

RECORD OF DRILLING MUD TESTS

COMPANY STALOIL				
WELL NAME & NO. 119-2				
API WELL NO.	STATE	COUNTY	WELL	S/T
FIELD		COUNTY		STATE
		NORTH SEA		NORWAY
CONTRACTOR			Sec.	T R
ROSS DRILLING CO.				

CASING	HOLE SIZE	NO. BITS	NO. DAYS
<u>30" @ 154</u>	<u>36"</u>	<u>1</u>	<u>2</u>
<u>30" @ 433</u>	<u>26"</u>	<u>2 RA</u>	<u>5</u>
<u>133 1/2 @ 1375</u>	<u>17 1/2"</u>	<u>2</u>	<u>7</u>
<u>9 3/4 @ 2856</u>	<u>12 1/4"</u>	<u>5</u>	<u>13</u>

TYPE MUD LIME BASE HIGH SOLIDS

DATE	DEPTH	WEIGHT lb/gal	VISCOSITY sec	PLASTIC VIS CPS	YIELD VALUE lb/100 ft ²	GEL STRENGTH 10S 10M	PH	FILTRATE ml	HT-HP FILTRATE 500 psi TEMP °F	CAKE 32nd IN.	ALKALINITY		SALT CHLORIDE ppm SPG	CALCIUM ION ppm	SAND % VOL	SOLIDS % VOL	OIL % VOL	WATER CONTENT % VOL	METHYLENE BLUE		
											Pf	Pm							ml/ml	lbs/bbl	
6-2	125	8.6	100†				9.0														
6-3	154	8.6	47				9.5														
6-4	236	8.7	45				9.0														
6-5	250	8.7	55				13.0														
6-6	438	8.8	90				10.0														
6-7	438	8.8	100†				10.0														
6-8	TRAN	20" CSE																			
6-9	438	8.8	45	16	10	2 4	11.5	10.0		2	7.8	4.8	25.0	1500	200		2	98	2	10	
6-10	561	10.8	47	17	9	2 4	12.0	10.4		2	6.2	6.0	20.0	5000	160	3	12	88	2	10	
6-11	854	10.8	47	20	11	2 5	12.0	12.5		2	5.0	4.5	12.0	7000	160	.75	11	89	2	10	
6-12	1155	10.8	45	21	9	2 5	12.0	12.0		2	2.5	3.5	9.6	14000	240	TR	14	86	3	15	
6-13	1336	10.8	47	24	12	2 6	12.5	10.8		2	2.8	7.0	11.0	17000	190	"	14	86	3	15	
6-14	1390	10.8	47	21	15	2 10	12.0	10.2		2	2.5	2.1	10.0	18500	240	"	15	85	3	15	
6-15	1390	10.8	49	21	16	2 11	10.0	10.3		2	1.0	1.5	6.0	20000	300	"	15	85	3	15	
