APPENDIX 3.

DRILLING FLUID RECAP.

PINE LODGE-1

W1034

P5310

VA
JDF

Baroid Australia Pty. Ltd.

(Incorporated in New South Wales)

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October 10, 1990

Gas & Fiel Exploration
Attn: Val Akbari/John Foster
G.P.O. Box 1841 Q
MELBOURNE VIC 3001

RE: DRILING FLUIDS RECAP - PINE LODGE NO. 1

Dear Val/John,

Enclosed please find two copies of the above recap.

Yours sincerely,
BAROID AUSTRALIA PTY. LTD.

Gus van der Heide
(District Manager)

CC: - Baroid Perth
- Manfred Olejniczak

GAS & FUEL EXPLORATION

DRILLING FLUIDS RECAP

PINE LODGE NO. 1

PEP 105, OTWAY BASIN, VICTORIA

Prepared by: M Olejniczak

Dated : October 1990

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GAS & FUEL EXPLORATION
PINE LODGE NO. 1
PEP 105, OTWAY BASIN, VIC.

WELL SUMMARY

Operator	:	Gas & Fuel Exploration
Well Name	:	Pine Lodge No. 1
Location	:	PEP 105, Otway Basin, Victoria
Contractor/Rig	:	ATCO / Rig 2
Rig on Location	:	25 July, 1990
Spud Date	:	27 July, 1990
RKB Elevation	:	5.73m
Total Depth	:	2149.6m
Date Reached TD	:	28 August, 1990 (start testing)
Total Days Drilling	:	33 Days
Rig Off Location	:	9 September, 1990 (rig released)
Total Days on Well	:	45 Days

Drilling Fluid Type	Interval	Hole Size	Cost (A$)
FW/Aquagel/Lime	15m - 309.8m	12 1/4"	$ 1,721.99
FW/Aquagel/Lime	309.8m - 700m	8 1/2"	$ 985.38
KCl/Aquagel/Polymer	700m - 2149.6m	8 1/2"	$39,847.40

Mud Materials Charged to Drilling			$42,554.77
Engineer on Location from Jul 26 to Sep 9			
Drilling Fluid Engineering: 44 days @ $410.00 (4 days shared with Nalangil No. 1)			$18,040.00
Mileage shared with Nalangil No. 1: 1000km & 48.7c/km			$ 487.00
Total Cost Drilling Materials & Engineering			$61,081.77
Mud materials not charged to drilling			$ 3,530.37

Casing Programme	:	9 5/8" @ 305.7m; 5 1/5" @ 2142m
Drilling Supervisor	:	Ken Smith & Gerard Nicot
Baroid Drilling Fluid Engineer:		Manfred Olejniczak & Alan Searle

GAS & FUEL EXPLORATION
PINE LODGE NO. 1
PEP 105, OTWAY BASIN, VIC.

DISCUSSION BY INTERVAL

12 1/4" Hole (15m to 309.8m)
9 5/8" Casing Set at 305.7m

Prior to spud-in 450 bbls of prehydrated Aquagel flocculated with Lime was mixed, so that the entire pit system could be used, including the sand traps, desander and desilter. The decision to go ahead and mix a full system was based on observation of the loose surface sands, to avoid conductor washout, and also the relatively low amount of native clays that could be expected to be incorporated in the section.

The kelly rathole and mousehole were dug using spud mud with returns to the cellar with no problems, with almost all of the mud used being recovered with the cellar jet.

Bottom was tagged with the 12 1/4" bit at about 15m in the 16" conductor, and the well was then spudded in at 20.00 hours on 27 July.

The very loose fine to medium surface sands were drilled using a pump rate of 300 gpm with no sign of any excessive washout. The Heytesbury Marl/Limestone was encountered from about 30m. The desander was run from the start, with B40 over B60 shaker screens to minimise sand build up in the mud tanks. Use of the desilter was delayed to allow the mud system time to clean up, as there was a significant amount of rust flakes in the tanks after being stacked for several months.

After the 8" and 6 1/2" collars were in the hole the pump rate was increased to 600 gpm using both pumps. There were no problems at the shakers with excessive cuttings indicating hole washout so, the pump rate was maintained. With 2 x 20 and 1 x 18 nozzles in the bit, the mud nozzle velocity was only 220 ft/second so hole washout should have been minimal.

From about 110m the bit began to drill into the coarse loose sands and dispersive brown mudstones of the Dilwyn Formation. The high organic content of the mudstone section continually acted as a thinner, reducing the returning mud viscosity at the shakers. Caustic Soda, Lime and some Aquagel was regularly added to the surface mud to maintain viscosity in the suction tank.

There were some mud losses over the shaker screens due to blinding of the screens by loose sands, but the total loss would have been no more than 100 bbls, so this was tolerated with the screens brushed and washed periodically.

DISCUSSION BY INTERVAL (cont.)

12 1/4" Hole (cont.)

At 309.8m, casing point was decided upon, as the previous single drilled seemed to have been predominantly mudstone. The hole was circulated clean, and a wiper trip run back to the 8" collars with no problems and only 1m of fill back on bottom. After circulating the hole clean again, the 9 5/8" casing was run without problems.

The casing was then cemented with a 2% prehydrated bentonite lead slurry and a neat tail slurry. Despite running 100% excess only about 9 bbl returned to the surface, and the cement level dropped several metres immediately after the job, indicating some loss to the formation.

DISCUSSION BY INTERVAL (cont.)

8 1/2" Hole (309.8m to 2149.6m)

After nippling up and pressure testing the B.O.P. stack, the cement and 9 5/8" casing shoe were drilled out with the old fresh water Aquagel/Lime Mud from the 12 1/4" hole. Water was added to control viscosity increases from cement contamination. Five metres of new hole was drilled to 315m, and a formation leak-off test run, giving a 13 ppg equivalent mud weight.

Drilling then continued rapidly through massive, very loose, clean sands of the Dilwyn Formation. The mud was maintained with Aquagel additions to maintain viscosity and stabilise the loose sands, with additional water to maintain volume. As most of the mud from the 12 1/4" hole had been salvaged in the pits during the cementing, initial mud volume was high. This was gradually allowed to drop towards the top of the Pember Mudstone as it was intended to convert this mud system to a KCl/Aquagel/Polymer Mud.

From 700m, after allowing the surface mud volume to drop as low as practical, conversion of the mud system began by simultaneous additions of additional water, Potassium Chloride and CMC HV. The drilling rate slowed dramatically from the top of the Pember Mudstone at 764m, and the mud pump rate was reduced to 266 gpm with a nozzle velocity of 257 ft/sec. to reduce hole washout.

By the time of the first trip for a bit change in the 8 1/2" hole, at 818m, the KCl percentage was at 2 1/2 and the filtrate control was 15 cc with a 42 viscosity. With jars and a stabiliser added to the B.H.A., one hour of reaming was required to get back to bottom from 780m.

Drilling then continued slowly through the Pember Mudstone, with the mud system continuing to be steadily improved with additions of new pre-mixed mud, increasing the KCl percentage and reducing the filtrate. The drilling rate slowed steadily to 2 m/hr. At 943m, on a trip for a bit change the bit nozzles were reduced, increasing the nozzle velocity to 390 ft/sec. This was done as the previous bit had been balled up. After running back in, reaming 5m to bottom, drilling continued at an improved rate of 6 m/hr.

