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C O N F I D E N T I A L

WELL COMPLETION REPORT

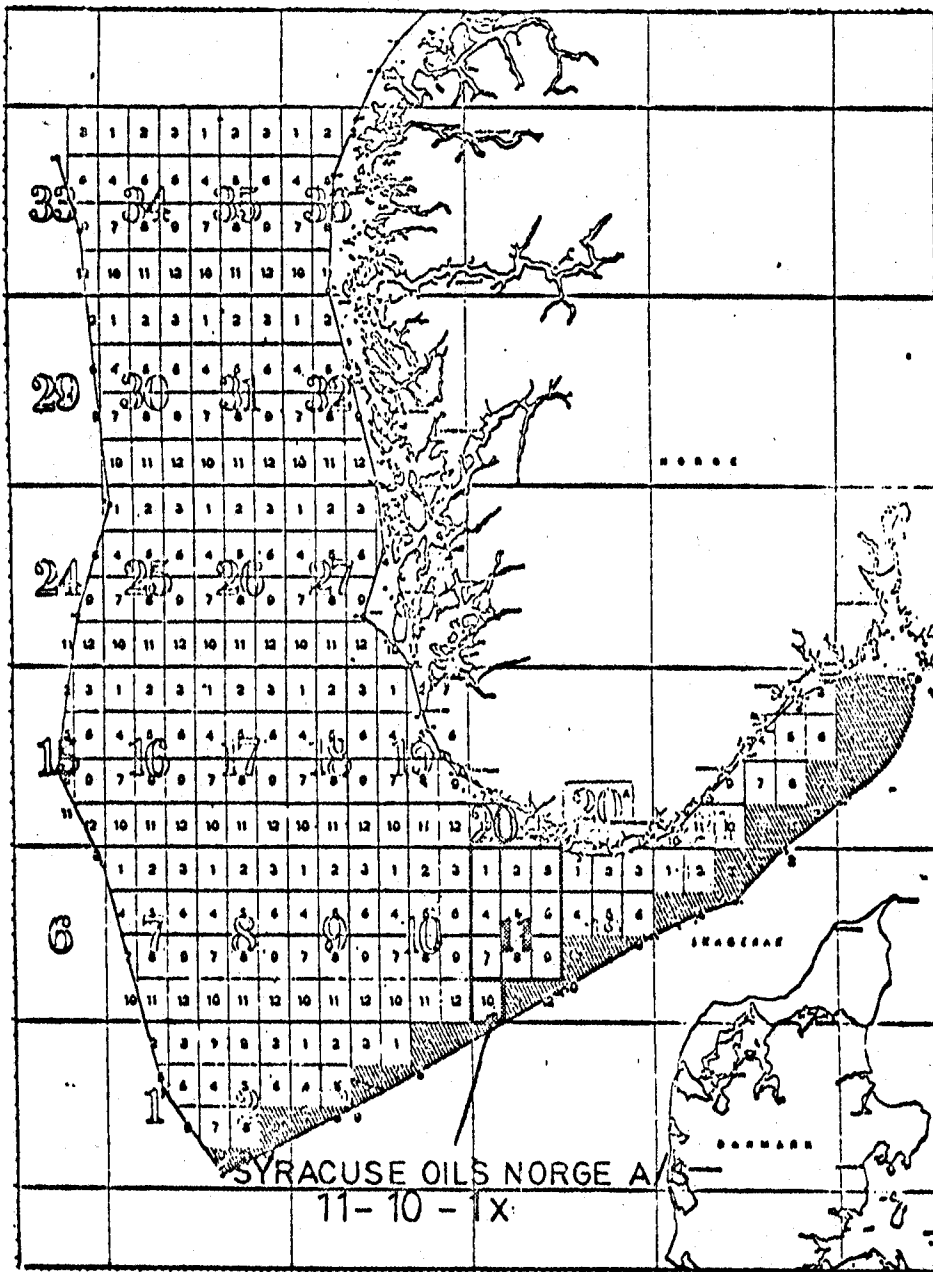
SYRACUSE 11/10-1X

PRODUCTION LICENSE 021

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LOCATION PLAT

Figure 1

SUMMARY

Well: Syracuse 11/10-1X
Classification: New Field Wildcat.
Area: Field 11, Block 10, Production License 021
Contractor and Rig: ODECO Norway Inc., "Ocean Viking"
Operator: Phillips Petroleum Company Norway
Location: Line NJV 610, S.P. 2050
57° 00' 47.6" N.,
06° 10' 00.2" E.
Water Depth: 58 meters (191 feet) below mean sea level
Rotary Kelly Bushing: 27 meters (89 feet) above mean sea level
Objective: To test the Tertiary and the Mesozoic
Results: No productive horizons were encountered
Status: Dry and abandoned
Total Depth: 2430 meters (7972 feet) RKB

DRILLING HISTORY

Dates of Operations

Spud: August 2, 1969
At Total Depth: August 17, 1969
Completed: August 19, 1969

Details of Operations

- Casing Program -

20-inch set at 130 meters (429 feet) RKB in 26" hole and cemented with 900 sacks cement.

13 3/8-inch set at 253 meters (831 feet) RKB in 17 1/2-inch hole and cemented with 900 sacks cement.

9 5/8-inch set at 1023 meters (3356 feet) RKB in 12 1/4-inch hole and cemented with 1100 sacks of cement.

- Mud Program -

<u>Depth</u>	<u>Weight (ppg)</u>	<u>Viscosity</u>	<u>Pv</u>	<u>Yp</u>	<u>Water Loss</u>
0 - 831 feet (0 - 253 meters)	- Sea Water -	-	-	-	-
831 - 3410 feet (253 - 1039 meters)	9.5	40	20	15	13
3410 - 4800 feet (1039 - 1463 meters)	10.3	40	17	6	7
4800 - 6200 feet (1463 - 1889 meters)	10.6	43	17	8	7
6200 - 7972 feet (1889 - 2429 meters)	10.6	40	17	5	6