6-15	TRAN	133 1/2" CSE																			
6-16	1425	13.3	55	24	9	2 12	13.0	15.2		2	5.0	3.3	16.5	20000	160	"	25	75	3	15	
6-17	1631	14.2	44	16	14	2 12	12.5	14.0		2	5.0	4.3	20.0	20000	100	"	27	73	4	20	
6-18	1772	15.0	50	22	10	2 12	12.0	9.4	29.0	2/3	3.9	4.2	19.0	18000	200	"	27	73	5	25	
6-19	1935	15.3	45	19	11	0 8	12.7	6.6	23.0	2/4	6.0	3.8	19.0	18000	200	"	29	71	4	20	
6-20	2052	15.5	47	24	6	0 6	13.0	5.9	24.0	2/4	6.5	5.0	24.0	18000	160	"	31	69	4	20	
6-21	2130	15.5	50	21	9	2 8	12.5	6.4	23.0	2	5.1	5.0	23.0	19000	100	"	23	76	3	15	
6-22	2306	15.5	62	28	12	2 8	12.5	6.2	22.0	2	5.0	4.0	20.0	19000	100	"	28	71	3	15	
6-23	2426	15.5	64	25	12	2 7	12.5	6.4	22.0	2	5.1	5.0	23.0	19000	120	"	28	72	3	15	
6-24	2658	15.5	62	27	11	2 7	12.5	6.3	21.0	2	5.2	4.2	20.0	19000	120	"	29	71	3	15	
6-25	2796	15.4	63	26	12	2 6	12.5	6.5	20.0	2	5.0	4.6	21.0	19000	120	"	29	71	3	15	
6-26	2867	15.3	66	29	15	2 7	12.5	6.3	20.0	2	6.0	5.4	25.0	20000	100	"	30	70	3	15	
6-27	2867	15.4	61	27	12	2 7	12.5	6.5	21.0	2	5.5	4.9	23.0	20000	110	"	30	70	3	15	
6-28	TRAN	95 1/2" CSE																			
6-29	2867	15.3	47	26	9	1 9	12.0	9.2	27.0	2	1.0	2.7	11.0	18000	160	"	30	70	4	20	
6-30	2867	15.2	42	25	8	1 10	12.0	7.8	23.0	2	3.5	2.2	11.0	18000	160	"	30	70	4	20	
7-1	2867	15.0	50	26	9	1 10	12.0	8.6	22.0	2	3.1	2.0	10.0	18000	80	"	29	71	4	20	
7-2	2891	14.0	54	26	10	2 9	12.0	7.1	20.0	2	3.5	2.6	12.5	18000	120	"	27	73	5	25	
7-3	2986	14.0	53	32	11	2 11	12.0	6.4	19.0	2	1.1			18000	160	"	25	75	5	25	
7-4	3040	14.0	50	36	14	1 11	12.5	5.4	17.0	2	1.7			18000	160	"	25	75	4.5	22.5	
7-5	3093	14.0	49	30	13	2 2	12.5	5.2	17.0	2	6.0			19000	110	"	25	75	4	20	

