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TEXACO OVERSEAS PETROLEUM COMPANY

WELL 9/4\*- 2 NORWAY NORTH SEA

FINAL ENGINEERING REPORT

- INDEX
- SUMMARY PAGE
- WELL HISTORY
- COST DETAILS
- LOGGING REPORT
- CASING REPORT
- MUD CHEMICAL CONSUMPTION REPORT
- BIT RECORD
- DRILLING TIME CURVES
- WELL SCHEMATIC DRAWING

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BA 79-1643-1

18 JAN 1979

REGISTRERT  
OLJEDIREKTORATET

TEXACO OVERSEAS PETROLEUM COMPANY

FINAL COMPLETION REPORT AND WELL HISTORY

NORWAY NORTH SEA

WELL 9/4 - 2

Field	---	Wildcat
Concession	-	Block 9/4
License	-	013
Co-ordinates	-	Latitude 57° 41' 11" North
	-	Longitude 04° 02' 35.4" East
Water Depth	-	230 feet <i>~70m</i>
Kelly Bushing Elevation	-	94 feet <i>~29m</i>
Kelly Bushing to Mudline	-	324 feet
Air Gap	-	55 feet
Leg Penetration	-	2 - 4 feet
Contractor	-	Rimrock
Rig	-	Gulftide
Rig take over	-	18.00 hours July 17, 1970
Spud	-	23.00 hours July 19, 1970
Completed Drilling	-	09.00 hours Aug. 26, 1970
Rig released	-	17.50 hours Aug. 29, 1970
Total depth	-	9926 feet <i>✓ 3025.4</i>
Net days drilling	-	37
Status	-	Abandoned dry hole

WELL 9/4-2

SUMMARY

The rig "Gulftide" completed well 39/1-1 in U.K. waters on July 9, 1970. The tugs Irishman, Sealion, Scaldis and Leie stood by to tow to location Norway 9/4-2, but due to stormy weather the tow did not commence until 18.00 hours on July 17, 1970. Due to a gale warning the rig had to jack up at

56° 33' 40" North  
14° 05' 48" East

for 8 hours on July 18, but arrived on location on July 19 and was jacked up, preloaded and leg penetration checked at an average of two feet without incident.

The well spudded at 23.00 hours on July 19, 1970. 38" hole was drilled using a 17 $\frac{1}{2}$ " bit and 17 $\frac{1}{2}$ " x 38" hole opener to 680'. A hard boulder was encountered at 465' and a shale streak at 570'. The 36" drive pipe stopped short at 552' and was then driven to refusal 210 blows/ft at 574'.

The hole was cleaned out, drilled with a 17 $\frac{1}{2}$ " bit to 2,000' and opened to 26" with a 26" bit, using a lightly treated seawater gel mud. The 20" casing was run but stopped short at 926' and would move neither up nor down, but circulation was maintained. The casing was cemented in place, cement circulated at the mud line.

Thereafter 17 $\frac{1}{2}$ " hole was drilled with minor gumbo problems + to 4563' or 198' below the top of the Cretaceous chalk. Schlumberger ran IES and BHC Sonic Gamma Ray logs at the second attempt, the first IES having hit a bridge at 2031'. 13-3/8" casing was run and cemented at 4553' in two stages to the mud line, excessive cement had to be used (3460 sacks) due to a Government requirement to fully cement this string.

12-1/4" hole was drilled without incident to 5300' and the well was then plagued with a series of twist offs or wash outs in the drill collars, all of which were fished or recovered successfully at the first attempt. The whole 8-1/4" drill collar string was changed out for an 8" drill collar string, while the 8-1/4" collars were being recut, reformed at the NORSCO workshops Tananger. After changing the string no further trouble was encountered and the hole was drilled without incident from 6133' to 9012' in 12-1/4" hole.

Schlumberger IES BHC. Sonic-Gamma Ray - Caliper, and CDM logs were run at this depth (9012') and two side wall core gun loads, 41 cores were taken. While the results of these logs were being evaluated the hole was drilled ahead to 9926' at which depth instructions were received to abandon the hole.

Schlumberger IES and BHC Sonic-Gamma Ray logs were run over the unlogged interval and the hole abandoned satisfactorily with cement plugs set at TD, across the mid-Jurassic sand, across the shoe of the 13-3/8" casing and at the mud line. The 13-3/8" casing was pulled from the MLS hanger and the 20" and 36" casings from the mud line at 334' and 330' respectively.

The rig was released to Norske Murphy Oil Company at 17.50 hours on August 29, 1970.

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WELL 9/4 - 2

WELL HISTORY

- 17.7.70 The rig had drilled and abandoned well U.K. 39/1-1 (Texaco) on July 9, 1970 but stayed on location awaiting favorable weather until July 17 when it was jacked down and taken under tow by tugs Irishman, Sealion, Scaldis and Leie at 18.00 hours.
- 18.7.70 An unfavorable weather report was received at 06.30 hours and the rig was hove to and later jacked up for 8 hours at Latitude 56° 33' 40" North  
Longitude 04° 05' 48" East  
Towing was recommenced in the evening.
- 19.7.70 Towed to position 57° 41' 11" North, 04° 02' 35.4" East, jacked up, preloaded, divers checked by penetration 2', 4', 2', 2'. Released tug. Jacked to drilling position and spudded 23.00 hours.
- 20.7.70 Drilled alternately with 17." bit and 17½" x 38" hole opener. Hard boulder at 465' KB, probable shale at 570'. Hole reamed very hard.
- 21.7.70 Drilled and opened hole to 680'. Spot viscous gel mud in hole, skid back rotary table, pick up and weld 9 joints 36" drive pipe, (account tight hole omitted shoe), Ultra Sonic test each weld.
- 22.7.70 Running 36" drill pipe, stopped solid at 552'. Drove to refusal 210 blows/ft at 574'. Rig up and weld 36" swedge and 20" flange for Hydril. Divers found pipe tight in hole at mud line no annular space, therefore no cementing through tubing.
- 23.7.70 Nippled up 20" Hydril, picked up B.HA, cleaned out to 680' drilled to 1534' with 17½" bit. (Deviation 866' 3°; 886' 3°; 1209' 2°; 1491' 2°; 1770' 1½°)  
Mud S/W gel 9.2 ppg 40 Vis 9.5 pH.
- 24.7.70 Drilled 17½" hole to 2000', reamed to 26" to 1356' Deviation 2000' 1-1/4°.  
Mud S/W Gel 9.4 ppg 44Vis 100 ccWL 9.5 pH.
- 25.7.70 Reamed to 26" to 2000', made two wiper trips circulate and condition mud. Deviation 2000' 1-1/4°  
Mud 9.4 ppg 41 Vis 38 ccWL 9.0 pH.

- 26.7.70 Finished second wiper trip. Rig up and run 20" casing, stopped at 926'. Would not move. Pulled 100,000 lbs over weight of casing. Cemented with 1500 sacks class B 12% gel, tailed with 500 sacks class B neat 2% CaCl<sub>2</sub>, circulated 36" x 20" annulus clean. Welded centralising plate on top 36". Mud 9.4 ppg 41 Vis 38 ccWL 9.0 pH
- 27.7.70 Instal 20" Hydril, test OK 500 psi, drilled top cement plug, float collar and shoe, cement drilled hard, washed and reamed to 2000', drilled 17½" hole to 2131'. Deviation 2280' 1½° ✓ Mud 9.8 ppg 40 Vis 8.8 ccWL 11.5 pH
- 28.7.70 Drilled 17½" hole to 3765', one short trip a/c gumbo blocked flowline. Deviation 3070' 1-3/4°; 3788' 1½° Mud 9.8 ppg ~~39~~ Vis 17.2 cc WL 12 pH
- 29.7.70 Drilled 17½" hole to 4140', include short trip to condition hole, made trip to check bit OK. Deviation 3780' 1½°; 4099' 1-3/4° Mud 9.8 ppg 40 Vis 22 ccWL 11.5 pH
- 30.7.70 Drilled 17½" hole to 4427'. Started trip. Deviation 4427' 1-3/4° Mud 9.8 ppg 42 Vis 17 ccWL 12 pH
- 31.7.70 Drilled 17½" hole to 4560'. Short trip to condition hole, POOH to log and run casing. Logging tools stopped at 2031'. Trip in hole without stabilizers to ream shoulder at 2000' and condition to TD. Schlumberger ran IES to TD (log TD 4563').
- 1.8.70 Finished running BHC-Sonic-Gamma Ray. Trip in hole to condition for casing. Ran 13-3/8 casing using B-J Lamb tongs. Mud 10 ppg 42 Vis 8.1 ccWL
- 2.8.70 Circulated casing. Cemented in two stages. DV tool at 1620' pumped in following order:  
Stage 1 1250 sacks class B 12% gel  
750 sacks class B neat  
Stage 2 510 sacks class B neat  
950 sacks class B 12% gel  
Washed 20 x 13-3/8 annulus through 1½ pipe spotted 50 bbls 2 lbs/bbl Sod. bichromate. Set 13-3/8" casing with 30,000 lb weight. Nippled up WH and BOPE.
- 3.8.70 Finish nipple up BOP and test to 5000 psi OK. Drilled out plugs and FC tested casing OK to 2500 psi.

- Drilled cement above float shoe and drilled to 4690'. BHA. Bit-stabilizer - 2 x 8-1/4 DCS - Stabilizer - 3 x 8-1/4 DC's Stabilizer - 10 x 8-1/4 DC's x-over to DP 557'.  
Mud 10.2 ppg 37 Vis 6.0 WL
- 4.8.70 Drilled to 4708' RTTCB. Drilled to 4720'. Trip for failed shock sub. Drilled to 4886'. Start RTTCB Deviation 4886'  $1\frac{1}{8}^\circ$   
Mud 10.2 ppg 37 Vis 6.0 cc WL
- 5.8.70 Finish RTTCB. Drilled to 5295'.  
Mud 10.6 ppg 40 Vis 6.3 cc WL
- 6.8.70 Drilled to 5300', short trip and drill to 5523', lost 66,000 lb weight and 1000 psi pump pressure. POOH found by SLM that pin on first joint D/P above collars was broken RIH with 11-3/4" overshot with 8-1/4" grapples and jars and 3 x 8-1/4" DC's  
Mud 10.8 ppg 39 Vis 6.3 cc WL
- 7.8.70 Fish successfully for D/P and BHA. GIH with bit No. 11 and drill 5523' - 5733'.  
Mud 10.7 ppg 38 Vis 5 cc WL
- 8.8.70 Drilled to 5754' lost weight and pressure. POOH found broken box on 5th DC below D/P x-over. Fished successfully with overshot as above. Checked each connection in BHA with Magnaflux, found 2 bad collars, 3 bad stabilizers, laid down same. Picked up bit No. 8 as RR, drilled 5754' to 5824', lost pressure and gained pump strokes POOH to check for wash-out.  
Mud 10.8 ppg 43 Vis 6.8 cc WL
- 9.8.70 Complete POOH and found cracked box on 6th D.C. from bit. GIH with bit No. 13 and drill 5824' - 5846'. Again lost pump pressure, POOH found cracked box on 7th D.C. from bit. Inspect each connection in BHA with Tuboscope (Magnaflux). GIH with bit No. 13 and drill 5846' - 5898'.  
Mud 10.7 ppg 41 Vis 6.8 ccWL
- 10.8.70 Drill 5898' to 5990'. RTTCB pick up shock sub and rented stabilizers. Test BOPE to 5000 psi on lines and rams. Hydril to 3000 psi, and casing to 1500 psi with cup tester at mud line.  
Mud 10.5 ppg 40 Vis 8.5 cc WL

- 11.8.70 Drill to 6064' lost 8000 lbs wt. POOH left bit and 4 DC's in hole. Ran overshot and fished successfully, ran in hole and drilled with bit No. 14 to 6065'.  
Mud 10.5 ppg 43 Vis 6.9 cc WL 12 pH
- 12.8.70 Drill to 6133' started losing pump pressure. POOH and lay down 8-1/4" BHA. Magnaflux check all drill collars string needs complete recut/reform. Pick-up new 8" BHA and GIH with bit No. 14 RR.  
Mud 10.5 ppg 41 Vis 10.6 cc WL 12 pH.
- 13.8.70 Finish RIH drill 6133' - 6271' start RTTCB  
Mud 10.6 ppg 38 Vis 10.4 cc WL 12 pH
- 14.8.70 Finish RTTCB. Drill with bit No. 15 6271' - 6398'. Totco and start RTTCB and check shock sub. Deviation 1/8° at 6398'  
Mud 10.5 ppg 40 Vis 9.6 cc WL 12 pH
- 15.8.70 Finish RTTCB. Drill with bit No. 16 6398' - 6886'. Made wiper trip at 6800'.  
Mud 10.4 ppg 40 Vis 8.6 cc WL 12 pH
- 16.8.70 Drill to 7015'. Totco. RTTCB and drill with bit No. 17 to 7317', wiper trip. Deviation 1-1/4° at 7015'  
Mud 10.5 ppg 41 Vis 6.2 cc WL 11.5 pH
- 17.8.70 Drill with bit No. 17 to 7517'. Totco. RTTCB drill with bit No. 18 to 7650'. Deviation 1° at 7517'  
Mud 10.6 ppg 41 Vis 4.2. cc WL 11.5 pH
- 18.8.70 Drill to 7844', drilling rate increased 7834' - 7844'. Circulate for samples. Drill to 8080' including one wiper trip 4 stands tight. POOH and check BOPE. OK.  
Mud 10.8 ppg 58 Vis 5.0 cc WL 11.5 pH
- 19.8.70 Blow-out drill. Finish RTTCB found bridge at 6700', worked through. Drill with bit No. 19, 8080' - 8406' include 2 wiper trips, each after 8 hours.  
Mud 11.6 ppg 40 Vis 2.8 cc WL 12 pH
- 20.8.70 Drill 8406' - 8420'. Totco. RTTCB. Reamed 8370' - 8420'. Drill ahead with bit No. 20, 8420' - 8604' include one short trip, no drag. Deviation 8420' 1-1/4°



- 21.8.70 RTTCB checked shock-sub. Drilled with bit No.21, 8604' - 8893' include one short trip at 8780'.  
No drag.  
Mud 11.8 ppg 49 Vis 2.8 cc WL 12 pH
- 22.8.70 Drilled with bit No. 21 8893' - 9010' short trip, condition hole and mud to log. Ran IES and BHC Sonic GR - caliper logs to TD - Schlumberger TD 9012'. R.I. H with (RR) bit to condition hole for CDM.  
Mud 11.8 ppg 45 Vis 2.6 cc WL 12 pH
- 23.8.70 Finish trip to condition hole. Ran CDM and shot 2 full side wall core guns. Lay down 10 joints grade G pipe on tail of drill pipestring. Set in 10 joints grade E drill pipe. RIH with No. 22 and drill 9010' - 9064'.  
Mud 11.8 ppg 42 Vis 2.9 cc WL 12 pH
- 24.8.70 Drill with bit No. 22 9064' - 9524' with one short trip. Abandon platform drill.  
Mud 11.8 ppg 42 Vis 8.8 cc WL 12 pH
- 25.8.70 Drill to 9525'. RTTCB changed out 15 joints grade G drill pipe, picked up 15 joints grade E pipe. RIH bit No. 23 drill 9525' - 9804' with one short trip.  
Mud 11.7 ppg 41 Vis 4.2 cc WL 12 pH
- 26.8.70 Drill to 9804' - 9920' TD driller. TD called by London office. Made 12 stands short trip. Condition hole and POOH, lay down shock-sub and 1 x 8" DC Schlumberger ran IES and BHC Sonic-Gamma Ray - Caliper logs, Schlumberger TD 9926'. RIH open ended drill pipe to lay abandonment plugs.  
Mud 11.7 ppg 43 Vis 3.1 cc WL 12 pH
- 27.8.70 Continue RIH open ended drill pipe, lay cement plugs  
1) 100 sacks at TD 9926' - 9820'  
2) 350 sacks 2% CaCl<sub>2</sub> 8450' - 7885' plug tagged with 10,000 lbs wt.  
3) 350 sacks 2% CaCl<sub>2</sub> 4748' - 4560' Note: plug went down the hole slightly tagged with 20,000 lbs wt.  
3a) 150 sacks 4560' - 4410' (calc)  
4) 150 sacks 470' - 350'.  
Back off 13-3/8" casing at mud line hanger. Lay down 8 joints. Cut and pull 20" casing from 334'.  
Cut and pull 36" pipe from 330' at second attempt.  
Divers checked legs and sea bottom clear.

29.8.70

Jacked down into water, checked barge and secured for tow. Tugs delayed 8 hours account of fog. Secured tugs Welshman and Superman and lowered into water 17.50 hours, August 29, 1970.

Rig released to Murphy  
41 days spud to release  
Status: Plugged - Abandoned.

GEOLOGIC DATA

TEXACO (C & T) NORWAY 9/4-2

Location: 57° 41' 11.050" N      Elevation K.B.  
          .04° 02' 34.851" E            to SEAFLOOR: 324'  
Reference  
Datum (K.B.): 95' Abv. MSL

Date Spudded: 19 July 1970      Date Completed: 29 August 1970  
Status:            Plugged and            Total Depth: 9,926'  
                                 Abandoned

Objectives:

Basal Jurassic Sandstone  
Danian  
Upper Cretaceous Chalk  
Triassic Sandstone

Shows: No significant shows (see Mud Log)  
Minor Methane Background in Pleistocene and Tertiary  
Methane show in Maastrichtian Chalk

Tests: None

Cores: No conventional cores; attempted 41 side wall cores  
For descriptions see Composite Well Log.