- Logging Program -

<u>Schlumberger Tools</u>	<u>Run</u>	<u>Interval</u>
Induction Electric	1	834 - 3410 feet
	2	3361 - 7970 "
Gamma Ray/Sonic-Caliper	1	280 - 3399 feet
	2	3356 - 7961 "

Velocity Survey at Total Depth.

- Drilling Problems -

None.

- Hole Deviation -

Maximum vertical deviation is 3° at 3410 feet; it is ½° at 4440 feet, and 0° at 7972 feet.

- Stuck Pipe -

No stuck pipe problems occurred in the drilling of well.

- Lost Circulation -

No serious lost circulation problems occurred.

- Coring -

No cores were taken.

- Testing -

No drill stem tests were carried out.

- Plugging and Abandonment -

5800 - 6000 feet RKB: Cement plug laid with 55 sacks class "B" cement.

3200 - 3500 feet RKB: Cement plug laid with 106 sacks class "B" cement.

Sea Floor - 426 feet RKB: Cement plug laid with 200 sacks class "B" cement.

GEOLOGY

Geologic Objectives

The objective of the 11/10-1X well was to test the hydrocarbon potential of the Tertiary and Mesozoic formations.

Stratigraphy

- Formations Drilled -

Stratigraphic Units:

Unit	Depth RKB		Depth MSL		Drilled Thickness	
	Meters	Feet	Meters	Feet	Meters	Feet
QUATERNARY	85	280	-58	-191		
TERTIARY					545+	1787+
?Miocene-Oligocene						
Upper-?Middle-						
Lower Eocene	630	2067	-603	-1978	359	1177
?Upper Paleocene	928	3244	-962	-3155	53	175
Lower Paleocene						
Danian	1042	3419	-1015	-3330	68	222
UPPER CRETACEOUS						
Maestrichtian-	1110	3641	-1083	-3552	347	1139
Campanian-						
Santonian-						
Coniacian						
Turonian	1457	4780	-1430	-4691	21	68
?Cenomanian	1478	4848	-1451	-4759	26	84
LOWER CRETACEOUS						
Albian	1503	4932	-1476	-4843	8	27
Aptian	1512	4959	-1484	-4870	20	65

(Cont.)