NOTICE

RECORD OF DRILLING MUD TESTS

COMPANY				
WELL NAME & NO.				
API WELL NO.	STATE	COUNTY	WELL	S/T
FIELD		COUNTY		STATE
CONTRACTOR			Sec.	T R

CASING	HOLE SIZE	NO. BITS	NO. DAYS
@			
@			
@			
@			
@			

TYPE MUD _____

DATE 19 77	DEPTH M	WEIGHT lbs/gal ppm	VISCOSITY sec	PLASTIC VIS cps	YIELD VALUE lbs/100 ft ²	GEL STRENGTH 10S 10M	pH	FILTRATE ml	HT-HP FILTRATE 500 psig TEMP - °F	CAKE 32nd IN	ALKALINITY			SALT CHLORIDE ppm ppg	CALCIUM ION ppm	SAND % VOL	SOLIDS % VOL	OIL % VOL	WATER CONTENT % VOL	METHYLENE BLUE	
											PI	PPM	Pm							me/ml	lbs/bbl
7-6	3130	14.0	49	32	14	3 8	12.5	5.0	16.0	2	6.0	11.5	19000	100	74	25	75	4	20		
7-7	3156	14.0	50	33	12	2 7	12.0	4.7	14.5	2	4.2	9.2	21000	80	"	25	75	4	20		
7-8	3169	14.0	50	34	11	2 7	12.0	4.8	15.0	2	5.0	9.5	21000	80	"	25	75	4	20		
7-9	3200	14.0	50	32	11	2 7	12.0	4.7	14.3	2	4.5	9.0	21000	90	"	24	76	4	20		
7-10	3218	14.0	49	31	11	2 6	12.3	4.9	15.0	2	4.7	9.2	22000	80	"	24	76	4	20		
7-11	3290	14.0	50	33	13	3 7	12.0	4.9	14.5	2	4.3	8.5	22000	80	"	25	75	4	20		
7-12	3364	14.0	49	33	14	3 7	12.5	5.0		2	4.5	8.1	22000	80	"	25	75	3.5	17.5		
7-13	3427	13.9	50	33	14	3 7	12.3	5.2	15.0	2	4.5	8.3	22000	80	"	25	75	3.5	17.5		
7-14	3445	13.9	49	31	13	3 7	12.4	5.3	15.0	2	4.5	8.6	22000	80	"	25	75	3.5	17.5		
7-15	3459	13.9	52	33	10	3 7	12.4	5.4	15.0	2	5.0	8.3	23000	80	"	24	76	3.5	17.5		
7-16	3459	13.9	53	33	11	2 7	12.4	5.4	15.0	2	5.0	8.2	23000	80	"	24	76	3.5	17.5		
7-17	3459	13.9	52	32	11	2 7	12.3	5.4	15.0	2	5.0	8.1	23000	80	"	24	76	3.5	17.5		
7-18	3459	13.9	54	29	10	3 7	12.0	5.7	15.3	2	3.8	8.0	23000	80	"	24	76	3.5	17.5		
7-19	RAIN	7	LINER																		
7-20	3459	13.9	63	47	7	4 28	12.6	10.0		2	6.0	3.6	18.5	21000	160		26	74	3.5	17.5	
7-21	3459	13.9	55	32	9	0 19	12.6	8.2		2	4.0	3.9	18.0	21000	80		24	76	4	20	
7-22	3459	13.9	55	25	13	1 31	12.6	8.6		2	5.0	3.0	15.0	18000	80		24	76	4	20	
7-23	3459	13.9	56	28	12	2 18	12.6	7.8		2	5.0	3.0	16.0	18000	80		24	76	4	20	
7-24	3459	13.9	52	28	17	1 20	12.6	9.6		2	5.0	3.0	15.0	21000	80		24	76	3.5	17.5	
7-25	3459	14.0	50	20	10	0 20	12.5	2.8		2	4.0	4.0	20.0	20000	80		24	76	4	20	
7-26	3459	13.9	48	23	8	0 27	12.6	9.8		2	4.0	3.8	17.5	16000	80		24	76	3	15	
7-27	3459	13.9	54	38	8	2 31	12.4	10.0		2	3.5	3.6	18.0	18000	120		24	76	3	15	
7-28	3459	13.9	55	37	11	5 27	12.6	9.8		2	6.5	3.3	19.5	15000	80		24	76	3.5	17.5	
7-29	3459	13.9	56	32	11	3 29	12.5	9.0		2	5.0	3.7	18.0	15000	80		25	75	3.5	17.5	
7-30	3459	13.9	58	33	8	2 20	12.5	9.6		2	5.0	3.6	17.5	12000	80	1	25	75	3.5	17.5	
7-31	3459	13.9	47	28	8	4 22	12.5	11.0		2	4.0	3.0	15.0	13000	80		25	75	3.5	17.5	
8-1	3459	14.0	50	30	10	10 25	12.4	11.0		2	3.5	3.2	12.5	14000	120		25	75	3.5	17.5	

VI TESTING SUMMARY



RW/JKT

6.1.78

WELL 1/9-2, TESTING OPERATIONS AND RESULTS

Summary:

Well 1/9-2 was spudded June 1st and abandoned as dry August 12th.

The interval 3135-3215 (m RKB) was cored with nearly 100% recovery.

T.D. was 3459 m.

The RFT-tool was run without success.

Two drillstem tests were carried out, one in the Maastrichtian (3197-3209 m RKB) and one in the Danian (3130-3154 m RKB).

The deliverability in both zones were too small to obtain a proper clean-up. Production was mainly water with minor amounts of hydrocarbons. Samples were caught during reverse circulating, but no clean formation water was obtained.

1/9-2 must be considered a dry well.

Extract of testing activities

<u>Date</u>	<u>Comments</u>
July 16	: RFT survey, 14 points were tried for pressure. No success. Total time spent including rigging was approx. 6 hrs.
16-18	: Condition mud, run 7" liner and cementing.
19-21	: Plugs set, pull and reset bop laying down 5" and picking up 3.5" drillpipe.
22-23	: Remove plugs, circulate and test.
23-24	: Run CBL-VDL
24	: Perf. zone 1, 3197-3209 m
24-25	: Running test string, 24 hrs.
26	: Initial flow and build-up.
27	: Acidizing. Clean up flow.
28	: Clean-up flow terminated. Reverse circulate string content (mud problems). Test ended.
29-31	: Plug set, squeeze cement, perforate second zone, 3130-3154 m, run teststring.
Aug. 1	: Initial flow and build-up. Second flow, reversed out (mud problems) and acidized. Clean-up flow started.
2	: Test ended, reverse circulated, problems with mud.
2-4	: Pulled string and worked on tools. Treated the mud to obtain proper temperature resistance and circulated to condition hole. Run teststring.
5	: Reperforated second interval, 3130-3154 m, with tubing gun. Acidized and started clean-up flow.
6	: Flowing approx. 3 - 4 bbls/hr.
7	: Flowing approx. 3 - 4 bbls/hr. Test ended. Reverse circulated string content.
12	: Rig left location 1/9-2 to go to 1/9-4.

RFT-Survey

14 pressure readings were tried in the Maastrichtian and Danian formation all unsuccessful. The tool indicated extremely low permeabilities. Schlumberger had problems obtaining a proper seal even with hole diameters below 10 inches, which is the given limit of the instrument.

The operation started 16.7 02.45 and the instrument was rigged down at 09.00.

Summary of Drillstem Test Results

DST 1: (Maastrichtian, 3197-3209 m RKB)

Flowed approximately 40-60 B/D of acidwater after stimulation, slugging badly. 2-10% of oil was measured in samples, and the gas produced contained at least C₁ - C₄ along with the Co₂.

Oil : 34.0° API
Water : 52000 ppm NaCl (samples from final reverse out sequence but doubtful due to improper clean-up).

DST 2 & 2 A: (Danian 3130 - 3154 m RKB)

The flow stabilized at approximately 85 - 96 B/D of acidwater after the retest effort. Clean samples of formation fluids were not obtained, but this interval produced long enough to approach clean-up. 2-17% of oil was measured on samples taken during flow and reversing sequences with the smaller value probably being more representative. Gas produced contained at least C₁-C₄.

Oil : 35.2 - 35.7° API
Water : DST 2 - 52000 ppm NaCl (sample taken from reverse sequence before acid).
DST 2 A - 78 000 ppm NaCl (sample from final reverse sequence).

Detailed Test Sequence

DST 1

Perforations : 3197 - 3209 m RKB, ref. FDC/CNL
4" casing gun, 4 shots/ft, 90° phased,

Cushion : Seawater down to RTTS circulating valve.

Recorders : 2 Sperry-Suns, 2 Ameradas and one RT7 temperature gauge run on wireline after observing the initial response. All but one Sperry-Sun were lost when the connecting hook between the Sperry-Suns broke after an unsuccessful pick-up attempt before the acid job. The locking mechanism failed around 500 ft above the XN-nipple.

The remaining gauge recorded properly only up to the acid job and stopped 4.5 hrs after the acid reached it.

1 Flow Sequence: 95 min

- 0-15 min : open apr with 2000 psi on wh
- 15-19 min : open on 3/4" choke, whp approx. Zero
- 19-32 min : open kill line to cement unit, produced approx. 0.5 bbls closed at cement unit to prepare injection.
- 36-43 min : Injected 9 bbls of mud and water with 5000 to 4500 psi whp. Closed in.
- After 50 min : whp = 3240 psi
- 54-65 min : open on 3/4" choke, flow to surge tank rec. approx. 4 bbls.
- 65-95 min : open kill line to cement unit, rec. approx. 5 bbls, last rate 1 bbl/8 min, whp approx zero.

1. Build-up : 245 min.
close in at surface to run recorders.
whp = 2200 psi just before 2. flow
2. Flow : 13 min (+ 16 min before apr. closed)
open kill line to Cement unit, flowed
- 0 - 13 min : 3.5 bbls, whp dropped to zero. Shut in at surface.
Closed apr. valve 16 min. later with whp = 1550 psi
2. Build-up : 177 min (from closing at surface)
apr. - valve was leaking during this shut-in
period (cuts in seat and ball when inspected)
last recorded whp = 2075 psi
- testing apr : pressure tested against apr, valve leaking.
- trying to retrieve
recorders : open apr, to retrieve bombs. Several attempts
unsuccessful, ref. Sperry-Sun report for details
and record on losing the bottom 4 recorders.
- acidizing : Thin film of oil on samples taken during reverse
circulation.
Pumped 95 bbls of acid, 1.5 bbls/min
- 4000 psi, plus 80 bbls sea water, 3 bbls/min -
4000 psi.
1 hr contact time, last whp = 3300 psi.
3. Flow : 19 hrs
- 0 - 3.5 hrs : Open on 3/4" choke. whp pressure dropped to
zero. Total flow approx. 60 - 70 bbls. Gas
breakthrough.
- 3.5-19 hrs. : mainly gas flowing, slugging liquid.
whp approx. zero. Estimated total recovery for
3. flow approx. 80 - 120 bbls liquid, i.e. about
equal to injected amount.

4. Build-up : 9.25 hrs.

shut-in at surface, whp = 0 psi

last whp recorded : 1220 psi

reversing : string content was reversed out. Thick mud caused severe problems. Unable to go down with fishing tool to retrieve bombs. Samples caught while reversing.

WELL NO: 1/9-2 OPEN HOLE (SIZE)/PERFS(TYPE): 4" casing gun 4 S.P.F

D.S.T.NO: 1 TEST TYPE: Drill stem

TEST INTERVAL: 3197-3209m WATER DEPTH: 76 m

FORMATION: Danian P.B.T.D: 3399 m

K.B.ELEVATION: 25,0m PACKER DEPTH: 3162.85 m

TOTAL DEPTH: 3459 m SHUT IN TOOL DEPTH: 3158.15 m

PACKER TYPE: R.T.T.S.7" RATHOLE VOLUME: 5.2 bbls

SHUT-IN TOOL: A.P.R.N.CUSHION: TYPE Seawater Full String VOLUME 78 bbls

CASING: SIZE 7" WT 29 lb/ft DEPTH 3458 m BH CHOKE SIZE: 2.0"

TEST STRING: SIZE 3½" WT 121b VOL 78 bbls

MUD: TYPE Lignosul-phate WT 13.9 lbs/gallon

Amerada (3)

B.H.P. GAUGES: TYPE Sperry Sun(2) NO/SIZE OF SAMPLES RETAINED: 20

DEPTH XN nipple at 3165.55m B.H. Nil

RATING 10000 15000 0-150°C 0-10000 WELLHEAD/CHOKE MANIFOLD: 1x20 ltr fl.
0-10000 1 bbl fluid 15x1 ltr fluid 1x½ ltr fl.
1x500 cc gas 1x20 ltr gass.

