

Drilling Authority No.

Date Issued

WELL NAME Murphy Canada Alexandra Falls No. 2

FIELD Wildcat

Area: Alexandra Falls

LOCATION: Unit

Section

Grid

Latitude 60°15' 30.00" N.

Longitude 116°34' 40.00" W.

From Established Reference Marker

Rig Release Date: 24-3-60

Status D A

Information Release Date 24-3-62

CHANGE OF NAME:

DATE RECEIVED	INDEX
	Application for a Drilling Authority. Well Completion Data. Well History Report. Application to Amend a Drilling Authority. Application to change a Well Name. Application to Abandon a Well or Suspend Drilling. Application to Alter Condition of a Well. Well History Supplement. Well Completion Data. Work-over Report No. Application to Commingle Production before Measurement. Approval to Commingle Production before Measurement. Application to Amend Approval No. to Commingle Production before Measurement. Application for M.P.R.—Oil. New Oil Well Report. New Gas Well Report. Well Inspection Report. Rig Inspection Report. Battery Inspection Report. Field Abandonment Programme and Approval. Well Card. Well Visit. Daily Drilling Reports.

Warp, Canada, Alameda Falls, 25.2 miles

Location: 1 t. 60° 15' 30.8" N., 108° 34' 41.90" W.

Elevation: 921 feet above, 921.55 feet below.

Date Completed: 1969

Total Depth: 3200'

Result: Abandoned

Summary of log by J.H. Beyer of cores and samples stored at Geological Survey of Canada, Calgary.

<u>Depth</u> <u>(feet)</u>	<u>Lithology</u>
0' - 32'	Drift
32' - 50'	No samples
50' - 90'	Limestone, light yellow-brown, fine-grained matrix with scattered coarse fossil fragments, silty, argillaceous; much red stain; shale, grey to maroon; brachiopods, crinoids, abundant corals
90' - 130'	<i>Tamias Formation</i> Limestone, white, fine to coarse-grained matrix containing abundant corals and stromatoporoids; calcite cement; upper 10' with much pelletoid limestone and green waxy shale; vugs lined with calcite
130' - 140'	Limestone, as above and fine-grained, argillaceous, silty limestone; much fossil debris, ostracodes; carbonaceous specks
140' - 150'	Limestone, as above; scattered stromatopore and brachiopod fragments; grey and maroon shale and siltstone
150' - 170'	Limestone, light yellow-brown, fine to coarse-grained calcarenite, pelletoid; calcite cement; much shell debris, brachiopods, crinoids, corals, spines
170' - 200'	Limestone, medium to coarse-grained, calcarenite, in part, pelletoid; a few stromatopore fragments; calcite cement; maroon shale partings at top
200' - 240'	Limestone, fine to coarse-grained, in part pelletoid; much fine fossil debris; scattered coral and possible stromatopore fragments; brownish-grey shale laminae; calcite cement
240' - 260'	Samples missing
260' - 290'	Limestone, grey, fine-grained, slightly argillaceous, calcilutite; brown shale laminae, carbonaceous specks; crinoid and brachiopod fragments
290' - 330'	Limestone, buff, fine to coarse-grained, pelletoid, much stromatopore and/or algal material; some limestone with brown shale intermixed; grey shale, probably as partings or laminae; pink stain at base

<u>Depth</u>	<u>Lithology</u>
330' - 410'	Limestone, shaly, grey, varies to shale; limestones, grey, dense, abundant brachiopods, crinoids, scattered carbonaceous specks; probably consists of interbedded shales and lily shales and limestones
410' - 440'	Limestone, as above, slightly argillaceous; black stained pellets or pebbles and fossil fragments
440' - 500'	Limestone, gray buff, fine-grained, calcilutite, slightly argillaceous; shaly laminae, in part slightly silty; scattered brachiopods
500' - 520'	Limestone, buff, fine-grained, colonial, potted with silty buff argillaceous colonial, shale partings
520' - 610'	Shale, gray to greenish-grey, calcareous, silty; gray, argillaceous, dense lines ore, in part containing abundant fossils; scattered pyrite; scattered carbonaceous specks; brachiopod and coral fragments; charaphite? at 580' - 590'; abundant pyrite cubes and argillaceous limestone and coarse crinoid fragments at 600' - 610'
610' - 630'	Limestone, buff, with abundant stromatoporeid fragments, fine-grained matrix; brown carbonaceous specks; scattered brachiopods
630' - 640'	Some limestone, as above, with coral fragments and stromatoporeids; siltstone, light green, quartzose, calcareous, micaceous
640' - 720'	Siltstone, light greenish grey, quartzose, calcareous, micaceous green shale partings; varies to very fine-grained, micaceous sandstone, with scattered green minerals; fair intergranular porosity; limestone, buff, very fine-grained; scattered brachiopod and crinoid fragments
670' - 720'	Siltstone, as above but with more green argillaceous material, breaks into platy fragments
720' - 760'	Siltstone, as above; shale, greenish-grey, flaky, fragments platy laminae
760' - 770'	Shale, as above; so a coarse fossiliferous limestone; scattered spines
770' - 780'	Limestone, buff and grey, fine-grained, calcilutite, silty; brachiopods, crinoid fragments
780' - 820'	Siltstone, light gray to greenish-grey, very fine-grained, argillaceous; in part coarser and porous; interbedded? silty limestones; dark grey inclusions; fragments of corals, may be cavings
820' - 840'	Shale, gray-green, silty; silty limestone and siltstone, as above; bryozoa and other fossil fragments; a few dark grey-stained pebbles

DepthLithology

840' - 900' Siltstone, grey-green, buff, calcareous, pyritic;
limestone, grey, silty, containing scattered fossil
fragments, argillaceous; some coarse-grained pebbled
limestone, calcarenite, containing abundant shell
fragments

900' - 930' Siltstone, fine-grained, pyritic; greenish-grey shale

930' - ~~1070'~~ Shale, grey-green, silty

~~1070'~~ Slave Point

.....

Drilling Authority No.

Date issued

WELL NAME Murphy Canada Alexandra Falls No. 2

FIELD Wilcox

Area: Alexandra Falls

LOCATION: Unit

Section

Grid

Latitude 60°15' 30.00" N.

Longitude 116°34' 40.00" W.

From Established Reference Marker

Rig Release Date: 24-3-60

Status D & A

Information Release Date 24-3-62

CHANGE OF NAME:

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	Approval to Commingle Production before Measurement.
	Application to Amend Approval No. to Commingle Production before Measurement.
	Application for M.P.R.—Oil.
	New Oil Well Report.
	New Gas Well Report.
	Well Inspection Report.
	Rig Inspection Report.
	Battery Inspection Report.
	Field Abandonment Programme and Approval.
	Well Card.
	Well Visit.
	Daily Drilling Reports.

#79

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NORTHERN ADMINISTRATION BRANCH

RESOURCES DIVISION

For the period from . . March 22, 1960.

to . . March 24th, 1960.

REPORT of ~~XXXXXXXXXX~~
~~XXXXXXXXXX~~
~~XXXXXXXXXX~~ of a Well
~~XXXXXXXXXX~~
ABANDONMENT

Permit No. . 1400 .

Name of well . MURPHY-CANADA ALEXANDRA FALLS NO. 2 Lease No.

Registered owner MURPHY-CANADA OIL COMPANY Drilling Company Peter Bowden Drilling

Location 60° 15' 30" N. Lat 16° 34' 41.96" W. Long.

Survey description, if available

Elevation: Ground . . 952 . . . Last previous depth

Kelly bushing. 962.5 . . . Present depth . . . 2,806'

Spudded . . . March 7th, 1960 Finished drilling Mar 22. Rig Released

12 Midnight March 24th, 1960.

Deviations from vertical . 160 = 3/4° . . . 190 3/4°

CASING RECORD

Date	Size O.D.	Weight lbs/ft	Grade	Set at feet	Sacks Cement	Top of Cement
1 3/10/60	8-5/8	24	J-55	346.01	250.44 4% CaCl ₂	To Surface
2						
3						
4						

TUBING RECORD

Size	Wt. Lbs/foot	Grade	Amount	Landed Depth	Remarks
Wellhead	(Manufacturer)		(Size)	(Series)	

Producing Zone and formation

Cord intervals . . . 1896 - 1935'

2368 - 2395

2465. - 2515'

Interval logged: E-log 346 - 2800' Other logs

R-Log

M-log .346-.2806' . . .

Velocity log

The above logs (are)
(will be) submitted in accordance with Section 65 of the
Regulations.

DRILL STEM TESTS

[illegible]

(If space insufficient, attach further sheet)

(Strike out the non-applicable) (Completion) (Rework) (Recompletion)

Perforations Bullet

Shootings

Hydraulic fracturing

Chemical treatment

Date initial production tests

Initial production data:

Pumping or flowing
Plug back:
Other
.
.
.
.

CEMENT PLUGS SET

<u>Date</u>	<u>Plug set at</u>	<u>Sacks cement</u>	<u>Method</u>	<u>Top found at</u>
Mar. 24/60	2206 - 2350'	134	Displacement	
Mar. 24/60	446 - 246'	90	"	190
Mar. 26/60	31 - 0'	10	Manual	

Washed well samples have been sent to Geological Survey of Canada, Calgary
~~will be~~

Cores will be stored at Geological Survey of Canada, Calgary, Alta.

Core analysis (was made) of the Intervals Not received yet, will forward
(to be made)

Oil analysis (was made) of the Intervals
(to be made)

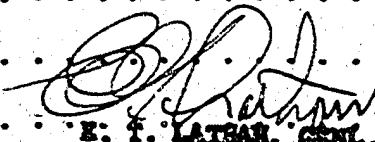
Gas analysis (was made) of the Intervals
(to be made)

Water analysis (was made) of the Intervals
(to be made)

The above analyses ~~(are)~~
(will be) submitted in accordance with Section 70(2) of
the Regulations.

ADDITIONAL DETAILS AND COMMENTS

.
.
A monument of 2" pipe cemented in center of well bore and extending . .
four feet above ground level.
.
.

Signed: 
E. F. LATAM, GENL. SUPT.
Date: APRIL 1st, 1960.

Address: AMUREX OIL COMPANY,
703 - 5th St. S.W.,
CALGARY, ALBERTA.

(To be submitted in triplicate in accordance with Sections
68, 69, 70 and 71, of the Territorial Oil and Gas Regulations
to the Oil Conservation Engineer at Calgary, Alberta.)

PLAN OF WELL LOCATION MURPHY-CANADA ALEXANDRA FALLS NO.2 NORTHWEST TERRITORIES

LATITUDE: 60° 15' 30.80" LONGITUDE: 116° 34' 41.96"

UNIT K SECTION 26 GRID AREA 60° 20' - 116° 30'

Elevation: 952 ground Datum: Geod. BM 880-H Mackenzie Hwy

Scale: 500 feet = 1 inch

TRAVERSE INFORMATION		
Origin of traverse Mon R102 Mackenzie Hwy		
Station	Distance	Bearing
R 102		
P1	266.20	N 05° 19' 50" W
R 104	1782.45	N 15° 01' 30" E
QMs 104	40.00	S 74° 58' 30" E
85-60-1	146.50	N 15° 01' 30" E
2	3420.65	N 88° 07' 00" W
3	2929.80	S 00° 38' 00" W
Loc	74.00	S 17° 34' 00" W

LEGEND:

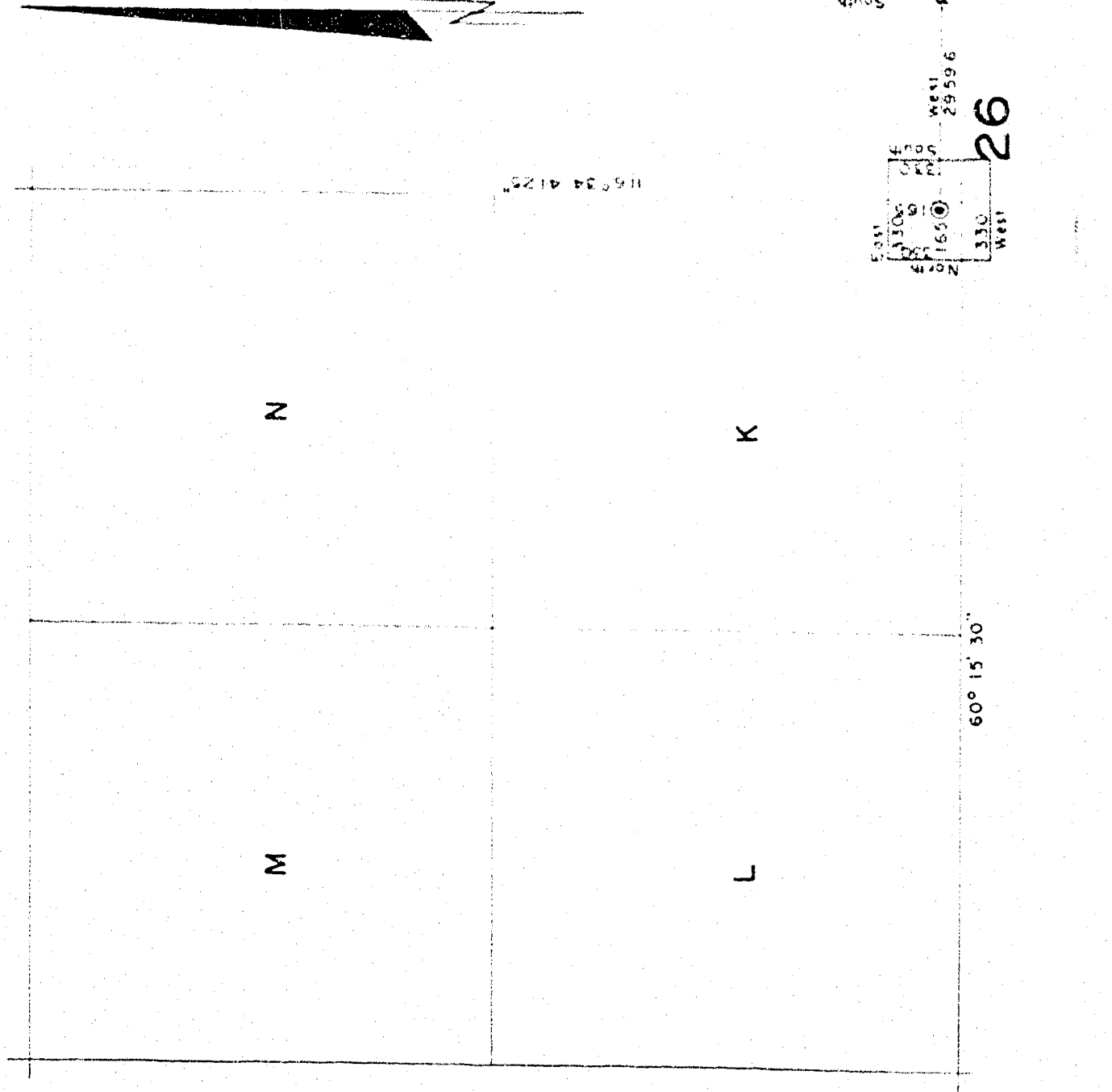
- Survey monument found
- ⊙ Well location

AREA

Well site 2.50 Ac

COORDINATES

- 2959.6 West of Mon R102
- 477.1 South of Mon R102
- 81' North of S Bay Unit K
- 36' West of E Bay Unit K



NOTE

All distances check chained.

Bearings referred to meridian through Monument R 102 Mackenzie Highway and derived from bearing between Mon R103 to R104 N15° 01' 30" E.

I Earl Edward Little of the Town of Fort St John BC, Dominion Land Surveyor make oath and say that I was present at and did personally supervise the survey represented by this plan and that the survey and plan are correct. The said survey was completed on the 14th day of March 1960.

Sworn before me this
16 day of March 1960

Operator: MURPHY-CANADA OIL COMPANY

APPROVED

Surveyor General

OTTAWA

FORM "C"

CANADA

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES

NORTHERN ADMINISTRATION BRANCH

RESOURCE DIVISION

ABANDON

NOTICE OF INTENTION TO

or

a Well

~~XXXXXXXXXXXXXXXXXXXX~~

(Strike out operation which does not apply)

In accordance with Sections 48 & 49 of the Territorial Oil and Gas Regulations, notice is hereby given of our intention to

..... ~~ABANDON~~ the well named ~~MURPHY-CANADA ALEXANDRA~~ ... on Oil FALLS NO. 2

Permit No. 1400 .

and Gas

Registered in the name of

Lease No.

~~MURPHY-CANADA OIL COMPANY~~

Depth . ~~2,806~~ .feet. Elevation above sea level: Ground surface . 952.56 . . ft.
(2700) Kelly bushing . 962.5 . . ft.

Location . 67° 15' 30" N. Lat. . 116° 30' 40" W. Long.

..... (N. of S. boundary) (Permit No.)
..... (S. of N. boundary) of (Lease No.)
..... (W. of E. boundary) of (Permit No.)
..... (E. of W. boundary) (Lease No.)

Survey description, if available

CASING RECORD

Size O.D. inches	Weight lbs/ft	Grade	Amount feet	Set at feet	Sacks cement	Method	to be withdrawn
1 .8-5/8.	.24 . .	J-55 . .	338 336	348 342	. . 250	Displace- ment	. . No . . .
2							
3							
4							

OIL, GAS AND WATER

Oil fromfeet tofeet Fromfeet tofeet with
.....sacks cement

Oil fromfeet tofeet Fromfeet tofeet with
.....sacks cement

Gas from feet to feet From feet to feet with
sacks of cement.

Gas from feet to feet From feet to feet with
sacks of cement.

Water from 2,536 . feet to 2,654. feet From feet to feet with
sacks cement.

Water from feet to feet From feet to feet with
sacks cement.

Surface and bottom plugs:

1. from 2806 . feet to . 2350 . feet with 140 . .sacks cement.
2. from 446 . .feet to . 235 .feet with . 66 . .sacks cement, *fact for*
3. from . 20 . .feet to Surface. feet with . 10 . .sacks cement.

Date of last operation . . . March 24th, 1960 Total depth . 2,806 feet . .
Nature of liquid left in well . . . ~~Mud~~ Level from surface . . . Full
on suspension or abandonment

~~SECTION~~

The following logs run . Electric Induction, Micro.
have been

Produced from zone and
on abandonment of a well which has been on production.

Present condition of well in addition to above
.
.

On abandonment or suspension of drilling we shall comply with Sections 68, 69 and
70 of the Regulations.

Program of operation not included above . ~~Monument~~ of two inch pipe extended . . .
. . four feet above ground level from center of well bore,
.
.

Responsible agents of permittee or lessee in charge of operation:

At well . Mr. Angus McKenzie Postal address . Hay River, N.W.T.
F.G. Kirby - Expl. Mgr. Amurex Oil Company
At registered office E.T. Latham, Genl. .Postal address 703 - 5th St. S.W.,
Supt. Calgary, Alberta.

It is understood that if changes in this Notice of Intention become
necessary we will promptly notify you.

dated at . Calgary. . . this . 25th . . . day of . March 1960. .

Signed by

This program is approved subject to the following provisions

... Conferencing ... and ... approved ...
... of ... 24/3/60 ...
...
...

March 25, 1960
Date

A. H. Cook
for B. H. J. THOMAS
Oil Conservation Engineer

(To be submitted in triplicate to the Oil Conservation
Engineer at Calgary, Alberta.)

C A N A D A

NORTHERN ADMINISTRATION BRANCH

RESOURCES DIVISION

NOTICE OF INTENTION TO BEGIN DRILLING OPERATIONS

or

TO CARRY OUT A STRUCTURE TEST PROGRAM

In accordance with Section 58 of the Territorial Oil and Gas Regulations, notice is hereby given of our intention to begin drilling a well on Oil and Gas Permit No. 1400 . . . registered in the name of
Lease No.

TYPE OF WELL:

Wildcat **WILDCAT**

Development

Expected total depth . . . **1,200** feet, in the . . .

formation of **Proterozoic** . . . ago.

The well will be located at .60°. 15'. 30". . . N. Lat. 116°. 30'. W. Long. 40".

..... (N. of S. boundary)	(Permit No.)
..... (S. of N. boundary)	of (Lease No.)
..... (W. of E. boundary)	of (Permit No.)
..... (E. of W. boundary)	(Lease No.)

Survey description of Location, if known

Approximate surface elevation of952.56 . feet above sea level.

Name of well . . . ~~Murphy-Canada~~ Alexandra Falls No. 2

Type of drilling rig . **Rotary.**

Expected date of commencement . . . **March 5th, 1960.**

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

Size O.D. Inches	Weight lbs/ft	Grade	Brand	New or Used	Estimated Depth	Sacks of Cement
1. 8-5/8	24	J-55	J&L	New	310	200
2. 5-1/2	14	J-55	J&L	If Production established, casing		
3. will be run and cemented at a depth relative to information obtained and as approved by Conservation Engineer.						

Expected depth of water, gas and oil horizons and method of control:

Slave Point Approximately 2,000'
Peace Hills Approximately 2,700'
Gravelly Wash Approximately 3,100'

An electric log will be run Other logs will be run Micro Log & Possibly R. A.
~~will not~~ ~~will not~~

STRUCTURE TEST PROGRAM

Proposed number of holes Maximum well depth
enclosed within an area bounded by

. N. Latitudes

. W. Longitudes

An electric log will be run Other logs will be run
will not will not

Name and address of drilling contractor . . Peter Dawson Drilling Ltd. . .

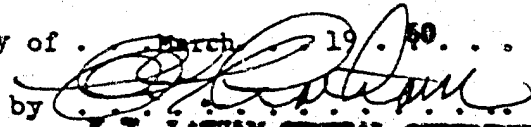
Responsible agents of permittee or lessee in charge of operation:

At well . Mr. Angus MacKenzie . . . Postal address . . Bay River, N.W.T. .

At registered F.C. Kirby - Engr. Mgr. Andrew Oil Company
office . E.T. Latham - Genl. Supt. Postal address . 703 - 5th St. S.W., .
Calgary, Alberta.

It is understood that if changes in this Notice of Intention become necessary we will promptly notify you.

Dated at Calgary this 1st . . . day of . . . March 19 . 60 . . .

Signed by  E.T. LATHAM GENERAL SUPERINTENDENT.

This program is approved subject to the following provisions (if any):

.
.
.
.
.

2nd March 1960
Date


Oil Conservation Engineer.

(To be submitted in triplicate to the Oil Conservation Engineer at least 15 days prior to the commencement of drilling)

[illegible]

[illegible]

March 22/60

WELL MURPHY CAN ALABAMA	LOCATION Alex #2	FIELD OR AREA W-10 CAT	PROVINCE N.W.T.
CONTRACTOR 11	DERRICK Lee C. Moore	MANUFACTURER Oilwell	LAST CASING
DRILL PIPE STRENGTH	TYPE TOOL JOINT	PRIME MOVERS	SIZE 8 5/8
			WEIGHT 24
			GRADE 3.55
			NO. JOBS 148
			NO. C&G NO.

TIME DISTRIBUTION - HOURS

DATE	DRY	DAY	SVI
11/22/60	11 1/2	14 1/2	14 1/2
11/23/60	11 1/2	14 1/2	14 1/2
11/24/60	11 1/2	14 1/2	14 1/2
11/25/60	11 1/2	14 1/2	14 1/2
11/26/60	11 1/2	14 1/2	14 1/2
11/27/60	11 1/2	14 1/2	14 1/2
11/28/60	11 1/2	14 1/2	14 1/2
11/29/60	11 1/2	14 1/2	14 1/2
11/30/60	11 1/2	14 1/2	14 1/2
TOTAL	88 1/2	88 1/2	88 1/2

DRILLING ASSEMBLY AT END OF TOUR				BIT RECORD				MUD RECORD				FOOTAGE				FORMATION			
NO.	STANDS D.P.	SIZE	W.C.C.	TIME	W.C.C.	W.C.C.	W.C.C.	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO		
38	224.45	1 1/2	11.7	100	11	10.9	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711		
14	433.11	1 1/2	11.7	100	11	10.9	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711		
1	2.35	1 1/2	11.7	100	11	10.9	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711	2711		
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Form 10-100 (Rev. 1-64) - Drilling Log. Includes sections for Well Information, Location, Field or Area, and detailed drilling data tables.

Well Information: Well Name: *Aureny Can Alexandria*, Location: *Alexandria #2*, Field or Area: *WILLOCAT*.

Drilling Data Tables:

TIME DISTRIBUTION - HOURS	NO.	DRILLING ASSEMBLY AT END OF TURN	BIT RECORD		MUD RECORD		FOOTAGE		FORMATION (SHOW CORE RECOVERY)	ACTUAL	WT. ON BIT 1000'S	PRESS	PUMP NO.	PUMP NO.	METHOD
			STANDS S.P.	SIZE	TIME	WEIGHT	FROM	TO							
MORNING TOUR FROM	34	2147.79	11	12	100	200	300	300	2600	450	120	30	60	50	50
	14	433.81	7 1/2	7 1/2	105	105	105	105	2600	450	120	30	60	50	50
	1	275	275	275	275	275	275	275	275	275	275	275	275	275	275
	MUD & CHEMICALS ADDED														
	STEEL LINE MEASUREMENT														
	SHOULD READ														
	DRILLER														
	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS														
	FORMATION														
	CORE NO.														
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TIME DISTRIBUTION - HOURS			
	MORN	DAY	EVE
HS UP & TRIM DOWN			
DRILLING ACTUAL	6 1/4	4 1/2	3
RELINING			
THROTTLE CIRCULATING			2 1/4
TRIP		1 1/2	2
REVERT	1/4		1/4
DEVIATION SURVEY	1/4		
TEST & O.P.			
CUT OFF			
DRIP	1 1/4		
CORING			4 1/2
WIRE LINE LOGGING			
REWORKING CASING & CEMENTATION			
WAITING ON CEMENT			
DRILL STEERING TEST			
OTHER			
FIGHTING			
COMPLETION WORK			
A. PERFORATING			
B. TURNING TIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8 1/2	8	8
TIME SUMMARY			
DAY WORK			
NIGHT WORK			
WELDED WORK			
WELD			
TOTAL DAY WORK			
SIGNATURE OF CONTRACTOR'S REPRESENTATIVE			
SIGNATURE OF OPERATOR'S REPRESENTATIVE			
REMARKS	C. Drilling		

WELL CONTRACTOR: MURPHY CANADA INC. PETER BAWDEN DRILLING CO. LOCATION: ALEXANDRIA FIELD OR AREA: WILDCAT. RIG NO: 11. DERRICK: LEE C MOORE. MANUFACTURER: OILWELL. LINES: 60. STROPE: 14. LAST CASING: TUBING. FORMATION: Limestone. DRILLER: B. Van Lier. DRILLING ASSEMBLY AT END OF TOUR: 29 STANDS B.P. 1726.87. BIT NO: 7. SIZE: 7 1/2. WEIGHT: 10.6. MUD RECORD: 10.6 10.6 10.6. FOOTAGE: 2125 2184 59. FORMATION: Limestone. DRILLER: B. Van Lier. DRILLING ASSEMBLY AT END OF TOUR: 14 6 1/2 433.81. BIT NO: 7. SIZE: 7 1/2. WEIGHT: 10.6. MUD RECORD: 10.6 10.6 10.6. FOOTAGE: 2125 2184 59. FORMATION: Limestone. DRILLER: B. Van Lier. DRILLING ASSEMBLY AT END OF TOUR: 30 STANDS B.P. 1797.94. BIT NO: 7. SIZE: 7 1/2. WEIGHT: 10.6. MUD RECORD: 10.6 10.6 10.6. FOOTAGE: 2125 2184 59. FORMATION: Limestone. DRILLER: B. Van Lier.

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DRILL WHEN TEST		NO		DRILLING ASSEMBLY AT END OF TYPIC		BIT RECORD		MUD RECORD		FOOTAGE		DIP		CORE		FORMATION		DIP		DIP		DIP	

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WELL		LOCATION		FIELD OR AREA		PROVINCE	
MURPHY CANADA OIL		HAY RIVER		WILDCAT		N.W.T.	
CONTRACTOR		RIG NO.		PUMP NO.		LAST	
PETER BOWDEN D.A.I.G.		11		LEECHMOORE		CABING	
DRILL PIPE STRING		SIZE		TYPE TOOL JOINT		PRIME MOVERS	
H-1		F-11					

TIME DISTRIBUTION - HOURS			
WORK	DAY	EVE	TOTAL
DRILLING ACTUAL	7 1/2	1 1/2	9
TRIPS	2 3/4	1 1/4	4 1/2
CONSIDERING MUD & CEMENTATION	2 3/4	1 1/4	4 1/2
SERVICE	4 1/4	1/4	4 3/4
DRILLING MURPHY	4 1/4	1/4	4 3/4
TEST & O.P.			
CUT OF LINE			
REPAIR			
CONCRETE	5 3/4		5 3/4
WIRE LINE LOGGING			
RUNNING CABLES & CEMENTING			
WAITING FOR CEMENT			
DRILL FROM TEST			
OTHER	3/4		3/4

TIME SUMMARY			
DAY WORK	NIGHT WORK	TOTAL	REMARKS
1	2 3/4	3 3/4	
2	2 3/4	4 3/4	
3	2 3/4	4 3/4	
4	2 3/4	4 3/4	
5	2 3/4	4 3/4	
6	2 3/4	4 3/4	
7	2 3/4	4 3/4	
8	2 3/4	4 3/4	
9	2 3/4	4 3/4	
10	2 3/4	4 3/4	
11	2 3/4	4 3/4	
12	2 3/4	4 3/4	

DRILLING ASSEMBLY AT END OF TOUR			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

MUD RECORD			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

FOOTAGE			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

FORMATION			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

DRILLING ASSEMBLY AT END OF TOUR			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

MUD RECORD			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

FOOTAGE			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

FORMATION			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

DRILLING ASSEMBLY AT END OF TOUR			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

MUD RECORD			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

FOOTAGE			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

FORMATION			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS			
NO.	STANDS D.P.	BIT NO.	TIME
24	1449.43	4	2 5 7
1	1449.43	4	2 5 7
12	6 1/8 372.69	4	2 5 7

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TIME DISTRIBUTION - HOURS			
	MORN	DAY	EVE
REGULAR TIME			
REGULAR ACTUAL	2 1/4	6	7 1/4
PLANNED			
CONTINGENCIES AND CIRCUMSTANCES			
TRIPS	4 1/2	2 1/2	1 1/4
SERVICE	4 1/4	3 1/4	1 1/4
OPERATION, MAINT	1 1/2	1 1/2	1 1/2
TEST & O.P.			
CUT BY (SEE LINE)			
REPAIR	4 1/2		
CRUISE			
TIME LINE, LAGGING			
REPAIRS, CRUISE & CONTINGENCIES			
MAINTENANCE, CRUISE			

SMALL UTILITY TEST	
OFFICER	
FIREARM	
CORRECTION NUMBER	A. IDENTIFICATION
	B. TURNING TIPS
	C. CHANGING
	D. VERIFYING
	E. ADDITIONAL
TOTALS	
TEST SUMMARY	
DAY WORK	
WED. W/DP	
WED. MID /DP	
THU.	

TOTAL DAY WORK

SIGNATURE OF CONTRACTOR'S REPRESENTATIVE

SUBMITTING INSPECTOR'S REPRESENTATIVE

[Handwritten Signature]

REMARKS

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ENDING FOUR FROM

NO	DRILLING ASSEMBLY AT END OF TURN		BIT RECORD		MUD RECORD			FOOTAGE		MR. D MR. R CODE C	CORE MR.	FORMATION (SHOW CORE RECOVERY)	WARRANT NO.	WT. ON BIT 100LBS	PUMP PRESS.	PUMP NO.	METHOD								
	SINGLE D.F.	PT	SIZE	TYPE	TIME	WEIGHT	M.L.C.E	FILTR. CH	FROM									TO							
11	STANDS D.F.	655.44	BIT NO	2	TIME	500	700	1100	FROM	TO															
	SINGLE D.F.	PT	SIZE	7 7/8	WEIGHT	10-	10-	10	933	1060	2200	D													
	B.C.		MR.	HFC	M.L.C.E	12-2	12-6	13-6																	
12	6 1/8 O.D.	312.69	TYPE	OSE ³	FILTR. CH	3/32																			
	B.C.		MS	CUT	VHRC MRC	41.6 ft	85		DEVIATION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION							
	ID	O.D.	PT	SIZE	CUT	FW	9' 0"	9.5	9'-3"	RECORD	923	1/2"		1032	0°										
	O.D.	PT	SEC NO	99289	NO. CORRT %				TIME LOG	CLASSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS														
	O.D.	PT	DEPTH OUT						4	4 1/5	1 1/4	2nd Rig - Check B.O.P.s													
	O.D.	PT	DEPTH IN	636					4 1/5	8 1/5	4	DRILLING 7 7/8 hole													
1	5 7/8 O.D.	2.75	TOTAL FTD	424 1/4	MUD & CHEMICALS ADDED				8 1/5	8 3/4	1 1/4	SURVEY													
	WT OR CB	PT	TOTAL HB RUN	13 1/4	TYPE	SPERMENE 500	105	830	11 1/5	2 3/4	DRILLING														
			LOGG OF BIT		CAUSTIC	10	165	11 1/5	11 30	1 1/4	SURVEY														
	BELT DOWN	29.15	HEAVER NO					11 30	12 00	1 1/2	DRILLING														
	TOTAL	1060.00	HEAVER TYPE																						
	WT OF STRING	34,000																							
									STEEL LINE MEASUREMENT			SHOULD READ			DRILLER										

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WELL		LOCATION		FIELD OR AREA		PROVINCE							
MURPHY CANADA Alex #2		11 LEE C MOORE		WILDCAT		NWT							
CONTRACT		RIG NO.	DERRICK	NO.	MANUFACTURER	LINE	STOCK						
PETER BOWEN DRILL		11	LEE C MOORE	1	OWELL	6 1/2	14						
DRILL PIPE STRING		TYPE TOOL JOINT	PRIME MOVERS	2									
4 1/2		1 1/2		3									
TIME DISTRIBUTION - HOURS		DRILLING ASSEMBLY AT END OF TOUR		BIT RECORD		MUD RECORD		FOOTAGE		FORMATION		DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS	
NO.		STANDS D.P.		BIT NO.		TIME		FROM		TO		CORRECTION	
1		279.52		2A 2		77 1/2 12 1/4		215		324		D-109	
2		279.52		77 1/2 12 1/4		HTE HTE		102		114		R-10	
3		279.52		HTE HTE		HTE HTE		102		114		R-10	
4		279.52		HTE HTE		HTE HTE		102		114		R-10	
5		279.52		HTE HTE		HTE HTE		102		114		R-10	
6		279.52		HTE HTE		HTE HTE		102		114		R-10	
7		279.52		HTE HTE		HTE HTE		102		114		R-10	
8		279.52		HTE HTE		HTE HTE		102		114		R-10	
9		279.52		HTE HTE		HTE HTE		102		114		R-10	
10		279.52		HTE HTE		HTE HTE		102		114		R-10	
11		279.52		HTE HTE		HTE HTE		102		114		R-10	
12		279.52		HTE HTE		HTE HTE		102		114		R-10	
13		279.52		HTE HTE		HTE HTE		102		114		R-10	
14		279.52		HTE HTE		HTE HTE		102		114		R-10	
15		279.52		HTE HTE		HTE HTE		102		114		R-10	
16		279.52		HTE HTE		HTE HTE		102		114		R-10	
17		279.52		HTE HTE		HTE HTE		102		114		R-10	
18		279.52		HTE HTE		HTE HTE		102		114		R-10	
19		279.52		HTE HTE		HTE HTE		102		114		R-10	
20		279.52		HTE HTE		HTE HTE		102		114		R-10	
21		279.52		HTE HTE		HTE HTE		102		114		R-10	
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DRILLING ASSEMBLY AT END OF TOUR				BIT RECORD	
WT	STANDS D.P.	FT	BIT NO	2A	
	SINGLES D.P.	FT	SIZE	7 7/8	
6	D.C. 6 1/8	186.00	W.D.	H.T.C	
	10 O.D.	FT	TIME	OSC 3	
	D.C.		NO	CUT	
	10 O.D.	FT	SIZE	CUT	
	D.C.		NO	13744	
	10 O.D.	FT	TIME	108	
1	SUB 5 7/8	2.75	TOTAL FT		
	BIT OR CB	FT	TOTAL NO RUN		
			CORE OF BIT		
	HELL DOWN	26.21	RELEASED NO		
	TOTAL	215.47	RELEASED TIME		
	WT OF STOWED	16,000			

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FOOTAGE		DR D	CORE
FROM	TO	NO R	NO
		CORE C	
188	215	107	

DEPTH		DIY	DIV
RECORD	160°	3/4	

TIME LOG		ELAPSED TIME	DIV
FROM	TO		
4	4:15	1/4	
4:15	4:30	1/4	-
4:30	7:45	3 1/4	
7:45	8	1/4	
8	9:45	1 3/4	
9:45	10	1/4	
10	10:45	3/4	

STEEL LINE MEASUREMENT

[illegible]

J. C. SPROULE & ASSOCIATES

GEOLOGICAL & ENGINEERING CONSULTANTS

J. C. SPROULE
O. D. BOGGS
M. B. CROCKFORD
R. DEWIT
S. R. L. HARDING
J. B. MAUGHAN

1009 FOURTH AVENUE S.W.
CALGARY — ALBERTA

TELEPHONE
AMHERST 9-7951

April 29, 1960.

Murphy-Canada Oil Company,
703 - 5th Street S.W.,
Calgary, Alberta.

Re: Murphy Canada Alexandra Falls No. 2 Well

Dear Sirs:

We attach hereto six copies of our "Geological Report" on the Murphy Canada Alexandra Falls No. 2 well, drilled and completed between March 7, 1960 and March 25, 1960.

Johnson Testers D.S.T. charts, normally included in the pocket of the report, have been previously distributed by you to interested parties.

Copies of Fluid Analyses have been bound into this report.

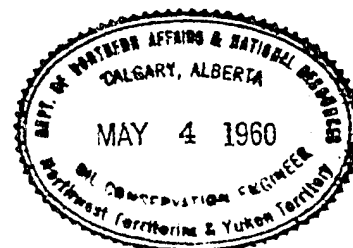
Yours very truly,

J.C. SPROULE & ASSOCIATES



Angus G. MacKenzie, P.Eng.

AGM:bk
Encl.



GEOLOGICAL REPORT
MURPHY CANADA ALEXANDRA FALLS NO. 2
SOUTH TATHLINA AREA, N.W.T.

Prepared For
Murphy-Canada Oil Company
April, 1960

J. C. SPROULE & ASSOCIATES
GEOLOGICAL & EXPLORATION CONSULTANTS

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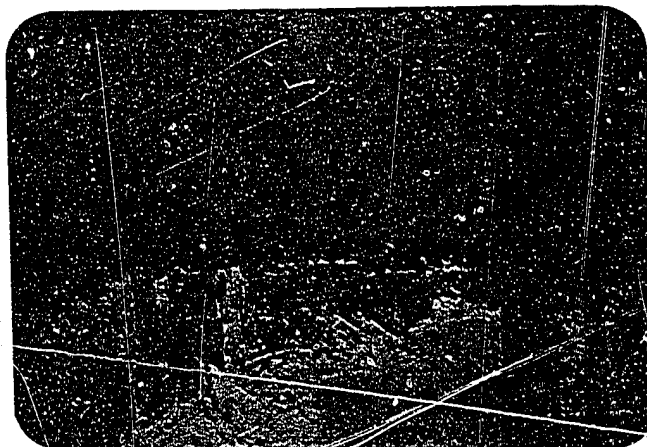
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Peter Bawden Drilling Ltd. Rig No. 11,
Murphy Canada Alexandra Falls No. 2.



Alexandra Falls, Hay River, N.W.T.



Alexandra Falls Canyon, Hay River, N.W.T.

SUMMARY OF PERTINENT WELL DATA

Well Name: Murphy Canada Alexandra Falls No. 2

Location: Latitude 60° 15' 30.8"
Longitude 116° 34' 41.96"

License No.: Form "A" Northern Affairs and National Resources for
Permit No. 1400

Elevation: Ground 952.56'
K. E. ~~963.61'~~ 962.55' } *all*

Total Depth: ~~2805'~~ 2806'

Operator: Murphy-Canada Oil Company

Technical Supervision: Angus G. MacKenzie, P.Eng., and C. Irving,
J.C. Sproule & Associates Amarex Oil Co.

Drilling Contractor: Peter Bawden Drilling Ltd.

Spudded: March 7, 1960

Completed: March 24, 1960

Status: Plugged and abandoned - dry hole.

<u>Drilling Data:</u>	<u>Hole Size</u>	<u>From</u>	<u>To</u>
	12 1/4"	0'	346'
	7 7/8"	346'	2805'

Deviation Surveys

30'	1/8°	350'	1/8°	1389'	1/2°
90'	0°	495'	0°	1590'	1/2°
160'	3/4°	585'	0°	1768'	0°
190'	3/4°	685'	7/8°	1959'	3/4°
230'	1/2°	823'	1/2°	2085'	3/4°
260'	3/4°	923'	1/2°	2286'	3/4°
295'	3/4°	1032'	0°	2436'	1 1/2°
159'	1/8°	1151'	1/2°	2555'	1 1/2°
222'	1/2°	1270'	1/4°	2735'	1 1/4°

Casing:

11 joints, 24 lb, J-55, 8 5/8", Range 2, 8 round thread, 346' short, new, Stewart & Lloyd surface casing. Landed at 348' feet. Cemented with 250 sacks Portland with 4% calcium chloride. Plug down at 3:05 P.M. March 10, 1960. 50 sacks cement returned.

Core Summary:

Core No.	Interval	Recovery
1	1896-1935'	39' (100%)
2	2348-2393'	25' (100%)
3	2465-2515'	50' (100%)

2368'

Summary of Drill Stem Tests:

No. 1 - 2469'-2515'
None to very faint puff (air).
Recovered 64' mud.

No. 2 - 2536'-2654'
Strong initial blow continuous.
Recovered 250' mud, 1344' salt water and mud.

Logs:

Schlumberger - Induction-Electric Log
Micro-Caliper

Abandonment Program:

Authority to abandon and procedure to follow received from Oil and Gas Conservation Board in Calgary, March 24th, 1960. The following plugs were run:

Plug #1 2806'-2350' 154 sacks cement, 15.5% slurry
#2 446'-246' 90 sacks cement, 2% calcium chloride, 15.5% slurry

Plug #2 Felt at 190'

Cemented to surface with 10 sacks cement, left 4 foot stick-up of 2 inch pipe set 5' in cement.

Geological Markers:

Age	Formation and Marker	Depth Feet	Elevation Feet
Upper Devonian	Grumbler-Alexandra Limestone	Surface-32	962.6 K.B.
	Hay River Shale Unit	630	952.6 Ground +334
Middle Devonian	Slave Point Formation	1870	-906
	<u>Elk Point Group</u>		
	Watt Mountain Formation	2032	-1063
	Muskeg	2100	-1136
	Keg River	2536	-1572
	Chinchaga	2720	-1756
	Granite Wash	Absent	
Precambrian	Granite and Diorite	2773	-1809

DAILY CHRONOLOGICAL REPORTWell Name: Murphy Canada Alexandra Falls No. 2Location: Latitude 60° 15' 30.8"
Longitude 116° 34' 41.96"

<u>Date</u>	<u>Day</u>	<u>From</u> <u>Feet</u>	<u>To</u> <u>Feet</u>	<u>Progress</u> <u>Feet</u>	<u>Remarks</u>
Mar. 7	1	0	215	215	Spudded in at 9:00 A.M., 12 1/4" bit, mix mud, drill 108' - 12 1/4", 216' - 7 7/8".
Mar. 8	2	215		Nil	W.O. Conductor pipe and recement.
Mar. 9	3	215	324	109	W.O.C. 7 3/4 hrs., drill 7 7/8" hole and ream 140', 12 1/4" hole. Rig up to mud tanks.
Mar. 10	4	324	500	176	Drill 7 7/8" hole. Ream 240' - 12 1/4" hole. Condition hole and run 11 jts. (363.01') 8 5/8, R-2, 8 thi., J-55 - 24s, Stewarts and Lloyd surface casing. Cement with 250 sacks Portland, 4% calcium chloride. Plug down at 3:05 P.M. Casing landed at 343' on bottom. 50 sacks returned. 346'
Mar. 11	5		500	Nil	W.O.C.
Mar. 12	6	500	636	136	W.O.C. 8 hrs. Con. mud. Clean to bottom. Drill out cement and drill ahead 7 7/8" hole. Pressure up, blind rams 1000#, pipe rams 1000#, formation 200# and 400#.
Mar. 13	7	636	1275	639	Drilling 7 7/8" hole, work mud ring, and surveys. Change to gyp. base mud.
Mar. 14	8	1275	1842	567	Drilling 7 7/8" hole. Condition mud.
Mar. 15	9	1842	1924	82	Drill 7 7/8" hole. Circulate sample. Coring 6 1/8". Work junk-sub, circulate and work inner barrel magnet. Pick up and service core barrel.
Mar. 16	10	1924	1996	72	Coring 6 1/8", ream cored hole, drill 7 7/8" hole, work stuck pipe.
Mar. 17	11	1996	2184	188	Drilling 7 7/8" hole, shale caving badly.

<u>Date</u>	<u>Day</u>	<u>From Feet</u>	<u>To Feet</u>	<u>Progress</u>	<u>Remarks</u>
Mar. 18	12	2134	2309	125	Drilling 7 7/8" hole. Repair compressor. Con. mud.
Mar. 19	13	2309	2393	84	Drilling 7 7/8" hole. Lost little mud. Circulate sample. Circulate core barrel. Coring, recover core and service barrel.
Mar. 20	14	2393	2515	122	Drilling 7 7/8" hole. Circulate sample. Coring. Reaming cored hole. Recover core.
Mar. 21	15	2515	2600	85	Drilling 7 7/8" hole. Reaming. Rig up for D.S.T. #1. (Bat-hole) 2515'-2467'. Rec. 64' mud.
Mar. 22	16	2600	2752	152	Drilling 7 7/8" hole. Shale caving badly.
Mar. 23	17	2752	2805	53	Drilling 7 7/8" hole. Circulate for logger.
Mar. 24	18		2805	Nil	Circulate and con. mud. Run packer D.S.T. #2, 2654-2536. Rec. 250' mud and 1344' salt water and mud. Running abandonment plug #1, 2806-2350, 154 sacks, plug down at 2:00 P.M. Running abandonment plug #2, 446-246, 90 sacks, 2% calcium chloride, plug down at 4:55 P.M. Felt for plug at 190'. Rig released at 12:00 midnight.
Mar. 25	19	T.D. 2805		Nil	Plug to surface 10 sacks cement. Monument hole.
T.D. Schlumberger			2806'		

BIT RECORD

Well Name: Murphy Canada Alexandra Falls No. 2

Location: Latitude 60° 15' 30.8"
Longitude 116° 34' 41.96"

Run No.	Size	Make	Type	Jet Size	Serial	Depth		Feet	Hours	Wt. 1000 lbs.	Pump Pres.	Dev.	Remarks
						From Feet	To Feet						
1A	12 1/4	HTC	OSC	cut out	47629	0	103	108	6 1/2				
2A	7 7/8	"	OSC3	" "	13744	108	324	216	9 3/4				
3A	12 1/4	"	OSC	" "	47421	324	348	240	12 3/4				
4A	7 7/8	"	OSC3	" "	95305	348	500	176	5 3/4	12	150	0	12 drill collars.
1	"	"	OSC3	" "	65211	500	636	136	9	20	300	0	12 drill collars.
2	"	"	"	" "	99289	636	1101	465	14	22	400	0	15 drill collars.
3	"	"	"	" "	99293	1101	1519	418	8 1/4				
4	"	"	OSC-IG	" "	71114	1519	1896	377	11 3/4	20	600	0	12 drill collars.
1	"	"	DIA	-	2012	1896	1935	39	18 3/4				
5	"	"	W7	" "	2727	1935	1998	63	13 1/4	30	650	3/4°	Reamed. 14 drill collars.
6	"	"	OWV	" "	4917	1998	2130	132	14	32	650	3/4°	
7	"	"	OWV	" "	4591	2130	2235	105	13 1/2				
8	"	"	OWC	" "	3912	2235	2336	101	14	34	650	3/4°	14 drill collars.
9	"	"	OWV	" "	23379	2336	2368	32	3				14 drill collars.
10	"	"	OWC	" "	6492	2368	2465	72	9 1/4				Reamed 25". 14 drill collars.
11	"	"	OWC	" "	88906	2465	2596	81	12 1/2				Reamed 50". 14 drill collars.
12	"	"	OWV	" "	7405	2596	2713	117	12 1/2				14 drill collars.
13	"	"	W7	" "	2723	2713	2797	84					Dol. & granite. 14 drill collars.
14	"	"	W7R	" "	99715	2797	2806	9					Granite & dol. 14 drill collars.

MUD RECORDWell Name: Murphy Canada Alexandra Falls No. 2Location: Latitude 60° 15' 30.8"
Longitude 116° 34' 41.96"

<u>Date</u>	<u>Depth</u> <u>Feet</u>	<u>Av. Wt.</u>	<u>Av. Visc.</u>	<u>Av. Water Loss</u>	<u>Additives</u>
Mar. 7	0		Mix initial mud.		
Mar. 8	215		High		Gel 8500#, sawdust 57 sacks, caustic 100#, lime 50#.
Mar. 9	324		High		Sawdust 25 sacks.
Mar. 10	500		High		Sawdust 25 sacks, Gel 700#, sawdust 25 sacks.
Mar. 11	500	No change. Run casing.			
Mar. 12	636	9.7	80	5.2	Gel 1000#, starch 500#, preservative 100#, bi-carb 200#, plaster 400#, my-lo-jel 400#.
Mar. 13	1275	10.0	140	11.4	Gel 1600#, starch 500#, plaster 800#, caustic 20#, spersene 250#.
Mar. 14	1842	10.6	98	7.4	Gel 200#, starch 400#, preservative 100#.
Mar. 15	1924	10.9	98	6.0	Gel 3900#, hydrogel 700#.
Mar. 16	1996	10.8	100	8.6	Gel 1000#, preservative 100#.
Mar. 17	2184	10.6	97	5.8	My-lo-jel 500#, preservative 100#, caustic 25#.
Mar. 18	2301	10.7	128	3.8	Gel 1500#, starch 300#, plaster 150#, preservative 150#, caustic 50#.
Mar. 19	2393	10.7	123	5.2	Gel 1300#, my-lo-jel 550#, preservative 25#, plaster 150#, sawdust 6 sacks.

<u>Date</u>	<u>Depth Feet</u>	<u>Av. Wt.</u>	<u>Av. Visc.</u>	<u>Av. Water Loss</u>	<u>Additives</u>
Mar. 20	2515	10.9	93	6.6	Gel 1000#, plaster 150#, preservative 25#.
Mar. 21	2600	10.8	98	6.0	Gel 500#, starch 250#, preservative 50#.
Mar. 22	2752	10.9	98	5.4	Gel 1100#, starch 550#, plaster 150#.
Mar. 23	2805	11.0	94	7.2	None
Mar. 24	2805	11.1	105	4.7	Gel 1200#, starch 300#.

Total depth logged and tested.

SURFACE CASINGWell Name: Murphy Canada Alexandra Falls No. 2Location: Latitude 60° 15' 30.8"
Longitude 116° 34' 41.96"

Casing - Stewarts and Lloyds, 8 5/8" x 24#, J-55, 8 ri. thd., new.

Casing Tally:	No.	Feet
	1	33.42
	2	33.42
	3	34.00
	4	32.75
	5	33.35
	6	32.80
	7	33.40
	8	34.03
	9	34.28
	10	34.05
	11	27.81
		Landing joint
		<u>363.37</u>

Casing String

<u>Item</u>	<u>No.</u>	<u>Size</u>	<u>Wt.</u>	<u>Grade</u>	<u>Rge.</u>	<u>Thds.</u>	<u>Cond.</u>	<u>Mfgr.</u>	<u>Ftg.</u>
Shoe	1	8 5/8				8 ri.	New	Howco	1.98
						short			
Casing	1	"	24#	J-55	2	8 ri.	"	St. & Lloyds	33.48
						short			
Baffle collar	1	"				8 ri.	"	Baker	1.55
						short			
Casing	10	"	24#	J-55	2	8 ri.	"	St. & Lloyds	329.89
						short			

Landing joint and/or piece cut off
 Total casing left in hole
 Dist. K.B. to top casing
 Depth casing landed

366.84
 - 23.21
 338.63
 12' 10.95
 348.68
 346.

Total depth of hole	500'	
Size of hole	12 1/4" to 34.8"	
	7 7/8" rat hole to 500'	
Depth casing set	348.62'	346' <i>apc</i>
Cement	250 sacks	
Additives	4% calcium chloride	
Service Company	Halliburton Oil Well Cementing Co. Ltd.	
Unit	Skid	
Date and time completion	Started mixing	2:30 P.M.
	Finished	3:00 P.M.
	Plug down	3:05 P.M. March 10/60
	Pump Pressure	300 psi
	Blow off	to 0 psi

Cement job went off O.K. Good returns.

Other Equipment: centralizers - 2, Baker, Latch-on, tack-welded.

TIME DRILLING RECORDWell Name: Murphy Canada Alexandra Falls No. 2Location: Latitude 60° 15' 30.8"
Longitude 116° 34' 41.96"

<u>Depth</u> <u>Feet</u>	<u>Time in Minutes</u>	<u>Depth</u> <u>Feet</u>	<u>Time in Minutes</u>
552-562	3.0, 3.2, 3.0, 3.0, 3.5, 2.5, 2.5, 2.0, 2.0, 2.0	682-692	2.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
562-572	2.0, 2.2, 2.0, 2.5, 3.0, 2.5, 2.0, 2.0, 2.0, 1.8	692-702	1.0, 1.0, 1.2, 1.2, 1.0, 1.0, 2.0, 1.2, 1.5, 1.5
572-582	2.5, 2.5, 2.5, 2.5, 2.5, 2.0, 2.0, 2.0, 2.0, 1.8	702-712	1.5, 1.5, 1.5, 1.8, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0
582-592	1.5, 1.2, 1.5, 1.8, 2.0, 2.0, 1.5, 1.5, 2.0, 2.5	712-722	2.0, 1.5, 1.2, 1.2, 1.0, 1.5, 1.0, 1.2, 1.2, 1.5
592-602	2.0, 1.5, 1.5, 2.0, 2.5, 2.5, 2.5, 2.5, 2.0, 3.0	722-732	2.0, 1.8, 2.0, 2.0, 2.2, 1.5, 2.0, 2.0, 1.5, 2.0
602-612	3.0, 1.0, 1.2, 1.8, 1.8, 1.5, 1.5, 1.5, 2.2, 1.5	732-742	1.2, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
612-622	1.0, 1.0, 1.2, 1.5, 1.5, 1.2, 2.0, 2.0, 1.2, 2.0	742-752	1.5, 1.0, 0.5, 0.8, 1.0, 1.0, 0.5, 1.0, 0.8, 0.8
622-632	1.8, 2.0, 2.5, 2.0, 2.0, 2.2, 2.5, 2.5, 2.5, 2.5	752-762	1.0, 2.0, 3.0, 2.0, 2.0, 2.0, 2.0, 2.2, 1.8, 1.8
632-642	3.0, 3.0, 4.0, 5.0, 2.0, 2.0, 1.0, 1.0, 1.5, 1.8	762-772	3.0, 3.0, 1.2, 1.2, 1.2, 1.2, 1.5, 1.5, 1.8, 2.0
642-652	1.0, 1.5, 1.2, 1.0, 1.0, 1.0, 1.0, 0.5, 1.0, 1.0	772-782	1.2, 1.2, 1.2, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
652-662	0.8, 2.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0	782-792	1.2, 1.2, 1.2, 1.5, 1.8, 1.8, 2.2, 2.0, 2.0, 2.0
662-672	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0	792-802	2.0, 2.0, 2.2, 2.0, 1.5, 1.2, 1.5, 1.5, 1.8, 1.5
672-682	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.2	802-812	1.5, 0.8, 0.8, 1.0, 1.0, 1.0, 1.0, 1.0, 2.0, 2.5

<u>Depth Feet</u>	<u>Time in Minutes</u>	<u>Depth Feet</u>	<u>Time in Minutes</u>
812-822	2.5, 2.8, 2.5, 2.0, 2.0, 2.0, 1.5, 2.0, 2.0, 2.0	982-992	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
822-832	2.0, 2.0, 2.0, 2.0, 1.8, 2.0, 2.0, 2.0, 2.0, 2.0	992-1002	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.5, 1.0
832-842	2.0, 2.0, 2.0, 2.5, 2.2, 2.0, 2.0, 2.0, 2.2, 2.0	1002-1012	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
842-852	2.5, 2.2, 2.8, 3.0, 3.0, 3.0, 3.0, 3.0, 3.0, 3.0	1012-1022	1.0, 1.5, 1.2, 1.0, 1.2, 1.0, 1.0, 1.0, 1.0, 1.0
852-862	3.0, 3.0, 3.0, 2.5, 2.5, 3.5, 3.0, 3.5, 3.5, 3.5	1022-1032	1.0, 1.0, 1.0, 1.0, 1.5, 1.0, 1.0, 1.0, 1.0, 1.0
862-872	2.5, 2.5, 3.0, 3.0, 2.5, 2.5, 2.5, 2.8, 3.0, 2.5	1032-1042	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
872-882	3.5, 2.5, 2.8, 2.0, 2.5, 2.2, 2.5, 2.0, 2.0, 2.2	1042-1052	0.8, 0.8, 0.5, 1.0, 1.0, 1.0, 1.0, 1.2, 1.2, 1.2
882-892	2.0, 2.5, 2.5, 2.5, 2.5, 2.5, 2.2, 2.2, 2.2, 2.2	1052-1062	1.2, 1.2, 1.2, 1.2, 1.2, 1.2, 1.2, 1.2, 1.2, 1.2
892-902	2.2, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0	1062-1072	1.2, 1.2, 1.2, 1.2, 1.2, 1.2, 1.2, 1.5, 1.5, 1.2
902-912	2.2, 2.5, 2.2, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0	1072-1082	2.0, 1.5, 1.5, 1.8, 1.5, 1.2, 1.5, 1.5, 1.5, 1.5
912-922	2.0, 2.0, 2.0, 2.0, 1.5, 1.0, 2.0, 1.0, 2.5, 1.0	1082-1092	1.2, 1.0, 0.8, 1.2, 1.2, 1.0, 1.2, 1.0, 1.2, 1.5
922-932	1.5, 1.3, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0	1092-1102	1.5, 1.5, 2.0, 1.8, 2.0, 2.0, 2.0, 2.0, 2.0, 1.2
932-942	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0	1102-1112	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
942-952	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0	1112-1122	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.2
952-962	1.2, 1.0, 1.0, 1.0, 1.5, 1.0, 1.2, 1.5, 1.2, 1.2	1122-1132	1.2, 1.2, 1.2, 1.5, 1.5, 1.8, 1.8, 1.5, 1.5, 1.0
962-972	1.2, 1.2, 1.2, 1.2, 1.5, 1.5, 1.5, 1.2, 1.2, 1.5	1132-1142	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
972-982	1.2, 1.5, 1.5, 1.5, 1.2, 1.2, 1.2, 1.2, 1.2, 1.2	1142-1152	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0

<u>Depth Feet</u>	<u>Time in Minutes</u>	<u>Depth Feet</u>	<u>Time in Minutes</u>
1152-1162	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 0.5	1322-1332	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1162-1172	0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5	1332-1342	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1172-1182	0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5	1342-1352	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1182-1192	0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5	1352-1362	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1192-1202	0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5	1362-1372	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1202-1212	0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5	1372-1382	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1212-1222	0.5, 0.5, 0.5, 0.5, 0.5, 0.8, 0.8, 0.8, 0.8, 0.8	1382-1392	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1222-1232	0.8, 0.8, 0.8, 0.8, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5	1392-1402	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1232-1242	0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5	1402-1412	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1242-1252	0.8, 1.0, 0.8, 1.0, 1.2, 2.0, 1.5, 1.2, 2.0, 2.2	1412-1422	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1252-1262	2.2, 2.0, 1.8, 1.5, 1.0, 1.0, 1.0, 1.2, 1.0, 0.5	1422-1432	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1262-1272	0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.8, 0.5, 0.5	1432-1442	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1272-1282	0.5, 0.5, 0.5, 1.0, 1.0, 1.0, 1.2, 1.0, 1.0, 1.0	1442-1452	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1282-1292	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0	1452-1462	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1292-1302	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0	1462-1472	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1302-1312	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0	1472-1482	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1312-1322	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0	1482-1492	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0