(Stratigraphic Units - continued)

Unit	Depth RKB		Depth MSL		Drilled Thickness	
	Meters	Feet	Meters	Feet	Meters	Feet
Barremian-	1531	5024	-1504	-4935	123	404
Hauterivian-						
?Berriasian						
UPPER JURASSIC						
?Kimmeridgian-	1654	5428	-1627	-5339	212	697
l. Kimmeridgian-						
Oxfordian						
TRIASSIC	1867	6125	-1840	-6036	563+	1847+
(Total Depth)	2430	7972	-2403	-7883	-	-

Lithology:

Quaternary - Tertiary

Recent-Pleistocene-Pliocene. Not differentiated and unidentifiable.

Tertiary

?Miocene-Oligocene. Total interval 900 - 2067 feet; thickness 1167+ feet (356+ meters). Sand Unit: interval 900 - 1358 feet; thickness 458+ feet (140+ meters). This unit is composed of clear medium to coarse grained, subangular to subrounded, glauconitic sand, generally unconsolidated and fairly well sorted. Black carbonaceous shales occur in thin beds throughout the unit with occasional lignite. Traces of white to light brown occasionally dark brown and sugrosic dolomitic limestone are also present, increasing towards the bottom of the unit where the dolomite forms the cement of the sand. Traces of metamorphic rock fragments and grains are found occasionally in minor amounts as components of the sand. This section is questionably Miocene on the basis of pre-dominant sand facies. Shale and Clay Unit: interval 1358 - 2067 feet; thickness 709 feet (216 meters). This unit is composed mainly of shales and dark brown sandy clay. The upper section is composed of dark brown slightly fissile carbonaceous shales with occasional plant debris and traces of very coarse to granular sand. In the middle section some sandstone with calcareous dolomitic cement occurs, followed by dark brown to brown clay which is representative of the middle-lower sections of the unit. The clay becomes very soft and gummy towards the base and contains occasional thin beds of soft white to buff microcrystalline limestone. This unit is wholly Oligocene.

Upper-?Middle-Lower Eocene Clay Unit. Interval 2067 - 3244 feet; thickness 1177 feet (359 meters). The clay of this unit is brown very silty in the upper section and generally slightly silty throughout the unit with minor traces of white to light brown, fine grained, slightly glauconitic and well cemented sand. Traces and thin beds of limestone occur also, increasing toward 2850 feet where brown hard microchrySTALLINE limestone is intercalated with soft and gummy clay. Below 3100 feet there are intercalations of thin beds of tight, light grey to light brown, fine to medium grained glauconitic sandstone, with abundant calcareous cement, in places argillaceous and micaceous; and brown soft clay. Abundant pyrite occurs throughout as cement in sand replacing limestone or filling worm burrows.

?Upper Paleocene Clay and Shale Unit. Interval 3244 - 3357 feet; thickness 175 feet (53 meters). This unit consists of brown silty and sandy clay with thin brown to white, hard to chalky limestone at the base.

Upper Paleocene Shale Unit. Interval 3357 - 3419 feet; thickness 62 feet (19 meters). This unit consists of light green to green occasionally light grey shales, which are indurated, fissile and waxy, and becomes dark grey, carbonaceous and harder and more radioactive towards the bottom of the unit.

Lower Paleocene-Danian Shale and Chalk Unit. Interval 3419 - 3641 feet; thickness 222 feet (68 meters). This unit consists of dark grey, silty and carbonaceous shales at the top followed by massive chalky limestone. The limestone is white, mainly soft chalky and occasionally brittle with nodules of light brown to light grey and occasionally white, opaque chert. The contact between Danian chalk and Upper Cretaceous is not clear but is suggested by difference in hardness and cohesion.

Upper Cretaceous

Maestrichtian-U.Campanian-Coniacian Chalk Unit. Interval 3641 - 4780 feet; thickness 1139 feet (347 meters). This section consists of very homogeneous white, brittle, dense and massive chalky limestone, with nodules of white, opaque to translucent chert occur throughout the unit without any visible change in properties.

Turonian Marl Unit. Interval 4780 - 4848 feet; thickness 68 feet (21 meters). This unit consists of light grey, greenish slightly silty marly clay with occasional thin beds of very fine grained and shaly sandstone which is very tight and well cemented.