CLOCK 120 hr 120 hr 120 hr SEPARATOR OIL/CONDENSATE Nil
100 hr 100hr

INSIDE/OUTSIDE Inside SEPARATOR GAS Nil

STOCK TANK OIL/CONDENSATE Nil

WATER Nil

SAND Nil

DST 1

TEST STRING	O/D	ID	LENGTH	DEPTH
3½ Tubing	3.50	2.75	27.12	21.75
Otis Lubricator Valve	10.75	2.94	2.12	23.87
3½ Tubing	3.50	2.75	66.89	90.76
Johbstone SSTT above WH			8.24	99.00
below WH			.82	99.82
3½ Tubing	3.50	2.75	2807.94	2907.76
Sub	4.75	2.75	.30	2908.06
Howco Slip Joint 1 open	4.275	2.00	10.67	2918.73
1 closed				
Drill Collars	4.75	2.25	171.49	3090.22
Sub			.20	3090.42
RTTS Cir. Valve	4.50	2.44	.84	3091.26
Sub			.21	3091.47
Drill Collars	4.75	2.25	28.63	3120.10
Howco Slip Joint Closed	4.375	2.00	4.57	3124.67
Drill Collars	4.75	2.25	28.58	3153.25
APR Reverse Sub	5.00	2.25	.81	3154.06
APR N Tester	5.00	2.25	4.09	3158.15
Big John Jars	4.625	2.375	1.52	3159.67
RTTS Cir. Valve	4.50	2.44	.84	3160.51
" Safety Joint	4.50	2.44	1.01	3161.52
RTTS Packer Above center	5.75	2.06	.52	3162.84
Below center			.81	3162.85
Perforated Tubing	2.875		2.47	3165.32
No Go Nipple		1.82	.23	3165.55
Blank Tubing	2.875		20.73	3186.28

DST 2

Perforations : 3130-3154 m RKB, ref. FDC/CNL, 4" casing gun, 4 shots/ft., 90° phased.

Cushion : Seawater down to RTTS circulating valve.

Recorders : 2 Amerada and one RT7 temperature element run on the string hanging from a spring between the lower two joints of blanked tubing. 2 Sperry Suns run on wireline after acidizing.

1. flow sequence : 72 min.

0 min. : whp = 1440 psi, open apr valve.

0-1 min. : whp increased to 1880 psi

1-19 min : open on 3/4" choke, whp decreased to 5 psi, no measureable flow after the compression was released.

19-22 min : pumped 1.5 bbls to reach 4500 psi had to increase pressure.

25-31 min. : breakdown at 5000 psi, injected 10 bbls at 4500 psi.

32-72 min : flowed through kill line to cement unit. whp decreased to zero. Total flow 17 bbls, approx. 5.5 bbls from formation. Closed apr valve.

1 Build-up : 180 min (bottomhole)

2. flow : 251 min
flowed 25 bbls to cement unit, flow rates decreasing. Kill line valve closed, apr closed.

2. Build-up : 8 hrs (downhole)

reversing : reversed out string content. Thin film of oil on samples. Problems with gelled mud. Circulated and conditioned mud for 5 hrs.

- acidizing : pumped 136 bbls of acid, 3 bbls/min @ 3900 psi, and 83 bbls of seawater, 4 bbls/min @ 4280 psi. Run Sperry Sun recorders on wireline. Acid contact time approx. 4 hrs.
3. flow : 13 hrs 20 min
open on 3/4" choke, whp = 3360 psi but dropped to 21 psi after 12 min. Approx. 2.5 hrs to recover 65-70 bbls when the gas broke through. Mainly gas flow from thereon with slugs of liquid. Total recovery approx. 95-110 bbls or at least 30 bbls less than injected. Possible plugging effect due to the mud problems observed was discussed.
3. Build-up : 13 min
closed lubricator valve to run wireline fishing tool to pick up Sperry Sun recorders.
4. flow : 75 min
open lubricator valve, Sperry Sun recorders picked without problems. No trace of solids on string or tools. Total flow in this period approx. 5 bbls. Closed lubricator valve. Open lubricator valve and closed swab valve, closed choke manifold and apr valve.
4. Build-Up : disturbed by reopening and shutting apr valve to help reversing.
- reversing : string content was reversed out with serious problems due to gelled mud.

WELL NO: 1/9-2 OPEN HOLE (SIZE)/PERFS (TYPE): 4" casing gun 4 S.P.F

D.S.T.NO: 2 TEST TYPE: Drill stem

TEST INTERVAL: 3130-3154m WATER DEPTH: 76 m

FORMATION: Danian P.B.T.D: 3177 m

K.B.ELEVATION: 25,0m PACKER DEPTH: 3097.72 m

TOTAL DEPTH: 3459 m SHUT IN TOOL DEPTH: 3093.83 m

PACKER TYPE: R.T.T.S.7" RATHOLE VOLUME: 5.2 bbls

SHUT-IN TOOL: A.P.R.N. CUSHION: TYPE Seawater FT String Full VOLUME 70 bbls

CASING: SIZE 7" WT 29 lb/ft DEPTH 3458 m BH CHOKE SIZE: 2.0"

TEST STRING: SIZE 3½" WT 121b VOL 70 bbls

MUD: TYPE Lignosul-phate WT 13.9 lbs/gallon

Amerada (3)

B.H.P. GAUGES: TYPE Sperry Sun (2) NO/SIZE OF SAMPLES RETAINED: 43

DEPTH XN nipple at 3101.2 m B.H. Nil

RATING 120000, 12000, 91° 350° 0- WELLHEAD/CHOKE MANIFOLD: 2x 1 ltr gas
10000 0-10000 5x25 ltr 35 x 1 litre 1x 5 ltr. gas

CLOCK 120hr 120hr 144 hr 100hr SEPARATOR OIL/CONDENSATE Nil
100hr

INSIDE/OUTSIDE Inside SEPARATOR GAS Nil

STOCK TANK OIL/CONDENSATE Nil

WATER Nil

SAND Nil

DST 2

TEST STRING	O/D	ID	LENGTH	DEPTH
3½ Tubing	3.50	2.75	27.12	21.75
Otis Lubricator Valve	10.75	2.94	2.12	23.87
3½ Tubing	3.50	2.75	66.89	90.76
Johbstone SSTT above WH			8.24	99.00
below WH			.82	99.82
3½ Tubing	3.50	2.75	2743.62	2843.44
Sub 1, open	4.75	2.75	.30	2843.74
Howco Slip Joint 1 closed	4.375	2.00	10.67	2854.41
Drill Collars	4.75	2.25	171.49	3025.90
Sub	4.50	2.44	1.25	3027.15
RTTS Cir. Valve w/subs.	4.50	2.25	28.63	3055.78
Sub		2.00	4.57	3060.35
Drill Collars	4.75	2.25	28.58	3088.93
Howco Slip Joint Closed	4.375	2.25	.81	3089.74
Drill Collars	4.75	2.25	4.09	3093.83
APR Reverse Sub	5.00	2.25	1.52	3095.35
APR N Tester	5.00	2.25	.84	3096.19
Big John Jars	4.625	2.375	1.01	3097.21
RTTS Cir. Valve	4.50	2.44	.52	3097.72
" Safety Joint			.81	3098.53
RTTS Packer Above center	5.75	2.06	2.47	3101.01
Below center			.23	3101.23
Perforated Tubing	2.875		20.73	3121.96
No Go Nipple		1.82		
Blank Tubing	2.875			

DST 2A

Retest designed to minimize mud contamination. Mud treated and tested. No problems with the mud observed during this test.

Perforations : 3130-3154 m, reperforated through tubing, 1 11/16 unijets, 2 shots/ft.

Cushion : Seawater to RTTS circulating valve.

Recorders : 2 Sperry Suns, 1 Amerada and 1 RT7 temperature gauge run on wireline after acidizing.

1. flow : 100 min
whp = 1400 psi just before opening kill line valve going to cement unit. Pressure dropped to zero recovered 1.7 bbls total.

1. Build-up : 149 min (downhole)
no recorders in place. Reversed out string content and spotted acid.

acidizing : Injected 1-5 bbls of water + 228 bbls of acid + 5 bbls water, total approx. 238 bbls, 4 bbls/min - 4000 psi. Run recorders on wireline. Contact time approx. 3 hrs.

2. flow : 50 hrs 16 min

0-11 min : whp dropping from 810 to 700 psi, recovered 59 bbls, flow to burner.

11 min - 4 hrs : slugging, estimated recovery 40-80 bbls.

4 hrs - end : flowing 3-4 bbls/hr pluss some gas. Rate fairly stable. Total recovery 290-320 bbls or more.

2. Build-up : 126 min (downhole)

WELL NO: 1/9-2 OPEN HOLE (SIZE)/PERFS (TYPE): 1-11/16" Tubing gun

D.S.T.NO: 2a TEST TYPE: Drill stem

TEST INTERVAL: 3130-3154m WATER DEPTH: 76 m

FORMATION: Danian P.B.T.D: 3177 m

K.B.ELEVATION: 25,0m PACKER DEPTH: 3093.28 m

TOTAL DEPTH: 3459 m SHUT IN TOOL DEPTH: 3088.58 m

PACKER TYPE: R.T.T.S.7" RATHOLE VOLUME: 5.2 bbls

SHUT-IN TOOL: A.P.R.N. CUSHION: TYPE Seawater Full FT String VOLUME 70 bbls

CASING: SIZE 7" WT 29 lb/ft DEPTH 3458 m BH CHOKE SIZE: 2.0"

TEST STRING: SIZE 3½" WT 121b VOL 70 bbls

MUD: TYPE Lignosul-phate WT 13.9 lbs/gallon

Amerada (2)

B.H.P. GAUGES: TYPE Sperry Sun (2) NO/SIZE OF SAMPLES RETAINED: 30

DEPTH XN nipple at 3095.98 m B.H. Nil

RATING 12000 91°-350° 10000 WELLHEAD/CHOKE MANIFOLD: 1x 25 ltr gas
10000 27x 1 ltr 2x
5 ltr gas

CLOCK 120 hr 144 hr 100 hr 100hr SEPARATOR OIL/CONDENSATE Nil

INSIDE/OUTSIDE Outside SEPARATOR GAS Nil

STOCK TANK OIL/CONDENSATE Nil

WATER Nil

SAND Nil

DST 2A

TEST STRING	O/D	ID	LENGTH	DEPTH
3½ Tubing	3.50	2.75	27.12	21.75
Otis Lubricator Valve	10.75	2.94	2.12	23.87
3½ Tubing	3.50	2.75	66.89	90.76
Johbstone SSTT above WH			8.24	99.00
below WH			.82	99.82
3½ Tubing	3.50	2.75	2738.37	2838.19
Sub	4.75	2.75	.30	2838.49
Howco Slip Joint 1 open	4.375	2.00	10.67	2849.16
Drill Collars 1 closed	4.75	2.25	171.49	3020.65
Sub				
RTTS Cir. Valve	4.50	2.44	1.25	3021.90
Sub				
Drill Collars	4.75	2.25	28.63	3050.53
Howco Slip Joint Closed	4.375	2.00	4.57	3055.10
Drill Collars	4.75	2.25	28.58	3083.68
APR Reverse Sub	5.00	2.25	.81	3084.49
APR N Tester	5.00	2.25	4.09	3088.58
Big John Jars	4.625	2.374	1.52	3090.10
RTTS Cir. Valve	4.50	2.44	.84	3090.94
" Safety Joint	4.50	2.44	1.01	3091.95
RTTS Packer Above center	5.75	2.06	.52	3092.47
Below center			.81	3093.28
Perforated Tubing	2.875		2.47	3095.75
No Go Nipple		1.82	.23	3095.98
Blank Tubing	2.875		20.73	3116.71