SOQ-13092

SOQUIP PETRO-CANADA IMPERIALE GALT NO 1 - DRILLING PROGNOSIS - AUGUST 9TH, 1983 - SOQUIP - PROJECT 2084 - REPORT #13092

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Énergie et Ressources naturelles
Québec

SOQUIP PÉTRO-CANADA IMPÉRIALE GALT NO. 1

DRILLING PROGNOSIS

SOQUIP

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SOQUIP PÉTRO-CANADA IMPÉRIALE GALT NO. 1

DRILLING PROGNOSIS

August 9th, 1983

Project No. 2084
SOQUIP
Sainte-Foy, Québec

Report No. 13092
J. Boudreault, ing.
C. Denis, Geologist

CONFIDENTIEL

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I- GENERAL INFORMATIONS

Well name :	SOQUIP Pétro-Canada Impériale Galt No. 1		
Location :	Latitude	64° 45' 00" West	48°51'26.5" N.
	Longitude	48° 51' 30" North	64° 44' 49.3" W.
	Exact U.T.M. coordinates to be surveyed		
	N. 5 412,851.408 m		
	E. 371,851.153 m		
Project :	2084		
Permit :	605		
Lot :	Non applicable		
Altitude :	± 450 m	451.72 m	
Seismic line :	82-170		
Shot point :	144		
K.B. elevation :	To be surveyed	457.22 m	
Total depth :	2 500 m G.L.		

II- GEOLOGICAL PROGNOSIS

A) Objective

The purpose of SOQUIP Pétro-Canada Impériale Galt No. 1 is to evaluate the reservoir potential at the base of the York River Formation (Gaspé Sandstones) and the fractured reservoir potential in the limestones of the Indian Cove and Forillon Formations (Upper Gaspé Limestones). Oil seepages have already been observed in the fractured zones of Gulf Sunny Bank No. 1.

B) Maximum total depth

The maximum total depth will be 2 500 m G.L.

C) Well prognosis

York River Formation (Anse-à-Brillant Member)

0-320 m : Thick laminated beds composed of greenish grey sandstones (graywackes), fine to medium grain, sub-angular to sub-rounded, poorly sorted, with an usually argillaceous matrix, and a slightly carbonated and siliceous cement locally. Various lithic particules, micas, organic matter and uncommon glauconite can be present in these sandstones. The lower part is made of siltstones, mudstones and very fine grain sandstones, rarely calcareous.

Indian Cove Formation

320-1425 m : An homogeneous sequence of siliceous to very siliceous and dolomitic, medium to light brown limestones (mudstones, wackestones, packstones), partly recrystallized and locally a calcareous porcelanite (calcareous chert) is present. Sponge spicules and fossiliferous beds also characterize this sequence.

Shiphead Formation

1425-1777 m : A siliceous, calcareous and dolomitic medium to dark grey siltstones, locally a limestone. It contains occasionnally some porcelanite, white orthoquartzite and glauconitic sandstones.

Forillon Formation

1777-2283 m : The upper part of the Forillon is similar to the Indian Cove above and becomes terrigenous in the lower part including dark grey siltstones, very fine grain medium brownish grey sandstones, sometimes glauconitic.

Indian Point Formation (Cape Road Member)

2283-2500 m (TD) : The Cape Road is a fine to medium grain, dolomitic, dark grey sandstones, interbedded with a siltstone.

D) Tops of formations

Ground level :	York River Formation
320 m :	Indian Cove Formation
1425 m :	Shiphead Formation
1777 m :	Forillon Formation
2283 m :	Indian Point Formation

E) Expected drilling problems

The formations are almost horizontal and no deviation problems are expected in this well. Deviation surveys will be taken each 30 metres for a good control.

A minimum of 1 000 sacks of baryte will be available at the well site in order to have a better control of the possible hydrocarbons zones under 400 metres.

The water loss will be maintained between 10-15 cc below 400 metres.

F) Mud logging

A mud logging unit will be at the well site. Cuttings samples will be taken at 5 metres intervals. As requested, one set of cuttings samples vials and one set of cuttings samples bags will be send to each participant. Cuttings will also be canned every 10 metres, from surface casing to TD. The following measurements will be made:

- Total gas readings ("hot wire unit")
- Hydrocarbons chromatography (C_1, C_2, etc.)
- Cutting's gas readings
- Fluorescence (presence of oil in mud/cuttings)
- Calcimetry / dolometry

G) Electrical logs

A Schlumberger unit will be available for the following logs:

- from the base of the surface casing to the ground level:
  . DLL-MSFL-GR
  . BHCS-GR
  . FDC-CNL-GR

- from the total depth (T.D.) to the base of the surface casing:
  . DLL-MSFL-GR
  . BHCS-GR
  . CNL-LDT-GR
  . HDT-High Resolution Dipmeter
  . FIL

H) Drill stem tests

Testing equipment, inflatable and conventional packers types will be available at the site if any DST's are required.

I) Coring

For the required cores (100 metres), the operator will have coring equipment (20 metres core barrel and appropriated diamond bits) available on the site. The coring decisions will be taken by the wellsite geologist in consultation with the department of Exploration and the partners.

III- Drilling Rig

Rig 6 of Regent drilling Ltd. will be used to drill this hole. A description of the rig is at the end of this report.

IV- ACCESS ROAD, WELL SITE AND CELLAR

6.8 km of road will be built in order to have access to the wellsite. The surface of the wellsite, cellar and mud pit will be 150 x 150 metres, 2.4 x 2.4 x 1.8 metres and 50 m x 50 m x 5 m respectively.

V- PREVIOUS DRILLING PERFORMANCE

This report is based on the previous performances of wells Gulf Sunny Bank No. 1, SOQUIP Pétrofina Baie de Gaspé Nord No. 1 and SOQUIP Gaspé Sud No. 1 whose relative location can be seen on Fig. No. 1.

VI- GENERAL DRILLING PROGRAM

Conductor hole

1a. Drill a 311 mm conductor hole to 60 metres using gel - fresh water mud using the following drilling parameters:

Bits	:	1-3-4 and 2-1-5
Viscosity	:	100 - 160 sec
Mud density	:	1020 kg/m^3
Type of pump	:	Emsco D700 duplex
Liner & stroke	:	216 x 406 mm
S.P.M.	:	50
Pump output	:	2450 l/min
Pump pressure	:	5000 kPa
Annular velocity	:	37.2 m/min
W.O.B.	:	2000 to 7000 daN
Nozzle	:	2 x 12.7 mm 1 x 14.3 mm
R.P.M.	:	60 to 85
Deviation	:	1°

1b. Ream hole from 311 mm to 445 mm using a 445 mm hole opener and 311 mm pilot bit.

2. Run 60 metres 340 mm K-55 90.78 kg/m 8RD casing using two centralizers and one guide shoe.

3. Cement casing using 8 m^3 of cement class "G" with an average slurry density of 1900 kg/m^3. WOC a minimum of 8 hours.

4. Install BOP's stack, flow nipple, flow line and mud log equipment.

5. Pressure Test casing to 1000 kPa.

Surface hole

1. Drill out cement guide shoe and 15 metres of formation in order to install bottom hole assembly.

2. Drill 311 mm hole to 400 metres using the following drilling parameters:

a) Stabilization:

1 near bit stabilizer
1 square drill collar 9 x 311 mm H.S.
1 string stabilizer 311 mm
2 round D.C. 229 mm
1 string stabilizer 311 mm
1 mechanical jar 171 mm
Round drill collars 229 & 171 mm
Drill pipe 114 mm, grade E, 24.7 kg/m premium class with 114 mm XH connection

b) Bits and hydraulics:

Bits	:	311 mm type 2-3-4, 5-1-5, 5-2-5, 5-3-8
Nozzles	:	2 x 11 mm 1 x 12 mm to 3 x 12 mm
Pump	:	8P80 triplex
Liner & stroke	:	150 x 216 mm
S.P.M.	:	120
Pump output	:	1250 l/min
Max. pumping press	:	3000 kPa
Annular velocity	:	24 m/min
W.O.B.	:	8000 to 10 000 daN
R.P.M.	:	55 to 80
Mud	:	An extended Gel system will be used,

3. Keep deviation less than 1 degree for 100 metres.

4. Circulate hole clean and run 400 metres of 244.5 mm, 59.53 kg/m N-80 buttress casing using guide shoe and float collar and 4 centralizers, 1.5 m, 9 m, 100 m and 150 metres from guide shoe and one 10 metres above the shoe of the conductor casing.

5. Circulate hole clean and prewash with 3.18 m^3 of water with 28.5 kg/m^3 of SAPP. (Prewash fluid will have a density equal to the maximum mud weight used).

6. Cement 244.5 mm casing using 14 m^3 of class "G" cement slurry with a density of 1895 kg/m^3 using 18.2 tons of cement. Displace cement using 11.6 m^3 of fresh water. Clean the cellar and WOC a minimum of 8 hours.

7. Cut casing and weld casing bowl (254 mm,20700 kPa, slip-on-type). Install drilling spool pipe rams, blind rams, hydril annular preventer (see annex 1), flow nipple and mud log equipment.

8. Test kelly cock and BOP's up to 10 000 kPa during 15 minutes.

9. Drill float collar, cement guide shoe and enough hole in order to install the bottom hole assembly.

Main hole

1. Drill 215.9 mm hole to T.D. (2500 m) using the following drilling parameters:

Bits	:	215.9 mm type 5-2-7, 6-1-7, 6-3-7, 8-3-7
Nozzles	:	3 x 15 mm to 2 x 8.7 & 1 x 9.5 mm
SPM	:	120
Pump output	:	886 l/min
Pump pressure	:	7000 kPa
W.O.B.	:	18 000 daN

Main hole...

R.P.M. : 55

Keep solids content at minimum using desilter and use degaser as required.

Stabilization :
1 near bit stabilizer, integral blade or SR3 Christensen type
1 square drill collar 9 x 216 mm H.S.
1 stabilizer integral blade 216 mm OD
1 monnel collar 171 x 70 mm 5H90 conn
1 stabilizer
2 round drill collars 171 mm OD
1 stabilizer
2 round drill collars 171 mm OD
1 stabilizer
13 drill collars 171 mm OD
1 mechanical jars 171 mm OD
3 171 mm OD round drill collars
114 mm grade E, 28.4 kg/m premium class drill pipe

2. Core barrel and coring bits will be available at the well site to be used at discretion of the exploration department.

3. Testing equipment will be available at the well site if any DST is required during the drilling.

4. Electrical logging unit will be available to run the log program as specified in the geological part of this program.

5. The well will be abandoned or cased depending of coring, logging and DST results.

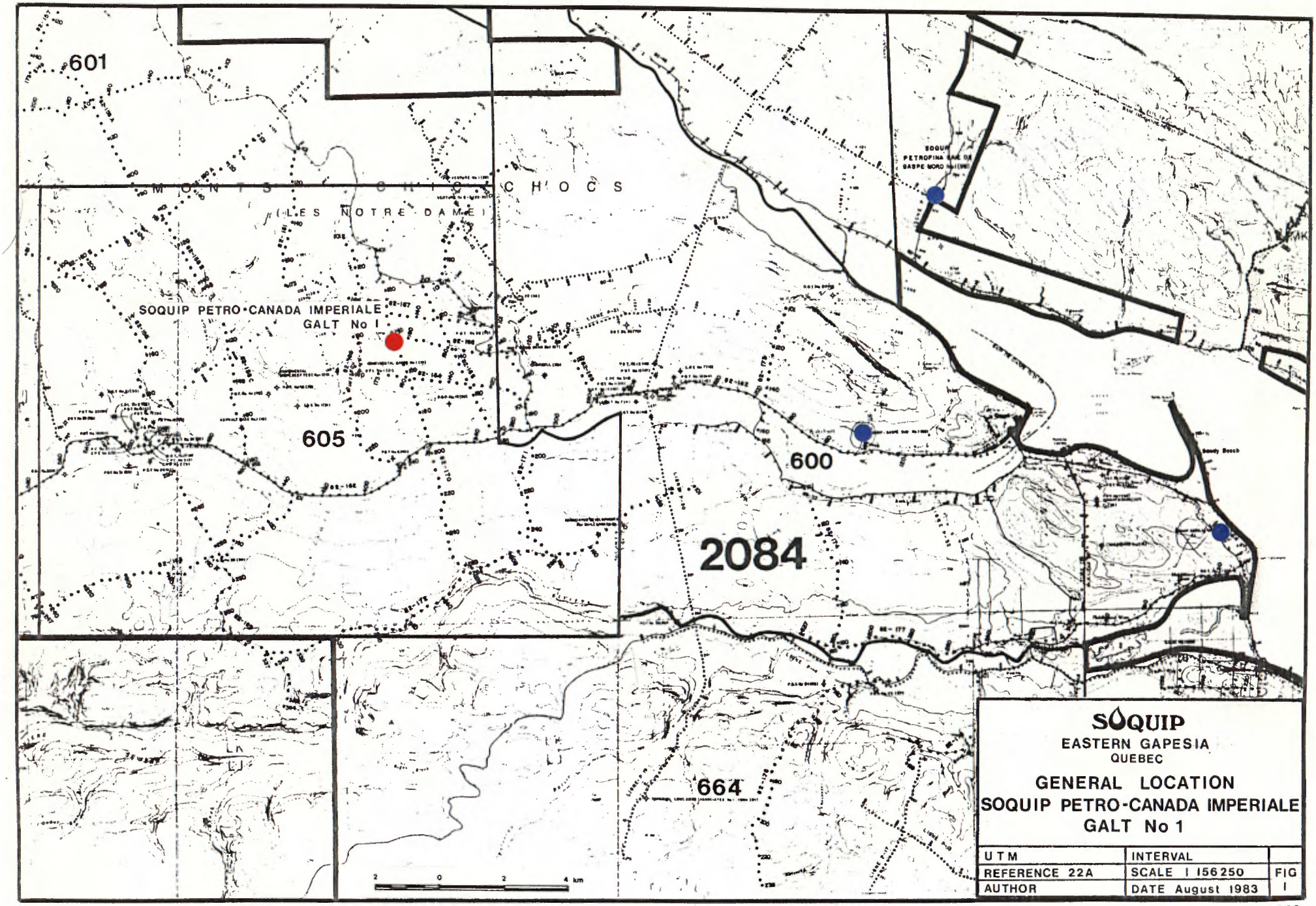
Abandonment program

The well will be abandoned in compliance with a program approved by a Government representative.

