
2309	2320	9					
2320	2350	30					

Log Discussion:

The Falcon 1 well was drilled and logged with water-based drilling fluid containing Barite weighting material to total depth. Subsequent borehole sections were drilled with additional Barite to increase the

borehole fluid pressure overbalance. All borehole sections required environmental corrections for hole size, temperature, pressure, and mud weight additives.

Environmental Corrections:

The Schlumberger 2000 Edition chartbook was used to correct the logs for borehole size, temperature, pressure, and drilling mud additives. The Gamma Ray log was corrected using chart GR-1. Compensated Neutron log was corrected using Por-14c and Por -14d. Dual Laterolog Resistivity logs were corrected using Rcor-2c and invasion corrected using Rint-9b. Dual Induction logs were corrected using Rcor-4a and invasion corrected using Rint-10.

Significant caliper enlargements were observed in the well, in cases where the borehole caliper readings were above the correction charts, the maximum chart correction was applied, however these corrections under estimate the true formation measurement.

The bulk density measurement was the most environmentally affected log in the dataset, where the density log readings measured drilling fluid when the caliper reading exceed 16 inches. Repair of the density log utilized a Gardner et al. (1974) sonic to density transform.

Observations Logged Interval 1

Observed some high caliper readings throughout the well and the logged interval required editing using the Gardner¹ density transform. Sonic log data was compared to the Faust⁴ velocity transform to correct anomalies in borehole washouts. Logged intervals where the bulk density was not present the delta-t sonic was used as the porosity model input to the final computed results.

References

1. Gardner et al., 1974, Formation velocity and density—the diagnostic basics for stratigraphic traps Geophysics, 39 (6) (1974), pp. 770-780
2. Graton, L. C., and H. J. Fraser, 1935, Systematic packing of spheres with particular reference to porosity and permeability: Journal of Geology, v. 43, p. 785–909, DOI: 10.1086/jg.1935.43.issue-8
3. Carmichael, R.S. ed. 1982. Handbook of Physical Properties of Rocks, Vol. 2, 1-228. Boca Raton, Florida: CRC Press Inc.
4. L. Y. Faust, “A Velocity Function Including Lithologic Variation,” Geophysics, Vol. 18, No. 2, 1953, pp. 271-288.

Summation Report:

RESERVOIR SUMMARY											
Zone	Zone Name	Top	Bottom	Gross	Net	N/G	Av Phi	Av Sw	Av Vcl	Phi*H	PhiSo*H
1	ORIGINAL BOREHOLE	226	5600.5	5375	1021	0.19	0.269	0.878	0.411	275.01	33.58

Reservoir summary cut off values used were porosity greater than 20% (PHIE > 0.2), shale volume less than 40% (VSHALE < 0.4), and water saturation less than 50% (SW < 0.5).

Core versus Log Porosity Crossplot:



