

CDR CPOG CHEVRON
MILLS LAKE I-57

Drilling Authority No. 243
Date Issued Dec 16, 1966

WELL NAME CDR CPOG Chevron Mills Lake I-57

FIELD

Area:

LOCATION: Unit I Section 57 Grid 61-20; 117-30

Latitude 61-16-37.5 Longitude 117-39-36.6

From Established Reference Marker

U W L R 61 27709 - 117.66167

Rig Release Date: 22-2-67

U W I No 200 1376120 117.200

Status New Field without

Information Release Date

CHANGE OF NAME:

DATE RECEIVED	INDEX
12-12-66	Application for a Drilling Authority.
3-8-67	Well Completion Data.
	Well History Report.
12-10-67	Application to Amend a Drilling Authority.
11-2-67	Application to change a Well Name.
12-10-67	Application to Abandon a Well or Suspend Drilling.
12-10-67	Application to Alter Condition of a Well.
	Well History Supplement.
	Well Completion Data.
	Work-over Report No.
	Application to Commingle Production before Measurement.
	Data for Back Pressure Test on Natural Gas Wells — Monograph 7 Method.
	Data for Back Pressure Test on Natural Gas Wells — Vitter's Method.
	M.P.R. — Oil — Calculations.
	New Oil Well Report.
	New Gas Well Report.
	Well Inspection Report.
	Rig Inspection Report.
	Battery Inspection Report.
	Equipment Report.
	Well Card.
	New Service Well Report.
	Monthly Water Flood Operations Report
	Monthly Water Receipts and Disposal of Fluids Report
	Logs. Large scale Small scale



DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
RESOURCE MANAGEMENT DIVISION

Application to Abandon a Well or Suspend Drilling

In compliance with the "Canada Oil and Gas Land Regulations", application is hereby made for approval to abandon, to suspend drilling—

Name and number of well **COR CPUS Chevron Mills Lake 1-87 (2)**
Location: Unit **1** Section **27** Grid **61° 30' 117° 30'**
Latitude **61° 36' 27.15"** Longitude **117° 30' 30.00"**
From Established Reference Marker **Beach Mark NW 30 T 141 S 21 W**
Universal Well Location Reference **61.2770 S 117.0000 W**
Permit No. **3876** Lease No. **Chevron Standard Limited**
(Previous: Lease, Ltd. et)

Date of commencement of proposed program **January 26, 1967**

OIL, GAS, AND WATER ENCOUNTERED
(Depth)

Oil at
Gas at
Water at
Total Depth **1880** Date of last operations **February 21, 1967**
Present condition of well **Dry hole.**

CASING RECORD

Casing Size O.D. Inches	Weight	Amount	Set At	Notes of Cement and Additives	Amount Poured
1 7"	200	336.74	345.24	130 sac Portland cement plus 25 CuCl₂	None.
2				100 sac outside casing + 25 CuCl₂	
3					
4					
5					

PROPOSED ABANDONMENT PROGRAM

No.	From	Geological Formation	Number of Sacks of Cement	Remarks
	T.D. to 1880			Pool.
	50' ± 340			Pool.

The following logs have been run
Other operations proposed

None
Plug

Operations to be carried out by **Central-Del Rio Oils/ Limited**
Address **736-6th Avenue S.E., Calgary, Alberta** Contractor Licence No. **34306**
Responsible Agent in field **E. J. Burger** Address **Calgary, Alberta**
Signed by **[Signature]** this **31st** Day of **August** 1967
Title **Staff Engineer** Company **Central-Del Rio Oils Limited**
Operator's Exploratory Licence No. **10-50**

Note: The Oil Conservation Engineer's office must be notified before work is commenced.

(For RESOURCE MANAGEMENT DIVISION use only)

APPROVAL

This application has been examined and proposed programme approved, subject to the following conditions:

Confirming oral approval given by Mr. S.H.J. Thomas on the 20th of February 1967

Dated **12th October** 1967

[Signature]
Oil Conservation Engineer

Forms to be submitted in triplicate to Oil Conservation Engineer,
Department of Indian Affairs and Northern Development, Calgary, Alberta.



DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
RESOURCE MANAGEMENT DIVISION

Application to Amend a Drilling Authority

This application, in triplicate, must be submitted and approved before commencing operations. If the well location is changed, this application must be accompanied where required, with a plan of survey approved by the Surveyor General.

In compliance with the "Canada Oil and Gas Land Regulations", application is hereby made to amend
Drilling Authority No. 343, concerning CDR CPOG Chevron Mills Lake 1-87

(Name and Number of Well)

The following amendments are required: The cement job on the surface pipe failed. Permission is requested to move the location 29.6' East and 29.6' South to redrill the well.

The second hole to be known as
CDR CPOG Chevron Mills Lake 1-57 (F1)

Reasons for the amendments: Cement job failed on surface pipe.

Dated at Calgary, this 31st day of August, 19 87
Signed by *Heckler*
Title Staff Engineer
Company CENTRAL-OIL RIO OILS LIMITED

(For Resource Management Division use only)

APPROVED

This application has been examined and approved subject to the following conditions:

Universal Well Location Reference: Lat. 61.27700° N. Long. 117.65996° W.

Date 12th October, 19 87

B. H. Thomas
Oil Conservation Engineer

Forms to be submitted to the Oil Conservation Engineer,
Department of Indian Affairs and Northern Development, Calgary, Alberta.

PRELIMINARY PLAN C.D.R. CPOG CHEVRON MILLS LAKE I-57

Unit I Section 57 Grid Area 61°20'; 117°30'

Latitude 61° 16' 37.5

Longitude 117° 39' 36.5

FALAISE LAKE - DISTRICT OF MACKENZIE - NORTH WEST TERRITORIES

14 P
N 6 30 54 W 21

14 P
N 6 33 54 W 21

14 P
N 6 30 54 W 21

12,328



Location Plan
Scale 1:250,000

Universal Well Location

Reference 61 277005 (R2)
117.65996 W

61 370099 (R1)
117.66079 W

Bearings are referred to meridian through 117°

I certify that the survey represented by this plan is correct to the best of my knowledge and was completed on the 23 day of December 1966.

J. W. P. Matthews
J. W. P. Matthews
MIDWEST SURVEYS (ALBERTA) LIMITED

MIDWEST SURVEYS (ALBERTA) LIMITED

ELEVATION 515 Ground

CO ORDS Well is located 484 ft W from the
762 ft S from the
N.E. cor UNIT I SECTION 57

TOTAL CO ORDS.

N 101.895 } 61° LAT.
W 116.148 } 117° LONG

AREAS:

CENTRAL-DEL RIO OILS
LIMITED

Scale 1000 feet to inch

Triangulation Station

Well Location

Survey monuments found shown thus
planted

Portions referred to outlined

Distances are in feet and decimals

DATUM Ground at
NE 32 T. 141 R. 21 W 5
ELEV. 502



C661-66

Drilling Authority No. **B43**

Date Issued: Dec. 15, 1963

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
RESOURCE MANAGEMENT DIVISION

WELL COMPLETION DATA

To be submitted in duplicate within thirty days after the completion, re-work, abandonment, noncompletion or suspension of every well.

Well name and number: **CHL CPOC Chevron Mills Lake 1-87** [1]Permit No. **3073**

League Size

Chevron Standard Limited

Offenbacher, S. 1999. *Journal of Management Education* 23: 101-111.

Explanatory License No. 1083

Central-Sul Rio Oil Limited

[illegible]

Exploratory Licence No. 1036

Location: Unit	I	Section	37	Grid	61° 30'; 117° 30'
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Latitude $61^{\circ} 16' 37.9''$

Longitude 117° 39' 30.6"

From Established Reference Markers

Deutsch Mark NE ND T 141 R 21 95

Universal Wall Location Reference

81.27703 N 117.60017 W

Postfix: Wildcat

Intervalls / open to production

Jan. 22/07

Sturgis, S.D.

Workaround Operations

Finished Dilling Jan. 27/67 376'

Unrepaired

El Servidoreño, Inc.	519	N. H.	525
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Complete gas mix

Wig No. 17

Signature of _____ Jan. 20/67 376

Drilling Contractor: **Big Indian Drilling Co.**

Wig removed Jan. 28/67

Contractor's Business License No. **24358**

CASE STUDY: HONG KONG

Testing Size (Inches)	Grade	Weight	Amount	Set at -	Ratio of Cement and Aggregate
7"	J-55	90#	252.61	261.51	100 max Portland Cement plus 2 $\frac{1}{2}$ CaCl ₂
2.					
3.					
4.					
5.					
6.					

[illegible]

CEMENTING RECORD (Plug, Squeeze, etc.)				PERFORATING RECORD (Bullets, Jet)				SERVICING RECORD (Acidizing, Fracing, etc.)			
Date	From	To	Remarks	Date	From	To	Remarks	Date	From	To	Remarks
Jan. 28, 1967	376	0	35 sacks of cement 3 " at surface Out casing and welded on cap.								

DRILL STEM TESTS

No.	Date	Formation	From	To	V.O. Mins.	L.S.L. Mins.	F.S.L. Mins.	ISLRHP	P.SLRHP	LF.RHP	FF.RHP	LHP	F.R.P.	REMARKS

ANALYSIS

Lab. No.	Sample	From	To	Source	Remarks

PRESENT STATUS OF WELL

Oil		(Interval)
Gas		(Interval)
Dry		
Susp.		

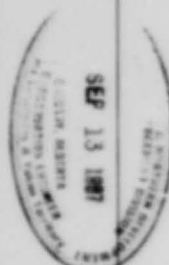
Company **CENTRAL-DEL RIO OILS LIMITED**

Signed by *Heckler*

Title **Staff Engineer**

Date *Aug 31 1967*

Form to be prepared in duplicate and forwarded to the Oil Conservation Engineer, Calgary, Alberta.





File No.
Drilling Authority No. 343

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
RESOURCE MANAGEMENT DIVISION

Application to Abandon a Well or Suspend Drilling

In compliance with the "Canada Oil and Gas Land Regulations", application is hereby made for approval to abandon, to suspend drilling—

Name and number of well **CNR CPOR Chevron Mills Lake 1-67 (P1)**
Location: Unit **1** Section **27** Grid **61° 20', 117° 20'**
Latitude **61° 16' 27.8"** Longitude **117° 20' 26.8"**
From Established Reference Marker **Beach Mark 22 22, T 141, S 21 22**
Universal Well Location Reference **61.2775 2 N 117.20217 W**
Permit No. **2075** Lease No.

Chevron Standard Limited
(Promoter, Lessee, Lessee)

Date of commencement of proposed program **January 20, 1967**

OIL, GAS, AND WATER ENCOUNTERED
(Depth)

Oil at
Gas at
Water at
Total Depth **375** Date of last operations **January 20, 1967**
Present condition of well **Dry hole.**

CASING RECORD

Casing Size O.D. Inches	Weight	Amount	Net Amt.	Notes of Cement and Additives	Amount Poured
1. 7"	200	202.61	201.61	100 sacks Portland cement plus 2 1/2 CuCg	None
2.					
3.					
4.					
5.					

PROPOSED ABANDONMENT PROGRAM

No.	Plug Position	Geological Formation	Number of Sacks of Cement	Remarks
1	Surface to T.B.	Hay River Shale	20 sacks	Fill hole with cement, cut off casing and weld on plate.

The following logs have been run
Other operations proposed

None
None

Operations to be carried out by **Central-Sul Rio Oils Limited** Contractor Licence No. **34355**
Address **726-8th Avenue S.E., Calgary, Alberta** Address **1310 - 9th Ave. S.E.**
Responsible Agent in field **R. J. Burger**
Dated at **Calgary, Alberta** this **21st** Day of **August** 19 **67**
Signed by **[Signature]** Company **Central-Sul Rio Oils Limited**
Title **Staff Engineer** Operator's Exploratory Licence No. **1036**

Note:—The Oil Conservation Engineer's office must be notified before work is commenced.

(For RESOURCE MANAGEMENT DIVISION use only)

APPROVAL

This application has been examined and proposed programme approved, subject to the following conditions:

Confirming oral approval given by Mr. B.R.J. Towns on the 27th January 1967

Dated **12th October**, 19 **67**

[Signature]
Oil Conservation Engineer

Forms to be submitted in triplicate to Oil Conservation Engineer,
Department of Indian Affairs and Northern Development, Calgary, Alberta.



Department of Indian Affairs and Northern Development
Resource & Economic Development Group

**DEPARTMENT OF INDIAN AFFAIRS AND NATIONAL RESOURCES
RESOURCE MANAGEMENT DIVISION**

Application to Amend a Drilling Authority

This application, in triplicate, must be submitted and approved before commencing operations. If the well location is changed, this application must be accompanied where required, with a plan of survey approved by the Surveyor General.

In compliance with the "Canada Oil and Gas Land Regulations", application is herein made to amend Drilling Authority No. 243, concerning CDR (TOG) Chevron Mills Lake 1-57.

(Name and Number of Well)

The following amendments are required: To move location 30 feet south & 30 feet east of presently approved location.

Reasons for the amendments: After drilling out the shoe joint and drilling to 349' it became apparent that the surface pipe was not properly bonded to the ground. The hole had to be abandoned and the rig skidded to the new location.

Dated at CALGARY, Alberta, this 23rd day of MARCH, 19 67.

Signed by *ORIGINAL SIGNED BY*
J. M. GIBSON *[Signature]*

Title Staff Engineer

Company Central-Del Rio Oils Limited

(For Resource Management Division use only)

APPROVED

This application has been examined and approved subject to the following conditions:

Date 31st March, 19 67

(for) *[Signature]*
Oil Conservation Engineer

Forms to be submitted to the Oil Conservation Engineer, Calgary, Alberta



DEPARTMENT OF MINERAL AFFAIRS AND TECHNICAL SURVEY
DEPARTMENT OF NORTHERN DEVELOPMENT AND NATIONAL RESOURCES
RESOURCE MANAGEMENT DIVISION

Application for a Drilling Authority

This notice of intention to begin drilling operations, in triplicate, and where required a plan of survey approved by the Surveyor General showing the target area or the site of the well must be submitted and approved before commencing operations.

In compliance with the "Canada Oil and Gas Land Regulations", application is hereby made for approval to drill:

Name and number of well: CDR CPOG Chevron Mills lake 1-57
Location: Unit 1, 37.5" Section 57, Grid 117° 22' 22" N, 117° 30.6" W
Latitude 61° 16' 22" N, Longitude 117° 30.6" W
From Established Reference Marker

Elevation: Ground K.H. feet above sea level.
Well is expected to produce from The Lonely Lane formation at a depth of about 2700 feet.
Area assigned to well

(for Oil Conservation Engineer's use only)

Permit No. 3875, Lease No. Acceage 61596
Permitter, licensee, or lessee Chevron Standard Limited
Exploratory Licence No. 1033, 1038
Surface owned by Crown or
Petroleum and natural gas rights owned by Crown
(if applicant submit name and address of owner and occupant)

We propose to use the following strings of casing, either cementing or landing them as indicated below:

Casing Size (O.D. (inches))	Weight (Lb./Ft.)	Grade	Material	Flow or Used	Estimated Depth	Scale of Cement
1. 7"	20#	J-55	Seamless	New	250	110
2. 4 1/2"	9.5#	J-55	Seamless	New	2700	75*
3.						
4. *If required for well completion,						
5.						

Expected water, gas, and oil horizons and type of control equipment: Lonely Lane, Middle Devonian
To be controlled by adequately weighted drilling mud and blowout preventers until production casing is set or the well abandoned.

Well will be drilled with (Rotary) Rig No. 17 by Big Indian Drilling Co. Ltd.
(Cable) (Drilling Contractor or company)

1318 - 9th Avenue S.E., Calgary, Alberta

Responsible agent of applicant: Contractor's Business Licence No. 24358
At well J. M. Gibson At registered office J. M. Gibson
Address 736-8th Ave. S.W., Calgary Address 736-8th Ave. S.W., Calgary, Alberta

It is understood that if changes become necessary, notice of the change of plan will be submitted.

Dated at Calgary, Alberta, this 13 day of December, 19 66
Signed by J. M. Gibson Company Central Alberta Drilling
Title Staff Engineer Operator's Licence No. 1036

(For Resource Management Division use only)

APPROVED

This application has been examined and approved subject to the following conditions:
The Company will submit to this office, on Tuesday of each week, the latest reports received by radio on the progress of the well.

Dated 16th December 19 66

Oil Conservation Engineer

Form to be submitted to Oil Conservation Engineer, Calgary, Alberta.

NAME 51-45-1 (7-43)

UNIVERSAL WELL LOCATION REFERENCE: 61.27709 N. 117.66167 W.

CENTRAL-DEL RIO OILS LIMITED

26-11-4-3

WELL HISTORY REPORT



CDR CPOG CHEVRON WILLO LARK 1-57

(6-1-1-1-1)

"Developing Canada's Resources"

APPROVED

OCT 17 1967

RESOURCE MANAGEMENT DIVISION

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Compiled by: R. J. Burger and J. W. Gibson

Approved by:

[Signature]

XXXX

WELL HISTORY REPORT

CDR CPOG CHEVRON MILLS LAKE 1-57 (W1) & (W2)

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SECTION 1

SUMMARY OF WELL DATA

PAGES 1-4

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WELL HISTORY REPORT

CDR CPOG CHEVRON MILLS LAKE I-87 (H1) & (H2)

Section I - Summary of Well Data

- (a) Well name and number - CDR CPOG Chevron Mills Lake I-87 (H1) & (H2)
- (b) Permitte, Licencee or Lessee - Chevron Standard Limited
- (c) Name of Operator - Central-Del Rio Oils Limited
- (d) Location - I-87-61-20-117-30
- (e) Co-ordinates - Not applicable
- (f) Permit or Lease Number - Permit No. 3875
- (g) Drilling Contractor - Big Indian Drilling Co. Ltd. Rig No. 17
- (h) Drilling Authority - 243 *Issued December 14, 1966*
- (i) Classification - Wildcat
- (j) Elevation - Ground - 515' K. B. - 525'
- (k) Date spudded - January 22, 1967
- (l) Total depth - 1932 feet (driller)
- (m) Well Status - Abandoned
- (n) Rig Released - February 22, 1967.
- (o) Hole Size - $9\frac{1}{8}"$ & $6\frac{1}{2}"$
- (p) Casing - 7" - 20" J-55, ST&C surface casing set at 346'.

SUMMARY OF WELL DATA

Well Name: CDR CPOG CHEVRAH Mills Lake I-57 (#1)

Location: Unit I Section 57, Grid 61° ^{30'} 24' N., 117° 30' W.

Ground Elevation: 515' K.B. 525'

Final Total Depth: 376'

Classification: Wildcat.

Drilling Contractor: Big Indian Drilling Co. Ltd. Rig #17.

Tool Push: Wilfred Neerie

Equipment: Drawworks: Gardner Denver #2000 Truck Mounted; Power off Cummins. 220 HP truck motor.
 Pump: Gardner Denver F X D power off Cummins 220 H.P. truck motor.
 Derrick: Gardner Denver 60' Mast.
 Substructure: 6' high made from LOW-BOY.

Operator: Central Del Rio Oils Ltd.

Spudded: 7:30 A. N. January 22, 1967.

Rig Released: Skidded Rig 42' South East.

Status: Junked and abandoned.
 (Surface casing cement failed)

Logs: Not Run.

Surface Casing: Ran 6 joints 7" J 55 8 rd St. & C. Rge. 3 new Japanese casing. Tallied 252.61' set @ 261.51' K.B. with/100 sax Portland cement plus 2 1/2% CaCl₂. Ran Weatherford guide shoe, insert flat and two centralizers. Thread LOC bottom two joints. Plug down @ 5:20 P.M. Jan. 24/67; with 1,000 p.e.i. Good cement returns, flat held. Float @ 219.67' K.B.; K.B. to ground 9.6'; K.B. to drilling flange 8'.1

Plugs: Plug #1 376' - ^{30'} 261' 26 sax cement Plug down @ 12:15 A.M.

Plug #2 3 sax cement @ surface cut off casing 3' below ground welded on steel plate.

SUMMARY OF WELL DATA

Well Name: CDR CPOG CHEVRON MILLS LAKE I-57 (#2)
Location: Unit 1 Section 37, Grid 61° 31' N., 117° 30' W.
Co-ordinates: Rig skidded 42' south east of #1 hole.

Elevation: Ground: 515' K.B. 515'
Final Total Depth: Driller: 1932' Schlumberger: 1934'
Classification: Wildcat.
Drilling Contractor: Big Indian Drilling Co. Ltd. (Rig #17)
Tool push: Wilfred Neerie
Drilling Supervisor: Ted Mulligan

Equipment: Drawworks: Gardner Denver #2000 truck mounted; power off Cummins 220 H.P. truck motor.
Pump: Gardner Denver F X D power off Cummins 220 H.P. Truck motor.
Derrick: Gardner Denver 60' mast.
Substructure: 6' high made from low boy.

Operator: Central Del Rio Oils Ltd.
Spudded: 10:30 P.M. Jan. 28, 1967.
Rig Released: 4:00 A.M. Feb. 22/67.
Status: Dry and abandoned.

Logs: Schlumberger Induction Electrical Log 350-1933'
Schlumberger Borehole Compensated Sonic Log 348-1933'

Surface Casing: Ran 8 joints 7" 20# J 55 Rge. 3 Japanese casing tallied at 336.94 and set at 346.24' K.B. with 120 sacks normal Portland Canadian cement plus 2% CaCl₂. Ran 9 bbls. pipe sweep ahead of cement. Plug down @ 1:52 A.M. cemented by B.J. Ran 10 scratchers on bottom 120' with 2 centralizers. No cement returns. Ran 1 1/4" pipe along side casing cement @ 135' Ran 90 sacks cement and 2% CaCl₂. Returns to surface 2:45 P.M. Feb. 2/67. Dug out cellar and mixed 16 sacks in cellar.

Analyses: Water - CBH-2-1286
Core - CNP-4-3595

SUMMARY OF WELL DATA (CONT'D)

DRILL STEM TESTS:

Test #1 1611' to 1641' (Lonely Bay)
 Pre-flow 32 minutes, reset, pre-flow 63 minutes.
 Shut-in 19 minutes, then valve open 30 minutes.
 No initial puff, no air blow to surface.
 I.H.P. 510 F.H.P. 630
 I.S.I.P. 30 F.S.I.P. - (Field Figures)
 I.F.P. 30 F.F.P. 140
 Temperature: 800 F. at bottom hole.
 Recovery: 30' drilling mud.
 Test successful but incomplete pressure data.

Test #2 1612 to 1672' (Keg River Dolomite)
 Pre-flow 10 minutes; I.F.I. 60 minutes; valve open 120 minutes; F.S.I. 120 minutes. Faint initial puff. Died in 20 seconds. Same results on initial flow period.
 I.H.P. 820 F.H.P. 830
 I.S.I.P. 770 F.S.I.P. 750 (Field Figures)
 I.F.P. 30 F.F.P. 60
 Temperature: 880 F., at bottom hole.
 Recovery: 110' drilling mud.
 Test mechanically satisfactory.

Core Record:

Diamond Core #1 1580-1610' Cut 30' Recovered 30'
 Diamond Core #2 1610-1641' Cut 31' Recovered 31'
 Diamond Core #3 1641'-1672' Cut 31' Recovered 31'

ABANDONMENT PLUGS:

Plug #1 1932'-1550' 90 sacks (No feel)
 Plug #2 400' - 300' 35 sacks (felt at 285')
 Plug #3 Top of surface casing 5 sacks.
 Surface casing cut off 3' below ground and plate welded on.

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SECTION II

GEOLOGICAL SUMMARY

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FORMATION TOPS

COR CPOG CHEVRON MILLS LAKE 1-57 (92)
Unit 1 Sec. 37, Grid 61° 20' N., 117° 30' W.

Ground: 515'
K.B.: 525'

Electric Log Top

Depth

Subsea

DEVONIAN

Hay River Shale	230	(275')
Mills Lake Member	1204'	(-879')
Horn River Shale	1353'	(-808')
Bituminous Limestone	1464'	(-939')
Lonely Bay	1494'	(-969')
Basal Keg River (Dolomite Platform)	1640'	(-1115')
Chinchaga	1664'	(-1139')
Green Shale	1723'	(-1200')
Red Beds	1790'	(-1265')
Granite Wash	1880'	(-1355')
Pre-Cambrian	1906'	(-1381')

Final Total Depth

Driller

Schlumberger

1932'

1935'

(-1407')

(-1410')

SAMPLE DESCRIPTIONS

CDR CPOG CHEVRON 1-37 (82)

Unit 1, Section 37, Grid 61° 20' N., 117° 30' W.

K.B. 515'
Ground: 525'

- 0-50' CLAY & SAND; clay light brown. Sand loose unconsolidated fine to medium grained poorly sorted some pebbles quartzite, granite, hornblende.
- 50-70' PEBBLES & FRAGMENTS. LIMESTONE light grey dense, GRANITE pink hornblende black.
- 70-180' CLAY light brown and light grey abundant pebbles and fragments. LIMESTONE GRANITE as above, unconsolidated.
- 180-250' PEBBLES & FRAGMENTS; LIMESTONE light grey, dense. GRANITE pink hornblende and feldspar pink, unconsolidated.
- TWP HAY RIVER SHALE 250' (275')
- 250-300' SHALE light grey slightly greenish slightly micro-micaceous soft calcareous.
- 300-370' SHALE light grey and grey green micro-micaceous calcareous.
- 370-470' SHALE light grey green slightly calcareous slightly micro-micaceous.
- 470-600' SHALE light grey green slightly micro-micaceous calcareous.
- 600-690' SHALE light grey green slightly calcareous slightly micro-micaceous some silty in part, some light grey soft shale.
- 690-830' SHALE light grey slightly greenish micro-micaceous, calcareous.
- 830-900' SHALE as above.
- 900-980' SHALE grey green micro-micaceous calcareous some SHALE black and grey black bituminous flecked slightly calcareous. Trace PYRITE.
- 980-1010 SHALE grey green and light grey micro-micaceous minor SHALE grey black and dark grey.
- 1010-1060 SHALE light grey some slightly brownish some grey black bituminous.
- 1060-1070 SHALE grey green micro-micaceous minor SHALE grey black bituminous micro-micaceous.
- 1070-1130 SHALE grey green micro-micaceous. Some coaly and bituminous flecked.

1130-1180 SHALE (40%) dark grey non-calcareous much SHALE (60%) light grey and grey green SHALE calcareous micro-micaceous.

1180-1200 SHALE light grey and grey green micro-micaceous. Some SHALE dark grey.

TOP HILLS LAKE MEMBER 1204' (-679')

1200-1220 LIMESTONE light grey argillaceous micro-crystalline in part, dense. Much SHALE light grey and grey green.

1220-1260 SHALE dark grey and grey black a slightly calcareous micro-micaceous. Minor LIMESTONE light grey micro-crystalline dense.

1260-1310 SHALE dark grey and grey black, calcareous micro-micaceous.

TOP HORN RIVER SHALE 1333' (-608')

1310-1350' SHALE dark grey and grey black bituminous some slightly brownish.

1350-1400 SHALE grey black bituminous some slightly brownish; much light grey and grey green SHALE micro-micaceous.

1400-1450 SHALE black bituminous some dark brown bituminous micro-micaceous.

1450-1460 SHALE as above some LIMESTONE dark brown bituminous.

TOP BITUMINOUS LIMESTONE 1464' (-939')

1460-1490 LIMESTONE dark brown bituminous micro-crystalline slightly granular in part dense argillaceous slightly fossiliferous (fish teeth?)

TOP LONELY BAY 1494' (-969')

1490-1510' LIMESTONE dark grey and slightly brownish slightly chalky in part, micro-micaceous argillaceous fossiliferous (crinoid fragments and fish fragments) much Calcite infilling and replacement. Tight. (Skeletal Micrite)

1510-1530 LIMESTONE light brownish to dark brown micro-crystalline dense hard sparingly fossiliferous.

1530-1540 LIMESTONE light brownish some dark brown micro-crystalline dense hard slightly fossiliferous.

1540-1560 LIMESTONE light brown micro-crystalline dense some buff, slightly chalky dense, slightly fossiliferous fragmental.

1560-1580 LIMESTONE medium brown micro-crystalline dense hard, some slightly fine fossiliferous and fine fragmental.

Diamond Core #1 1580-1610' Cut 30' Recovered 30'

Penetration Rate: 31, 19, 20, 30, 18, 17, 15, 20, 14, 20, 30, 22, 31, 42, 46, 34, 27, 28, 49, 49, 38, 37, 37, 34, 32, 37, 40, 40, 38, 40.

30.0' LIMESTONE light gray and grey brownish micro-crystalline to some fine crystalline dense; occasional stylolites through out core. Some scattered mottled brownish solution breccia. Core is slightly fossiliferous. Core has horizontal bedding and banding. No apparent porosity or staining present.

Diamond Core #2 1610-1641' Cut 31' Recovered 31'

Penetration Rate: 35, 17, 23, 25, 23, 20, 10, 17, 18, 28, 25, 23, 23, 25, 34, 30, 28, 24, 18, 8, 8, 12, 11, 9, 10, 10, 6, 4, 3, 3.

5.5' LIMESTONE light gray and light brownish micro-crystalline dense. Core has mottled dark brown solution breccia appearance.

8.0' LIMESTONE light gray fine crystalline fair to some good pin point and fine vuggy porosity light brown oil stained and oil saturated bright yellow saturated.

13.0' LIMESTONE light gray and dark gray micro-crystalline to crypto crystalline dense hard brittle.

4.5' LIMESTONE light brown and light greyish fine crystalline scattered poor to fair fine vuggy and pin point porosity. Oil stained and oil saturated, dull yellow fluorescence.

Diamond Core #3 1641-1672' Cut 31' Recovered 31'

Penetration Rate: 12, 12, 13, 18, 23, 15, 15, 15, 10, 31, 9, 14, 12, 12, 8, 5, 9, 11, 10, 11, 13, 13, 10, 14, 11, 24, 15, 16, 7, 22, 24.

TOP BASAL KEE RIVER PLATFORM DOLOMITE 1640' (-1113')

6.0' DOLOMITE brown micro-crystalline, scattered poor pin porosity, brown oil saturated dull yellow fluorescence.

1.0' DOLOMITE gray micro-crystalline dense.

1.8' DOLOMITE brown micro-crystalline scattered poor pin point porosity brown oil saturated dull yellow fluorescence.

0.6' DOLOMITE gray micro-crystalline dense.

2.0' DOLOMITE brown micro-crystalline scattered poor pin point porosity brown oil saturated dull yellow fluorescence.

1.8' DOLOMITE light gray micro-crystalline dense.

1.0' DOLOMITE brown micro-crystalline scattered poor pin point porosity brown oil saturated dull yellow fluorescence.

0.8' DOLOMITE light gray micro-crystalline dense.

- 8.6' DOLOMITE brown and dark brown micro-crystalline scattered poor porosity tight, dull yellow fluorescence.
- 5.7' ANHYDRITE & DOLOMITE light gray micro-crystalline to fine crystalline dense. DOLOMITE has scattered poor pin point porosity.
- 2.4' ANHYDRITE light gray micro-crystalline to fine crystalline slightly vitreous.

Core has 20' poor pin point porosity.

TOP CHINCHAGA 1644' (-1139')

- 1672-1690' ANHYDRITE gray white and light brown micro-crystalline to crypto-crystalline dense.
- 1690-1700 DOLOMITE & ANHYDRITE
DOLOMITE dense light brown and gray crypto-crystalline argillaceous.
ANHYDRITE white micro-crystalline, chalky in part.
- 1700-1720' ANHYDRITE white crypto-crystalline dense slightly vitreous.
- 1720-1730' Sample missing.

TOP GREEN SHALE 1725' (-1200')

- 1730-1750' DOLOMITE light gray and light brown micro-crystalline argillaceous dense, some ANHYDRITE white micro-crystalline dense.
- 1750-1760' ANHYDRITE gray and white micro-crystalline to crypto-crystalline dense, some light green SHALE (40%).
- 1760-1780' SHALE light gray and gray greenish dolomitic some ANHYDRITE gray white micro-crystalline dense.

TOP RED BEDS 1790' (-1265')

- 1780-1790' SANDSTONE white and rust red, medium to coarse grained quartz grains sub-angular to rounded frosted, tight cemented non-calcareous some pink feldspar grains and fragments.
- 1790-1820 ANHYDRITE & SHALE rust red some white anhydrite crypto-crystalline dense. Some gray green SHALE.
- 1830-1870' SHALE rust red non calcareous minor SHALE gray green. Trace ANHYDRITE white crypto-crystalline, dense.
- 1870-1880' SHALE rust red soft.

TOP GRANITE WASH 1880' (-1343')

GRANITE WASH (40%) quartz biotite hornblende and feldspar fragments and coarse chips. No staining no apparent porosity.

1880-1890 GRANITE WASH quartz white coarse grained angular feldspar pink, biotite, black fragment and chips; tight.

1890-1900' GRANITE WASH as above tight.

TOP PRE-CAMBRIAN 1906' (-1381')

1900-1920' GRANITE(WASH 7) quartz white clear coarse angular fragments, abundant biotite and mica flakes, some feldspar pink, tight; no staining.

1920-1932' GRANITE fragments and chips quartz clear angular, abundant black biotite and mica flakes. Minor pink feldspar and black hornblende.

Final total depth

Driller	1932' (-1407')
Schlumberger	1934' (-1410')

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SECTION III

ENGINEERING SUMMARY

PAGES 11-17

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DRILL STEM TEST REPORT

Test No. 1

Date: Feb. 14/67.

Well Name: CDB CPOG CHEVRON MILLS LAKE 1-57

Testing Co. B.J.

Operator: Henry Blanchette

O.D. Packer Rubber: 5 1/2" Hole Size: 5 1/4" Choke Size: 1/2"

Length of Tail Pipe: 30' Drill Pipe Size: 3 1/2" Perforations: 16'

Interval Tested: 1611'1641' Formation: Lonely Bay

Mud: Weight 9.5 Viscosity 60 Water Loss 7.5 P.H. 8

Time: Tool started in hole 11 A.M. Tool on Bottom: 1:00 P.M.

Tool opened 1:32 P.M. Tool closed 3:09 P.M.

Tool pulled loose 4 P.M. Tool out of Hole 7:30 P.M.

Pressures: I.H.P. 510 F.H.P. 630

I.S.I.P. 50 F. .I.P. -

I.F.P. 50 F.F.P. 140

Pre-flow 32 minutes, reset, pre-flow 63 minutes. Shut-in 19 min.
then valve opened 30 minutes.

Remarks: No initial puff, no air blow, reset after 32 minutes with same
result (no blow) tool open 63 minutes. Pre-flow total 95 mins.
Shut-in 19 minutes. Then valve opened 30 minutes for flow period.
No air blow or surface indication. Tool pulled loose because
did not know if sufficient weight to open tool or if tool plugged.

Recovery: 30' drilling mud.

Test successful but incomplete pressure data.

Temperature: 80° F.

R. J. Burger, Geologist

D. S. I. REPORT

Well Name	G.D.R. SPQ9 Chevron	Test No	One
Well Number	Mills Lake 1-27	Zone Tested	egg River
Company	Central Del Rio Oil	Interval	1011-1041
Comp. Rep	I. Whilligan	Tester	H. Planchette
		Date	February 14/67



BJ SERVICE DIVISION
BOGG-WARNER (CANADA) LIMITED



DRILL-STEM TEST DATA

Well Name	G.D.R. CPOG Chevron	Test No	One
Well Number	Mills Lake 1-57	Zone Tested	seg River
Company	Central Del Rio Oils	Interval	1611-1641
Comp. Rep	I. Mulligan	Tester	H. Blanchette
		Date	February 14/67

Preflow 33 mins IS 12 mins Flow 30 mins FSI mins

Type of Test	Bottom Hole	REC No	1232	REC No	2062	REC No	
		12 HR CLOCK	12	12 HR CLOCK	12	12 HR CLOCK	
DEPTH		1613	1622				
Initial Hydro Mud Press			794				
Initial Shut-in Press			30				
Initial Flow Press			30			Preflow 25	
Final Flow Press			30				
Final Shut-in Press			71-143				
Final Hydro Mud Press			794				

Mud Drop Nil Fluid Loss 7.5 Mud Weight 9.2

Viscosity 60 Temperature 80°F Net Pay Tested 12'

Top Packer Depth 1611 Bottom Packer Depth Total Depth 1641

Drill Pipe Size 3 1/2" IF Wt 13.3 Drill Collar ID 2" Fr Run 148

Surface Choke Size 1" Bottom Choke Size 3/4" Main Hole Size 6 1/2"

Anchor Size 4 3/4" OD Rot Hole Size Feet of Rot Hole

Cushion Amount Type Rubber Size 5 1/2"

Fluid Recovery Total Feet 32

Recovered 32 Feet of Drilling Mud.

Recovered Feet of

Gas Recovery How Measured

mins	Press Rdg	=	MCF Day
mins	Press Rdg	=	MCF Day
mins	Press Rdg	=	MCF Day
mins	Press Rdg	=	MCF Day

REMARKS No Air Blow on Preflow.

Reset, after 33 minutes same results.

Attempt was made to reverse shut-in tool into open position after final shut-in was taken, however, the flow stage was missed and another shut-in period took place.

Due to recorder failure, the pressure of Rec #1232 appears to be erroneous.

P.O. No. 1.00

CO. SUB 1.00

SHUT IN TOOL 2.25

BPS 3.50

HYDRAULIC TOOL 7.01

JABS 4.36

RECORDED:

SAFETY JOINT 1.74

BY PASS SUB

PACKER 1.00

1. PACKER DEPTH 1611

PACKER

2. PACKER DEPTH

ANCHOR

BLANK OFF SUB/BY PASS SUB

RECORDED

3. PACKER DEPTH

PACKER

4. PACKER DEPTH

PACKER

ANCHOR SPECIFY

Recorder 4.75

L.P. 11.00

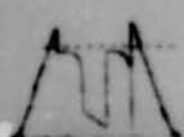
Recorder 4.75

L.P. 5.00

TOTAL DEPTH 1641

BULLNOSE 3.15

BST CHARTS FOR COMPARATIVE VISUAL ANALYSIS



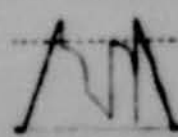
HIGH PERMEABILITY
STRONG DAMAGE EFFECT



HIGH PERMEABILITY
NO DAMAGE EFFECT



MEDIUM PERMEABILITY
STRONG DAMAGE EFFECT



MEDIUM PERMEABILITY
NO DAMAGE EFFECT

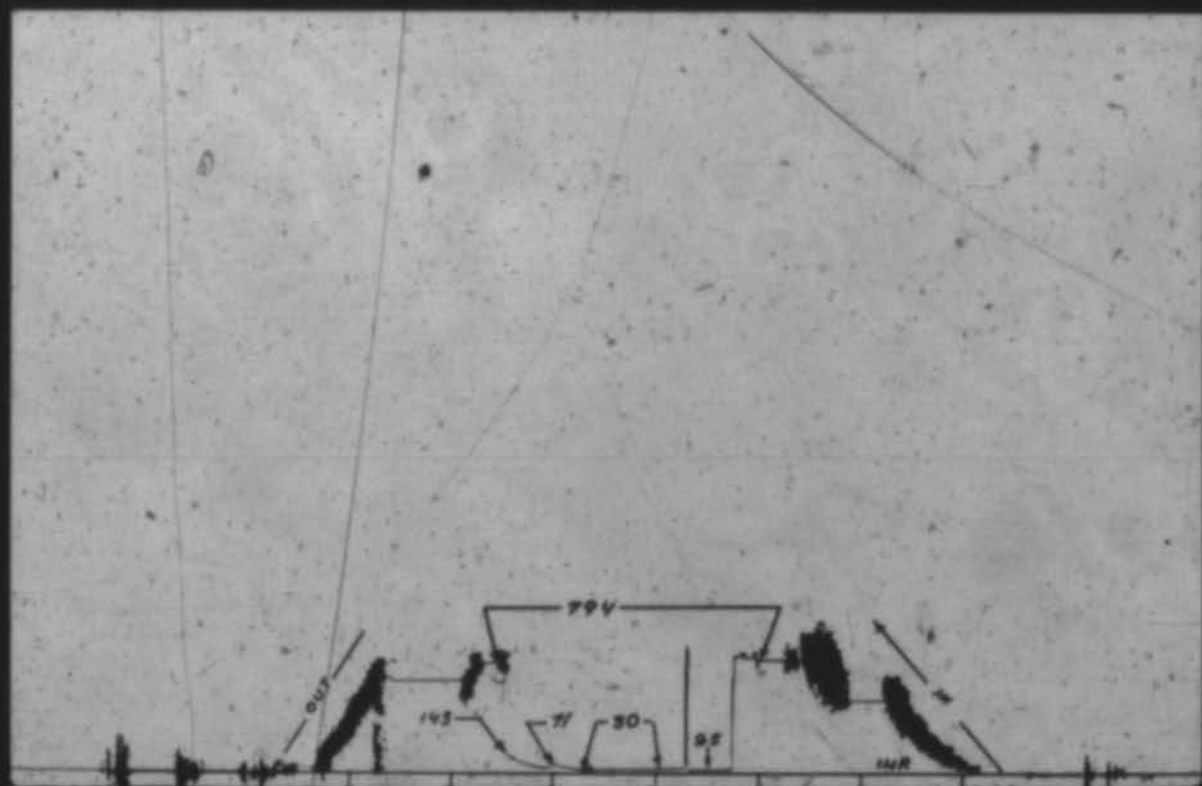
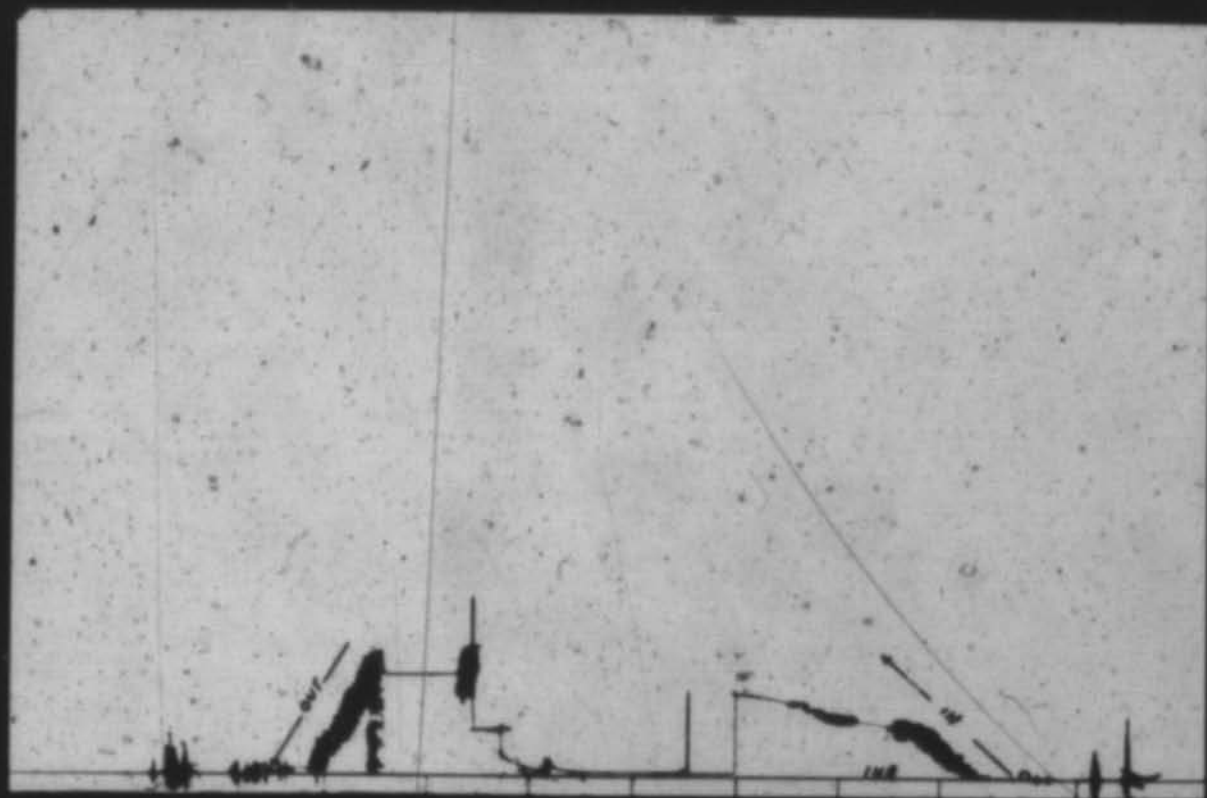


LOW PERMEABILITY
STRONG DAMAGE EFFECT



LOW PERMEABILITY
NO DAMAGE EFFECT





DRILL STEM TEST REPORT

Test No. 2
Date: Feb. 16/67.

Well Name: CDR CPOG CHEYBON MILLS LAKE I-37

Testing Co. B.J. Service Operator: Henry Blanchette

O.D. Packer Rubber: 5 1/2" Hole Size 5 1/4" Choke Size 1 1/2"

Length of Tail Pipe 60' Drill Pipe Size: 3 1/2" Perforations: 18'

Interval Tested: 1612'1672' Formation: Keg River Dolomite

Mud: Weight 9.3 Viscosity 70 Water Loss 7.7 P.M. 8.0

Time: Tool started in hole 5:30 A.M. Tool on Bottom: 6:30 A.M.
Tool opened: 8:51 A.M. Tool Closed: 2:01 P.M.
Tool Pulled Loose: 2:10 P.M. Tool out of hole: 4 P.M.

Pressures:	I.H.P.	820	F.H.P.	830
	I.S.I.P.	770	F.S.I.P.	750
	I.F.P.	30	F.F.P.	60

Pre-flow 10 minutes I.C.I. 60 minutes. Valve open 120 minutes.
Final shut in 120 minutes.

Remarks: Faint initial puff. Died in 20 seconds same results on initial flow.

Recovery: 110' drilling mud.

Bottom Hole Temperature: 88°

Test Mechanically satisfactory.

R. J. Burger, Geologist.

Well Name	WELL NO. 100 GREYTON	Test No.	100
Well Number	WELL NO. 1-07	Zone Tested	RED SILVER
Company	Central Petroleum Co. Ltd.	Interval	1010-1012
Comp. Rep.	L. M. L. L. L.	Tester	H. Blanchette
		Date	FEB. 10, 1967



BJ SERVICE DIVISION
BORG-WARNER (CANADA) LIMITED



DRILL-STEM TEST DATA

Well Name	CAN OPGG CHEVRON	Test No.	100
Well Number	Mills Lake 1-57	Zone Tested	Keg River
Company	Central Del Rio Oils	Interval	1612-1672
Comp. Rep.	I. Kolligan	Tester	H. Blanchette
		Date	Feb. 16, 1967

Preflow 10 mins ISI 52 mins Flow 117 mins FSI 112 mins

Type of Test	Bottom Hole	SEC No.	1251	SEC No.	888	SEC No.	
		12	HR CLOCK	12	HR CLOCK		HR CLOCK
DEPTH		1614		1632			
Initial Hydro Mud Press		805		807			
Initial Shut In Press		770		769			
Initial Flow Press		36		44			
Final Flow Press		68		75			
Final Shut In Press		724		721			
Final Hydro Mud Press		805		807			

Mud Drop Nil Fluid Loss 7.9 Mud Weight 9.4

Viscosity 70 Temperature 88°C Net Pay Tested 30'

Top Packer Depth 1612 Bottom Packer Depth Total Depth 1672

Drill Pipe Size 3 1/2" IF Wt 13.3 Drill Collar I.D. 2" Ft. Run 145'

Surface Choke Size 1" Bottom Choke Size 3/4" Main Hole Size 6 1/2"

Anchor Size 4 3/4" QJ Rot Hole Size Feet of Rot Hole

Cushion Amount Type Rubber Size 5 1/2"

Fluid Recovery Total Feet 110

Recovered 110 Feet of Drilling Mud.

Recovered Feet of

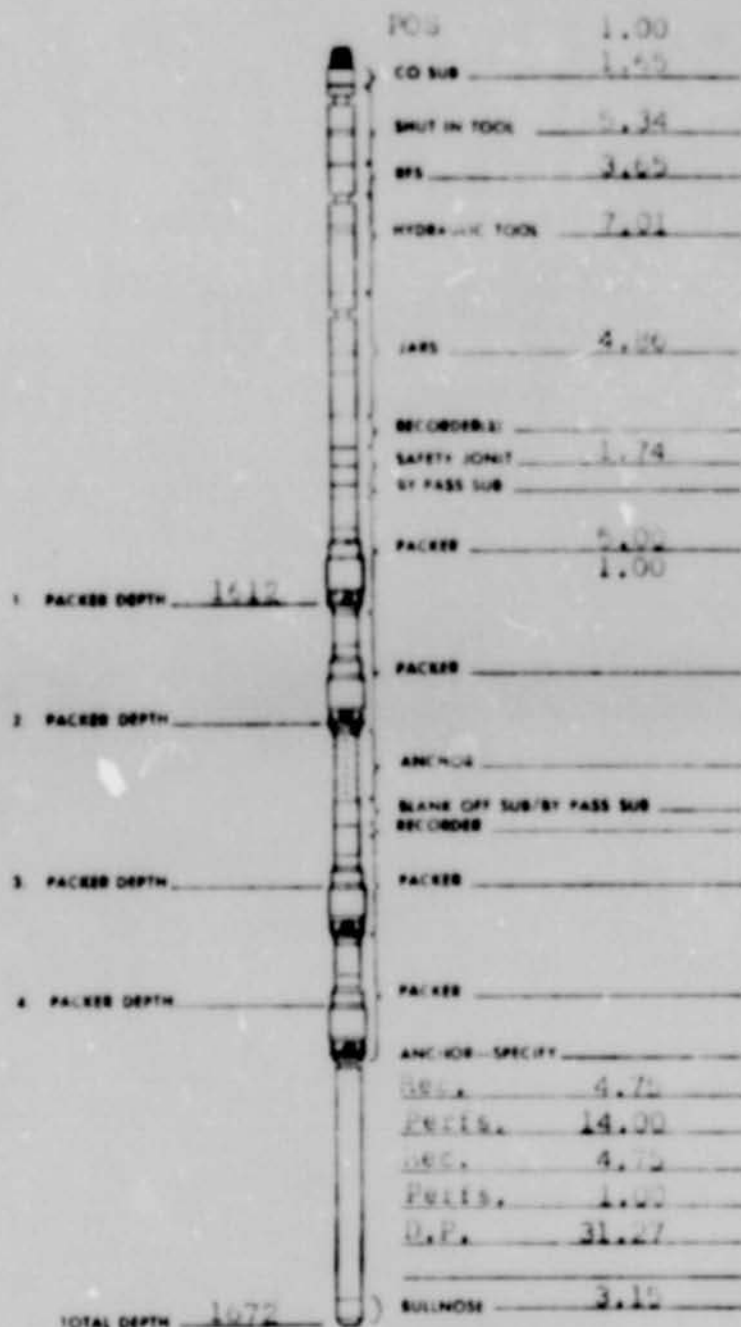
Gas Recovery How Measured

mins	Press Rdg	=	MCF/Day
mins	Press Rdg	=	MCF/Day
mins	Press Rdg	=	MCF/Day
mins	Press Rdg	=	MCF/Day

REMARKS Faint initial puff, died in 20 seconds.

Same result on initial flow.

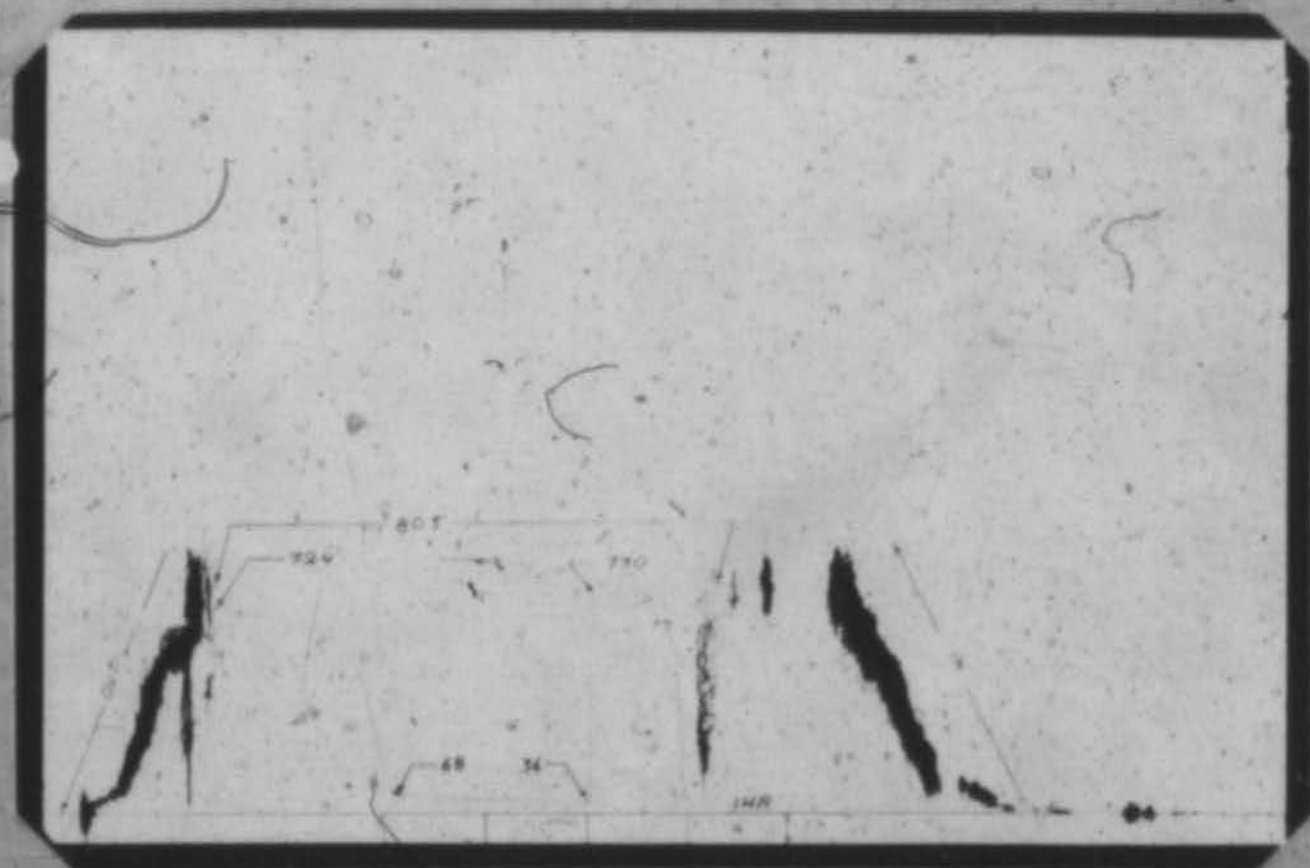
No damage report due to nature of recovery.

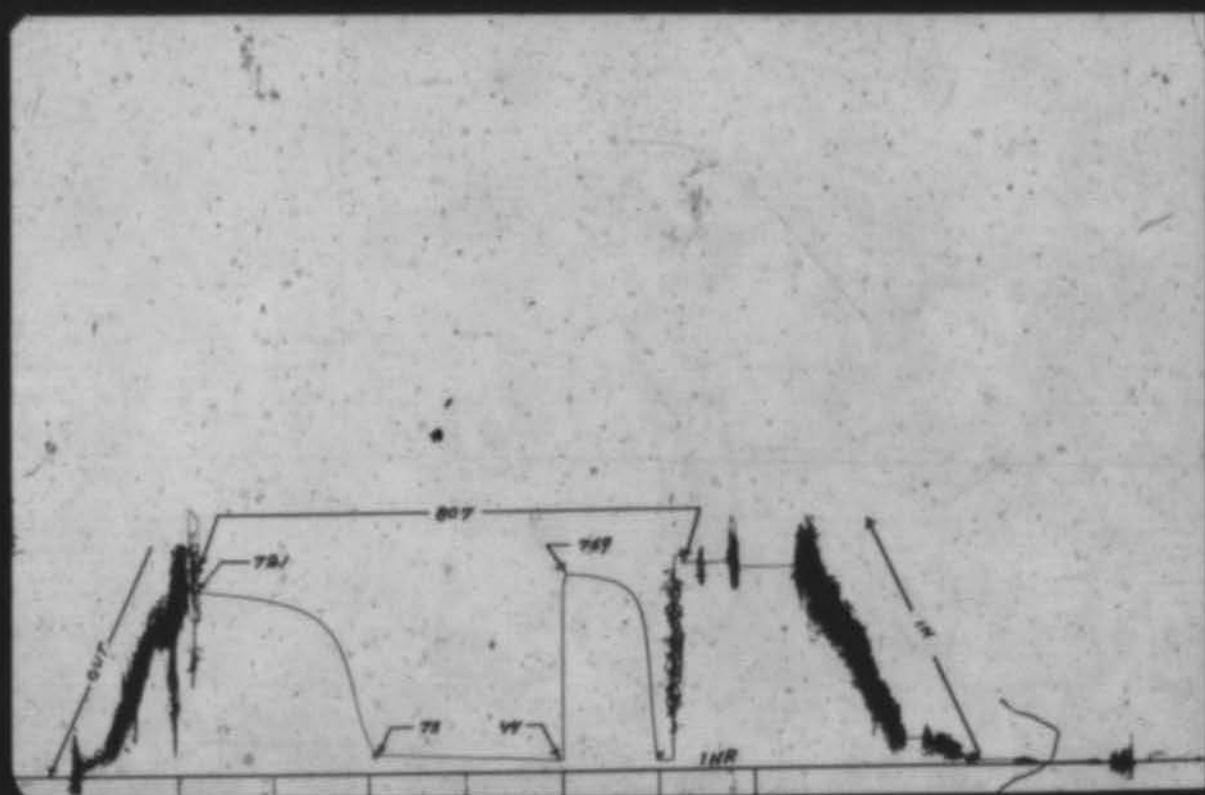
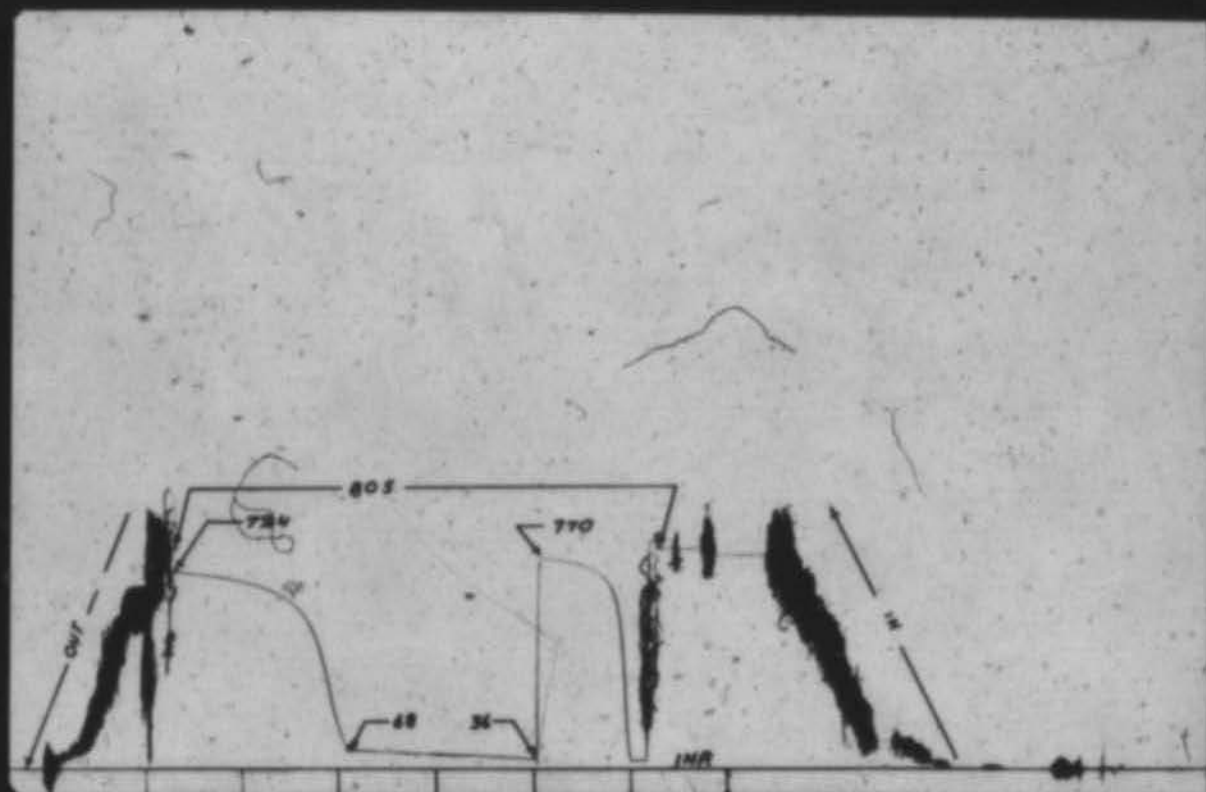


DST CHARTS FOR COMPARATIVE VISUAL ANALYSIS



HIGH PERMEABILITY STRONG DAMAGE EFFECT
 HIGH PERMEABILITY NO DAMAGE EFFECT
 MEDIUM PERMEABILITY STRONG DAMAGE EFFECT
 MEDIUM PERMEABILITY NO DAMAGE EFFECT
 LOW PERMEABILITY STRONG DAMAGE EFFECT
 LOW PERMEABILITY NO DAMAGE EFFECT





SURVEY RECORD

(M)

<u>Depth</u>	<u>Deviation</u>
97'	1/2 °
130'	1/4
183'	1/2
267'	3/4
340'	1 1/4

BIT RECORD

<u>Bit</u>	<u>Size</u>	<u>Make</u>	<u>Type</u>	<u>Serial</u>	<u>Depth</u>	<u>Feet</u>	<u>Hours</u>	<u>Accum.</u>
<u>#</u>				<u>#</u>	<u>Out</u>			<u>Hours</u>
1A	9 7/8	Smith	D.T.	66896	177	177	7	7
2A	9 7/8	Smith	D.T.	66889	267	90	7 1/4	14 1/4
1	6 1/4	Smith	D.T.	38726	376	109	2	16 1/4

MUD RECORD

Caustic	250 lbs.
Sawdust	3 sax
Super Col	5000 lbs.
Nago Gel	6700 lbs.
Salt Water Gel	2000 lbs.
Plaster	200 lbs.

SURVEY RECORD

(#1)

<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
70	1/2 °	465	1 °
100	3/4	560	1/4
130	1 1/4	592	1/2
130	1	634	1/2
158	1	750	1/4
190	1/2	845	1/8
220	1	1035	3/4
250	1/2	1160	1/4
280	1	1321	1/4
347	1	1511	3/4
407	1 1/4	1580	3/4
		1700	1 1/8

MUD RECORD

Gel	38 sacks
Salt Gel	50 sacks
Super Col	48 sacks
C.M.C.	225 lbs.
Bi-Carbonate of Soda	100 lbs.
Plaster	30 sacks
Starch	40 sacks
Preservative	90 sacks

BIT RECORD

(A1)

<u>Bit</u> <u>#</u>	<u>Size</u>	<u>Make</u>	<u>Type</u>	<u>Serial #</u>	<u>Depth</u> <u>Out</u>	<u>Footage</u>	<u>Hours</u>	<u>Accum. Hrs.</u>
1A	9 7/8	Smith	D.T.	66896	65	65	7.5	7.5
2A	9 7/8	Smith	D.T.	6889	130	65	5.75	13.25
3A	9 7/8	Reed	YTR	P37616	210	80	10.75	24
4A	6 1/4	Reed	YSL	E17168	283	73	4	28
5A	9 7/8	Smith	D.T.	60420	312	102	13.5	41.5
6A	9 7/8	Smith	D.T.	66899	350	38	2.5	48.5
7A	6 1/4	Smith	D.T.	38726	Pilot	150	6	46.5
1	6 1/4	Smith	D.T.	38724	1067	717	21 1/2	70.0
2	6 1/4	Smith	D.T.	38537	1511	444	22.75	92.75
3	6 1/4	Smith	D.T.	38726RR	1538	177	11 3/4	98
4	6 1/4	Reed	Y.T.L.	ED5075	1580	42	12	110
5	6 3/16	ACC	Diamond	70180	1672	92	31	141
6	6 1/4	Smith	D.T. 2G	40264	1732	60	18	159
7	6 1/4	Reed	YHR	P40235	1901	102	18 1/4	177 1/4
8	6 1/4	Reed	YHR	P40234	1932	31	13 1/4	190 1/2

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SECTION V

ANALYSIS

PAGES 18-21

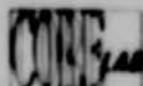
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CHEMICAL ANALYSIS
CENTRAL-DEL RIO OILS LIMITED
CDR CPOG CHEVRON MILLS LAKE 1-57
MILLS LAKE AREA
NORTH WEST TERRITORIES

CORE LABORATORIES - Canada Ltd.

Petroleum Reservoir Engineering

CALGARY • EDMONTON • REGINA



CONE LABORATORIES CANADA LTD.
 PETROLEUM RESEARCH ENGINEERING
 EDMONTON CALGARY REGINA
WATER ANALYSIS



File CBH-2-1286

Company Central-Del Rio Oils Limited
 Well Name CDR CPOG Chevron Mills Lake 1-57 Sample No. _____
 Formation Keg River Depth 1612' - 1672'
 Location Grid 61° 20' N.L.
117° 30' W.L. Field Mills Lake Area Province Northwest Territories
 Date Sampled Feb. 14/67 Date Analysed March 20/67 Analyst VC
 Sampled From DST No. 1 (Top of Tool) By _____
 Recovery 110' Fluid Elevation _____

Constituents:

1. Total Solids 6,866 mg/liter 2. pH 7.23 3. Sp.Gr. 1.0077 @60°F.
 4. Resistivity 1,607 Ohm-meters @ 75 °F 5. H₂S Absent

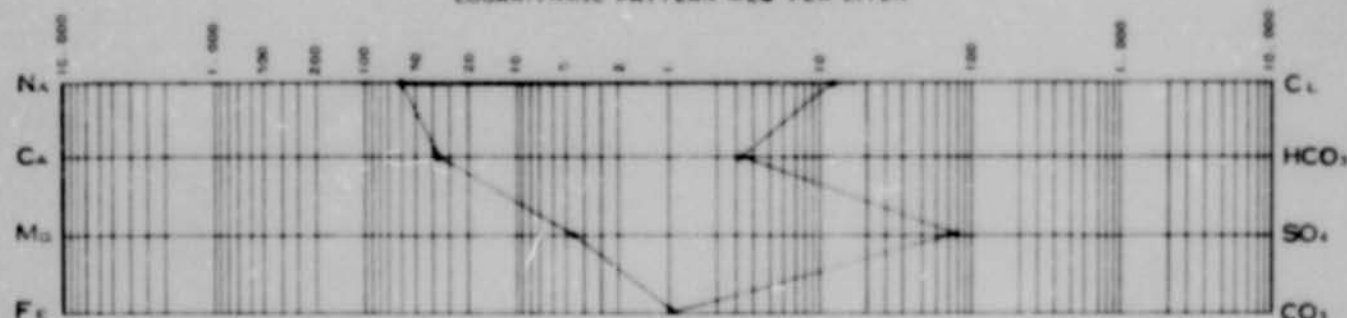
MILLIGRAMS PER LITER

Na & K	Ca	Mg	Fe	Ba	Cl	HCO ₃	SO ₄	CO ₃	OH
1,387	714	56	Absent	Absent	479	210	4,020	-	-

MEQ PER LITER

60.3	35.6	4.6	-	-	13.5	3.4	83.6	-	-
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LOGARITHMIC PATTERN MEQ PER LITER





CONE LABORATORIES CANADA LTD.
PETROLEUM RESEARCH ENGINEERING
EDMONTON CALGARY REGINA
WATER ANALYSIS



File CBH-2-1286

Company Central-Dei Rio Oils Limited
Well Name CDR CPOG Chevron Mills Lake 1-57 Sample No. _____
Formation Keg River Depth 1612' - 1672'
Grid. 61° 20' N.L.
Location 117° 30' W.L. Field Mills Lake Area Province Northwest Territories
Date Sampled Feb. 16/67 Date Analyzed March 20/67 Analyst VC
Sampled From DST No. 2 (Bottom of Recovery) By _____
Recovery 110' Elevation _____

Constituents:

1. Total Solids 19,225 mg/liter 2. pH 7.30 3. Sp.Gr. 1.0171 @60°F.
4. Resistivity 0.385 Ohm-meters @ 75 °F 5. H₂S Absent

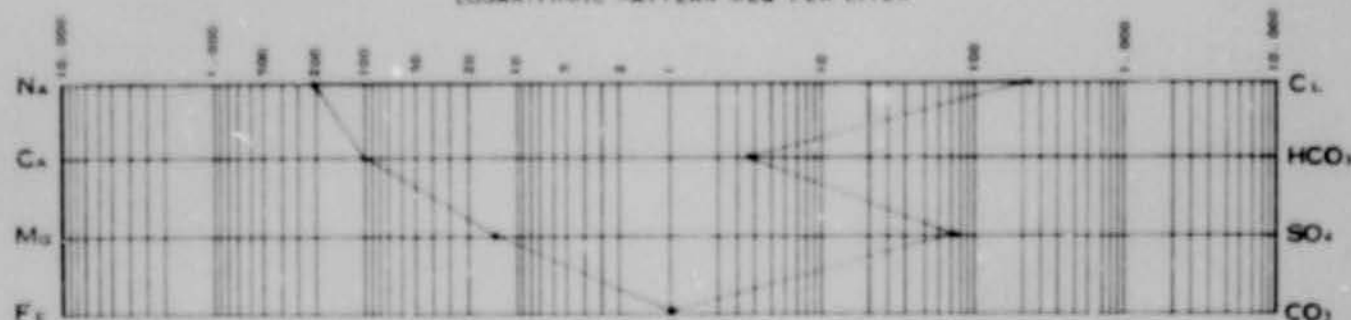
MILLIGRAMS PER LITER

Na & K	Ca	Mg	Fe	Ba	Cl	HCO ₃	SO ₄	CO ₃	OH
4,681	2,016	182	Absent	Absent	8,547	229	3,570	-	-

MEQ PER LITER

203.5	100.6	15.0	-	-	241.0	3.8	74.3	-	-
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LOGARITHMIC PATTERN MEQ PER LITER



CORE LABORATORIES-CANADA LTD.
CALGARY ALBERTA

Company - CENTRAL-DEL RIO OILS LIMITED
Well - CDR CPOG CHEVRON MILLS LAKE 1-57
Field - MILLS LAKE AREA, NORTH WEST TERRITORIES
Location - UNIT 1 SEC. 57 GRID. 61° 20' N
117° 30' W

Date Report - MARCH 7, 1967
Formation -
D. Fluid - WATER BASE MUD
Analysis - FULL DIAMETER

Page - 1 of 3
File - CNP-4-3505
Analysts - MBI
Core - DIAMOND

SAMPLE NUMBER	DEPTH REPRESENTED FEET	FOOT. REPR.	PERMEABILITY TO AIR HORIZONTAL) K MAX K 90°) VERTICAL			PERM. X FEET	POROSITY PER CENT	POROSITY X FEET	DENSITY BULK GRAIN	RESIDUAL SATURATION OIL TOTAL WATER % PORE % PORE		VISUAL EXAMINATION
CORED INTERVAL 1500' - 1672.5'												
CORE NO. 1 1500' - 1610' (REC. 30') (7 BOXES)												
-	1500.0-1610.0	30.0	-	-	-	-	-	-	-	-	-	Dense
CORE NO. 2 1610' - 1640' (Measured 31.5') (7 BOXES)												
-	1610.0-1616.7	6.7	-	-	-	-	-	-	-	-	-	Dense
A	1616.7-1618.4	1.7	0.31	0.25	0.17	0.527	6.0	10.20	2.53	2.70	-	I. PPV.
B	1618.4-1619.7	1.3	2.2	1.8	0.63	2.86	7.0	9.10	2.50	2.69	-	I. PPV. F.
C	1619.7-1620.7	1.0	0.71	0.65	0.51	0.710	5.0	5.00	2.54	2.67	11.6	I. PPV. STY.
-	1620.7-1621.5	0.8	-	-	-	-	-	-	-	-	-	Dense
D	1621.5-1622.1	0.6	0.92	0.31	0.16	0.552	1.0	1.00	2.63	2.68	-	PPV. STY.
E	1622.1-1623.3	1.2	2.1	1.2	0.26	2.52	6.3	7.56	2.48	2.65	19.1	I. PPV. STY. F.
F	1623.3-1624.4	1.1	0.00	0.00	<0.01	0.008	0.7	0.77	2.67	2.69	-	Few PPV. STY.
-	1624.4-1637.1	12.7	-	-	-	-	-	-	-	-	-	Dense
G	1637.1-1637.7	0.6	0.42	0.06	0.15	0.252	6.0	3.60	2.63	2.80	-	I. Few PPV. F.
H	1637.7-1638.7	1.0	1.1	0.56	0.13	1.10	16.5	16.50	2.36	2.83	5.6	I.
I	1638.7-1639.5	0.8	0.60	0.39	0.36	0.460	13.9	11.12	2.46	2.66	-	I. A.
J	1639.5-1640.5	1.0	1.1	0.49	<0.01	1.10	10.3	10.30	2.48	2.77	-	I.
K	1640.5-1641.5	1.0	0.17	0.06	<0.01	0.170	7.7	7.70	2.60	2.82	-	I. A.
CORE NO. 3 1641' - 1672' (REC. 30.0') (7 BOXES)												
I	1641.5-1643.2	1.7	0.05	0.03	<0.01	0.005	7.1	12.07	2.62	2.82	-	I. A.

SAMPLE NUMBER	DEPTH REPRESENTED FEET	FOOT, REPR.	PERMEABILITY TO AIR (HORIZONTAL)			PERM. X FEET	POROSITY POR. CENT	POROSITY X FEET	DENSITY BULK GRAIN	RESIDUAL SATURATION OIL TOTAL WATER		VISUAL EXAMINATION	
			K (MAX)	K (20°)	VERTICAL					% PORE	% PORE		
CORE NO. 3 (Cont'd)													
-	1643.2-1644.7	1.5	-	-	-	-	-	-	-	-	-	Dense	
2	1644.7-1646.9	2.2	0.12	0.09	<0.01	0.264	6.2	13.64	2.61	2.79	-	I, A.	
-	1646.9-1647.3	0.4	-	-	-	-	-	-	-	-	-	Dense	
3	1647.3-1649.2	1.9	<0.01	<0.01	<0.01	-	3.1	5.09	2.77	2.06	-	I, A.	
4	1649.2-1650.7	1.5	0.43	0.40	0.26	0.645	11.4	17.10	2.50	2.02	10.0	37.7	I, A, STY.
-	1650.7-1651.4	0.7	-	-	-	-	-	-	-	-	-	Dense	
5	1651.4-1653.3	1.9	0.46	0.43	<0.01	0.074	10.7	20.33	2.49	2.79	-	-	I, STY.
-	1653.3-1655.1	1.0	-	-	-	-	-	-	-	-	-	Dense	
6	1655.1-1655.4	0.3	1.4	0.77	0.05	0.420	14.1	4.23	2.39	2.70	-	-	I, STY, F.
-	1655.4-1656.6	1.2	-	-	-	-	-	-	-	-	-	Dense	
7	1656.6-1658.0	1.4	4.5	4.5	0.50	6.30	17.6	24.64	2.31	2.00	-	-	I, STY.
8	1658.0-1660.3	2.3	0.16	0.16	<0.01	0.300	5.4	12.42	2.66	2.03	-	-	I, A.
9	1660.3-1661.5	1.2	0.33	0.27	<0.01	0.306	0.7	10.44	2.58	2.03	Trace	51.7	I, Few PPV.
10	1661.5-1663.0	2.1	0.01	<0.01	<0.01	0.021	1.0	2.10	2.75	2.70	-	-	I.
11	1663.0-1664.0	1.0	2.0	2.5	0.53	2.00	10.4	10.40	2.50	2.06	-	-	I.
-	1664.0-1671.5	0.9	-	-	-	-	-	-	-	-	-	Dense	
-	1671.5-1672.5	1.0	-	-	-	-	-	-	-	-	-	Lost Core.	

I. = Intergranular: PPV. = Pin Point Vugs: F. = Fractured: STY. = Stylolite: A. = Anhydrite:

Core with Permeability 0.00 to less than 0.10 md.

Total footage of core with permeability 0.00 to less than 0.10 millidarcys -----	0.0'	
Weighted average porosity of core with permeability 0.00 to less than 0.10 millidarcys -----	5.1%	(20.83)
Per cent of analyzed core having permeability 0.00 to less than 0.10 millidarcys -----	23.6%	
Weighted average horizontal permeability of core with permeability 0.0 to less than 0.10 md. -----	0.03md.	(0.194)

Core with Permeability 0.10 to 0.99 millidarcys

Total footage of core with 0.10 to 0.99 millidarcys permeability -----	14.0'	
Weighted average porosity of core with 0.10 to 0.99 millidarcys permeability -----	7.6%	(112.63)
Per cent of analyzed core having 0.10 to 0.99 millidarcys permeability -----	51.4%	
Weighted average horizontal permeability of core with 0.10 to 0.99 millidarcys -----	0.35md.	(5.230)

Core with Permeability 1.0 to 9.9 millidarcys

Total footage of core with 1.0 to 9.9 millidarcys permeability -----	7.2'	
Weighted average porosity of core with 1.0 to 9.9 millidarcys permeability -----	11.5%	(82.73)
Per cent of analyzed core having 1.0 to 9.9 millidarcys permeability -----	25.0%	
Weighted average horizontal permeability of core with 1.0 to 9.9 millidarcys -----	2.4md.	(17.10)

Core with Permeability 10 Millidarcys and Greater - Nil

Core interval -----	1500.0' - 1672.5'	
Total footage -----	92.5'	
Footage analyzed -----	20.0'	
Footage not analyzed ----- Dense 62.7', Lost core 1.0' -----	63.7'	
Weighted average porosity of core analyzed -----	7.5%	(216.19)
Weighted average horizontal permeability of core analyzed -----	0.70md.	(22.532)

Note: Figures in parentheses indicate porosity foot and permeability foot.

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SECTION VI

COMPLETION SUMMARY

PAGES 22-27

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DAILY PROGRESS REPORT

COR CPOG CHEVRON MILLS LAKE I 57 (#1)

- Jan. 22/67 Depth (8 A.M.) 15' Progress: 15' On Bottom: 1/2 hr.
Operation: drilling.
Remarks: Spudded 7:30 A.M. Jan. 22/67.
Waiting on parts 10 hours.
Repairing drawworks motors 12 hours.
Rigging to spud 1 1/2 hours.
- Jan. 23/67 Depth (8 A.M.) 55' Progress: 40' On Bottom: 2 hrs.
Operation: drilling.
Mud Viscosity: 40. Additives
Caustic 250 lbs.
Super Col 5000 lbs.
Salt Water Gel 2000 lbs.
Mago Gel 5200 lbs.
Flaster 200 lbs.
Remarks: Shut down to repair oil filter 2 1/2 hours mud settled out, mixed all available mud and waited on new mud 8 1/4 hours.
Mixing mud 10 hours; repair swivel and Rig motor 3 1/4 hours;
Rig service 1 hour.
- Jan. 24/67 Depth (8 A.M.) 252' Progress: 197' On Bottom: 14 1/4 hours.
Operation: drilling.
Mud: Viscosity 38 Weight 9.5 Additives: Mago gel 700 lbs.
Remarks: Mixing Mud 1 hour
Rig service 1 1/2 hours
Survey 1/2 hour
Work on pump 2 hours
Set up Clutches 1/2 hour
Start rig motor & Prime pump 1 1/2 hours.
- Jan. 25/67 Depth (8 A.M.) 267' Progress: 15' On Bottom: 1 1/2 hours.
Operation: Nippling up.
Mud: Viscosity 55 Weight 9.5
Additives: nil.
Remarks:
Mix Mud 2 hours
Service Rig 1 "
Run Casing 1 1/2 "
Head to Circulate 3/4 "
Circulate casing 3/4 "
Mix cement & displace 1/2 "
W.O.C. 12 "
Nippling up 3 "
- Jan. 26/67 Depth (8 A.M.) 267' Progress: 0 On Bottom: 0
Operation: Waiting on welder for kelly cock.
Remarks:
Nippling up B.O.P.'s 8 hours
Rig up mud tanks
Prime pump & finish nippling up 8 hours
Drain pump tighten belts 8 hours
etc.

Jan. 26/67 (cont'd)

Drilled out plug.
Finished drilling out @ 8:30 A. M. Plug at 215' adapter
between Kelly cock and Kelly Seivel leaking waiting on welder.

Jan. 27/67 Depth (8 A.M.) 376' Progress: 109' On Bottom: 2 hrs.
Operation: removing casing bowl.
Mud Viscosity: water. Additives: 800 lbs. Gel
3 sax Sawdust

Remarks:

	<u>Hours</u>
Drill out shoe	1/2
Work on mud pump & Rig motor	3/4
Waiting on welder	14
Rig service & survey	1/2
Loosing mud build volume	2 1/4
Circulating	
Tear out B.O.P.	3

Loosing volume in tanks. Check leak at well head, mud coming out
between 7" collars and male thread of bowl. Bowl backed off to
with in one or two threads.

Jan. 28/67 Depth (8 A.M.) 376'

Operation: Skidding Rig 30' S.E.

Remarks: Ran cement plugs.

Plug #1 376-211' 35 sax cement. Plug down @ 12:15 A.M.

Plug #2 3 sax cement at surface. Cut off casing 3' below ground.
Welded on steel plate.

DAILY PROGRESS REPORTSCOR CPOG CHEVRON MILLS LAKE 1-37 (83)

Jan. 29/67 Depth (8 A.M.) 83' Progress: 85' On Bottom: 7 1/2 hours
 Operation: drilling.
 Remarks: Spudded @ 10:30 P. M. Skidded rig 42' E 16' S of #1 location.
 Rigging to spud 14 1/2 hours
 Work on pump 1 hour

Jan. 30/67 Depth (8 A.M.) 161' Progress: 96' On bottom: 11 1/4 hours.
 Operation: straightening hole. Additives: 10 sacks gel.
 Remarks: Ream 8-150' 3 3/4 hours
 Surveys 2 "
 Prime Pump & Rig Service 3 "
 Mix Mud 1 "
 Rig Repair 2 "

Jan. 31/67 Depth (8 A.M.) 283' Progress: 122' On Bottom: 7 3/4 hours
 Operation: waiting on repairs.
 Mud: Viscosity: 44. Additives: Nil.
 Remarks: Surveys 2 hours
 Swivel Repair 1 1/2 hours
 Service Rig 3/4 "
 Wait on U-Joint for Rotary Table 10 1/4 hours.

Feb. 1/67 Depth (8 A.M.) 312' Progress: 30' On Bottom: 3 1/4 hours.
 Operation: tripping for 6 1/4 pilot bit.
 Mud: Viscosity 34 Weight 10.2
 Additives: 23 sacks Gel.
 Remarks: Wait on repairs 6 1/2 hours
 Ream 9 7/8 - 6 1/4 210-283' 3 hours
 Fanning 120' 5 hours
 Rig service 1 hour
 Surveys 1 3/4 hours
 Mix mud 1 1/2 hours

Feb. 2/67 Depth (8 A.M.) 350' Progress: 38' On Bottom: 1 1/2 hours (3 1/4 reaming)
 Operation: Waiting on cement.
 Mud: Viscosity: 52' Weight: 10.5
 Remarks: Surveys 3/4 hr.
 Pump water 1
 Run casing 2 1/4
 Circulate casing 1 1/4
 Set Clamp in Cellar 2 1/2
 Cementing 1/4
 Hipple up to circulate
 hot water down D.P. & return
 out casing 4 1/4
 Circulating 2

Feb. 2/67 (cont'd)

Ran 8 joints 7" 30# J 55 Ege. 3 Japanese casing.
Tallied at 336.94' and set at 346.24 K.B. with 120 sacks normal
Portland Can. Cement. plus 2% CaCl₂ Ran 9 btls. pipe sweep ahead
of cement.
Plug down @ 1:52 A.M. Via B.J. Ran 10 scratchers on bottom. 120'
worked scratchers 45 minutes.

Feb. 3/67 Depth at (8 A.M.) 350' Progress: 0 On Bottom: 0
Operation: Nippling up.

Remarks: Circulate Hot water through casing 4 1/2 hours
Nipple up and remove landing joint 1 1/2 hours
Run in 1 1/4" pipe and cement 1 hour
W.O.C. 7 1/2 hours
Nipple up head 9 1/2 hours
Ran 1 1/4" pipe alongside casing. Top of cement @ 135'.
Ran 90 sax cement plug 2% CaCl₂. Return to surface
2:45 P.M. dug out cellar. Mix 16 sax in cellar.

Feb. 4/67 Depth (8 A.M.) 350' Progress: 0 On Bottom: 0
Operation: waiting on rig motor.
Remarks: Rig motor down 8:45 A.M. Feb. 3/67.

Feb. 5/67 Depth (8 A.M.) 350' Progress 0
Operation: shut down waiting on rig motor.

Remarks: Rig motor arrived from Calgary 10 A.M. Feb. 5/67.

Feb. 6/67 Waiting additional parts for rig motor.

Feb. 7/ 67 Still waiting on parts.

Feb. 8/67 Depth: 350'

Operation: drilling shoe at 346'

Remarks: found plug @ 306'

Pressured Blind Rams 1200 P.S.I. 30 Min.

Pressured 4 1/2 Rams 1200 P.S.I. 30 Min.

Pressured Hydril 1200 P.S.I. 30 Min.

Repairs completed, pump primed and started pressured up
at 1:30 A.M. Feb. 8/67.

Repairing motor 16 hours

Prime pump 1 1/2 hours

Pressure test B.O.P.'s 2 1/2 hours

Drilling Plug 4 hours

Feb. 9/67 Depth (8 A.M.) 968' Progress: 622' On Bottom: 18 3/4 hours
Operation: drilling.

Mud: Viscosity 42 Weight 9.2 Water Loss 7.4 PH 8.0

Additives: Super Col 23 sacks C.M.C. 100 lbs. Bi-Carb. 100 lbs.

Remarks: Check & start new motor 1 1/4 hours

Dump tanks & displace hole 1

Surveys 2 1/2

Rig service 1/4 hours

Feb. 10/67 Depth (8 A.M.) 1440' Progress: 472' On Bottom: 17 1/4 hours.
 Operation: drilling.
 Mud: Viscosity 43 Weight 9.8 Water Loss 7.7 P.H. 8.0
 Additives: Super Col 5 sacks C.M.C. 25 lbs.
 Remarks: Repair shaker cord 1 hour
 Check preventors 3/4 hours
 Service Rig & Surveys 2 1/2 hours
 Clean Mud Tanks 1 hour

Feb. 11/67 Depth (8 A.M.) 1539' Progress: 99' On Bottom: 11 1/4 hours
 Operation: drilling.
 Mud: viscosity 58 Weight 9.5 Water loss 6.0 P.H. 8.0
 Additives: Plaster 8 sacks Starch 13 sacks Preservative 30 lbs.
 Remarks: Rig Service 1 hour
 Circulate Sample 1/2 hour
 Clean 4' fill on last bit 1 1/2 hours

Feb. 12/67 Depth (8 A.M.) 1586' Progress 47' On Bottom: 14 1/4 hours.
 Operation: coring.
 Mud: viscosity 63 weight 9.4 Water loss 5.5 P.H. 8.0
 Additives: Gel 8 sacks (salt Gel) Plaster 1 sack Preservative 25 lbs.
 Remarks: Service rig and B.O.P. 1 3/4 hours
 Circulate Hole clean 1 3/4 hours
 Make up Core Barrel 2 hours
 Survey 1/2 hour

Feb. 13/67 Depth (8 A.M.) 1610' Progress: 24' On Bottom 12 3/4 hours.
 Operation: cleaning to bottom.
 Mud: Viscosity 61 Weight 9.6 water loss 9.0 P.H. 8.0
 Remarks: Rig service and repairs 4 1/2 hours
 Handle core 1 1/2 hours
 Clean to bottom 1

Feb. 14/67 Depth (8 A.M.) 1641' Progress: 31' On Bottom: 9 hours
 Operation: Making testing tool up.
 Mud: viscosity 9.3 Weight 6.5 Water Loss 7.5 P.H. 8.0
 Additives: Plaster 4 sacks Starch 4 sacks Salt Gel 22 sacks
 Preservative 25 lbs.
 Remarks: Mixing and conditioning mud 5 1/2 hours
 Service rig and check B.P. 1 1/4 hours
 Thawing out 2 3/4 hours
 Handle core 1 hour

Feb. 15/67 Depth (8 A.M.) 1641' Progress : 0
 Operation: thawing out.
 Mud: 65 Weight 9.3 Water Loss 8.0 P.H. 8.0
 Additives: Plaster 3 sacks Gel 5 sacks.
 Remarks: Thawing out 6 3/4 hours
 Making up tool 3
 Testing 2 3/4
 Make up testing head 1/2
 Break down tool 1/2
 W.O. orders 2 1/2 hours
 Bail cellars 3/4

Feb. 16/67 Depth (8 A.M.) 1672' Progress: 31' On Bottom: 7 1/4 hours.
 Operation: testing.
 Mud: Viscosity 70 Weight 9.4 Water Loss 7.7 P.H. 8.0

Feb. 16/67 (cont'd)

Additives:	Starch	7 sacks
	Salt Gel	14 sacks
	C.M.C.	1 sack
	Super Col	5 sacks
	Plaster	2 sacks

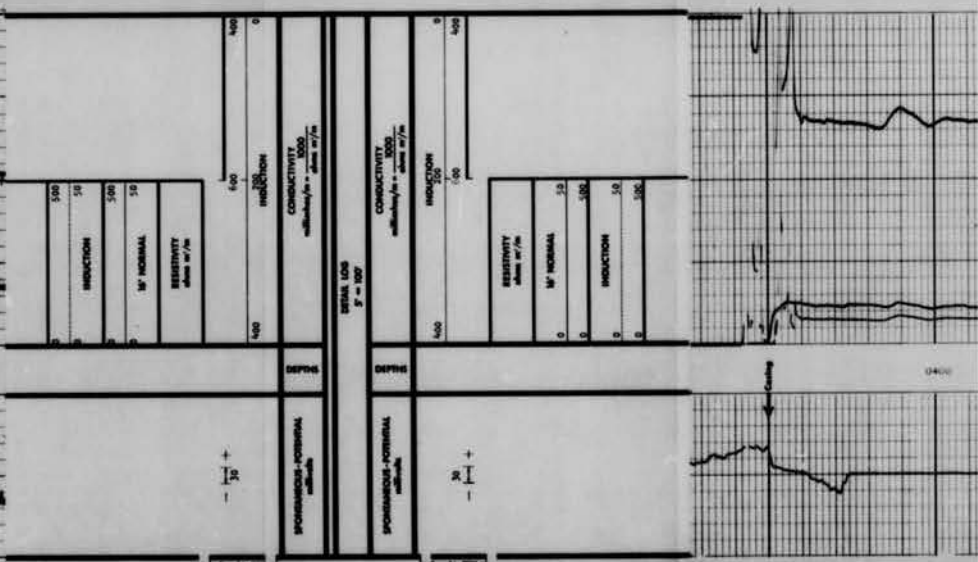
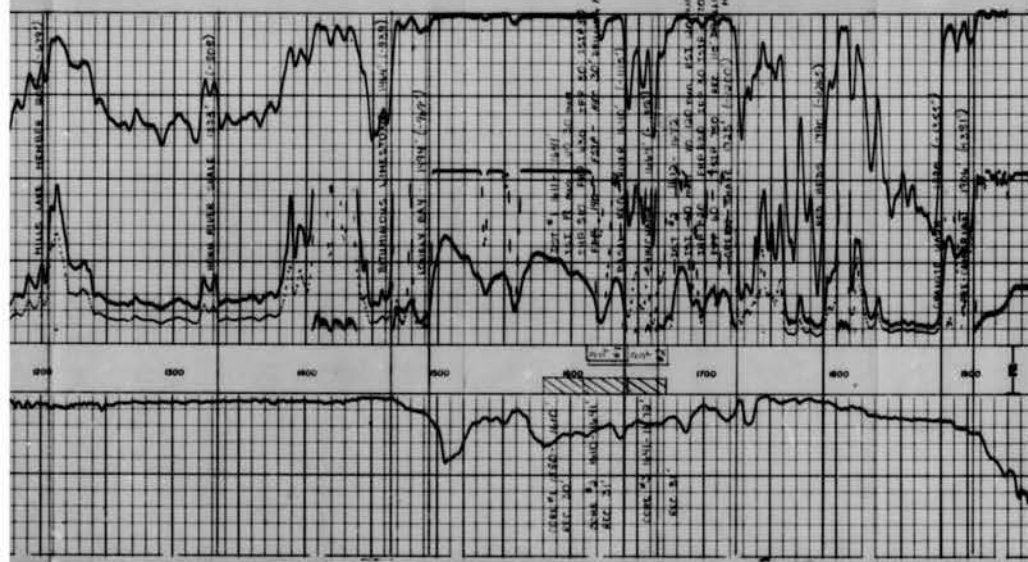
Remarks:	Thawing	2 hours
	Circulate mud	3 3/4 hours
	Circulate hole clean to core	1/2 hour
	Drain Kelly hose	1/2 hour
	Handle core & lay down barrel	1 1/2 hours
	Rig service & B.O.P.	3/4 hours
	Make up tool	2 1/4 hours

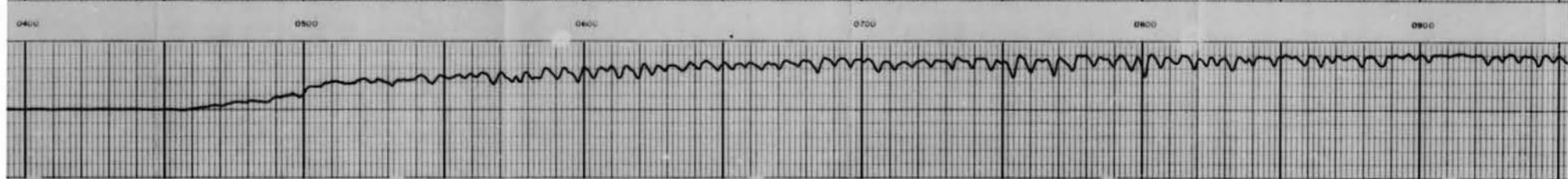
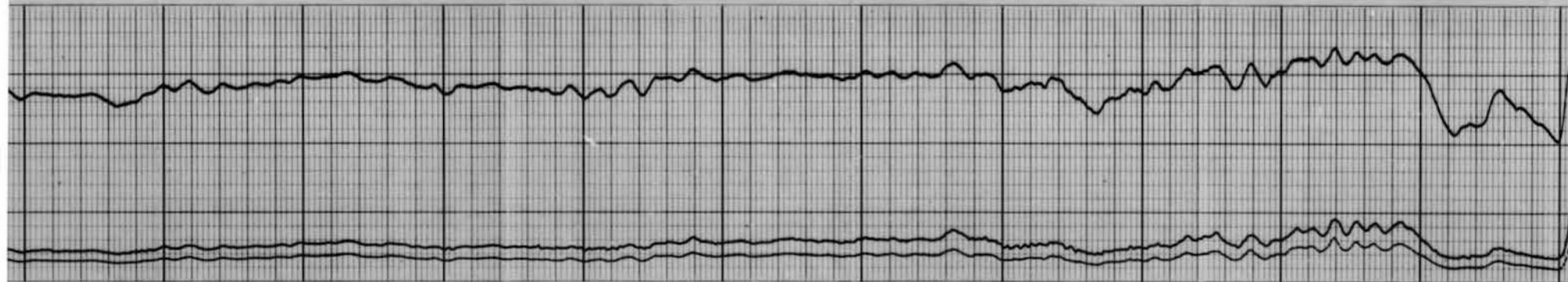
Feb. 17/67 Depth (8 A.M.) 1710' Progress: 38' On Bottom: 11 1/4 hrs.
 Operation: drilling.
 Mud: Viscosity 58 Weight 9.2 Water Loss 6.8 P.H. 8.0
 Additives: Plaster 4 sacks
 Starch 5 sacks

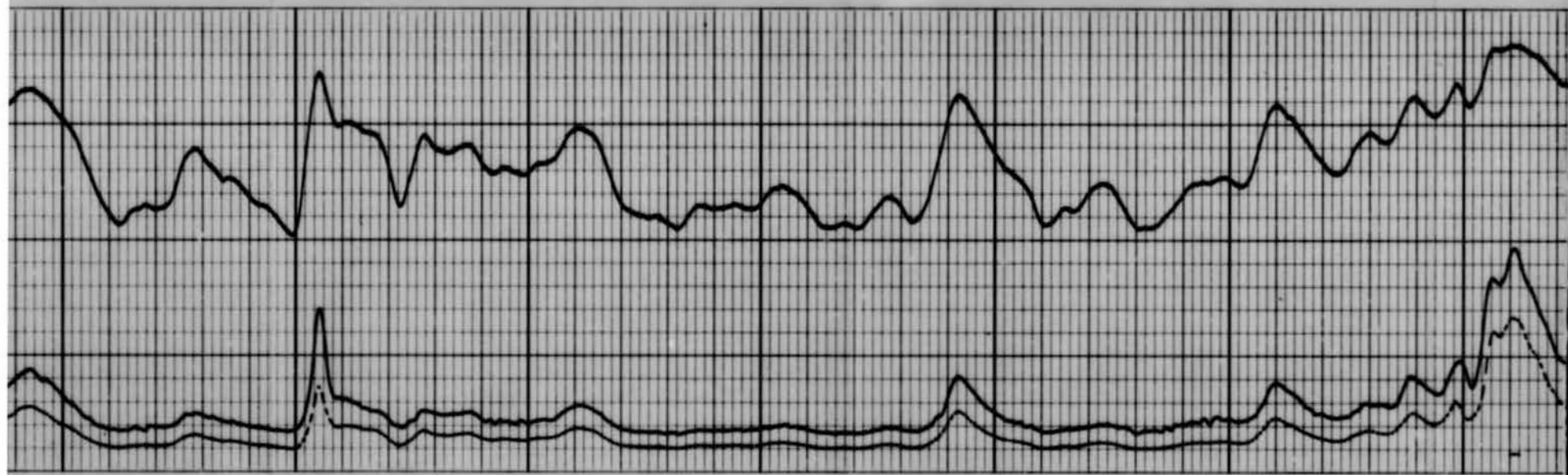
Feb. 18/67 Depth (8 A.M.) 1798' Progress: 88' On Bottom: 19 hours.
 Operation: tripping.
 Mud: viscosity 70 Weight 9.4 Water Loss 5.3 P.H. 8.0
 Additives: Super Col 5 sacks
 Plaster 4 sacks
 Starch 5 sacks
 Preservative 15 lbs.

Feb. 19/67 Depth (8A.M.) 1887' Progress: 89' On Bottom: 15 1/4 hours
 Operation: drilling.
 Mud: Viscosity 63 Weight 9.2 Water Loss 6.0 P.H. 8.0
 Additives: Super Col 10 sacks
 Salt Gel 6 sacks
 Plaster 4 sacks
 Starch 6 sacks
 Remarks: Work on Pump & Service rig 2 hours
 Mix Mud dump truck 3/4 hours

Feb. 20/67 Depth (8 A.M.) 1932' Progress: 45' On bottom: 16 1/4 hours
 Operation: Circulating to log.
 Mud: Viscosity 68 Weight 9.5 Water Loss 6.2 P.H. 8.0
 Remarks: Work on pump, wt. indicator 1/2 hour
 Circulate hole to log 1/2 hour
 Service Rig 1 hour







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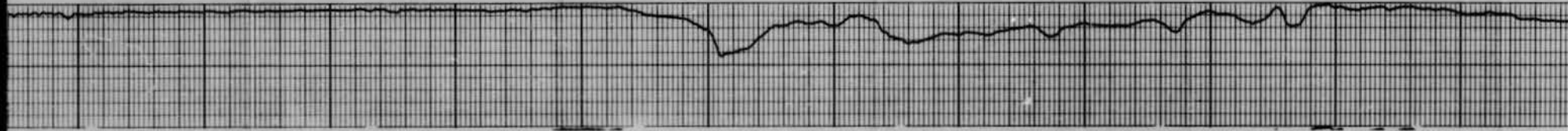
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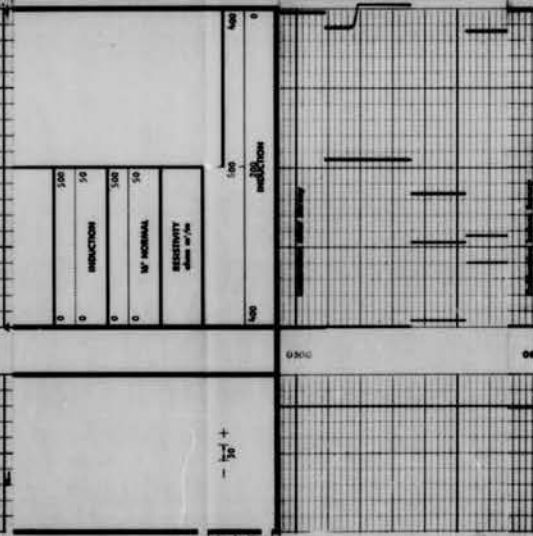
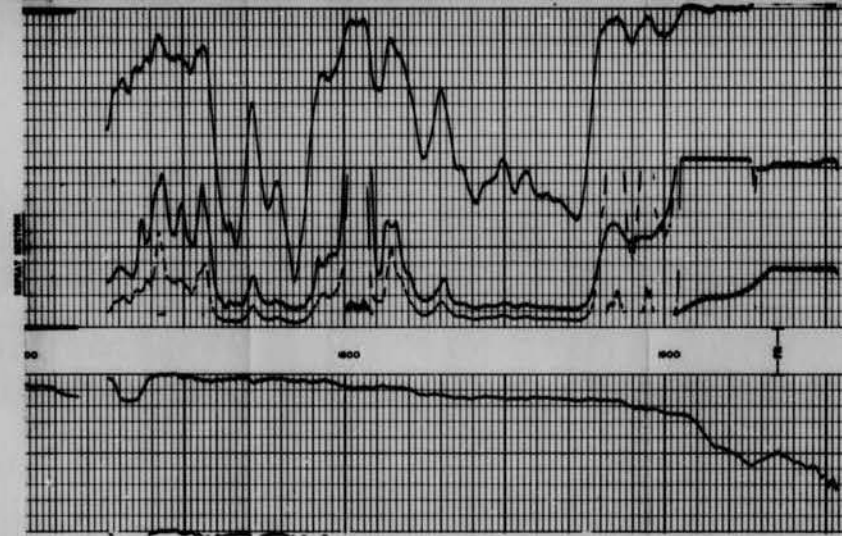
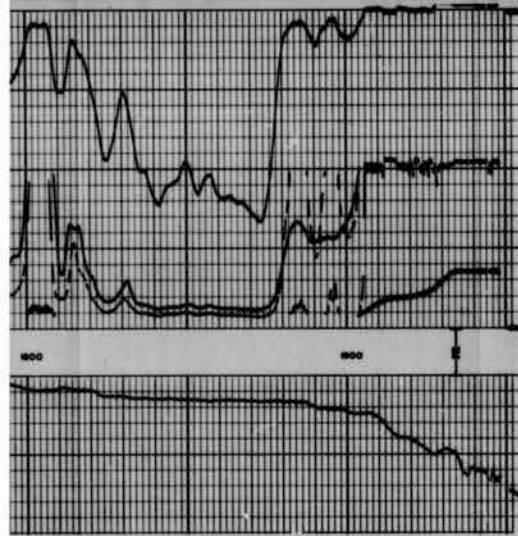
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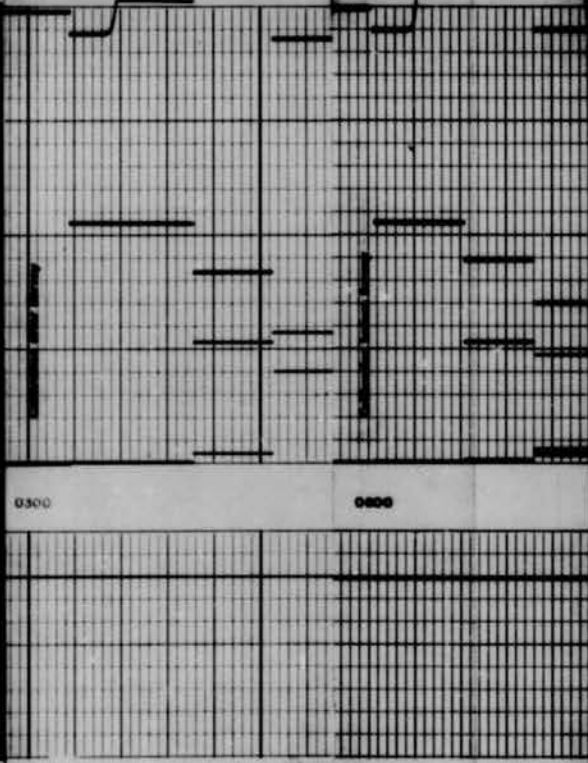
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COMPANY CENTRAL-DEL RIO OILS LIMITED

WELL

CDR CPOG CHEVRON MILLS LAKE 1-57 (dg)

FIELD

WILDCAT

PROVINCE

NORTHWEST TERRITORIES

SCHLUMBERGER

SCHLUMBERGER

[illegible]

COMPANY CENTRAL-BEL NIO OILS LIMITED
WELL CDR EMGO CHEVRON HILLS LAKE
1-57 (43)
FIELD WILDCAT

PROVINCE	NORTHWEST TERRITORIES
LOCATION	UNIT 1, SEC 57, GRID G1 ^m

Permanent Status OL Date 5/19
 Log Worksheet From 88 To 10 A Month From 0

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DATE: _____

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Bidding Request		07/10	30	Duration Requested	08/10	3
Colony 1st		2055				
Colony 2nd		4120				
Colony 3rd		4110				
Colony 4th		5250				

Customer Type:	
SALES TAX CALCULATION	45
Subtotal 0%	510
Tax 0%	0

[illegible]

9000

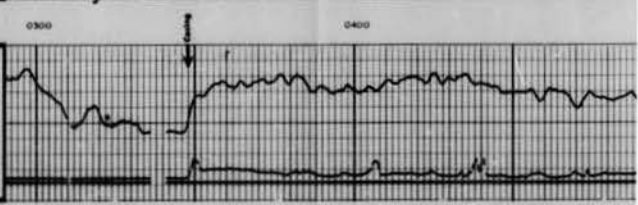
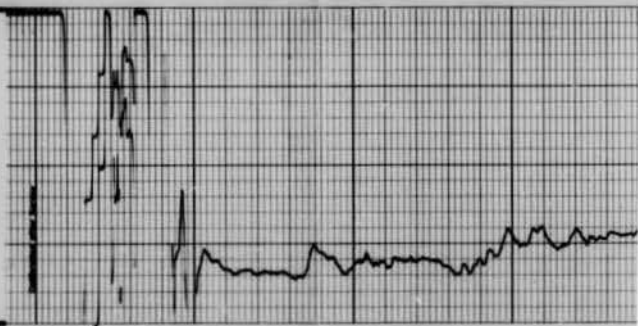
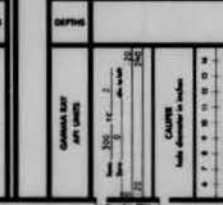
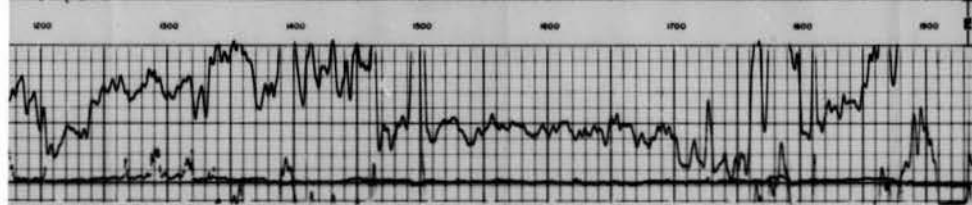
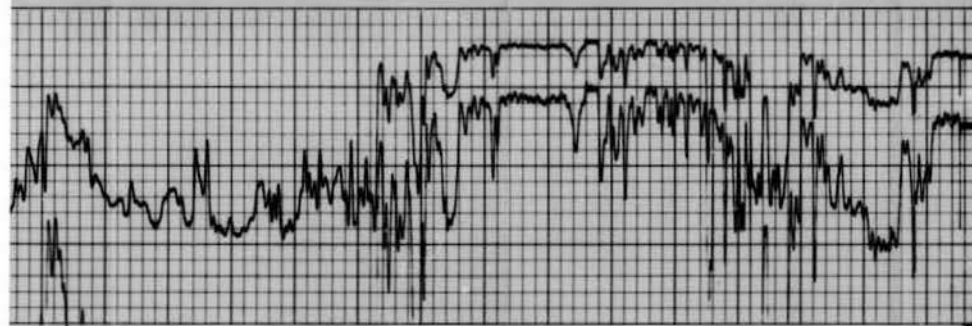
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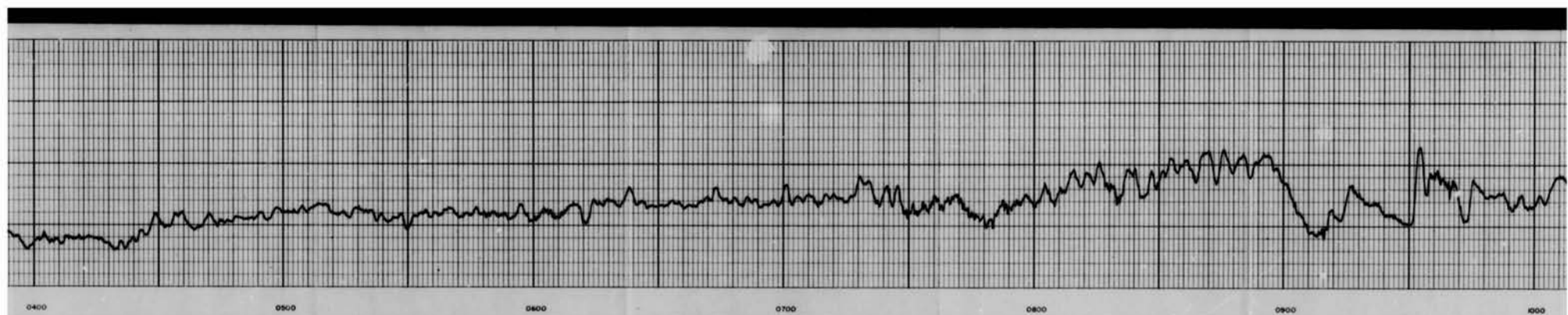
10-255 3745-527											
<table border="1"> <tr> <td>Order No.</td> <td>2893</td> </tr> <tr> <td>Order No.</td> <td>4159</td> </tr> <tr> <td>Order No.</td> <td>4160</td> </tr> <tr> <td>Order No.</td> <td>5166</td> </tr> <tr> <td>Order No.</td> <td>5293</td> </tr> </table>		Order No.	2893	Order No.	4159	Order No.	4160	Order No.	5166	Order No.	5293
Order No.	2893										
Order No.	4159										
Order No.	4160										
Order No.	5166										
Order No.	5293										
Billing Requested	8719 / 30										
Customer Requested	0819 / 30										
Net or Balance	1399 / 201										
By New Billing Order #	334236										
	8-8-8										

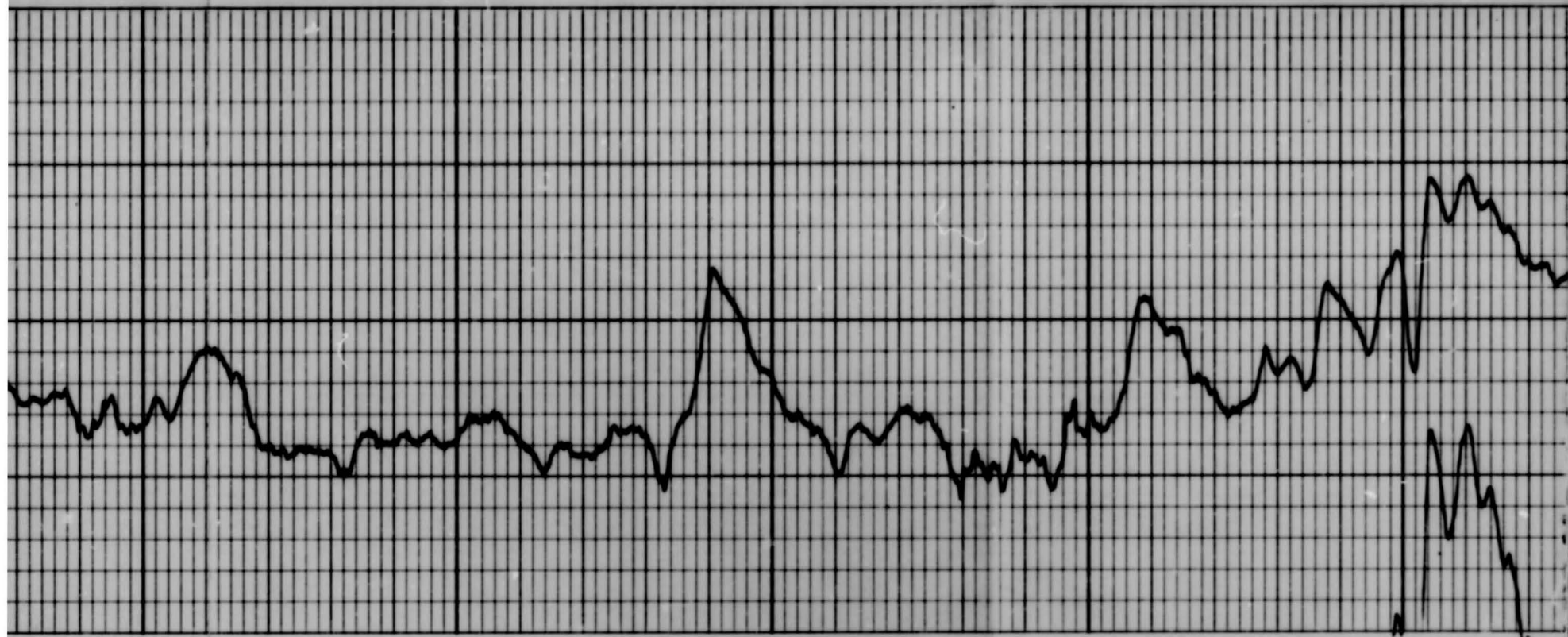
[illegible]

GAMMA RAY API LIMITS		DEPTH		DOSC INTERVAL TOLERANCE microseconds per foot	
0	100	0	60	60	60
100	100	100	100	100	100
200	200	200	200	200	200

Two ECG strips are shown. The top strip shows a regular rhythm with a rate of 100 bpm. The bottom strip shows a regular rhythm with a rate of 100 bpm.



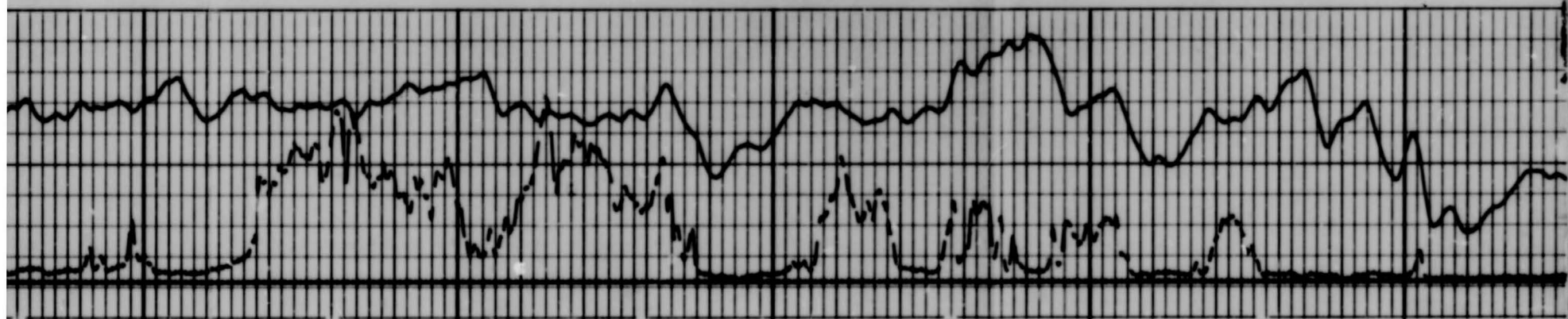


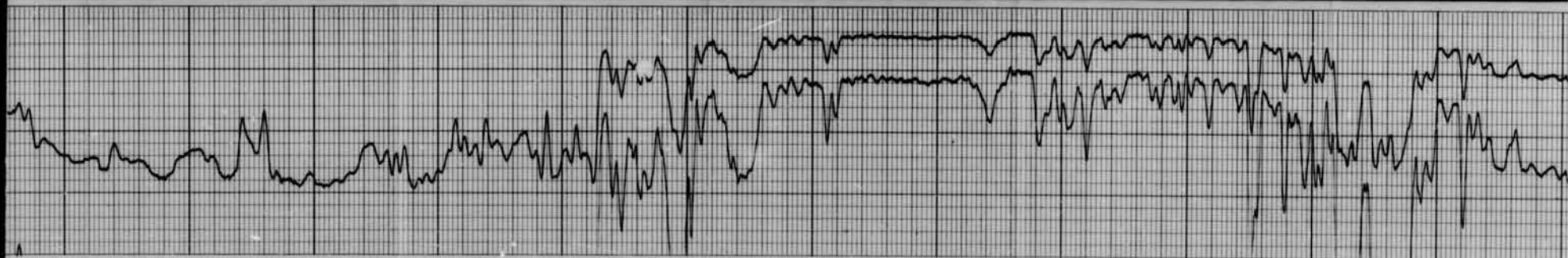


1000

1100

1200





1500

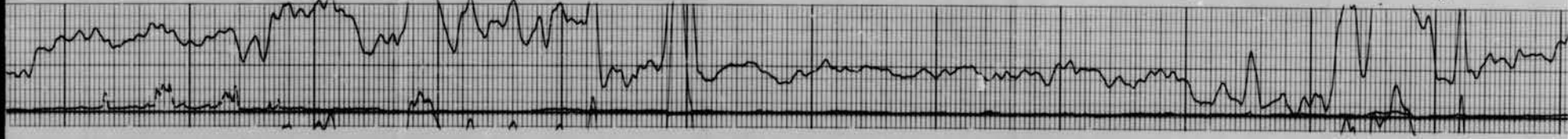
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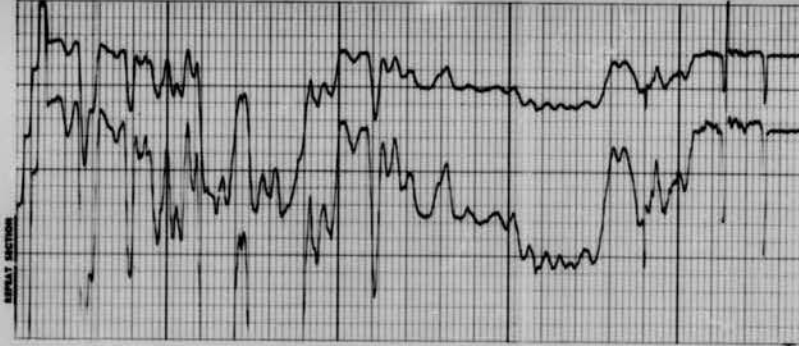
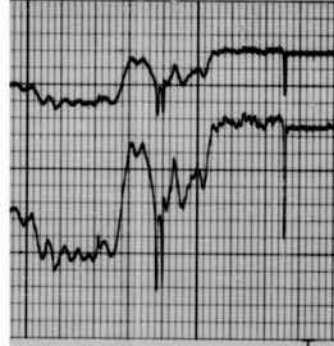
1300

1200

1100

1000





CALIBER	
hole diameter in inches	
Size	1.5
Zone	1.5
Rate	1.5

DEPTHS	
140	140
80	80

GAMMA RAY
API UNITS

SONIC
INTERVAL TRANSIT TIME
microseconds per foot

COMPANY

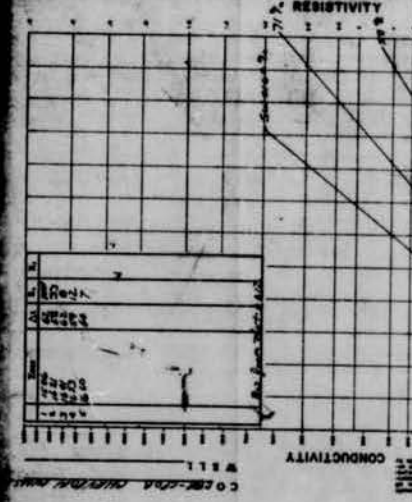
CENTRAL-BEL RIG BILLS LIMITED

WELL

GR 2708 CHEVON MILLS LAKE 1-2 (B)

FIELD

WILDCAT PROVINCE NORTHWEST TERRITORIES



COLE-CPA CHIR/DAL PHAS

WELL

Zone	Δt	R_1	R_2
1	17.06	62	100
2	12.91	62	100
3	12.91	62	100
4	12.91	62	100
5	12.91	62	100
6	12.91	62	100
7	12.91	62	100

See from 76 to 81.3

71% RESISTIVITY

CONDUCTIVITY

For the interpretation of logs the geologist will use the following data:
 1. The resistivity of the formation.
 2. The resistivity of the mud.
 3. The resistivity of the water.
 4. The resistivity of the oil.
 5. The resistivity of the gas.
 6. The resistivity of the sand.
 7. The resistivity of the shale.
 8. The resistivity of the limestone.
 9. The resistivity of the dolomite.
 10. The resistivity of the granite.

100% RESISTIVITY

Δt

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DATE 2.12.57

STATION/DATE/LOG			PUMP TEST		CLASS	REMARKS	TIME		
FROM PT.	TO TIME	BATH IN TEMP	DESCRIPTION	DEPTH TO WATER ON PT.			START	STOP	INTERVAL
						Drilling 54 hole	1:00	1:05	15
						Drilling 54 hole	1:05	1:10	5
						Drilling 54 hole	1:10	1:15	5
						Drilling 54 hole	1:15	1:20	5
						Drilling 54 hole	1:20	1:25	5
						Drilling 54 hole	1:25	1:30	5
						Drilling 54 hole	1:30	1:35	5
						Drilling 54 hole	1:35	1:40	5
						Drilling 54 hole	1:40	1:45	5
						Drilling 54 hole	1:45	1:50	5
						Drilling 54 hole	1:50	1:55	5
						Drilling 54 hole	1:55	2:00	5
						Drilling 54 hole	2:00	2:05	5
						Drilling 54 hole	2:05	2:10	5
						Drilling 54 hole	2:10	2:15	5
						Drilling 54 hole	2:15	2:20	5
						Drilling 54 hole	2:20	2:25	5
						Drilling 54 hole	2:25	2:30	5
						Drilling 54 hole	2:30	2:35	5
						Drilling 54 hole	2:35	2:40	5
						Drilling 54 hole	2:40	2:45	5
						Drilling 54 hole	2:45	2:50	5
						Drilling 54 hole	2:50	2:55	5
						Drilling 54 hole	2:55	3:00	5
						Drilling 54 hole	3:00	3:05	5
						Drilling 54 hole	3:05	3:10	5
						Drilling 54 hole	3:10	3:15	5
						Drilling 54 hole	3:15	3:20	5
						Drilling 54 hole	3:20	3:25	5
						Drilling 54 hole	3:25	3:30	5
						Drilling 54 hole	3:30	3:35	5
						Drilling 54 hole	3:35	3:40	5
						Drilling 54 hole	3:40	3:45	5
						Drilling 54 hole	3:45	3:50	5
						Drilling 54 hole	3:50	3:55	5
						Drilling 54 hole	3:55	4:00	5
						Drilling 54 hole	4:00	4:05	5
						Drilling 54 hole	4:05	4:10	5
						Drilling 54 hole	4:10	4:15	5
						Drilling 54 hole	4:15	4:20	5
						Drilling 54 hole	4:20	4:25	5
						Drilling 54 hole	4:25	4:30	5
						Drilling 54 hole	4:30	4:35	5
						Drilling 54 hole	4:35	4:40	5
						Drilling 54 hole	4:40	4:45	5
						Drilling 54 hole	4:45	4:50	5
						Drilling 54 hole	4:50	4:55	5
						Drilling 54 hole	4:55	5:00	5
						Drilling 54 hole	5:00	5:05	5
						Drilling 54 hole	5:05	5:10	5
						Drilling 54 hole	5:10	5:15	5
						Drilling 54 hole	5:15		

[illegible][illegible]

BIG. NO. 12 LOCATION 1901 1901 1901 1901 DATE 1901 1901 LOCATION 1901 1901 DATE 1901 1901

TOUR	DATE	HOLE NO.	FROM	TO	T.O.P. FIN.	NEE CASH	AMOUNT	SAC CASH	TIME	CLASS	REMARKS	START	STOP	INTERVAL
1	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901
2	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901
3	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901	1901

TOUR 1
DATE 1901
HOLE NO. 1901
FROM 1901 TO 1901
T.O.P. FIN. 1901
NEE CASH 1901
AMOUNT 1901
SAC CASH 1901
TIME 1901
CLASS 1901
REMARKS 1901
START 1901 STOP 1901 INTERVAL 1901

TOUR 2
DATE 1901
HOLE NO. 1901
FROM 1901 TO 1901
T.O.P. FIN. 1901
NEE CASH 1901
AMOUNT 1901
SAC CASH 1901
TIME 1901
CLASS 1901
REMARKS 1901
START 1901 STOP 1901 INTERVAL 1901

TOUR 3
DATE 1901
HOLE NO. 1901
FROM 1901 TO 1901
T.O.P. FIN. 1901
NEE CASH 1901
AMOUNT 1901
SAC CASH 1901
TIME 1901
CLASS 1901
REMARKS 1901
START 1901 STOP 1901 INTERVAL 1901

FIG. NO. 11

LOCATION *Malheur Lake, O.R.*

DATE 3-4-67

LOCATION

DATE JAN 1967

CLASS	REMARKS	TIME		
		START	STOP	INTERVAL
	Drilling 6 1/2 hole	12:30	4:20	4 1/2
	Concussion and work	4:30		
	from 12:30 to 4:30	5:35	7:45	2 1/2
	Drilling 6 1/2 hole	5:45	8:30	2 1/2

DRILLER *Wm. J. Smyth*

ECONOMY TIME		CONCRETE TIME		TIME	
CLASS	REMARKS	START	STOP	INTERVAL	
	2nd and 3rd stage	8:20	8:50		
	2nd and 3rd stage	8:50	9:00		
	2nd and 3rd stage	9:00	9:10		
	2nd and 3rd stage	9:10	10:00		
	2nd and 3rd stage	10:00	11:00		
	2nd and 3rd stage	11:00	12:00		
	2nd and 3rd stage	12:00	12:45		
	2nd and 3rd stage	12:45	4:00		

[illegible]

Kellycup16FT

RIG, NO. 17

LOCATION MILLS LAKE I-57 CQA, NWT, DATE FEB 17/67

LOCATION

DATE

LT.	LF.	HOLE NO.	FROM	TO	T.D. IF FINISHED	CHARGE SET TO DEPTH	AMOUNT	SAC COMMENT	CONTRACT NO.	DATE	TIME	CLASS	REMARKS	START	STOP	INTERVAL
1	1	2	1688	1710			22						DRILL 6 1/4 HOLE	12:00	4:00	4
1	1	6	6 1/4	0720	4224	12	70						CONRAD SURVEY	4:30	4:30	0
1	1												WORKING RIGHT HAND	4:30	4:45	15
1	1												DRILL 6 1/4 HOLE	4:45	4:00	3 1/4
MUD 12MM 2A.M. 4A.M. 8A.M. WT 9.1 9.3 9.2 VISC 45 47 59 58 GR. 6.8 6.8 ADDITIONAL WATER 200L ADDITIONAL MUD 500L PUMP 1710 1720 174 WEATHER MIDN. 4A.M. TEMPERATURE -20 -25 WIND VELOCITY 10-15 RAIN/INCH FOG CREW TIME SUMMARY DRILLER Wm Forsyth HOIST ED. BRUMMEND BARRELL STEWART ATTENDANT ARNOLD CRUICKSHANK																
2	2	171	1720	1732			22						Drilling 6 1/4 hole	2:00	2:10	10
2	2	6	6 1/4	0720	12	70	60						3rd cut	2:10	2:20	10
2	2												Laminar Reg	2:20	2:30	10
MUD 8A.M. 12NN 2P.M. WT 9.2 9.3 9.4 VISC 54 56 57 60 GR. 5.4 5.4 ADDITIONAL WATER ADDITIONAL MUD PUMP 1710 WEATHER 8A.M. NOON TEMPERATURE 38 WIND VELOCITY RAIN/INCH FOG CREW TIME SUMMARY DRILLER Dan Cannon HOIST L. J. Ford BARRELL L. Cannon																
3	3	157	1732	1732			41						Laminar Reg	4:00	4:30	1/2
3	3	7	6 1/4	YTUREN	14	90	41						Reg in 1/2 in 6 1/4 P.H.	4:30	4:45	15
3	3												Dr. II	4:45	12:00	5 1/4
MUD 4P.M. 8P.M. 10P.M. WT 9.1 9.1 9.2 VISC 67 64 62 GR. 6.2 6.2 ADDITIONAL WATER 200L ADDITIONAL MUD 250L ADDITIONAL MUD 250L ADDITIONAL MUD 250L PUMP 1735 1740 1735 WEATHER 4P.M. 8A.M. TEMPERATURE WIND VELOCITY RAIN/INCH FOG CREW TIME SUMMARY DRILLER Ken Brown HOIST L. P. HARRIS BARRELL L. HARRIS ATTENDANT L. S. GORDON																

22 FT up on Kelly

DRILLER Ken Brown

RIG, NO. 17

LOCATION MULLSAKE 2-57 NWT

DATE Feb 13/67

LOCATION

DATE Feb 13/67

LT.	LF.	HOLE NO.	FROM	TO	T.D. IF FINISHED	CAUSING SET TO DEPTH	AMOUNT	SAC CEMENT	CONCRETE	LAST BELL TIME	WATER ON WATER
AP.	AT.	2	1600								
N. LIFT	CONC.	NO.	SIZE	TIME	SEX. NO.	WEIGHT	SPM	FT. DRILLED	REMARKS	WEL	FORM
BT	RECORD	5	6 1/2			2018C		30			
MUD	12M	24 M.	4 A.M.	9 A.M.							
W.											
W. TRUCK											
MOS. PUMP											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HEAVY											
HEAVY											
TOTAL											
INJURIES AND REMARKS											

LT.	LF.	HOLE NO.	FROM	TO	T.D. IF FINISHED	CAUSING SET TO DEPTH	AMOUNT	SAC CEMENT	CONCRETE	LAST BELL TIME	WATER ON WATER
AP.	AT.	27	1110	1524							
N. LIFT	CONC.	NO.	SIZE	TIME	SEX. NO.	WEIGHT	SPM	FT. DRILLED	REMARKS	WEL	FORM
BT	RECORD	5	6 1/2			2018C		45			
MUD	9 A.M.	10 A.M.	12 M.	3 P.M.							
W.											
W. TRUCK											
MOS. PUMP											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HEAVY											
HEAVY											
TOTAL											
INJURIES AND REMARKS											

LT.	LF.	HOLE NO.	FROM	TO	T.D. IF FINISHED	CAUSING SET TO DEPTH	AMOUNT	SAC CEMENT	CONCRETE	LAST BELL TIME	WATER ON WATER
AP.	AT.	559	1134	1640							
N. LIFT	CONC.	NO.	SIZE	TIME	SEX. NO.	WEIGHT	SPM	FT. DRILLED	REMARKS	WEL	FORM
BT	RECORD	5	6 1/2			2018C		61			
MUD	4 P.M.	5 P.M.	6 P.M.	7 P.M.							
W.											
W. TRUCK											
MOS. PUMP											
GENERAL											
CREW TIME SUMMARY											
DRILLER											
HEAVY											
HEAVY											
TOTAL											
INJURIES AND REMARKS											

CLASS	REMARKS	TIME	START	STOP	INTERVAL
	FINISHED AT 12:00		12:00		
	HANDLED & ADJUSTED		12:30		
	PAID PUMP (1000) 12:30		1:00		
	PISTON PIPE, W/ 1000 1:00		1:30		
	RECOVER CORE REVERSE 1:30		2:00		
	CATCH, WASH & REVERSE 2:00		2:30		
	REVERSE TO CUT CORE 2:30		3:00		
	REVERSE FLOWING 3:00		3:30		
	PIPE PIPE, STEERING 3:30		4:00		
	OUT CORE, SAMPLE 4:00		4:30		
	ELEVATIONS 4:30		5:00		
	BREAKING A CIR TO 5:00		5:30		
	CORE STEAM OUT 5:30		6:00		
	SHARPER SCARING 6:00		6:30		
	ROTARY TABLE 6:30		7:00		
	No SHARP SURFACE 7:00		7:30		
	DRILLER 7:30		8:00		
	COMPANY TIME 8:00		8:30		

CLASS	REMARKS	TIME	START	STOP	INTERVAL
	Mining and drilling 8:00		8:30		
	Drilling 8:30		9:00		
	Drilling 9:00		9:30		
	Drilling 9:30		10:00		
	Drilling 10:00		10:30		
	Drilling 10:30		11:00		
	Drilling 11:00		11:30		
	Drilling 11:30		12:00		
	No SHARP SURFACE 12:00		12:30		
	DRILLER 12:30		1:00		
	COMPANY TIME 1:00		1:30		

CLASS	REMARKS	TIME	START	STOP	INTERVAL
	Getting Core 2 4:00		4:30		
	Service Rig Thaw Hole 4:30		5:00		
	Fit line 5:00		5:30		
	Pull out 5:30		6:00		
	Recover Core Wash 6:00		6:30		
	and Box 6:30		7:00		
	Clean Mud Tank 7:00		7:30		
	Drain Kelly hose and 7:30		8:00		
	Put in line 8:00		8:30		
	Start in Hole with 8:30		9:00		
	But Condition For 9:00		9:30		
	Put up Geologists 9:30		10:00		
	Stove 10:00		10:30		
	Driller 10:30		11:00		
	COMPANY TIME 11:00		11:30		

RIG. NO. 17 LOCATION P.D. H. MINAS AREA EST DATE FEB 14/48 LOCATION MINAS AREA EST DATE FEB 14/48

LT.	UP.	HOLE NO.	FROM	TO	T.D. IF FINAL	CAUSED BY	DEPTH	AMOUNT	SAC CEMENT	REMARKS	CLASS	REMARKS	TIME
AP.	AT.												
T	1	157	1880	1886									
RECORD													
MUD	12MN	2A.M.	4A.M.	8A.M.									
WT.													
W.C.													
DEL.													
W.C.													
W. TRUCK													
MOB. PUMP													
GENERAL													
CREW TIME SUMMARY													
DRILLER													
WELDER													
HEAVY													
TOTAL													
INJURIES AND REMARKS													
T	2	157	1886	1890									
RECORD													
MUD	8A.M.	10A.M.	12P.M.	2P.M.									
WT.													
W.C.													
DEL.													
W.C.													
W. TRUCK													
MOB. PUMP													
GENERAL													
CREW TIME SUMMARY													
DRILLER													
WELDER													
HEAVY													
TOTAL													
INJURIES AND REMARKS													
T	3	157	1890	1899									
RECORD													
MUD	4P.M.	6P.M.	8P.M.	10P.M.									
WT.													
W.C.													
DEL.													
W.C.													
W. TRUCK													
MOB. PUMP													
GENERAL													
CREW TIME SUMMARY													
DRILLER													
WELDER													
HEAVY													
TOTAL													
INJURIES AND REMARKS													

 Rig service
 Check O.P.
 Make up wire log
 Run in hole
 General's
 Gearing

 12 30 12 35 5
 12 35 12 40 5
 12 40 1 00 1
 1 00 1 05 5
 1 05 1 10 5
DRILLER *Forrest*

COMPANY TIME _____ CONTRACT TIME _____

CLASS _____

 Coring
 Work on pump
 Coring
 Replenish water
 Replenish water
 Replenish water

 4 00 4 05 5
 4 05 4 10 5
 4 10 4 15 5
 4 15 4 20 5
 4 20 4 25 5

 No more service
 Waiting for trip

NO MORE SERVICE

DRILLER *Sturman*

COMPANY TIME _____ CONTRACT TIME _____

CLASS _____

 Cutting Core
 Local core loss
 Service Rig Change
 Batteries in back
 Fix Backs

 4 00 4 05 5
 4 05 4 10 5
 4 10 4 15 5
 4 15 4 20 5
 4 20 4 25 5

NO MORE SERVICE

DRILLER *Ken Brennan*

COMPANY TIME _____ CONTRACT TIME _____

TOTAL CONTRACT TIME _____

TOTAL CONTRACT TIME _____

APPROVED BY _____

DATE _____

Total Contract Tax _____ \$
 Total Contract Tax _____ \$

FIG. NO. 17

LOCATION *Gmills Lake 152 NWT*

DATE Feb 9/67

LOCATION _____ DATE Feb 267

[illegible]

1943 3/1/167

TOTAL CONTACT TIME _____ HRS. TOOKAWAY OR TOOK UP BY Ed Hansen
 TOTAL CONTACT TIME _____ HRS. CARPENTER BY Ed Hansen

FIG. NO. 17

LOCATION

Miller Lake 2:57

N.N.T.

DATE FEB. 5/67

LOCATION *ET. PROPOSEE*

DATE Feb 5/67

[illegible]

DATE Feb 7/67

[illegible]

FIG. NO. 17

LOCATION *R.L.G. ...*

DATE 3-4-21-67

LOCATION

DATE 2-16-67

RIG NO. 17		LOCATION well site 1.2.7		DATE Feb 1/57		LOCATION		DATE Feb 1/57		
TOUR 1	LT.	UP.	HOLE NO.	FROM	TO	T.D.P. FINISHED CASING SET TO DEPTH	AMOUNT	SAC CEMENT	WATER	
	APL	ATL	1.7	291	312					
	N. OPT. LOGS									
	MUD									
	PUMP									
	SURVEY									
	WEATHER									
	TEMPERATURE									
	WIND VELOCITY									
	RAINFALL/FOG									
TOUR 2	LT.	UP.	HOLE NO.	FROM	TO	T.D.P. FINISHED CASING SET TO DEPTH	AMOUNT	SAC CEMENT	WATER	
	APL	ATL	2.91	312	350					
	N. OPT. LOGS									
	MUD									
	PUMP									
	SURVEY									
	WEATHER									
	TEMPERATURE									
	WIND VELOCITY									
	RAINFALL/FOG									
TOUR 3	LT.	UP.	HOLE NO.	FROM	TO	T.D.P. FINISHED CASING SET TO DEPTH	AMOUNT	SAC CEMENT	WATER	
	APL	ATL	3.91	312	380					
	N. OPT. LOGS									
	MUD									
	PUMP									
	SURVEY									
	WEATHER									
	TEMPERATURE									
	WIND VELOCITY									
	RAINFALL/FOG									
TOUR 4	LT.	UP.	HOLE NO.	FROM	TO	T.D.P. FINISHED CASING SET TO DEPTH	AMOUNT	SAC CEMENT	WATER	
	APL	ATL	4.91	312	400					
	N. OPT. LOGS									
	MUD									
	PUMP									
	SURVEY									
	WEATHER									
	TEMPERATURE									
	WIND VELOCITY									
	RAINFALL/FOG									

FIG. NO. 17

LOCATION *C.D.R. Muth Lake 1-57*

DATE *Jan 30/67*

LOCATION

DATE 8-1-67

LT.	U.S. ²	MOLE NO.		FROM	TO	T.D. DIFF. (SUN. CRYST. TO DEATH)		AMOUNT	SAC. COMMENTS	REMARKS	DATE	TIME
AP. ¹	AT.	151		151	161							
T	OUT	1. GFT. CODE	NO.	NO.	TIME	SEA. NO.	WEIGHT	AGE	ST. DRESS	WEAPON	NO.	TIME
	RECORD		3A	98	Hard	52-46	1000/75					
1		MUD				PUMP		PUMP		SURVEY		
		W.	10	10	10	W.	15	11	W.	15	11	10
MIDN.		DEL.	50	50	2	DEL.	50	50	2	DEL.	50	50
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		W. TRUCK		
		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		MOB. PUMP		
		W. TRUCK										

[illegible]

LT:	UF:	HOLE NO. FROM		TO	T.D. & FIN.		TEST CHSNG	SET TO DEPTH	AMOUNT		SAC CONENT		WIND DIR		WIND SPEED		WIND CH. WATER		
AP:	AT:	2 210 300								73									
N OPT		CHNG	NO	DEE	TYPE	SEA NO	HEIGHT	SW	FT. SKELLS	REMARKS	WIND	TEMP	FORM	N DEPT	COND				
BT		4A		64	YSI	RT108	4	175	23		4					DML			
3		MLUD		4 P.M.	5 P.M.	6 P.M.	10 P.M.	PUMP		PUMP		SURVEY							
WT.		44		44	44	44	8	MEED	SW	DEPTH	MEED	SW	DEPTH	WT	DEE	COST/TEST			
WOL		101		101	101	101	101	WIND		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
DEE								WIND		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
A.C.		F.C.		F.C.				W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
ADDITIONAL DATA								W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
T								W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
B								W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
GENERAL								W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
CREEN TIME SUMMARY								W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
DRIFT								W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
WIND								W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
WIND								W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
WIND								W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
WIND								W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
TOTAL								W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			
ILLUSTRATIONS AND REMARKS								W. TRUCK		FUEL CONSL		SPEED TO		WEATHER		P.M. S.A.M.			

WIND DIRECTION (DD)				WIND / SST		LOCATION		DATE		
FROM / DT	TO / DD	SPEED / KTS	WIND DIR	DESCRIPTORS	DEPTH TO WATER IN FT.	CLASS	REMARKS	TIME START	TIME STOP	INTERVAL
							Seismic	12 50	12 55	5 S
							Drill ahead slowly	12 55	12 58	
							to 100 ft. hole	12 58	6 00	
							Continued to 100 ft	6 00	6 30	
							Seismic	6 30	7 00	
							Drill ahead slowly	7 00	8 00	

DRILLER James Connor

CLASS	REMARKS	TIME		
		START	STOP	INTERVAL
	Service Rig	8:00	8:40	1/2
	Drill holding back	8:50		
	weight		11:30	3:00
	Suction Replaces Kelly	11:30		
	side break connection			
	To 1500 ft		12:15	3/4
	Drill 1/2 hr. late	12:15	1:00	3/4
	tighten Swedge in	1:00		
	Sw. in START next		2:15	1 1/4
	Don't clean out	2:15		
	Section in pit pump			
	pump Drilling		2:45	3/4
	Belders pull out to	2:45		
	take 4 1/2' Bit	3:15	4:00	1/2
	DRILLER <i>Tom Buchanan</i>			

[illegible]

T O U R	U P A T	HOLE NO.	FROM	TO	T.D. IF FINISHED CASHOUT TO DEPTH	AMOUNT	SAC CEMENT	HOURS ON PUMP	LAST TIME	PUMP TEST	CLASS	REMARKS	TIME		
													START	STOP	INTERVAL
1	U P A T	HOLE NO. 65	FROM 125	TO 125	T.D. IF FINISHED CASHOUT TO DEPTH	AMOUNT 60	SAC CEMENT	HOURS ON PUMP	LAST TIME	PUMP TEST	CLASS	REMARKS Drilling 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft	START	STOP	INTERVAL
													10:00	10:45	45
													10:45	11:30	45
													11:30	12:15	45
													12:15	13:00	45
													13:00	13:45	45
													13:45	14:30	45
													14:30	15:15	45
													15:15	16:00	45
													16:00	16:45	45
CREW TIME SUMMARY												TOTAL HOURS			
DRILLER: [Signature]												TOTAL HOURS			
CONTRACT TIME												CONTRACT TIME			
2	U P A T	HOLE NO. 65	FROM 125	TO 125	T.D. IF FINISHED CASHOUT TO DEPTH	AMOUNT 60	SAC CEMENT	HOURS ON PUMP	LAST TIME	PUMP TEST	CLASS	REMARKS Drilling 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft	START	STOP	INTERVAL
													10:00	10:45	45
													10:45	11:30	45
													11:30	12:15	45
													12:15	13:00	45
													13:00	13:45	45
													13:45	14:30	45
													14:30	15:15	45
													15:15	16:00	45
													16:00	16:45	45
CREW TIME SUMMARY												TOTAL HOURS			
DRILLER: [Signature]												TOTAL HOURS			
CONTRACT TIME												CONTRACT TIME			
3	U P A T	HOLE NO. 65	FROM 125	TO 125	T.D. IF FINISHED CASHOUT TO DEPTH	AMOUNT 60	SAC CEMENT	HOURS ON PUMP	LAST TIME	PUMP TEST	CLASS	REMARKS Drilling 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft Survey 10 ft	START	STOP	INTERVAL
													10:00	10:45	45
													10:45	11:30	45
													11:30	12:15	45
													12:15	13:00	45
													13:00	13:45	45
													13:45	14:30	45
													14:30	15:15	45
													15:15	16:00	45
													16:00	16:45	45
CREW TIME SUMMARY												TOTAL HOURS			
DRILLER: [Signature]												TOTAL HOURS			
CONTRACT TIME												CONTRACT TIME			

RIG. NO. 17 LOCATION CENTOAR RIO I-57 MILE LAKE NAT. DATE JAN 24/67

LOCATION DATE

TOUR	LT.	LF.	HOLE NO.	FROM	TO	T.D. IF FINISHED	CASING SET TO DEPTH	AMOUNT	SAC CEMENT	COST OF MATERIALS	LAST DRILL TIME	CLASS	REMARKS	TIME		
														START	STOP	INTERVAL
1	AT:	AT:	1	276												
	N LEFT CORNER	NEL	276	276	276	276	276	276	276	276	276					
	WEATHER	TEMPERATURE	WIND VELOCITY	RAINFALL/FOG												
	MUD	12M. 2A.M.	4 A.M. 8 A.M.													
	PUMP	12M. 2A.M.	4 A.M. 8 A.M.													
	PUMP	12M. 2A.M.	4 A.M. 8 A.M.													
	PUMP	12M. 2A.M.	4 A.M. 8 A.M.													
	PUMP	12M. 2A.M.	4 A.M. 8 A.M.													
	PUMP	12M. 2A.M.	4 A.M. 8 A.M.													
	PUMP	12M. 2A.M.	4 A.M. 8 A.M.													
2	AT:	AT:	1													
	N LEFT CORNER	NEL														
	WEATHER	TEMPERATURE	WIND VELOCITY	RAINFALL/FOG												
	MUD	8 A.M. 10 A.M.	12 N. 2 P.M.													
	PUMP	8 A.M. 10 A.M.	12 N. 2 P.M.													
	PUMP	8 A.M. 10 A.M.	12 N. 2 P.M.													
	PUMP	8 A.M. 10 A.M.	12 N. 2 P.M.													
	PUMP	8 A.M. 10 A.M.	12 N. 2 P.M.													
	PUMP	8 A.M. 10 A.M.	12 N. 2 P.M.													
	PUMP	8 A.M. 10 A.M.	12 N. 2 P.M.													
3	AT:	AT:	0	15												
	N LEFT CORNER	NEL														
	WEATHER	TEMPERATURE	WIND VELOCITY	RAINFALL/FOG												
	MUD	4 P.M. 6 P.M.	8 P.M. 10 P.M.													
	PUMP	4 P.M. 6 P.M.	8 P.M. 10 P.M.													
	PUMP	4 P.M. 6 P.M.	8 P.M. 10 P.M.													
	PUMP	4 P.M. 6 P.M.	8 P.M. 10 P.M.													
	PUMP	4 P.M. 6 P.M.	8 P.M. 10 P.M.													
	PUMP	4 P.M. 6 P.M.	8 P.M. 10 P.M.													
	PUMP	4 P.M. 6 P.M.	8 P.M. 10 P.M.													

Run 25 lbs cement 12.15 12.15 1/4
 Hoist away down pipe 12.15 12.15 1/4
 Back out casing 12.15 12.15 1/4
 Cleanup for next
 To cut, cut a well and
 Cap on top
 Cleanest mud tank 3.00 3.00 2 1/4
 and pouring to skid.
 Thawing out plank
 etc. 8.00 6

DRILLER *John Smith*
 COMPANY TIME

CLASS REMARKS TIME
 START STOP INTERVAL
 8.00 4.20 3.40
 4.20 1.20 3.00
 1.20 4.20 3.00

DRILLER *James Brown*
 COMPANY TIME

CLASS REMARKS TIME
 START STOP INTERVAL
 4.00 10.30 6.30
 10.30 11.00 1/2
 11.00 11.45 1/4
 11.45 12.00 1/4

DRILLER *Ken Brown*
 COMPANY TIME

DRILLER *Ken Brown*
 COMPANY TIME

FIG. NO.

17

LOCATION CRR MILLS LAKE I-57 NWT

DATE JAN 25 / 67

LOCATION

DATE _____

[illegible]

DATE 2-2-1972

[illegible]

COMPUTED TIME		CONV. TIME		
CLASS	REMARKS	TIME		
		START	STOP	INTERVAL
	Spindle R.p	4 ⁰⁰	4 ³⁰	12
	Drill 9th hole	4 ³⁰	4 ⁴⁵	15
	Mixing Mud	4 ⁴⁵	6 ³⁰	78
	W.P.M. on Mud	6 ³⁰	12 ⁰⁰	

8

DRIILLER *Ken Brownson*

EQ. NO.

17

LOCATION

Small Lake 1-57

DATE _____

Jan 21/57

LOCATION

DATE _____

2/2/57

[illegible]

H/O, NO.

17

LOCATION

mulla lake 1-57

DATE

Jan 20/67

LOCATION

DATE

Jan 20/67

LT.	LF.	HOLE NO.	FROM	TO	T.D.P. FINISHED	NO. OF DAYS	AMOUNT	TAC. CEMENT	STILL IN	STILL IN
AP.	AT.									
1	1	1	1	1	1	1	1	1	1	1
MUD 12MN 12A.M. 4A.M. 8A.M.										
PUMP PUMP SURVEY										
MIDN. 4A.M.										
WEATHER TEMPERATURE										
WIND VELOCITY										
RAIN/SNOW/FOG										
Crew Time Summary										
TOTAL										
INJURIES AND REMARKS										

CLASS	REMARKS	TIME	START	STOP	INTERVAL
1	1	1	1	1	1
WATER REPAIRS					
DRILLER <i>Ken Burns</i>					

LT.	LF.	HOLE NO.	FROM	TO	T.D.P. FINISHED	NO. OF DAYS	AMOUNT	TAC. CEMENT	STILL IN	STILL IN
AP.	AT.									
1	1	1	1	1	1	1	1	1	1	1
MUD 8A.M. 10A.M. 12N 2P.M.										
PUMP PUMP SURVEY										
8A.M. NOON										
WEATHER TEMPERATURE										
WIND VELOCITY										
RAIN/SNOW/FOG										
Crew Time Summary										
TOTAL										
INJURIES AND REMARKS										

CLASS	REMARKS	TIME	START	STOP	INTERVAL
1	1	1	1	1	1
WATER REPAIRS					
DRILLER <i>Ken Burns</i>					

LT.	LF.	HOLE NO.	FROM	TO	T.D.P. FINISHED	NO. OF DAYS	AMOUNT	TAC. CEMENT	STILL IN	STILL IN
AP.	AT.									
1	1	1	1	1	1	1	1	1	1	1
MUD 4P.M. 6P.M. 8P.M. 10P.M.										
PUMP PUMP SURVEY										
4P.M. 8P.M.										
WEATHER TEMPERATURE										
WIND VELOCITY										
RAIN/SNOW/FOG										
Crew Time Summary										
TOTAL										
INJURIES AND REMARKS										

CLASS	REMARKS	TIME	START	STOP	INTERVAL
1	1	1	1	1	1
WATER REPAIRS					
DRILLER <i>Ken Burns</i>					

DATE _____

Long-term Contract Term _____, 19____
 Long-term Contract Term _____, 19____
 Long-term Contract Term _____, 19____