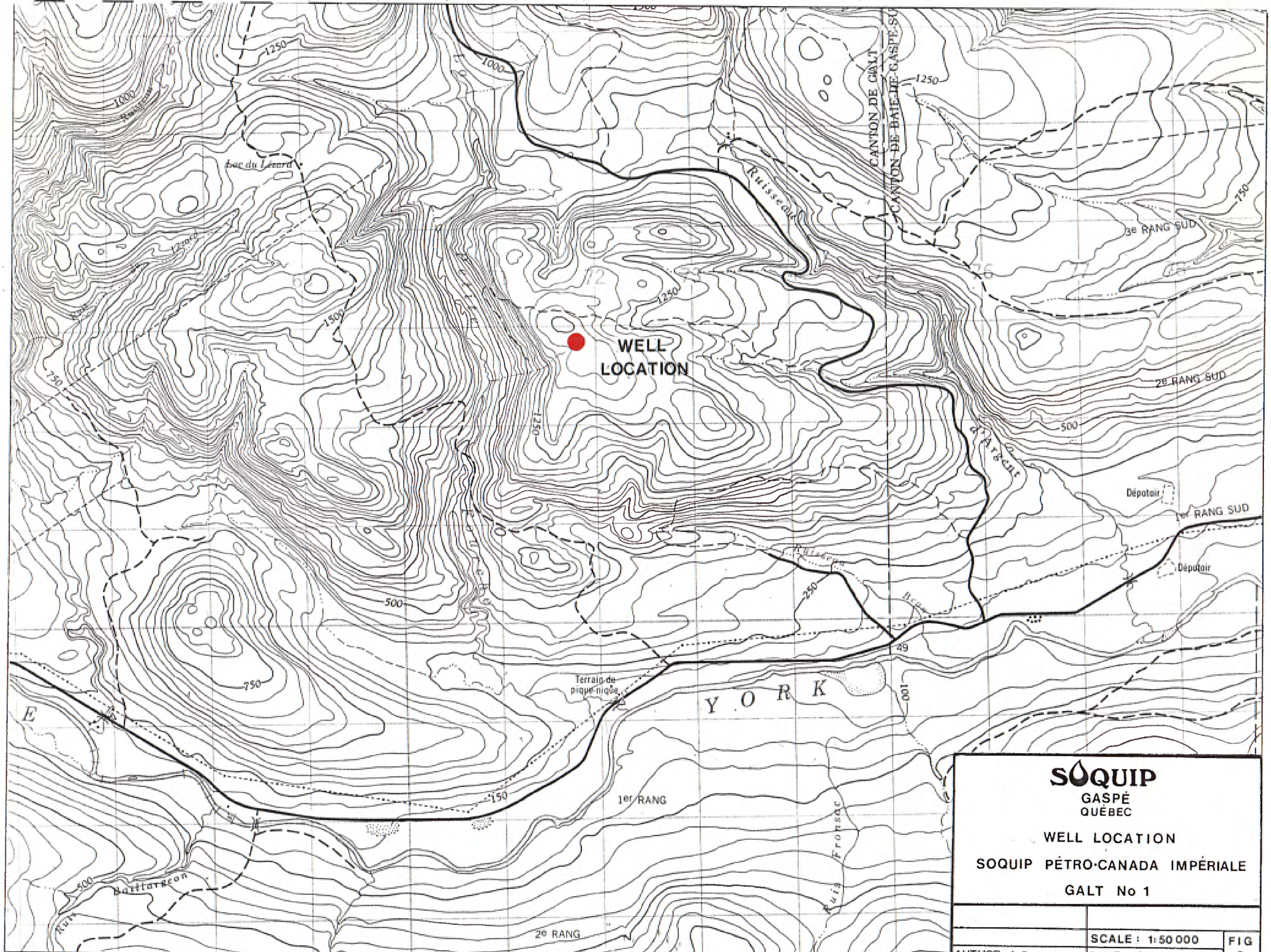
Cement plugs of 30 metres minimum will be set at TD and across the deepest casing string.

Additional cement plugs will be set in such a manner as to isolate formations with abnormal pressures, separate porous permeable formations and separate lost circulation zones in the well from other porous permeable formations.

All plugs will consist of API class G neat cement. Those which required testing will be felt with a force of 90 daN after waiting for a minimum of six hours. If the plugs are not in the correct position additional plugs will be set.