?Cenomanian Marl and Clay Unit. Interval 4848 - 4932 feet; thickness 84 feet (26 meters). This unit consists of marly clay at the top which changes in color downward from light grey to dark grey and grey brown, and is accompanied by silty interbeds.

Lower Cretaceous

Albian Shale Unit. Interval 4932 - 4959 feet; thickness 27 feet (8 meters). The shales of this interval are grey, slightly silty and fairly soft, with stringers of very fine grained argillaceous and tight sandstone.

Aptian Shale Unit. Interval 4959 - 5024 feet; thickness 65 feet (20 meters). This unit consists of soft, dark grey to light grey slightly silty shale.

Barremian-Hauterivian-?Berriasian Shale Unit. Interval 5024 - 5428 feet; thickness 404 feet (123 meters). This unit consists of soft light to dark grey shale with a sandy sequence in the upper 85 feet of section. The sandstone is poorly developed and occurs in thin beds within slightly indurated grey very fine grained sandy to silty shale. The shales and clay are generally soft and very silty throughout.

Upper Jurassic

?Kimmeridgian-Oxfordian Shale Unit. Interval 5428 - 6125 feet; thickness 697 feet (212 meters). This unit consists of soft light grey to dark grey silty shale, in the top 50 feet followed by shale with stringers of unconsolidated very fine grained sand containing traces of pyrite. Pyrite increases toward the lower third of the unit where the shales become very silty and firm and contain occasional stringers of cryptocrystalline, dark brown, hard dolomite appearing at about 5815 feet. Fairly well sorted very fine to fine grained subangular to subrounded glauconitic sandstone with calcareous cement begins at about 5920 feet. It is accompanied by unconsolidated fine grained and occasional coarse to medium grained rounded sand and traces of pyrite. Limestone occurs as cement in the sandstone, but occasionally develops independently as thin white, hard, dense layers in part probably of bioclastic origin. The shales in this part of the unit are dark grey to grey, and sandy and silty.

Triassic

Total interval 6125 - 7972 feet total depth; thickness 1847+ feet (563+meters). Clay Unit: Interval 6125 - 6236 feet; thickness 111 feet (34 meters). This unit consists of redbrown clay with silty and sandy interbeds. Sand grains are very fine, well sorted, and cemented with calcite. White Sand Unit: Interval 6236 - 6346 feet; thickness 110 feet (36 meters). This unit consists of very fine to medium grained sandstone which is fairly well sorted, generally unconsolidated and fairly porous and clean, except where intercalations of red brown to grey and silty clay occur. The sand of this unit becomes cemented by calcite toward the bottom. Undifferentiated Sand Unit: Interval between 6346 - 7972 feet total depth; thickness 1626+ feet (496+ meters). This unit starts with red brown silty shale followed by a sequence of more or less consolidated sand and sandstone with a few minor shaly intercalations and is of very homogeneous lithologic character. The sand is generally poorly sorted, fine to coarse to occasionally very coarse grained, angular to subangular and shows poor sphericity in grain shape. Grains are red, yellow, occasionally green with frosted

surfaces and become multicolored toward 7100 feet. Traces of feldspars are fairly common and occasional traces of red orange jasper are also present. The sandstone becomes more consolidated toward 7600 feet where some anhydritic cement first occurs and intercolations of shale become more frequent. White chalky limestone beds occur at 7865 and 7915 feet about 5 feet thick. The shales and clay are uniformly red brown and are silty and soft occasionally becoming indurated and fissile. Pyrite in small amount is present throughout the interval. Glauconite occurs mainly in the upper part of the unit, associated mainly with sandstone. Visual porosity is good throughout all the sandstone of the unit.

EXPECTED VERSUS ACTUAL TOPS

Seismic Horizon (Formation)	PREDICTED			ACTUAL		
	Top RKB	Thickness	Facies	Top RKB	Thickness	Facies
Base of Tertiary (Danian-U.Cret).	3096'	-	Ls, Chalk	3419'	-	Ls, Chalk
Base of Upper Cretaceous (Base of Chalk)	4581'	1485'	Marl, Shale	4780'	1361'	Marl, Shale
Near Top of Jurassic (Triassic Clay Unit)	6418'	1837'	Sand	6125'	1345'	Shale, Sand

Figure 2