

Well Identification:

API#	AREA	BLOCK	OPERATOR	WELL NAME	
55220000080000	SELDOVIA	576	ARCO Alaska Inc.	OCS Y-0113 IBIS 1	ST00BP00
LATITUDE	LONGITUDE	KB	WATER DEPTH	GEO DATUM	ZONE
59° 24' 47.9"	-152° 41' 10.9"	79	-202	NAD83	5

Overview

The Ibis 1 was spud as an exploratory well on May 9th, 1980 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 Borst and Giddings. Collected samples were analyzed for lithology only.

Geologic Intervals used for Analysis:

Age/Period	Stratigraphy	Top	Source	Comments
Cretaceous	KY GK_Mid	2102	COK Picks GF.xls	
	KY GK_Lwr	3436	COK Picks GF.xls	
	PD MR	4375	COK Picks GF.xls	
	MKU_HRND	4559	COK Picks GF.xls	
Jurassic	SKVK	5877	COK Picks GF.xls	
	NKNK_PMR Y	6301	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	230	4046	111	12.25	9.9	1.02	1	X		X								X
							2	X			X							
							3	X				X						
							4											
							5											
							6											
2	4058	7009	121	8.5	10	1.26	1	X		X								X
							2	X			X							
							3	X				X						
							4							X				
							5								X			

Cored Intervals and Sample Analysis:

TOP ft	BASE ft	WHOLE CORE		TOP ft	BASE ft	SWS CORE	
		ft	ROUTINE SCAL			#REC	ROUTINE SCAL
4522	4552	30		4320	6910	45	
5072	5100	28					
7000	7016	16					

Log Discussion:

The Ibis 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 minor caliper readings in the shallower section. The logged interval deeper than 4000 ft measured depth showed the borehole was more affected and required editing using the Gardner¹ density transform. Sonic log data was compared to the Faust⁴ velocity transform to correct anomalies in borehole washouts. No core data for this well was transmitted for the analysis. 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	281	7100	6819	126	0.018	0.244	0.764	0.47	30.62	7.23	

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).

Summary Plot:

