

Well Identification:

API#	AREA	BLOCK	OPERATOR	WELL NAME	
55220000050000	SELDOVIA	798	Phillips Petroleum Company	OCS Y-0136 BEDE 1	ST00BP00
LATITUDE	LONGITUDE	KB	WATER DEPTH	GEO DATUM	ZONE
59° 12' 56.5"	-152° 32' 24.58	79	-245	NAD83	5

Overview

The Bede 1 was spud as an exploratory well on May 28th, 1979 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, and drill cutting samples collected by Borst and Giddings. Collected samples were analyzed by Mark Palmer for lithology.

Geologic Intervals used for Analysis:

Age/Period	Stratigraphy	Top	Source	Comments
Oligocene	HMCK	2545	COK Picks GF.xls	
Eocene	WFLD	2958	COK Picks GF.xls	
Cretaceous	BTU-SDLM	3500	COK Picks GF.xls	
	KY GK_Mid	3563	COK Picks GF.xls	
	KY GK_Lwr	4288	COK Picks GF.xls	
	PDMR	5295	COK Picks GF.xls	
	MKU_HRND	5501	COK Picks GF.xls	
Jurassic	SKVK	6157	COK Picks GF.xls	
	NKNK_PMR Y	6633	COK Picks GF.xls	
	NKNK_SGHB	7106	COK Picks GF.xls	
	NKNK_mkr	7497	COK Picks GF.xls	
	NKNK_CHSK	8146	COK Picks GF.xls	
	CNTN	9984	COK Picks GF.xls	
	TXDN	10166	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	RFT					
1	1327	4870	106	12.25	11.6	1.07	1	X		X														
							2	X																
							3	X			X													
							4	X																
							5	X											X					
2	4929	10318	147	12.25	12.5	1.36	1	X		X										X				
							2	X																
							3																	
							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
10275	10294		17	5275	10000		26

Log Discussion:

The Bede 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 deeper sections of 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 and bulk density 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 was reported for this well. 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	324	10774	10026	352	0.035	0.25	0.895	0.458	88.07	9.21

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:

