

B002

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PROPERTY EVALUATIONS

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GEOLOGIC WELL REPORT

GENERAL CRUDE OIL COMPANY  
AND  
LOUISIANA LAND & EXPLORATION COMPANY  
Tribal Riverview No. 12-15  
NW $\frac{1}{4}$  SW $\frac{1}{4}$  Section 15, T. 1 N., R. 1 E.  
Fremont County  
Wyoming

WELLSITE GEOLOGY  
BY  
DON E. LAWSON

DATA SHEET

Operator: General Crude Oil Company & LL&E  
 Field: Wildcat  
 Well Name: Tribal Riverview No. 12-15  
 Location: NW $\frac{1}{4}$  SW $\frac{1}{4}$  Section 15, T. 1 N., R. 1 E.  
 Fremont County, Wyoming  
 Elevations: 5561 Grd., 5573 K.B.  
 Well Site Geologist: Don E. Lawson, Casper, Wyoming  
 Drilling Foreman: Mack Mahaffey, Riverton, Wyoming  
 Commenced: January 5, 1975  
 Completed: January 31, 1975  
 Surface Casing: 9 5/8" (527') @ 523 KB w/475 sacks.  
 Status: Plugged and Abandoned  
 Contractor: R. L. Manning Drilling Co., Rig No. 8  
 Don Handleland, Pusheer  
 Emsco GA 500  
 Mud Program: Water to 3605, Chemical Gel 3605 to T.D.  
 Testing: None  
 Coring: Normandy Coretest, No's. 1 and 2  
 Christensen, No. 3  
 Mud Logging: Tooke Engineering Co., Casper, Wyoming  
 Electrical Logging: Schlumberger, Pete Stecker, Engr., Casper, Wyo.  
 Dual Induction-Laterolog, TD-520  
 BHC Density-BHC Nuetron-Gamma Ray, TD-520  
 BHC Integrated Sonic-Gamma Ray, TD-520  
 Four arm high resolution dipmeter, TD-T20  
 Samples: Ten foot interval, surface to TD  
 Stored at Amstrat, Casper, Wyoming  
 Core Analysis: Chemical and Geological Laboratories, Casper, Wyo.

HISTORY AND PROGRESS

<u>Date</u>	<u>Status</u>	<u>Depth</u>	<u>Made</u>	<u>Comments</u>
Jan. 75 5	Dlg	174	174	Drilling pilot surface hole. Spudded at 1 A.M. January 5, 1975
6	Ream	523	349	Reaming 8 3/4" hole to 13 3/4" @ 335'.
7	WOC	523	-	WOC and nippling up. Ran 14 joints of 9 5/8" 32.30# H-40 casing (527 ft. net), landed @ 523' KB. Ran w/Howco guide-shoe insert float collars and three centralizers. Cemented w/475 sacks Type G cement w/3% CaCl and 1/4# floreal. Good returns. Cement circulated--80 sacks excess to pits. Bumped plug w/1000 psi. Plug down @ 5 PM, 1-6-75. Pressure tested blind rams and Hydril. Held OK.
8	Dlg	956	433	Drilling. Drilled plug @ 1 PM, January 7, 1975. Holding up on weight because of deviation.
9	Dlg	1391	435	Drilling w/Bit #5. Drilling w/water; holding up on weight because of deviation.
10	Dlg	1724	323	Drilling w/Bit #6. Drilling w/water; holding up on weight because of deviation.
11	Dlg	2007	283	Drilling w/Bit #7. Drilling w/water; holding up on weight because of deviation.
12	Dlg	2244	237	Drilling w/Bit #8. Drilling w/water; holding up on weight because of deviation.
13	Dlg	2554	310	Drilling w/Bit #8. Drilling w/water; holding up on weight because of deviation.
14	Trip	2896	342	Trip out for Bit #9. Drilling w/water. Holding up on weight because of deviation.