DISCUSSION BY INTERVAL (cont.)

8 1/2" Hole (cont.)

Despite the mud weight slowly increasing through the mudstone, there were indications of regular, increasing connection gas and occasional tight hole on connections. By the time the top of the Pebble Point Formation was reached, with a drilling break being circulated out at 1031m, typical mud properties were:

Weight	9.4 ppg
Viscosity	38 sec.
Yield Point	12 $lb/100ft^2$
Filtrate	8.5 cc
Chlorides	14,000
KCl	3 %
pH	10.0

The mud was then basically maintained in this same condition for the rest of the well. After circulating out again at 1033m, 1039m and 1045m in the Pebble Point Formation, drilling continued much more rapidly in the sands of the Paraate Formation from 1085m. While drilling the loose sands, mud consumption increased markedly with the viscosity dropping to 36 seconds as bentonite was lost to the downhole wallcake.

Drilling continued with the Paraate Sandstone becoming steadily harder and the drilling rate steadily decreasing. Trips were run for bit changes at 1255m, 1382m and 1433m with no major hole problems, except for some minor tight hole. Mud properties were maintained quite steadily with no attempt made to decrease the filtration control lower than about 9 cc.

At about 1450m the mud viscosity rose rapidly to 55 seconds with corresponding drops in mud alkalinity (P_m and P_f), with an increase in mud acidity (M_f). The calcium content also decreased, with mud gel strengths increasing and filtration also increasing to over 18 cc. All these changes indicated Carbon Dioxide contamination, most likely from a small drilling break at around 1427m. The contamination was successfully treated out with four sacks of Lime. However, in continued drilling, mud alkalinity maintenance required one to two sacks of Lime every day, indicating a continuous presence of carbon dioxide in the formations being drilled.

On a trip at 1541m for a bit change, a new full gauge stabiliser was run, the old one being slightly undergauge. Seven and a half hours of reaming was then required from 1122m back to bottom. This indicated that the Paraate Formation was very close to gauge, for such a small difference in stabiliser gauge to make so much difference.

DISCUSSION BY INTERVAL (cont.)

8 1/2" Hole (cont.)

During continuing slow drilling through the remainder of the Paraate Formation, the mud bentonite content was gradually reduced to minimise the effects of any repeated carbon dioxide contamination. Also, with apparent downhole seepage losses of around 2 bbl/hr, and differential sticking being a strong possibility in this formation, the filtrate was reduced further to around 6 cc. Typical mud properties were:

Weight	9.3 ppg
Viscosity	37 - 38 sec.
Yield Point	10 - 11 $lb/100ft^2$
Filtrate	5.5 - 6.0 cc
Chlorides	15 - 17,000 mg/l
KCl	3 %

The seepage losses to the hole were confirmed at 2 to 2 1/2 bbl/hr when the hole was monitored on the trip tank during a stop for rig repairs to the hydromatic on a trip for a bit change at 1942m. A lot of filter cake was returned at the shakers when the repairs were completed and drilling resumed. All this indicated significant seepage losses in a close to gauge hole; a perfect recipe for possible differential sticking.

Steady, slow drilling continued through the Belfast Formation with drilling breaks circulated out at 1948.7m, 1951.7m, 1957m and 1957.4m in what appeared to be an Inter-Belfast sandy section. With no major shows drilling continued to 1975m when it was decided to trip for a bit and stabiliser change. Again, the new full gauge stabiliser had to be reamed through the Paraate Sandstone from 1658m to 1793m over 3 1/2 hours, before being able to run to bottom.

It was then decided to run a drill stem test instead of drilling ahead. So DST No. 1 (a straddle test) was run over the interval of 1939.9m to 1967.1m with a successful flow of carbon dioxide. It should be noted that despite having drilled through a carbon dioxide zone, mud properties had not changed significantly; nor had the carbon dioxide detector recorded increased carbon dioxide during drilling of the section. Apparently the mud alkalinity was sufficient to absorb the carbon dioxide from the drilled cuttings with the mud hydrostatic sufficient to stop any carbon dioxide influx from the formation.

DISCUSSION BY INTERVAL (cont.)

8 1/2" Hole (cont.)

A sixty foot core barrel run was then attempted but was too stiff to be run in, so after reaming with it for a half hour from 1149m to 1169m it was pulled and a thirty foot barrel run instead. Even this shorter barrel still required many hours of reaming to reach bottom, with lots of filtercake being returned at the shakers. The core was then cut from 1975m to 1985m with 100% recovery achieved.

Drilling of the 8 1/2" hole then continued slowly with mud properties still relatively unchanged. A drilling break into the top of the Waare Formation was circulated out at 2058m, and again at 2064m, but despite a small gas show, drilling was continued. TD was decided on at 2149.6m, after drilling into the top of the Eumarella Formation at 2102m, on the 27th of August. After circulating the hole clean and running a thirty stand wiper trip, with minor tight spots requiring reaming, the hole was circulated out again and Gearhart wireline logs run.

The wireline loggers had no problems with the hole; reaching their recorded TD of 2149m. The caliper log showed the hole to be in very good gauge from 1050m all the way to TD, as had been indicated by the problems reaming still assemblies through this section. The Pember Mudstone above this was badly enlarged to between 10 and 14 inches on average, more than expected. The Dilwyn Sandstone above this was also washed out to between 9 1/2 and 11 inches average but this was to be expected in the very loose sands. These washouts higher up the hole accounted for the excessive carbide lags recorded during drilling. During logging the hole continued to take approximately 2 bbl/hr of mud, with filter cake build-up noticeable on the later logging runs.

After completing wireline logging, a wiper trip was run back to bottom, and it was decided to continue with further drill stem testing.

DISCUSSION BY INTERVAL (cont.)

Testing and Completion of 8 1/2" Hole

After completing the wiper trip following the logging, Drill Stem Tests No. 2 through 7 were run over the following five days with no hole problems.

DST No. 2 was run as a conventional bottom hole test but the packers failed to seat. An inflatable packer straddle test assembly was then run in and DST No. 3 and DST No. 4 were successfully run in one trip. DST No. 4 was a repeat test of the carbon dioxide zone and was flowed three hours.

A wiper trip was then run to condition the mud and the hole. Tight spots had to be reamed between 2005m and bottom for two hours on the way back in. The mud was then circulated and conditioned with Lime Caustic Soda and additional polymers to counteract severe carbon dioxide contamination from the tested zone.

Another run with the inflatable packer straddle test assembly was then made running DST No. 5 and DST No. 6. DST No. 6 failed to open the test tool so the test assembly was pulled out and serviced. No wiper trip was run but the drill pipe was run in open ended to the casing shoe while waiting on the tools to be serviced.

The same test assembly was then run in and DST No. 7 re-run over the interval that DST No. 6 had failed on, in the lower Paraate Formation. Again, there were problems opening the tool, with the drill string becoming temporarily stuck during the initial shut in period. This suggested that partial differential sticking may also have been the cause of the failure of DST No. 6. The test string was pulled free almost immediately and the test continued, but the second flow period was halved to reduce the chances of becoming stuck again.