Drilling Contractor: Rimrock

Rig: Gulftide

<u>Hole Size</u>	<u>Interval</u>	<u>Casing</u>	<u>Shoe</u>
38"	324' to 680'	36" Conductor	574'
26"	680' to 2,000'	20"	926'
17½"	2,000' to 4,563'	13 3/8"	4,553'
12 1/4"	4,563' to 9,926'		

<u>Drilling Fluid</u>	<u>Interval</u>
Seawater Gel with Spersene	324' - 9,926'

TABLE OF STRATIGRAPHIC UNITS

K.B. = 95' AMSL

<u>UNIT</u>	<u>DEPTH OF TOP (K.B.)</u>
Recent and Pleistocene	324'
Pliocene	1,180'
Upper Miocene	1,300'
Middle Miocene	1,460'
Lower Miocene	1,650'
Oligocene	2,072'
Upper and Middle Eocene	2,960'
Eocene	3,470'
Paleocene	3,740'
Maestrichtian (U. Cretaceous)	<u>4,358'</u>
Campanian	4,940'
Santonian	5,600'
Coniacian	5,840'
Turonian	6,080'
Lower Turonian - Cenomanian	6,290'
Lower Cretaceous	6,405'
Jurassic	6,950'
Jurassic Limestone	8,030'
Jurassic Sand	<u>8,169'</u>
Triassic (Bunter)	<u>8,335'</u>
T.D. in Triassic	9,926'

## STRATIGRAPHY

### RECENT AND PLEISTOCENE (324' to 1,180' K.B.)

Predominantly sand with some interbedded clay. The sands seen in cuttings are fine to medium grained, clayey, with trace of mica, glauconite and carbonaceous material. The clay is gray to blue - gray, sandy and limy.

### PLIOCENE (1,180' to 1,300' K.B.)

Clay, gray, soft, calcareous to very calcareous, silty, with a trace of carbonaceous material.

### UPPER MIOCENE ( 1,300' to 1,460' K.B.)

Clay, gray, soft, in part sandy containing very fine grained sand, trace of limestone.

### MIDDLE MIOCENE (1,460' to 1,650' K.B.)

Clay, gray to blue-gray, very slightly calcareous.

### LOWER MIOCENE (1,650' to 2,075' K.B.)

Clay, gray to blue-gray, with traces of microcrystalline limestone, glauconite and micaceous clay.

### OLIGOCENE (2,075' to 2,960' K.B.)

Clay, gray to gray-brown with traces of pyrite and glauconite. This clay is slightly sandy above and calcareous below.

### UPPER AND MIDDLE EOCENE (2,960' to 3,470' K.B.)

Clay and claystone, gray to gray - brown to dark gray slightly calcareous, in part micaceous and glauconite, sandy in the lower part.

LOWER EOCENE (3,470' to 3,740' K.B.)

Claystone, gray-brown, slightly silty, becoming calcareous and sandy at the base.

PALEOCENE (3,740' to 4,358' K.B.)

Claystone and shale, gray to brown to tan, more or less silty or sandy with trace of glauconite and pyrite, slightly calcareous, with interbedded limestone at the base. The gamma-ray-sonic anomaly indicative of the tuff marker is near the top of this unit.

MAESTRICHTIAN (UPPER CRETACEOUS) (4,358' to 4,940' K.B.)

Chalk and limestone white to cream to light tan, with marly beds, abundant chert.

CAMPANIAN (4,940' to 5,600' K.B.)

Chalk and limestone, white to cream, trace of marl, trace of pyrite.

SANTONIAN (5,600' to 5,840' K.B.)

Chalk and limestone, white to cream, trace of marl, trace of pyrite.

CONIACIAN (5,840' to 6,080' K.B.)

Chalk and limestone, white to cream, trace of marl, trace of pyrite.

TURONIAN (6,080' to 6,290' K.B.)

Chalk and limestone, white to cream, trace of marl, and glauconite.

LOWER TURONIAN - CENOMANIAN (6,290' to 6,405' K.B.)

Chalk and limestone, white to light green, abundant

chert, trace of glauconite. At the base is a minor amount of red silty calcareous shale.

LOWER CRETACEOUS (6,405' to 6,950' K.B.)

(The top of this unit is of Middle Albian age)  
Shale, gray to black, firm to soft, calcareous to slightly calcareous with a trace of silt and glauconite.

JURASSIC SHALE (6,950' to 8,030' K.B.)

Shale and clay, black to gray, firm to soft, calcareous to slightly calcareous, trace of siltstone and minor white chalky limestone near the base.

JURASSIC LIMESTONE (8,030' to 8,169' K.B.)

Shale gray to black with interbeds of microcrystalline limestone and dolomite somewhat silty. Traces of pyrite and glauconite.

JURASSIC SANDSTONE (8,169' to 8,335' K.B.)

Sand, white, medium to coarse grained, poorly consolidated, calcareous, with thin interbeds of shale red to gray, micaceous. This sandstone appears to be an excellent reservoir, of the total thickness of 166 feet about 160 feet appears to be a porous sandstone on the logs with porosity of about 24 percent.

TRIASSIC (8,335' to 9,926' K.B. (TD))

Claystone, red, soft, occasionally calcareous and micaceous with interbedded sandstone, red to white, fine to coarse grained, in part calcareous.

WELL 9/4 - 2

COST DETAILS

\$ x 10<sup>3</sup>

<u>ITEM</u>	<u>BUDGETED</u>	<u>FINAL ESTIMATE</u>
60 Position Rig incl. Deposition Fee	150	52
61 Location	30	30
62 Water	7	1
63 Rig Up - Down	13	-
70 Drilling	465	342
71 Coring	34	1
72 Logging	75	71
73 Drill Stem Test	-	-
74 Conductor and Surface Casing	65	62
75 Intermediate Casing	31	49
78 Circulating System	50	53
79 General Rig Operations	8	9
80 Special Problems	-	66
85 Abandonment	31	43
90 Supervision	36	24
91 DSX	85	40
92 Transportation	<u>162</u>	<u>140</u>
Total Intangibles	1,236	983
50 Casing and Tubing	124	80
51 Producing Equip. Subsurface	<u>30</u>	<u>18</u>
Total Tangibles	<u>154</u>	<u>98</u>
Total Well Costs	<u>1,390</u>	<u>1,081</u>
Total Well Depth	10,700'	9,926'
Incl. Move Total Days	50	43



WELL 9/4 - 2

Logging Report.

<u>Date</u>	<u>TD.</u>	<u>Hole Size</u>	<u>Interval</u>	<u>Logs</u>
31.7.70	4560'	17.1/2"	Hit bridge at 2031	IES
31.7.70	4563'	17.1/2"	943' - 4562'	1 IES ✓
1.8.70	4563'	17.1/2"	943' - 4551'	1 BHC Sonic-GR-Cal. ✓
22.8.70	9012'	12.1/4"	4553' - 9011'	2 IES ✓
22.8.70	9012'	12.1/4"	4553' - 9012'	2 BHC Sonic-GR-Cal. ✓
23.8.70	9012'	12.1/4"	1800' usable	CDM
23.8.70	9012'	12.1/4"	41 shots, 11 NIL/R	Side Wall Core Tool
26.8.70	9926'	12.1/4"	8900' - 9926'	3 IES ✓
26.8.70	9926'	12.1/4"	8900' - 9918'	3 BHC Sonic-GR-Cal. ✓

WELL 9/4 - 2

CASING REPORTS

Size	36"	20"	13-3/8"
Shoe at	574'	926'	4553'
Weight lb/ft	374/472	133/94	72/61
Grade	1"/1-1/4"	J55/H40	N80/J55
Coupling	Weld	STC	LTC/Buttress
Stage Collar	-	-	1620'
Cement Job(s) Shoe		1500sxB 12%gel 500sxB 2%CaCl <sub>2</sub>	1250sx B 12% gel 750sx B neat
Stage collar			540sx B neat 950sx B 12% gel
Cement Tops Shoe			calc at stage collar
Stage collar			washed at 341'

WELL 9/4 - 2

MAGCOBAR MUD CHEMICAL CONSUMPTION REPORT  
(Not yet M&E Audited)

<u>Item</u>	<u>Unit</u>	<u>Unit Quantities</u>	<u>\$</u>
Al Stearate	25 lb	25	430
Barites	Ton Bulk or Eq.	210	11,707
Bentonite	100 lb or Eq.	686	1,818
Salt Gel	80 lb	550	2,471
Caustic Soda	112 lb	384	3,000
CMC	56 lb	37	440
Diesel Oil	Gals	12,000	1,148
Drill Detergent	55 gal	8	1,937
Lime	56 lb	206	252
Nylogel (Starch)	56 lb	507	3,679
Soltex	50 lb	118	2,467
Spersene	50 lb	1,310	12,672
Drill Aid	56 lb	260	2,730
Vis-Quick	50 lb	98	1,087
Sodium Chromate	56 lb	15	171
			<u>\$46,009</u>

COUNTY: **NORWAY** FIELD: **LICENCE 013** STATE: **TEXAS** SECTION: **RECORD** TOWNSHIP: **BLICK 9/4** RANGE: **NORWAY** WELL NO.: **2**

CONTRACTOR: **RIMROCK DRILLING LTD** RIG NO.: **GULFIDE** OPERATOR: **TEXACO OVERSEAS PET. CO.** TOOLPUSHER: **RUCCINI & ADAMS** SALESMAN: **SWI GEL**

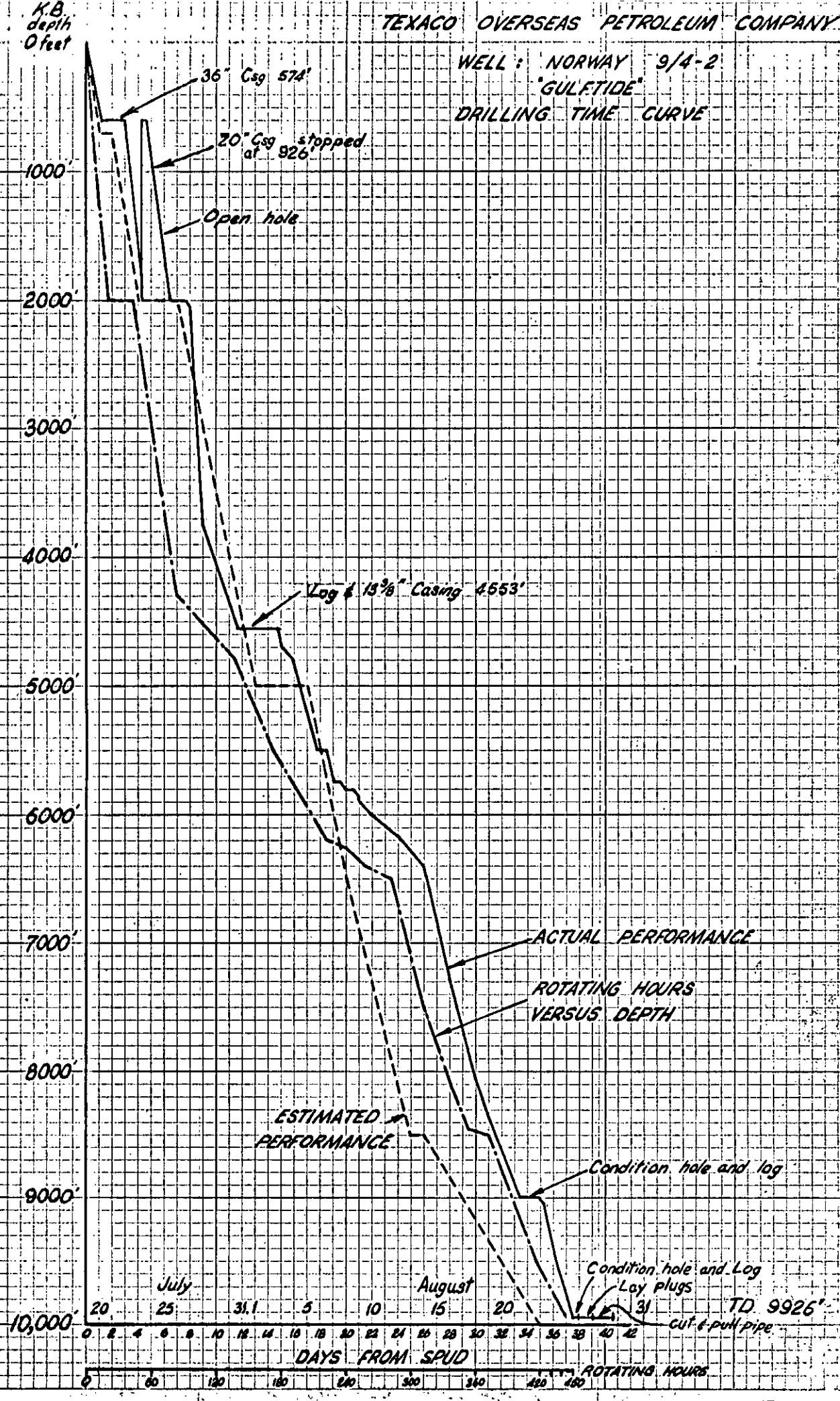
SPUD: **23.30 1977P** UNDER SURF.: **UNDER INTER.** SET SAND ST.: **REACHED T.O.** PUMP NO. 1: **N. 1600** PUMP NO. 2: **N. 1600** LINER: **7"** LINER: **7"** PUMP POWER: **30** TYPE MUD: **SWI GEL**

DRILL PIPE: **4 1/2"** UNDER SURF.: **UNDER INTER.** SET SAND ST.: **REACHED T.O.** PUMP NO. 1: **N. 1600** PUMP NO. 2: **N. 1600** LINER: **7"** LINER: **7"** PUMP POWER: **30** TYPE MUD: **SWI GEL**

NO.	SIZE	MAKE	TYPE	JET 32ND IN	SERIAL	DEPTH OUT	FEET	HOURS	FT/HR	ACCUM DRG. HRS.	WT. 1000 LBS.	R P M	VERT. DEV.	PUMP PRESS	PUMP OPER. ACTION	S P M		MUD		DULL. COND.	FORMATION REMARKS	
																1	2	WT. VIS.	W.L.			T
1	1 1/2"	H7C	OSC 3	1/2"	UK 87227	650'	386'	7		7	5 1/5	110	1 1/2	400	C	55	55					SD 5 SH
2	1 1/2"	" RR	OSC 1	1/2"	95368	2000'	1320'	13		20	10 1/5	200	1 1/2	2200	C	60	60	9.2	42	38	350	SD 5 SH
3	2 1/2"	"	OSC	REG	M2 955	2000'	1320'	27		27	10 1/5	200	1 1/2	1200	C	60	60	9.4	41	38	110	- 4 1/2"
4	1 1/2"	"	OSC 3A	1/2"	UK 95189	4137'	2137'	38		27	8 5/8	120	1 1/2	3000	C	57	57	1.8	36	22	550	clay # sand 5 1/2"
5	1 1/2"	" RR	OSC 1	1/2"	95368	4427'	2900'	22		107	3 1/2	120	1 1/2	3000	C	50	50	5.8	35	17	650	clay # sand 5 1/2"
6	1 1/2"	"	OSC 1 G	1/2"	UK 59303	4520'	133'	6 1/2		113 1/2	10 1/5	120	2	3000	C	50	50	10	42	8.1	650	CHALK
7	1 1/2"	"	X 1 G	1/2"	UK 94193	4708'	145'	10		123 1/2	12 1/5	125		3000	C	40	40	10	36	6	640	"
8	1 1/2"	JEC	M44 N	1 1/2"	270861	4586'	178'	12		135 1/2	30	125	1 1/2	3000	C	40	40	10.2	37	6	110	"
9	1 1/2"	H7C	X 1 G	1 1/2"	88523	5379'	493'	27 1/2		163	30 1/2	300	3/4	3000	C	40	40	10.7	40	6.3	440	clay
10	1 1/2"	H7C	X 3 H	2 1/2"	79809	5523'	144'	9 1/2		172 1/2	30 1/2	50 1/2		3000	C	39	39	10.7	40	5	450	chalk
11	1 1/2"	H7C	X 1 G	1 1/2"	94192	5754'	231'	16 1/2		189	30 1/2	50 1/2		3000	C	34	33	10.7	38	5	550	"
12	1 1/2"	JEC	M44 N	1 1/2"	272861	5824'	70'	6		195	30 1/2	120		3100	S	63		10.7	40	6.9	350	1st sand
13	1 1/2"	Reed	Y-T-3	1 1/2"	NHLY 28	6133'	143'	25		220	38	85		3000	C	34	34	10.5	41	8.5	440	"
14	1 1/2"	H7C	X 1 G	1 1/2"	UK 98625	6271'	135'	21		241	38	65 1/2		3000	C	33	33	10.6	39	10.4	620	1st clay
15	1 1/2"	H7C	X 1 G	1 1/2"	UK 98691	6398'	127'	17		258	45	75	1/2	3000	C	31	31	10.5	40	9.6	540	1st mud
16	1 1/2"	H7C	X 1 G	1 1/2"	UK 98626	7015'	67'	28 1/2		286 1/2	35	85	1 1/2	3000	C	31	31	10.5	41	8.6	560	clay
17	1 1/2"	H7C	X 1 G	1 1/2"	UK 98688	7517'	502'	24		302 1/2	40	90		3000	S	60		10.6	41	4.2	650	clay + sand
18	1 1/2"	H7C	X 1 G	1 1/2"	UK 98687	8080'	583'	24		322 1/2	40	85		3000	S	60		10.6	58	5.0	650	"
19	1 1/2"	H7C	X 1 G	1 1/2"	98602	8420'	340'	17		351 1/2	40	85		3000	S	60		10.6	41	2.8	750	clay, sh, sd
20	1 1/2"	SEC	M44 N	1 1/2"	272863	8604'	184'	14 1/2		366	40	90		3000	S	60		10.6	40	2.8	320	sh & sd + sh
21	1 1/2"	Reed	ST 3A	1 1/2"	NHLY 29	9010'	406'	23 1/2		389	40	90		3000	S	60		10.6	46	2.6	750	sh



WELL: NORWAY 9/4-2  
"GULFTIDE"  
DRILLING TIME CURVE



# TEXACO

## ABANDONMENT SCHEMATIC NORWAY 9/4 - 2