601
MONTS CHICS
(ILES NOTRE DAME)
SOQUIP PETRO-CANADA IMPERIALE
GALT No 1
605
600
2084
664
2 0 2 4 km
SOQUIP
EASTERN GAPESIA
QUEBEC
GENERAL LOCATION
SOQUIP PETRO-CANADA IMPERIALE
GALT No 1
UTM
INTERVAL
REFERENCE 22A
SCALE 1 156250
FIG
AUTHOR
DATE August 1983
1

C-4369



SOQUIP
GASPÉ
QUÉBEC

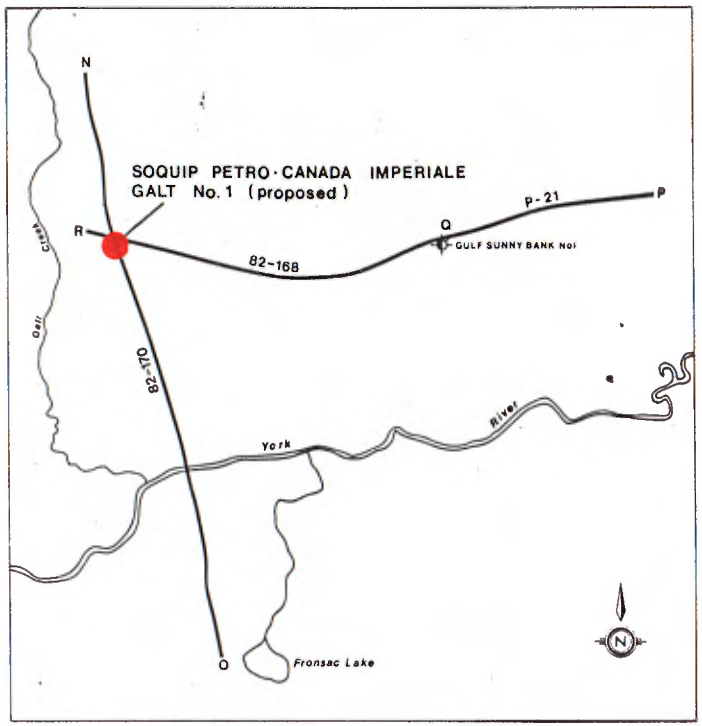
WELL LOCATION

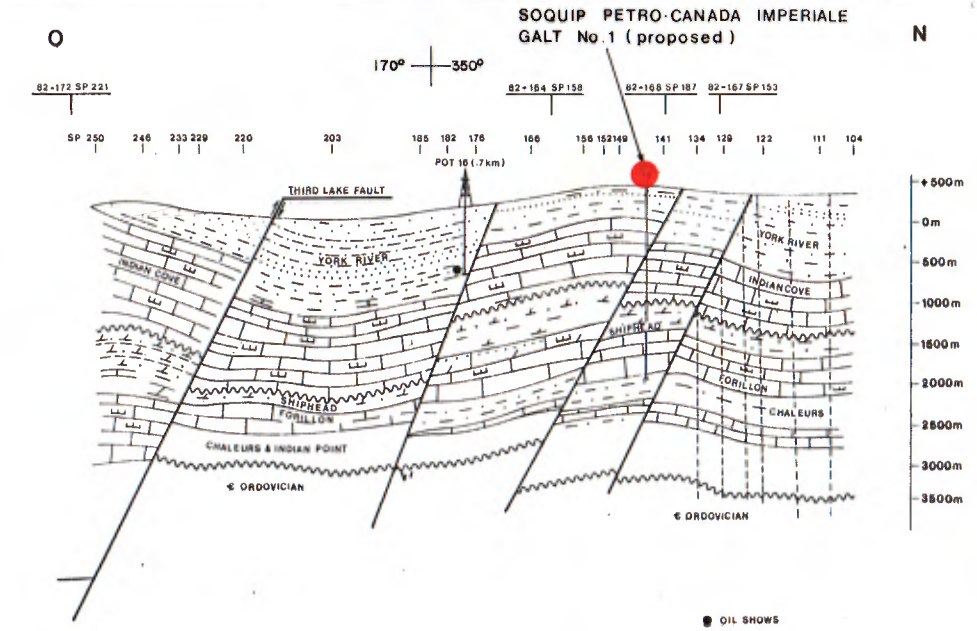
SOQUIP PÉTRO-CANADA IMPÉRIALE

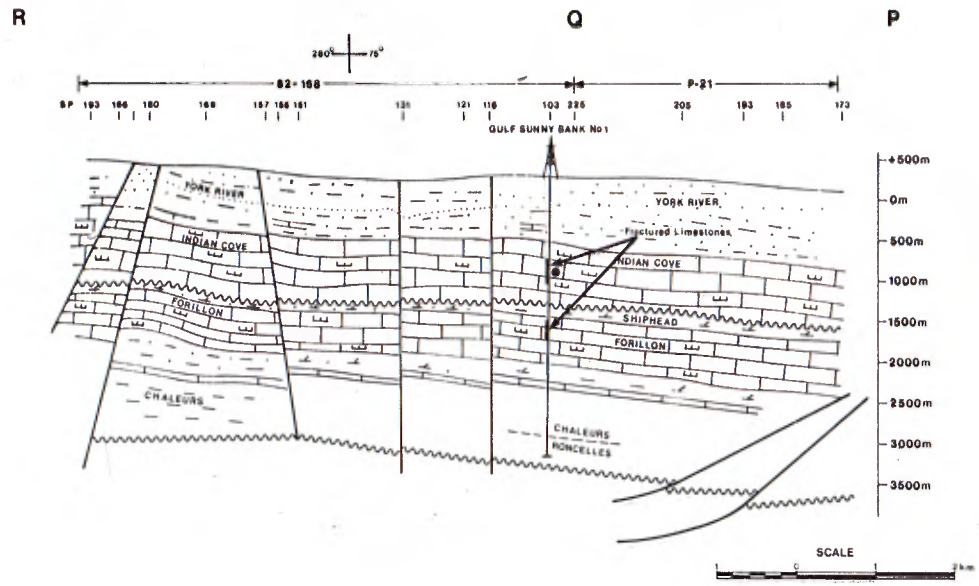
GALT No 1

	SCALE : 1:50 000	FIG
AUTHOR : A. Beauchesne	DATE : July 1983	2

C-4335







SCALE

0 1 2 km

SOQUIP

EASTERN GASPESIA
QUEBEC

GEOLOGICAL CROSS-SECTIONS

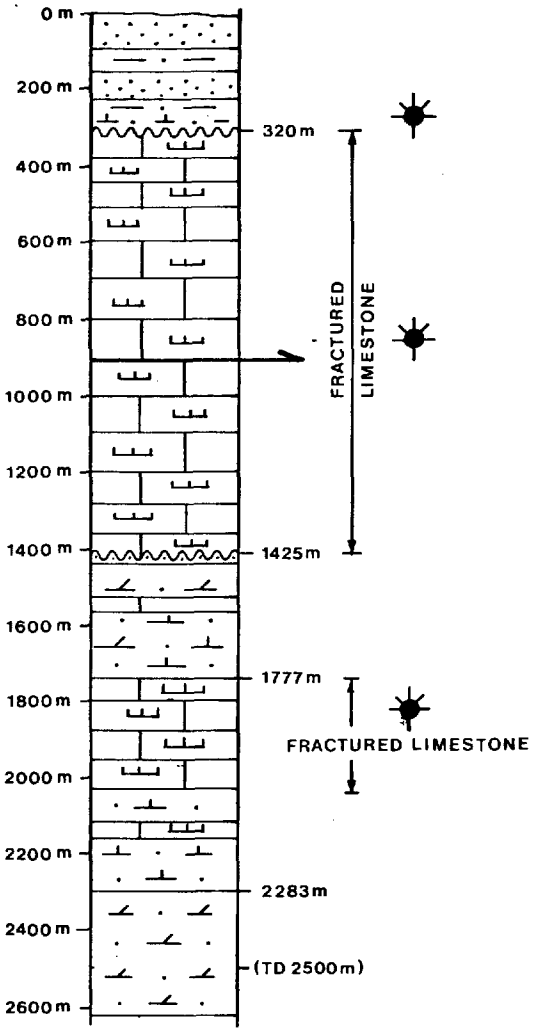
PQR : 82 - 168, P 21
NO : 82 - 170

U.T.M. : Zone 20	INTERVAL :	
REFERENCE :	SCALE : 1 : 100000	Fig. 3
AUTHOR : R. Theroux	DATE : June 1983	

C-4297-I

GEOLOGICAL PROGNOSIS

SOQUIP PETRO-CANADA IMPERIALE GALT No.1
SP 144 LINE 82-170
GROUND LEVEL ± 450m



YORK RIVER (ANSE A BRILLANT Mb)

INDIAN COVE FM

SHIPHEAD FM

FORILLON FM

INDIAN POINT FM

SOQUIP
EASTERN GASPESIA
QUEBEC

GEOLOGICAL PROGNOSIS
GALT WELL (PROPOSED)