Another wiper trip was then run with the mud treated again for carbon dioxide contamination (DST No. 7 had recovered water with a high carbon dioxide content.). Cement was used instead of Lime this time as stocks of Lime had run out. A thirty-five stand wiper trip was run without problems and the string then pulled back to the casing shoe while waiting on orders.

The decision was then made to complete the well with 5 1/2" casing. While waiting on the arrival and the preparation of the casing two more trips were made back to bottom with no hole problems. On the last trip a thirty barrel hi-vis pill was spotted on bottom to assist in getting the 5 1/2" casing to bottom.

DISCUSSION BY INTERVAL (cont.)

Testing and Completion of 8 1/2" Hole (cont.)

The 5 1/2" casing was then run and cemented to 2142m without problems using a 2 1/2% prehydrated bentonite lead slurry and a neat Class G tail slurry. The cement was displaced with fresh water.

The mud tanks were then dumped and washed clean and 250 bbls of 9.2 ppg Sodium Chloride Brine containing Baracor A (B1400) inhibitor/microbiostat were mixed to a pH of 10.5. A casing scraper was then run on tubing and the casing displaced to the Sodium Chloride Brine. The tubing was then pulled and the well completed and suspended.

GAS & FUEL EXPLORATION
PINE LODGE NO. 1
PEP 105, OTWAY BASIN, VIC.

CONCLUSIONS

Pine Lodge No. 1 was drilled without any really significant mud or hole problems.

The 12 1/4" surface hole and the 8 1/2" hole down to 700m were drilled with a Lime flocculated bentonite - native clay mud to provide good hole cleaning and stabilisation at minimal cost

From 700m the remaining portion of this mud was converted to a 3% KcL/Aquagel/Polymer, while drilling continued into the Pember Mudstone. This was done without any cosy in time to the drilling operation.

This 3% Kcl/Aquagel/Polymer System was then maintained all the way to the end of the well, with only the filtration and bentonite content reduced from the lower part of the Paraate Formation. The filtration was reduced to minimise chances of differential sticking in the Paraate Formation, and the bentonite content was reduced to lessen the effects of carbon dioxide contamination.

The only problems experienced were tight hole requiring reaming through the Paraate Formation on several occasions, and the constant presence of a small amount of carbon dioxide contamination requiring daily Lime additions, after an early incident of contamination at around 1427m. The tight hole through the Paraate appeared to be due to a combination of gauge hole being drilled in sandstone which was quite permeable, causing a constant mud loss, and associated filter cake build-up. These conditions are quite normal for the Paraate Formation, but the main danger of differential sticking was avoided during drilling, although minor sticking occurred during the running of the drill stem tests. It should be noted that the drill collars on site were smooth and not spiral, which would have been preferable.

Originally, the mud cost for the well had been estimated at around twenty thousand dollars but the very slow drilling, causing the well to take much longer than anticipated, together with constant downhole mud losses, resulted in the mud cost being approximately twice this early estimate. This should be regarded as consistent with the increased duration of the well.

Baroid Australia Pty. Ltd.

MATERIAL RECAP

COMPANY	Gas & Fuel Exploration	HOLE SIZE	12 1/4″
WELL	Pine Lodge No. 1	CONTRACTOR/RIG	ATCO / Rig 2
LOCATION	PEP 105, Otway Basin, VIC.	MUD TYPE	Fresh Water/Aquagel/Lime

INTERVAL TO (m)	309.8	DRILLING DAYS	3	COST/DAY	$574.00
FROM (m)	15	ROTATING HRS.	9	COST/M	$5.84
DRILLED (m)	294.8			COST/BBL	$2.13
DATE	Aug 28, 1990	MUD CONSUMPTION FACTOR (bbl/m)			2.75

MATERIAL	UNIT	UNIT COST	QUANTITY EST	QUANTITY ACT	CONC (ppb) EST	CONC (ppb) ACT	TOTAL COST (A$) ESTIMATE	TOTAL COST (A$) ACTUAL
Barite								
AQUAGEL	100lb	18.64	80	80		9.9	1,491.20	1,491.20
Caustic Soda	25kg	27.93	4	5		0.3	111.72	139.65
Lime	25kg	6.51	10	14		1.0	65.10	91.14
DIESEL	Bbls							
CHEMICAL VOLUME	Bbls			10				
FRESH WATER	Bbls		700	800				
SEA WATER	Bbls							
TOTAL MUD MADE	Bbls			810				
COST LESS BARYTES							$1,668.02	$1,721.99
COST WITH BARYTES							$1,668.02	$1,721.99

COMMENTS

Baroid Australia Pty. Ltd.

MATERIAL RECAP

COMPANY	Gas & Fuel Exploration	HOLE SIZE	8 1/2″
WELL	Pine Lodge No. 1	CONTRACTOR/RIG	ATCO / Rig 2
LOCATION	PEP 105, Otway Basin, VIC.	MUD TYPE	Fresh Water/Aquagel/Lime

INTERVAL TO (m)	700	DRILLING DAYS	2	COST/DAY	$492.69
FROM (m)	309.8	ROTATING HRS.	22.5	COST/M	$2.53
DRILLED (m)	390.2			COST/BBL	$1.95
DATE	Aug 28, 1990	MUD CONSUMPTION FACTOR (bbl/m)			1.30

MATERIAL	UNIT	UNIT COST	QUANTITY EST	QUANTITY ACT	CONC (ppb) EST	CONC (ppb) ACT	TOTAL COST (A$) ESTIMATE	TOTAL COST (A$) ACTUAL
Barite								
AQUAGEL	100lb	18.64	95	50		9.9	1,770.80	932.00
Caustic Soda	25kg	27.93	7				195.51	
Lime	25kg	6.51	15				97.65	
Sodium Bicarbonate	40kg	26.69		2				53.38
DIESEL	Bbls							
CHEMICAL VOLUME	Bbls			6				
FRESH WATER	Bbls		1150	500				
SEA WATER	Bbls							
TOTAL MUD MADE	Bbls			506				
COST LESS BARYTES							$2,063.96	$985.38
COST WITH BARYTES							$2,063.96	$985.38

COMMENTS

Watered back mud from previous interval to drill cement.

Baroid Australia Pty. Ltd.

MATERIAL RECAP

COMPANY	Gas & Fuel Exploration	HOLE SIZE	8 1/2″
WELL	Pine Lodge No. 1	CONTRACTOR/RIG	ATCO / Rig 2
LOCATION	PEP 105, Otway Basin, VIC.	MUD TYPE	KCl/Aquagel/Polymer

INTERVAL TO (m)	2149.6	DRILLING DAYS	37	COST/DAY	$1,076.96
FROM (m)	700	ROTATING HRS.	394.2	COST/M	$27.49
DRILLED (m)	1449.6			COST/BBL	$11.80
DATE	Aug 28, 1990	MUD CONSUMPTION FACTOR (bbl/m)			2.33

MATERIAL	UNIT	UNIT COST	QUANTITY EST	QUANTITY ACT	CONC (ppb) EST	CONC (ppb) ACT	TOTAL COST (A$) ESTIMATE	TOTAL COST (A$) ACTUAL
Barite	50kg	11.31		331		10.8		3,743.61
AQUAGEL GOLD SEAL	100lb	18.64	125	323		9.6	2,330.00	6,020.72
Caustic Soda	25kg	27.93	20	64		1.1	558.60	1,787.52
Lime	25kg	6.51		45		0.7		292.95
Sodium Bicarbonate	40kg	26.69		1				26.69
CMC HV	25kg	67.17	38	55		0.9	2,552.46	3,694.35
DEXTRID	50lb	37.96	160	246		3.7	6,073.60	9,338.16
PAC-R	50lb	97.18		63		0.9		6,122.34
Soda Ash	25kg	14.06	10	3		0.0	140.60	42.18
Pot Chloride (Ag)	1mt	324.32	15	25		16.6	4,864.80	8,108.00
Pot Chloride (Tech)	25kg	11.12		40		0.7		444.80
Q-BROXIN	50lb	25.12		9		0.1		226.08
DIESEL	Bbls							
CHEMICAL VOLUME	Bbls			156				
FRESH WATER	Bbls		2050	3220				
SEA WATER	Bbls							
TOTAL MUD MADE	Bbls			3376				
COST LESS BARYTES							$16,520.06	$36,103.79
COST WITH BARYTES							$16,520.06	$39,847.40

COMMENTS

Mud from previous interval was converted to KCl.
These figures include the extended testing period after logging, prior to running 5 1/2″ casing.

Baroid Australia Pty. Ltd.

MATERIAL RECAP

COMPANY	Gas & Fuel Exploration	HOLE SIZE	Completion
WELL	Pine Lodge No. 1	CONTRACTOR/RIG	ATCO / Rig 2
LOCATION	PEP 105, Otway Basin, VIC.	MUD TYPE	NaCl Brine

INTERVAL TO (m)		DRILLING DAYS	3	COST/DAY	$994.55
FROM (m)		ROTATING HRS.		COST/M	
DRILLED (m)				COST/BBL	$11.84
DATE	Sep 8, 1990	MUD CONSUMPTION FACTOR (bbl/m)			

MATERIAL	UNIT	UNIT COST	QUANTITY EST	QUANTITY ACT	CONC (ppb) EST	CONC (ppb) ACT	TOTAL COST (A$) ESTIMATE	TOTAL COST (A$) ACTUAL
Barite								
Salt (Flossey Fine)	25kg	6.87		272		59.4		1,868.64
BARACOR-A (B1400)	200lt	557.50		2				1,115.00
DIESEL	Bbls							
CHEMICAL VOLUME	Bbls			17				
FRESH WATER	Bbls			235				
SEA WATER	Bbls							
TOTAL MUD MADE	Bbls			252				
COST LESS BARYTES								$2,983.64
COST WITH BARYTES								$2,983.64

COMMENTS

Completion brine displaced into 5 1/2″ casing prior to suspending well.

Baroid Australia Pty. Ltd.

MATERIAL RECAP

COMPANY Gas & Fuel Exploration
WELL Pine Lodge No. 1
LOCATION PEP 105, Otway Basin, VIC.

HOLE SIZE
CONTRACTOR/RIG ATCO / Rig 2
MUD TYPE

INTERVAL TO (m)
FROM (m)
DRILLED (m)
DATE

DRILLING DAYS
ROTATING HRS.

COST/DAY
COST/M
COST/BBL

MUD CONSUMPTION FACTOR (bbl/m)

MATERIAL	UNIT	UNIT COST	QUANTITY EST	QUANTITY ACT	CONC (ppb) EST	CONC (ppb) ACT	TOTAL COST (A$) ESTIMATE	TOTAL COST (A$) ACTUAL
Barite								
Materials not used for Drilling, Testing or Compl								
1) 9 5/8" Casing Cement Mix Water								
AQUAGEL GOLD SEAL	100lb	18.64		5		166.7		93.20
2) 5 1/2" Casing Cement Mix Water								
AQUAGEL GOLD SEAL	100lb	18.64		13		433.3		242.32
3) Damaged, Broken Stock written off at end of								
Soda Ash	25kg	14.06		11		201.7		154.66
Barite	50kg	11.31		5		183.8		56.55

DIESEL	Bbls		
CHEMICAL VOLUME	Bbls	3	
FRESH WATER	Bbls		
SEA WATER	Bbls		
TOTAL MUD MADE	Bbls	3	
COST LESS BARYTES			$546.73
COST WITH BARYTES			$546.73

COMMENTS

Baroid Australia Pty. Ltd.

MATERIAL SUMMARY

COMPANY	Gas & Fuel Exploration			CONTRACTOR/RIG	ATCO / Rig 2
WELL	Pine Lodge No. 1			MUD TYPES	Fresh Water/Aquagel/Lime
LOCATION	PEP 105, Otway Basin, VIC.				Fresh Water/Aquagel/Lime
INTERVAL	DRILLED	DAYS	HOURS		KCl/Aquagel/Polymer
12 1/4″	294.8	3	9.0		NaCl Brine
8 1/2″	390.2	2	22.5		
8 1/2″	1449.6	37	394.3	COST/DAY	$907.50
Completion		3		COST/M	$19.13
				COST/BBL	$8.26
TOTALS	2134.6	45	425.8	MUD CONSUMPTION FACTOR (bbl/m)	2.32

MATERIAL	UNIT	UNIT COST	QUANTITY ESTIMATE	QUANTITY ACTUAL	TOTAL COST (A$) ESTIMATE	TOTAL COST (A$) ACTUAL
Barite	50kg	11.31		336		3,800.16
AQUAGEL GOLD SEAL	100lb	18.64		471		8,779.44
Caustic Soda	25kg	27.93		69		1,927.17
Lime	25kg	6.51		59		384.09
Sodium Bicarbonate	40kg	26.69		3		80.07
CMC HV	25kg	67.17		55		3,694.35
DEXTRID	50lb	37.96		246		9,338.16
PAC-R	50lb	97.18		9 63		874.62
Soda Ash	25kg	14.06		14		196.84
Pot Chloride (Ag)	1mt	324.32		25		8,108.00
Pot Chloride (Tech)	25kg	11.12		40		444.80
Q-BROXIN	50lb	25.12		9		226.08
Salt (Flossey Fine)	25kg	6.87		272		1,868.64
BARACOR-A (B1400)	200lt	557.50		2		1,115.00
DIESEL	Bbls					
CHEMICAL VOLUME	Bbls			189		
FRESH WATER	Bbls		3900	4755		
SEA WATER	Bbls					
TOTAL MUD MADE	Bbls		3900	4944		
COST LESS BARYTES						$37,037.26
COST WITH BARYTES						$40,837.42

COMMENTS

This summary includes all mud materials used during the duration of the well; through drilling, logging, testing and completion.

Baroid Australia Pty. Ltd.