15	Dlg	3198	302	Dlg w/Bit #9. Dlg w/H <sub>2</sub> O.
16	Dlg	3405		Dlg w/Bit #11. Pulled Bit #9. Added 10 drill collars to try Amoco process to straighten hole. Ran 50,000#, turn in low gear, Deviation increased fomr 4 1/2 to 5 3/4 in 68 feet. Pulled out of hole, removed drill collars. Went in hole w/ Bit #11; running 3-4000# wt.
17	Dlg	3628	223	Dlg w/Bit #11. Holding up on weight. Started adding gel @ 3605.
18	Dlg	3816	188	Dlg w/Bit #12. Holding up on weight. Wt 8.7, Vis 33.
19	Dlg	4064	248	Dlg W/Bit #13. Holding up on weight. Wt 9.2, Vis 36.
20	Dlg	4343	279	Dlg w/Bit #14. Wt. 8.9, Vis 37
21	Trip	4493	150	Trip out for Bit #16. Wt 9.0, Vis 37.
22	Dlg	4610	147	Dlg w/Bit #17. Wt 9.0, Vis 37.
23	Trip	4633	23	Trip out w/Core No. 1, 4612-4633,(21), re 15'. Wt 9.2, Vis 40.
24	Dlg	4799	166	Dlg W/Bit #19. Wt 9.1, Vis 41.
25	Trip	4863	64	Trip in w/Bit # 18RR. Cut core No. 2, 4814-4842 (28'), rec 22'. Wt 9.1, Vis 43.
26	Trip	4985	122	Trip in W/Core barrel for Core No. 3. Strapped pipe @ 4985 Dlr, SLM 4993, +8 foot correction. Wt 9.1, Vis 43.
27	Coring	5031	46	Cutting Core No. 3 from 4993.
28	Dlg	5089	58	Dlg w/Bit #19RR, Pulled core No. 3. Wt 9.1, Vis 39.
29	Dlg	5293	204	Dlg W/Bit #17RR. Wt 9.1, Vis 40.
30	Logging	5354	61	Running Schlumberger Logs, Ran DIL, BHC Density-Gamma Ray, BHC CNL-Sonic Gamma Ray, Four Arm High Resolution. Dipmeter.

CORE NO. 1 -- 4612-4633 (21'), recovered 15 feet.

- 4612-4618 Probably not recovered as core broke off hard when pulled.
- 4618-4620.5 Bentonite, gray very firm, micaceous, poker chip type bedding.
- 4620.5-4633 Shale, black and gray-black siliceous, very hard, w/laminae (1/16th to 1/4th inch) and blebs sandstone, gray, light gray and gray-white, very fine-grained, quartzitic, NCSOF, w/occasional trace black fossil fish and/or amphibian fragments; fossil shell fragments 4618-4619, layer of fossil shell (Inoceramus?) between 4624-4625. Core extensively fractured, approximately 85° fracture planes, apparent dip 7° (13° if deviation of hole of 7° restored to vertical).
- 4633-4750 Shale, gray-black and dark gray, blocky, slightly silty in part, very hard, siliceous, w/laminae sandstone, white, gray-white, gray, very fine-grained, trace white fine-grained, quartzitic, NCSOF, w/laminae siltstone, light gray, white bentonite streaks, trace fossil shells.
- 4750-4814 A/A/, w/increase in white and off-white soft bentonite, w/slight increase in light gray and gray-brown siltstone.

CORE NO. -- 4814-4842 (28"), Recovered approximately 24 feet.

- 4814-4820 Assumed lost portion.
- 4820-4825 Shale, gray black, siliceous, sandy in part, micaceous, some fossil fish fragments, w/sandstone laminae, light gray to light gray brown, fine-grained, w/dark mineral grains, quartzitic, occasional fish scales, trace large fossil shell (Inoceramus?), highly fractured. Near vertical fracture planes; dip 3-4°, (10-12° if hole deviation restored to vertical).
- 4825-4829.6 A/A, but no open fractures, occasional calcite vein in closed fracture faces.
- 4829.6-4820 Four inch bed of layered crystalline calcite, white, gray, slickensided.
- 4830-4832 Shale, a/a, sandy in part, siliceous, calcite in bedding and hairline fracture planes, fossil fish fragments.
- 4832-4836 Shale, gray-black, siliceous.

## CORE NO. 2, Cont'd.

4836-4837 Bentonite, gray, firm.

4837-4842 Shale, gray-black, micaceous, slightly sandy, fine scattered pyrite clusters, possible pyritized worm trail, rare trace fossil fish fragment.

4842-4850 A/A.

4850-4945: Shale 90%, a/a, w/sandstone, gray and gray-white, very fine and fine-grained, salt and pepper, tight, NCSOF, and siltstone stringers, calcareous, gray, trace calcite, white and light gray bentonite.

4945-4955 Shale 70%, dark gray and gray-black, calcareous in part, w/siltstone, gray-brown and light gray, calcareous, and sandstone, light gray, very fine-grained, tight, calcareous, w/very slight trace sandstone, white, fine-grained, sub-angular to sub-rounded, friable, porous, NCSOF, trace calcite, veinlets, white bentonite.

4955-4981 Shale, gray and brownish-gray 60%, calcareous, and shale, dark gray, w/siltstone, gray and light gray, calcareous, w/slight increase (less than 10%) in white sandstone, a/a, some gray sandstone, fine-grained, some white sandstone fine and fine to medium-grained, sub-angular to sub-rounded, dark angular mineral grains, NCSOF, trace limestone, gray, white bentonite.

4981-4985 Sandstone 80%, predominantly fine-grained, some very fine grained, some fine to medium-grained, porous for most part, trace medium-coarse rounded clear quartz grains, NCSOF, w/ shale and siltstone, a/a.

CIRCULATED SAMPLES @ 4985 -- 7 - 15 minute samples.

Same as above.

Steel Line Measurement @ Dirs 4985= 4993 SLM; +8 foot correction

CORE NO. 3 - 4993-5048 (55'), recovered 52.5 feet

4993-4994 Sandstone, white, mediumgrained, sub-angular to sub-rounded, good porosity and permeability, slightly glauconitic, well sorted, pyritized in part, NCSOF.

4994-4997 Sandstone, white, fine and medium-grained, sub-angular to sub-rounded, some medium rounded frosted grains, slightly glauconitic, medium well sorted, porous, w/carbonized plant stems and fragments, NCSOF, some clay infill, occasional gray shale laminae and blebs, trace microcephlapod in shale blebs.

CORE NO. 3, cont'd.

- 4997-5000 Sandstone, buff, a/a, scattered dark mineral grains.
- 5000-5004 Sandstone, darker buff than above, very fine to fine-grained, glauconitic, some medium grains, poorly sorted, some shale inclusions, scattered medium-coarse sub-rounded to rounded frosted grains, NCSOF, scattered carbonized blebs and irregular laminae.
- 5004-5006 Sandstone, buff, very fine grained, sub-angular, well sorted, medium porosity, trace carbonized inclusions, rare dark grains, clay infill, NCSOF.
- 5006-5007 Sandstone, buff, fine-grained, glauconitic, well sorted, scattered darker mineral grains, NCSOF, trace carbonized material.
- 5007-5009 Sandstone, white, very fine-grained, sub-angular, well sorted, clay fill, medium porosity, scattered carbonaceous material and laminae, few dark grains, NCSOF.
- 5009-5010 Sandstone, light brown, very fine-grained, clay infill, poorer porosity, sub-angular, well sorted, NCSOF.
- 5010-5012 Sandstone, white, very-fine grained, sub-angular, well sorted, well cemented, medium-porosity, some scattered dark mineral grains, irregular laminae carbonaceous material, possible vertical worm burrow lined w/carbonaceous material, NCSOF.
- 5012-5013, A/A/, w/trace coarse angular black chert grains.
- 5013-5014 Same as 5010-5012.
- 5014-5017 Sandstone, a/a 90%, and irregular interbedded shale, dark gray, and carbonaceous laminae, cross-bedded, fossil shells and fish and/or amphibian remains, NCSOF.
- 5017-5020 Shale and sandstone interbedded, a/a, irregularly crenulated. NCSOF.
- 5020-5021 Sandstone, gray and white, ver fine-grained, micaceous, very hard, very tight, siliceous, w/irregular shale laminae, a/a, NCOSF.
- 5021-5023 Sandstone, gray, very fine to fine-grained, very hard to semi-quartzitic, w/irregular black shale blebs and irregular bedding, micaceous, NCSOF.
- 5023-5028 Sandstone, shaley, dark gray, and shale, gray-black, micaceous, irregularly bedded, siliceous, very hard, tight, fossil fish and/or amphibian fragments, trace of sand infilled worm burrows, NCSOF.

CORE NO. 3, cont'd.

5028-5037 Shale, black, siliceous, a/a, w/less sandstone laminae, bentonite laminations, fossil fish and/or amphibian fragments, black mica flakes very pronounced 5037-5037 in sandstone laminae, NCSOF

5037-5045.5 Shale, gray-black, sandy in part, very micaceous, scattered fossil fish and/or amphibian fragments and fish scales, scattered zones of finely pyritized sand, NCSOF.