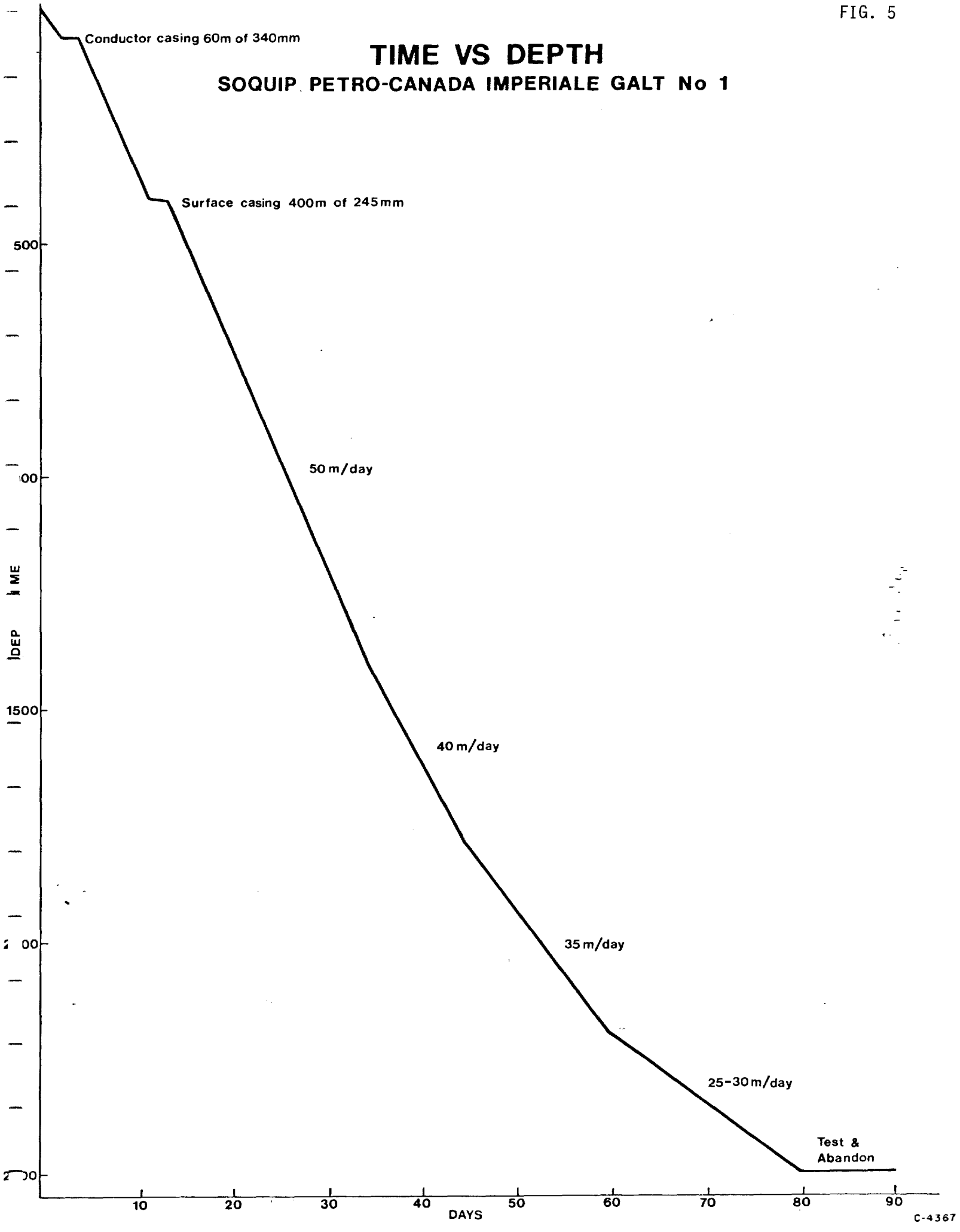
		Fig 4
AUTHOR: R.Theroux	DATE: June 1983	

C-4306

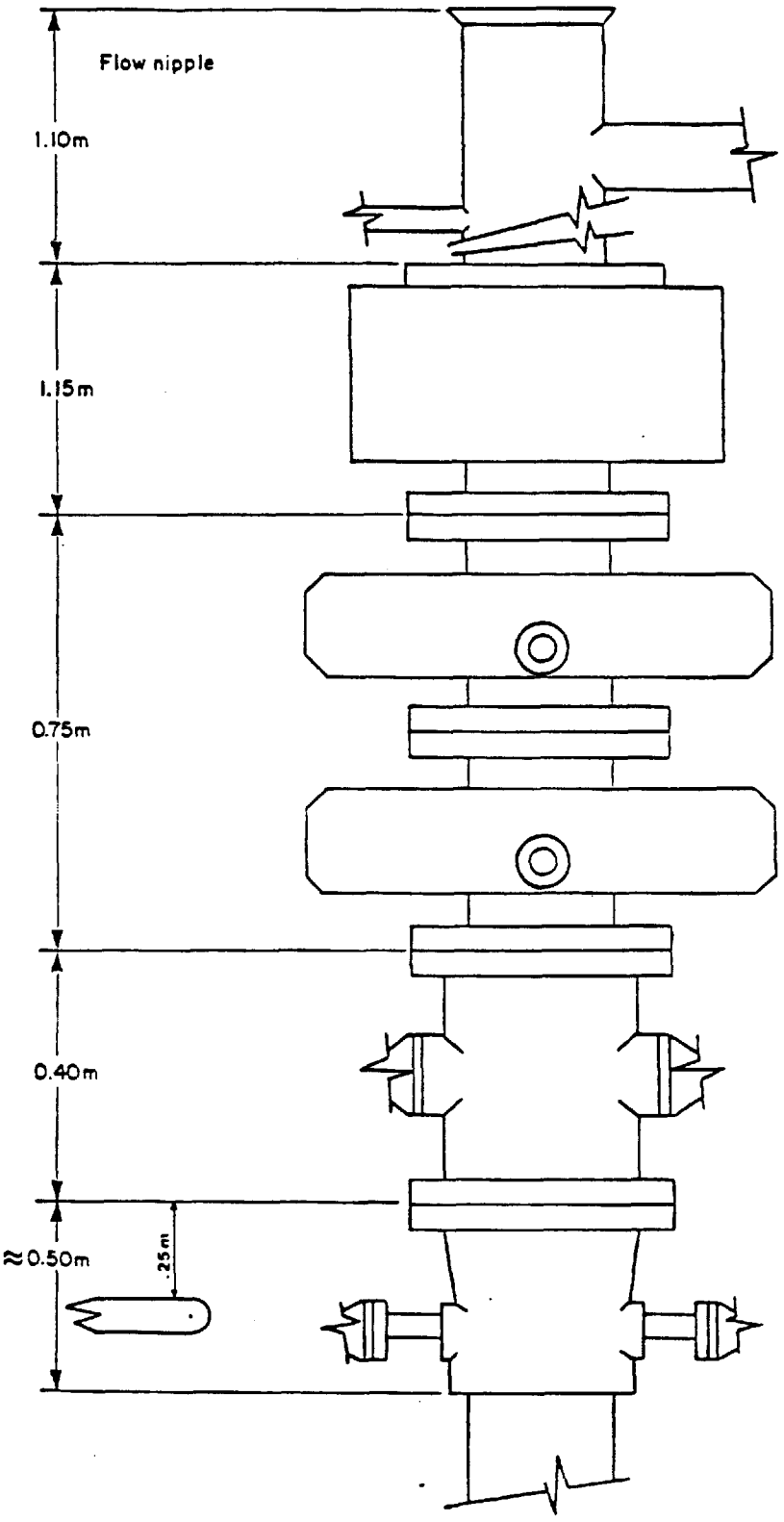
FIG. 5

TIME VS DEPTH

SOQUIP PETRO-CANADA IMPERIALE GALT No 1



SAFETY SURFACE EQUIPMENT



Rotating head
Grand Model 7068
12"
0.91m

Hydrill 12" GK. BOP
Serie 900
20700 kPa
13 5/8"

Cameron Type U
Serie 900
13 5/8"

Drilling Spool
Serie 900
13 5/8"

Casing head
Serie 900
13 5/8" X { 13 3/8" or 9 5/8"

REGENT DRILLING LIMITED

DESCRIPTION OF RIG NO. 6

DEPTH RATING	4250m (14000')
Drawworks	Brewster N-75
POWERED BY	3- D-353-E Cat Motors 930kw (1230hp)
MAIN PUMP	National 8-P-80 159mm x 215mm (6¼" X 8½")
POWERED BY	Belt driven from floor
STANDBY	EMSCO D-700 203mm x 406mm (8" x 16")
POWERED BY	Belt driven from floor
MIXING PUMPS	3- 5" x 6" Mission pumps
POWERED BY	3- 671GM Single N-Series 82kw (110hp) each Total hp on rig - 930kw (1230hp)
DERRICK	Lee C. Moore - Height: 41.45m (136') Hook load capacity: @ 10 lines 207,270daN (466,000lbs.)
SUBSTRUCTURE	Lee C. Moore - Height: 4.26m (14") Casing capacity: 133,440daN (300,000lbs.) Set back capacity: 222,400daN (500,000lbs.)
BOP EQUIPMENT	Hydril Model GK-12-900 (305mm) Cameron Double Gate SS-12-900 (305mm)
CLOSING UNIT	Wagner 605L. x 21000kpa (160gal. x 3000PSI)
BOP MANIFOLD	High Hazard 51mm x 3400kpa (3" x 5000")
MUD TANKS	3- 1.83m x 2.74m x 10.97m (6' x9' 36') Capacity: 165m^3 (1000BBLS)
SHAKERS	2- Payne & Harris (Milchem); Screens: B20 to B100 mesh
DESILTER	Thompson - 10 cone
ELECTRIC GENERATORS	Cat 3306 125kw (156kva)
STANDBY GENERATORS	GM671 - N-1800 100kw (125kva)
FUEL STORAGE	Fuel: 15910L. (3500gals.)
WATER STORAGE	Water: 48m^3 (300BBLS)
BOILER	Napanee - 60kw (80hp) 690kpa (100PSI)
DRILLING CONTROLS	Bell Automatic Driller Geolograph Recorder Rotary Torque Indicator Mechanical Pit Level Indicator
DRILL PIPE	114mm (4½") Grade E Premium Threads (4½" x H90)
DRILL COLLARS	25 x 171mm (6 3/4") thread 5" H90 6 x 229mm (9") thread 7" H90
ADDITIONAL EQUIPMENT	Necessary buildings, pipe racks, tools, supplies, and winter covering.