PROPERTY RECAP

COMPANY Gas & Fuel Exploration
WELL Pine Lodge No. 1
LOCATION PEP 105, Otway Basin, VIC.
CONTRACTOR/RIG ATCO / Rig 2

DATE 1990	DEPTH m	HOLE SIZE in	F'LNE TEMP C	MUD WT ppg	VIS sec	PV	YP	GELS 10 sec	GELS 10 min	FILTRATION API ml	FILTRATION HTHP ml	FILTRATION CAKE 32nd	FILTRATION TEMP C	pH	Pf	Mf	Cl mg/l x1000	Ca mg/l	K+ xWT %	SAND %	RETORT SOL %	RETORT H2O %	RETORT OIL %	MBC ppb	REMARKS/TREATMENT/FORMATION
July																									
27	23.9	12 1/4		8.70	32	5	20	10	30					11.0	1.30	1.60	0.4	100		0.25	2	98		15	Spud - Sand
28	308.9	12 1/4		8.80	38	7	19	9	32					11.0	1.50	1.70	0.2	100		0.10	3	97		12	Drill, 9 5/8"csg - Marl/Sd
29	308.9	12 1/4		8.70	30	2	4	1	2					9.5	0.40	0.50	0.2	200		0.01	2	98		12	
30	608	8 1/2	28	9.00	39	5	28	18	25	18.0		4		11.0	0.70	0.80	0.3	50		0.01	4	96		22	Drill out csg - Sands
31	807	8 1/2		9.00	42	5	25	20	28	15.0		3		9.0	0.05	0.10	12.0	250	2.5	0.01	3.5	96.5		7	Drill - Sands/Clyst
Aug 1	886	8 1/2	32	9.10	36	10	12	4	18	14.0		3		9.5	0.10	0.15	15.0	200	3	0.01	4	96		7	Drill, trip - Clyst
1	943	8 1/2	33	9.20	36	9	6	1	3	10.0		2		9.5	0.10	0.15	15.0	200	3	0.01	4	96		8	Drill, trip - Clyst
2	1065	8 1/2		9.45	38	14	12	1	8	8.5		2		10.0	0.15	0.20	14.0	40	3	0.01	5.5	94.5		10	Drill - Clyst/Sst
3	1225	8 1/2	30	9.40	36	12	9	1	4	8.0		2		10.0	0.20	0.25	14.0	40	3	0.01	5	95		8	Drill, sh trip - Sst/Clyst
4	1349	8 1/2	34	9.40	36	11	9	1	4	8.5		2		10.0	0.20	0.25	14.0	60	3	0.01	5	95		8	Trip, drill - Sst/Clyst
5	1448	8 1/2		9.35	39	14	13	2	6	9.0		2		9.0	0.10	0.15	13.0	40	2.5	0.01	5	95		10	Drill, trip - Sst/Clyst
6	1520	8 1/2		9.35	38	10	12	2	5	9.5		2		10.0	0.20	0.25	12.0	60	2.5	0.01	5	95		10	Drill - Sst
7	1566	8 1/2		9.35	36	10	10	1	4	9.0		2		9.5	0.20	0.30	12.5	60	2.5	0.01	5	95		9	Drill, trip
8	1623	8 1/2	41	9.30	36	10	9	1	6	8.0		2		9.5	0.10	0.15	12.5	40	2.5	0.01	5	95		8	Drill
9	1688	8 1/2	39	9.20	36	9	9	1	5	7.0		2		9.5	0.10	0.20	15.0	60	3	0.01	4	96		7	Drill, wiper trip
10	1763	8 1/2	39	9.20	36	9	9	1	6	6.5		2		9.5	0.15	0.20	14.5	60	3	0.01	4	96		8	Drill - Sst
11	1792	8 1/2	42	9.20	37	9	10	1	4	7.0		2		10.0	0.30	0.40	14.5	80	3	0.01	4	96		8	Drill, trip
12	1837	8 1/2	41	9.30	42	13	16	2	9	6.2		1		9.5	0.10	0.20	15.5	160	3	0.01	4.5	95.5		8	Drill, trip
13	1872	8 1/2		9.30	37	10	10	2	5	5.8		1		10.0	0.20	0.30	17.5	100	3.5	0.01	4.5	95.5		7	Drill, trip
14	1920	8 1/2	43	9.40	37	10	10	2	5	5.5		1		9.5	0.15	0.25	17.5	150	3.5	0.01	5	95		7	Drill
15	1942	8 1/2	43	9.40	37	10	10	2	6	5.8		1		9.5	0.15	0.25	17.0	90	3	0.01	5	95		8	Drill, trip, rig repair
16	1957	8 1/2	41	9.30	37	10	10	2	6	5.1		1		9.5	0.10	0.15	16.0	150	3	0.01	4.5	95.5		8	Rig repair, drill
17	1975	8 1/2	41	9.30	38	10	12	2	6	4.6		1		10.0	0.15	0.20	20.0	40	4	0.01	4.5	95.5		7	Drill, trip
18	1975	8 1/2		9.30	38	10	12	2	5	4.5		1		10.0	0.10	0.20	20.0	50	4	0.01	4.5	95.5		6	Run DST No. 1
19	1975	8 1/2	35	9.30	38	10	10	1	5	4.6		1		10.0	0.10	0.20	18.5	40	3.5	0.01	4.5	95.5			RIH to core, ream
20	1979	8 1/2	38	9.30	37	9	9	2	5	5.4		1		9.5	0.13	0.49	19.0	80	3.5	0.01	4.5	95.5		10	Ream, cut core No. 1
21	2021	8 1/2	41	9.30	38	11	9	2	5	5.2		1		10.0	0.11	0.36	16.5	80	3.5	0.01	4.5	95.5		10	Core, trip, drill
22	2051	8 1/2	42	9.30	39	11	11	2	5	5.0		1		10.0	0.27	0.54	17.0	80	3.5	0.01	4.5	95.5		11	Drill, trip, drill
23	2071	8 1/2	43	9.40	39	12	10	2	5	4.8		1		10.0	0.16	0.53	16.5	60	3.5	0.01	5	95		11	Drill
24	2087	8 1/2	43	9.35	39	12	10	2	4	5.4		1		10.0	0.28	0.54	16.0	40	3.5	0.01	5	95		11	Drill, trip
25	2118	8 1/2	43	9.40	40	14	12	2	5	4.5		1		10.0	0.21	0.46	14.5	60	3.25	0.01	5	95		11	Ream, drill
26	2149.6	8 1/2	43	9.40	46	20	18	2	6	4.7		1		10.0	0.35	0.65	14.0	40	3	0.01	5	95		10	TD, wiper, trip, log

Baroid Australia Pty. Ltd.

PROPERTY RECAP

COMPANY Gas & Fuel Exploration
WELL Pine Lodge No. 1
LOCATION PEP 105, Otway Basin, VIC.