5045.5-5048 No recovery.

DRILLED

5048-5134 Shale, gray-black, siliceous, splintery and fissil, siliceous, w/occasional laminae sandstone, light gray, gray, very fine to fine-grained, tight; streaks white bentonite, occasional laminae gray siltstone.

5134-5145 Shale 70%, brown, some dark brownish-gray, slightly calcareous, and siltstone, dark brown, slightly carbonaceous, sandy in part, w/shale, a/a; w/sandstone, gray-brown and light gray, very fine-grained, very hard, NCSOF, trace calcite.

5145-5185 A/A, w/increase to 40% in light gray finely micaceous siltstone to silty shale, semi-lustrous from fine mica.

5185-5235 Sandstone, 40% light gray and gray-white, ver fine-grained, sub-rounded, well sorted, soft, appears wet, NCSOF, w/siltstone, 40%, light gray to gray, slightly calcareous, and shale, dark gray, bentonite.

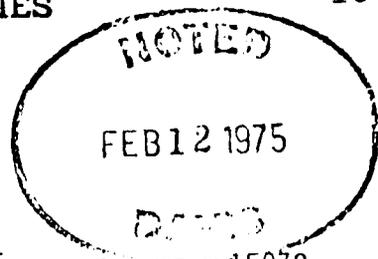
5235-5260 Sandstone, white 70%, very fine-grained, some very fine to fine-grained, soft, porous, sub-angular, well sorted, w/siltstone, a/a 20%, and shale, dark gray, trace calcite, NCSOF.

5260-5308 Shale 70% light gray and cream, soft, waxy, few very fine floating quartz grains, w/ sandstone, a/a, trace chert, trace brown siltstone, calcareous.

5308-5354 Shale 80%, gray-green, light gray, brown, white, trace red and maroon, w/brown siltstone, a/a, trace chert.

Total Depth 5354 Driller, 5335 Schlumberger.

P. O. Box 2794  
Casper, Wyoming



CORE ANALYSIS REPORT

Company General Crude Oil Company Date January 28, 1975 Lab. No. 15070  
 Well No. #12-15 Tribal River View Location NW SW 15-1N-1E  
 Field Wildcat Formation Muddy  
 County Fremont Depths 4993-5017  
 State Wyoming Drilling Fluid \_\_\_\_\_

**LEGEND**  
 C—Crack  
 F—Fracture  
 H—Horizontal  
 O—Open  
 NF—No Fracture  
 IS—Insufficient Sample  
 S—Slight  
 St—Stain  
 V—Vertical  
 Vu—Vugs

SAMPLE NO.	LEGEND	DEPTH, FEET	EFFECTIVE POROSITY PERCENT	PERMEABILITY MILLIDARCIES		SATURATIONS	
				HORIZONTAL	VERTICAL	% PORE SPACE RESIDUAL OIL	% PORE SPACE TOTAL WATER
Core Number 3, 4993-5048, recovered 52.5 feet.							
1	VF	4993-94	25.4	55		Trace	76.2
2	VF	4994-95	19.4	40		Trace	98.7
3	NF	4995-96	21.6	73		0	95.7
4	NF	4996-97	23.7	297		Trace	93.8
5	NF	4997-98	12.2	0.30		0	78.4
6	NF	4998-99	13.9	0.37		Trace	81.3
7	NF	4999-5000	13.0	0.48		Trace	90.5
8	NF	5000-01	13.2	1.13		0	98.2
9	NF	5001-02	18.6	10		0	77.8
10	NF	5002-03	18.7	12		Trace	90.1
11	NF	5003-04	20.6	24		Trace	95.0
12	NF	5004-05	21.5	92		0	90.9
13	NF	5005-06	21.0	76		0	97.7
14	NF	5006-07	20.9	82		Trace	93.3
15	NF	5007-08	24.4	180		Trace	98.2
16	NF	5008-09	22.5	76		Trace	98.2
17	NF	5009-10	22.3	215		Trace	90.8
18	NF	5010-11	25.8	122		0	93.7
19	NF	5011-12	25.9	82		0	98.1
20	NF	5012-13	26.0	180		Trace	98.4
21	NF	5013-14	25.0	100		Trace	89.8
22	NF	5014-15	23.0	48		Trace	78.7
23	NF	5015-16	18.0	26		0	87.9
24	NF	5016-17	16.3	0.21		0	69.5
5017-44.5, shale, no analysis.							