CONTRACTOR/RIG ATCO / Rig 2

DATE 1990	DEPTH m	HOLE SIZE in	F'LNE TEMP C	MUD WT ppg	VIS sec	PV	YP	GELS 10 sec	GELS 10 min	FILTRATION API ml	FILTRATION HTHP ml	FILTRATION CAKE 32nd	FILTRATION TEMP C	pH	Pf	Mf	Cl mg/l x1000	Ca mg/l	K+ xWT %	SAND %	RETORT SOL %	RETORT H2O %	RETORT OIL %	MBC ppb	REMARKS/TREATMENT/FORMATION
27	2149.6	8 1/2		9.40	46	20	18	2	6	4.7		1		10.0	0.35	0.65	14.0	40	3	0.01	5	95		10	Logging
28	2149.6	8 1/2		9.40	43	18	14	2	5	4.7		1		9.7	0.20	0.40	13.0	40	2.75	0.01	5	95		8	Log, wiper trip
29	2149.6	8 1/2		9.40	43	18	14	2	5	4.7		1		9.7	0.20	0.40	13.0	40	2.75	0.01	5	95		8	Run DST No. 2
30	2149.6	8 1/2		9.40	40	14	13	2	5	5.2		1		9.5	0.10	0.20	13.0	40	2.5	0.01	5	95		8	Run DST Nos. 3 & 4
Sep 1	2149.6	8 1/2		9.40	43	15	12	2	3	5.3		1		10.5	0.50	0.80	14.5	20	3	0.01	5	95		7	Wiper trip
1	2149.6	8 1/2		9.40	43	15	12	2	3	5.3		1		10.5	0.50	0.80	14.5	20	3	0.01	5	95		7	Run DST Nos. 5 & 6
2	2149.6	8 1/2		9.35	37	16	10	2	3	5.4		1		10.0	0.20	0.45	13.5	40	2.75	0.01	5	95		7	Run DST No. 7, wiper trip
3	2149.6	8 1/2		9.35	42	16	12	2	4	5.6		1		10.0	0.20	0.40	13.0	20	2.5	0.01	5	95		7	Wait on orders, wiper trip
4	2149.6	8 1/2		9.35	42	16	12	2	4	5.9		1		10.5	0.40	0.70	12.0	20	2.5	0.01	5	95		7	Wait on casing, wiper trip
5	2149.6	8 1/2		9.35	43	16	12	2	4	5.9		1		10.5	0.40	0.70	12.0	20	2.5	0.01	5	95		7	Run 5 1/2" casing
6	2149.6	8 1/2			Mud	pits	dumped	and	cleaned																Cemented 5 1/2" casing
7	2149.6	8 1/2		9.20										10.5											Displace csg to NaCl Brine

Baroid Australia Pty. Ltd.

BIT RECORD

COMPANY Gas & Fuel Exploration
WELL Pine Lodge No. 1
LOCATION PEP 105, Otway Basin, VIC.

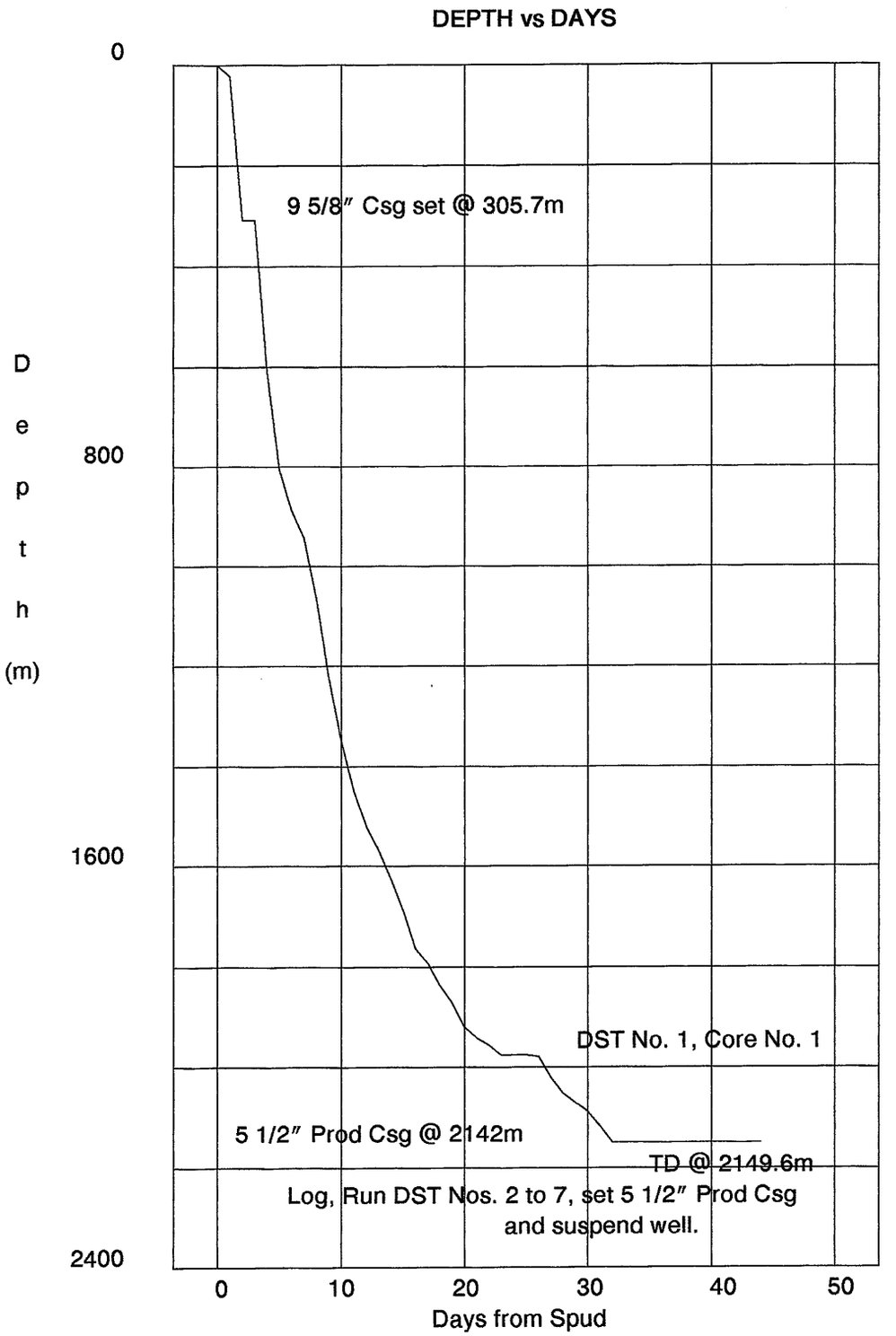
CONTRACTOR/RIG ATCO / Rig 2

DATE 1990	BIT NO.	BIT SIZE in	MAKE	TYPE	JETS 32nd"	DEPTH OUT m	METRES DRILLED	HOURS	RATE m/hr	ACCUM DRLG HOURS	BIT WT. tonnes	RPM	VERT DEV'N deg.	PUMP PRESS psi	PUMP RATE gpm	MUD WT ppg	MUD VIS sec	CONDITION T	CONDITION G	CONDITION B	FORMATION
July																					
28	1	12 1/4	Varel	L114	20/20/18	309.8	154	9	17.1	9	15	120	0	1100	600	8.8	38	1	1	I	Marl/Sand
Aug 1	2	8 1/2	Varel	L114	12/12/12	818	562	30.75	19.1	38.5	10	120	1.5	950	302	9.1	42	2	2	I	Sand/Mudstone
2	3	8 1/2	Varel	L137	12/12/12	934	548	27.5	10.7	89.5	25	100	1	800	266	9.2	36	7	2	I	Mudstone
5	4	8 1/2	Varel	L137	10/10/11	1225	291	30.5	9.5	120	18	100	1.5	1200	266	9.4	36	7	6	4	Sand/Claystone
6	5	8 1/2	Varel	V437	10/10/11	1382	157	26.5	5.9	146.5	25	70		1300	266	9.35	37	2	1	I	Sandstone/Claystone
7	6	8 1/2	Varel	L137	10/10/11	1463	81	16	5.1	162.5	20	110	1.75	1300	266	9.4	45	7	3	1	Sandstone/Claystone
8	7RR	8 1/2	Varel	V437	10/10/11	1541	78	19	4.1	181.5	24	70	2.25	1350	266	9.35	36	8	3	1	Sandstone/Claystone
12	8	8 1/2	Varel	V517	10/10/11	1772	231	75	3.1	256.5	25	65	1.75	1400	266	9.2	36	6	4	1	Sandstone/Claystone
13	9	8 1/2	Varel	V437	10/10/11	1809	37	20.5	1.8	277	25	65		1400	266	9.2	37	2	2	I	Claystone/Sandstone
14	10	8 1/2	Sec.	S44	10/10/11	1866	57	21	2.7	298	20	100		1400	266	9.3	38	7	4	1	Claystone/Sandstone
16	11	8 1/2	Varel	L137	10/10/11	1942	76	37	2.1	335	20	100		1400	266	9.4	37	7	4	1	Claystone/Sandstone
18	2RR	8 1/2	Varel	V437	10/10/11	1975	33	16	2.1	351	24	70	2.25	1400	266	9.3	37	3	3	I	Claystone/Sandstone
19	13	8 1/2	Varel	L137	11/11/11	1975	0			351				1150	266	9.3	38				Wiper/junk trip
22	14	8 1/2	Chris.	C-9		1985	10	8.5	1.2	359.5	16	70		860	260	9.3	37	2	%	W	Sandstone/Claystone
23	5RR	8 1/2	Varel	L137	11/11/11	2044	59	24.5	2.4	384	20	90	4	1125	266	9.3	38	6	5	1	Sandstone/Claystone
25	16	8 1/2	Varel	V437	11/11/11	2087	43	42	1.0	426	24	80	3	1200	266	9.35	39	8	8	1	Sandstone/Claystone
27	17	8 1/2	Varel	L135	11/11/11	2149.6	62.6	22	2.8	448	18	80	1.75	1200	266	9.4	41	4	4	I	Siltstone

Baroid Australia Pty. Ltd.

GRAPH

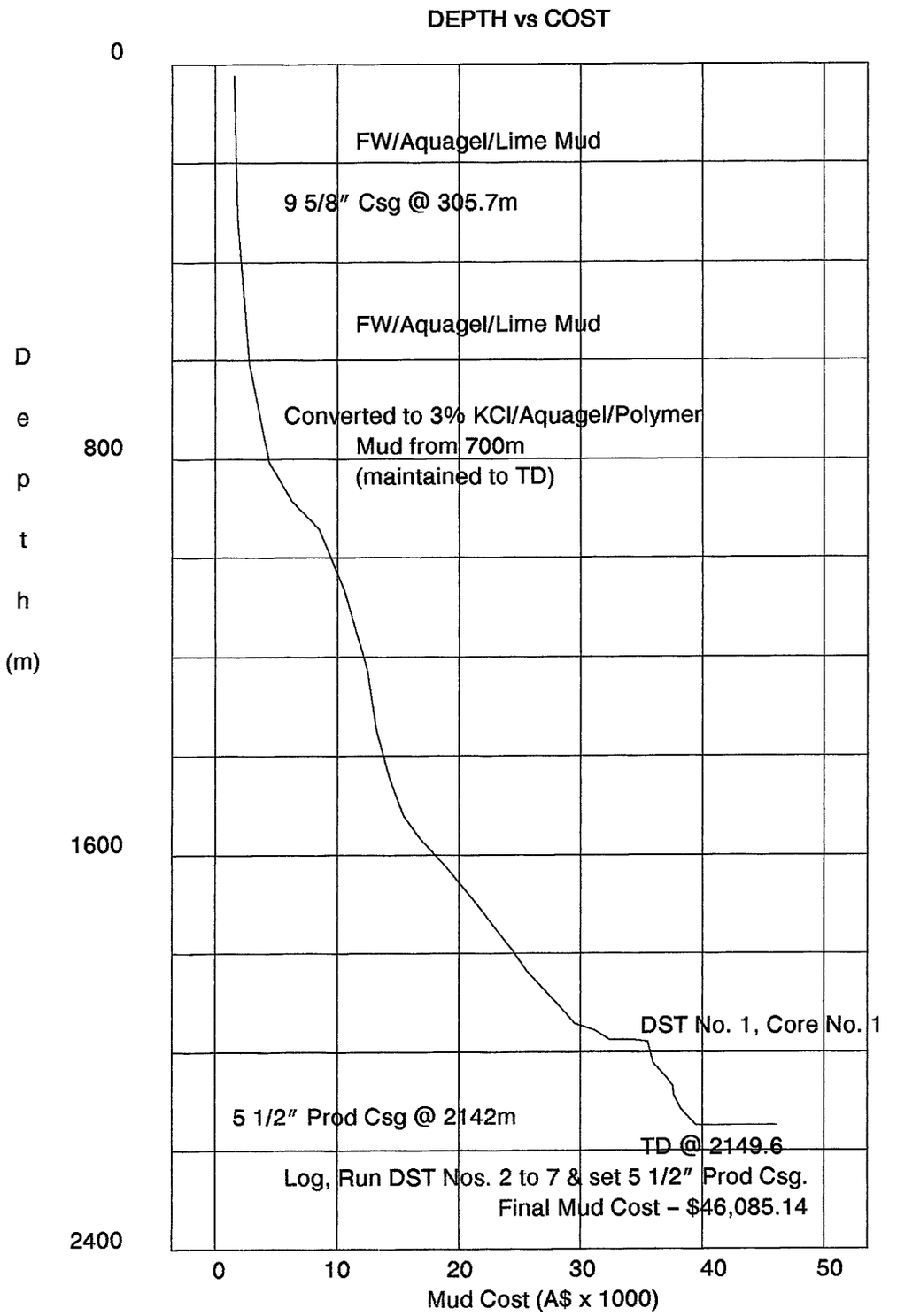
COMPANY Gas & Fuel Exploration
WELL Pine Lodge No. 1
LOCATION PEP 105, Otway Basin, VIC.



Baroid Australia Pty. Ltd.

GRAPH

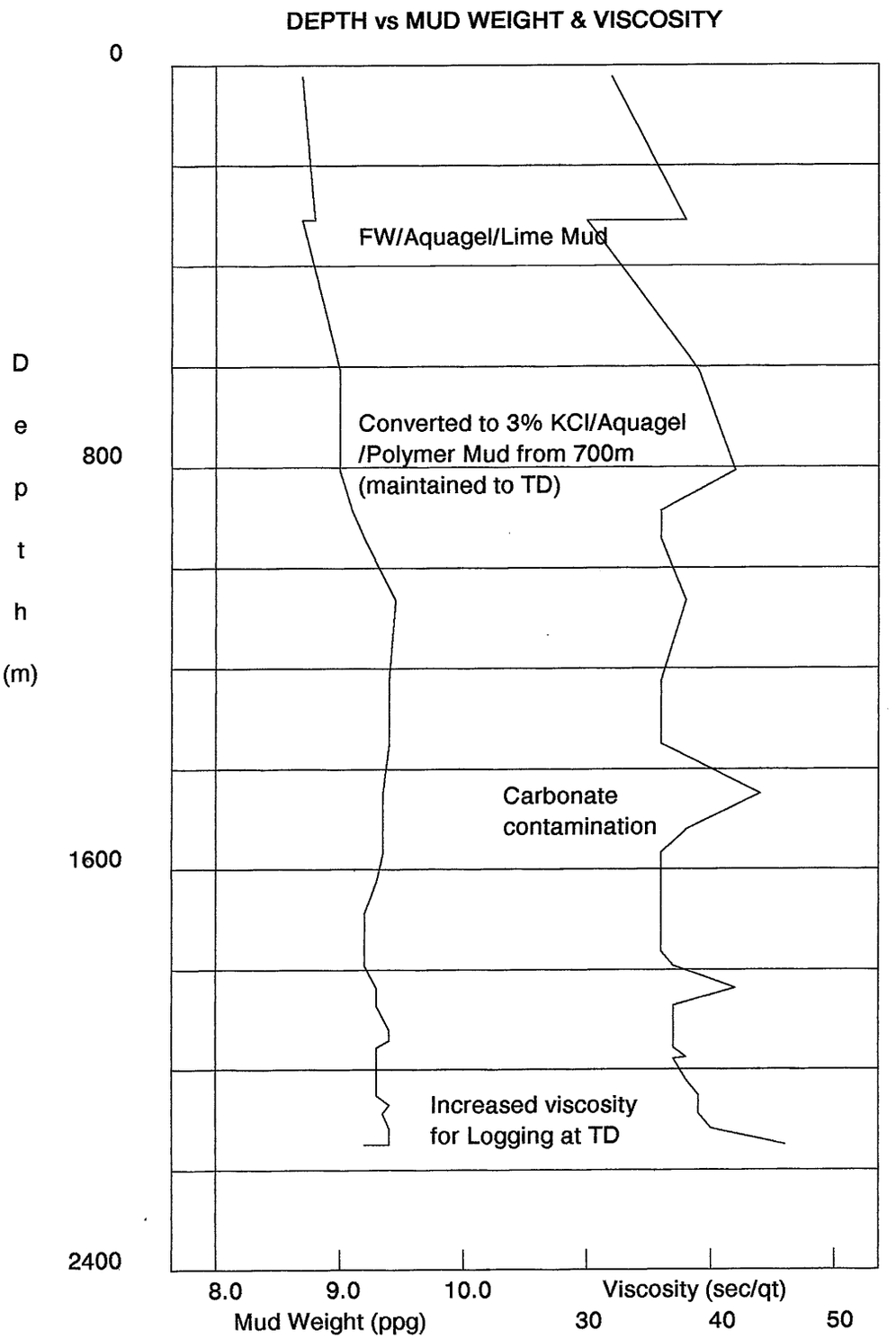
COMPANY Gas & Fuel Exploration
WELL Pine Lodge No. 1
LOCATION PEP 105, Otway Basin, VIC.



Baroid Australia Pty. Ltd.

GRAPH

COMPANY Gas & Fuel Exploration
WELL Pine Lodge No. 1
LOCATION PEP 105, Otway Basin, VIC.

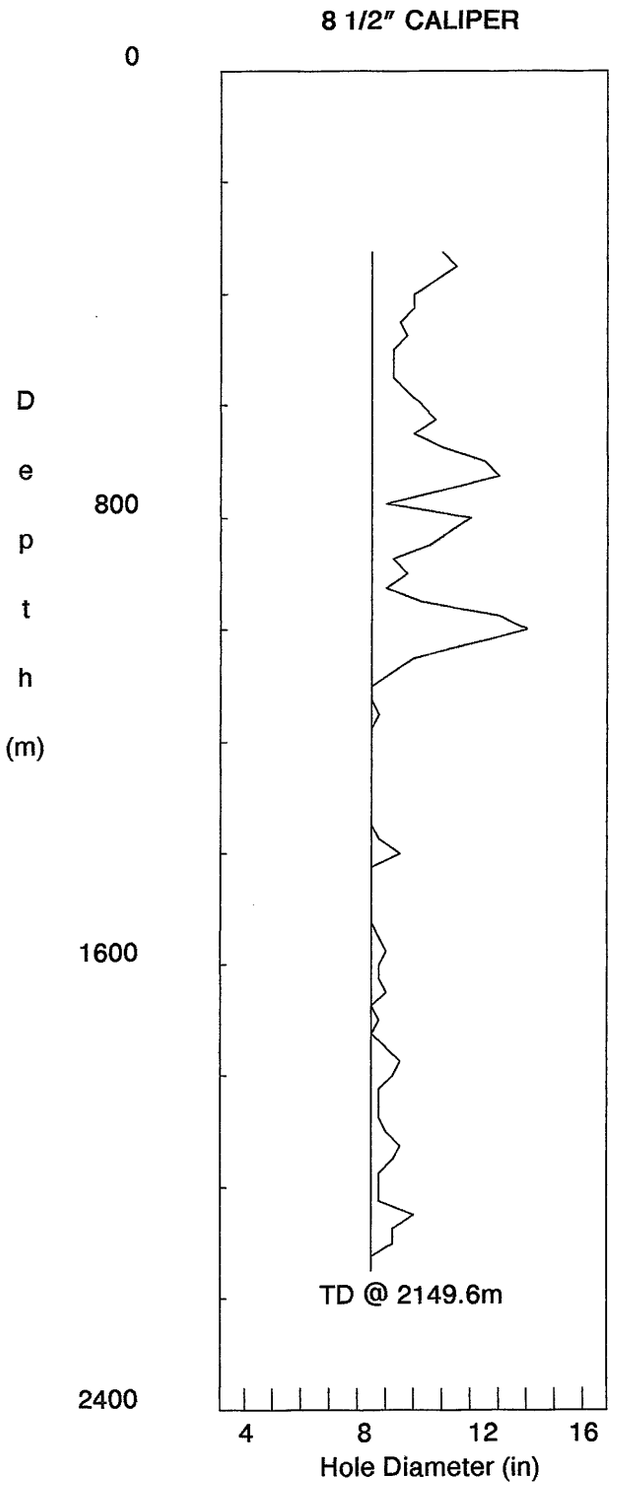


Baroid Australia Pty. Ltd.

CALIPER

APPENDIX A

COMPANY	Gas & Fuel Exploration
WELL	Pine Lodge No. 1
LOCATION	PEP 105, Otway Basin, VIC.



FORMATION	TOP (m)
Post Wangirup Group	Surface
Dilwyn Formation	120m
Pember Mudstone	764m
Pebble Point Formation	1031m
Paaratte Formation	1085m
Belfast Formation	1870m
Waare Formation	2056m
Eumarella	2101m
Logger's TD	2149m