<u>Depth Feet</u>	<u>Time in Minutes</u>
1492-1502	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1502-1512	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1512-1522	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.5, 2.0
Nari rings had to let up on weight.	
1522-1532	2.0, 1.8, 1.5, 1.0, 1.0, 1.0, 2.8, 2.5, 1.5, 1.2
1532-1542	1.5, 1.5, 1.2, 1.2, 1.2, 1.2, 1.5, 1.5, 1.2, 1.2
1542-1552	1.2, 1.5, 1.2, 1.2, 1.2, 1.2, 1.2, 1.2, 1.2, 1.0
1552-1562	0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 1.0
1562-1572	0.5, 1.0, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.5
1572-1582	0.5, 1.0, 1.0, 1.0, 1.0, 1.2, 1.5, 2.0, 1.5, 1.0
1582-1592	1.0, 0.8, 0.8, 0.8, 1.5, 1.0, 1.8, 1.8, 2.0, 2.0
1592-1602	1.5, 3.0, 2.0, 3.2, 3.0, 2.2, 2.0, 1.5, 2.0, 1.0
1602-1612	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1612-1622	1.0, 1.0, 1.0, 1.5, 1.8, 1.5, 1.5, 1.5, 1.5, 1.5
1622-1632	1.5, 1.5, 2.0, 2.0, 2.0, 3.0, 2.0, 1.5, 1.5, 1.5
1632-1642	1.5, 1.5, 1.5, 1.5, 1.5, 1.5, 1.5, 1.5, 1.5, 1.5
1642-1652	1.5, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 1.8, 2.0, 2.0

<u>Depth Feet</u>	<u>Time in Minutes</u>
1652-1662	2.0, 2.0, 2.0, 2.0, 2.0, 1.5, 1.0, 1.0, 1.5, 0.5
1662-1672	0.5, 0.5, 0.5, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1672-1682	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1682-1692	1.0, 1.0, 1.0, 1.0, 1.0, 1.2, 1.0, 1.0, 1.0, 1.2
1692-1702	1.2, 1.0, 1.2, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1702-1712	1.2, 1.2, 1.0, 1.2, 1.8, 1.0, 1.5, 1.5, 1.5, 1.8
1712-1722	2.0, 1.5, 1.5, 2.0, 2.0, 2.0, 1.8, 2.0, 1.8, 1.8
1722-1732	1.2, 1.5, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0
1732-1742	1.0, 1.0, 1.5, 1.0, 1.0, 1.0, 1.0, 1.8, 1.2, 1.0
1742-1752	1.2, 1.5, 1.5, 1.5, 1.5, 1.5, 1.2, 1.0, 1.0, 1.0
1752-1762	1.0, 1.0, 1.2, 1.2, 1.0, 1.0, 1.0, 1.5, 1.8, 1.5
1762-1772	1.5, 1.5, 1.2, 1.5, 1.5, 1.5, 1.2, 1.2, 1.5, 1.5
1772-1782	1.5, 1.5, 1.5, 1.5, 1.5, 1.5, 2.0, 2.0, 1.8, 2.0
1782-1792	2.0, 2.0, 2.0, 2.0, 2.0, 1.8, 2.0, 2.2, 2.2, 2.2
1792-1802	2.0, 2.0, 2.2, 2.2, 2.0, 2.0, 2.0, 2.0, 2.0, 2.2
1802-1812	2.0, 2.0, 2.2, 2.2, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0
1812-1822	2.0, 2.0, 2.2, 2.2, 2.0, 2.0, 1.5, 2.0, 2.0, 1.5

<u>Depth Feet</u>	<u>Time in Minutes</u>	<u>Depth Feet</u>	<u>Time in Minutes</u>
1822-1832	2.0, 1.8, 1.5, 1.8, 1.5, 2.0, 1.8, 2.0, 1.8, 1.8	1965-1975	8.0, 7.0, 7.5, 10.0, 7.0, 9.0, 8.0, 7.0, 4.5, 4.5
1832-1842	1.8, 1.5, 1.5, 1.8, 2.0, 1.5, 1.8, 1.8, 2.0, 1.8	1975-1985	4.0, 7.0, 5.0, 8.0, 7.5, 7.0, 5.0, 11.0, 10.0, 9.0
1842-1852	1.0, 2.5, 2.0, 2.2, 1.2, 1.5, 2.0, 1.0, 2.0, 2.0	1985-1995	8.0, 9.0, 7.0, 8.0, 7.5, 10.5, 5.0, 8.0, 10.0, 11.5
1852-1862	2.0, 2.0, 1.5, 2.0, 2.0, 2.5, 2.2, 2.0, 2.0, 1.5	1995-2005	10.0, 10.0, 10.0, 9.0, 3.0, 3.0, 7.5, 2.0, 2.0, 3.5
1862-1872	1.8, 1.2, 1.8, 1.8, 2.0, 2.0, 1.5, 2.0, 2.0, 2.5	2005-2015	8.0, 9.0, 5.5, 5.0, 9.0, 4.5, 4.5, 4.0, 5.0, 5.0
1872-1882	2.0, 2.0, 2.0, 2.5, 1.5, 2.0, 2.0, 1.8, 2.2, 1.8	2015-2025	5.5, 5.0, 5.0, 3.0, 7.0, 7.0, 7.5, 6.0, 3.5, 4.5
1882-1892	2.0, 2.2, 2.2, 2.5, 2.5, 3.0, 2.2, 2.5, 3.0, 3.0	2025-2035	6.5, 7.0, 8.0, 7.0, 6.0, 6.5, 6.0, 6.0, 5.0, 5.0
1892-1896	3.2, 3.0, 3.0, 4.0	2035-2045	4.0, 4.0, 4.0, 5.0, 2.0, 3.5, 4.0, 3.0, 10.0, 6.0
<u>Coring Time</u>		2045-2055	6.0, 7.0, 3.5, 5.0, 6.5, 7.0, 7.5, 7.0, 3.5, 7.0
1896-1906	50, 30, 30, 30, 30, 31, 31, 23, 21, 24	2055-2065	7.0, 5.0, 5.0, 5.0, 5.5, 4.5, 3.5, 5.0, 5.0, 5.5
1906-1916	25, 28, 23, 25, 30, 26, 26, 30, 26, 29	2065-2075	6.0, 4.5, 5.0, 5.0, 4.5, 4.0, 5.0, 4.0, 2.0, 4.0
1916-1926	28, 29, 29, 28, 29, 27, 30, 24, 26, 25	2075-2085	3.5, 3.5, 4.0, 4.0, 5.0, 5.0, 4.0, 4.0, 4.0, 4.0
1926-1935	29, 29, 28, 33, 33, 35, 36, 36, 33	2085-2095	4.0, 4.0, 2.0, 2.0, 3.0, 4.0, 4.0, 4.0, 3.5, 3.0
<u>Drilling Time</u>		2095-2105	2.5, 3.5, 3.5, 3.5, 4.0, 4.0, 5.0, 4.0, 4.0, 4.0
1935-1945	2.5, 6.5, 1.5, 2.0, 2.0, 6.5, 7.0, 6.5, 7.0, 7.0	2105-2115	5.0, 6.0, 5.0, 6.0, 4.0, 7.0, 6.5, 7.0, 7.0, 7.0
Irregular drilling for 4 feet		2115-2125	7.0, 4.0, 5.0, 7.0, 7.0, 8.5, 8.0, 9.0, 5.0, 6.5
1945-1955	7.0, 7.0, 8.0, 8.0, 7.5, 9.5, 9.5, 10.0, 10.0, 9.0	2125-2135	7.0, 6.5, 8.0, 9.0, 12.0, 4.0, 8.0, 6.0, 7.0, 4.0
1955-1965	5.5, 8.0, 7.5, 7.5, 6.0, 7.5, 7.0, 10.0, 8.0, 8.0		

<u>Depth Feet</u>	<u>Time in Minutes</u>	<u>Depth Feet</u>	<u>Time in Minutes</u>
2135-2145	4.0, 4.0, 6.0, 4.0, 5.5, 4.5, 4.5, 6.0, 6.5, 6.5	2305-2315	11.5, 12.0, 13.0, 13.5, 13.0, 10.0, 8.0, 9.0, 5.0?, 8.5
2145-2155	6.0, 5.0, 4.5, 3.0, 3.0, 5.0, 5.0, 5.0, 4.0, 4.5	2315-2325	5.5, 7.0, 8.0, 10.0, 8.0, 11.0, 11.0, 10.0, 10.0, 13.0
2155-2165	4.5, 3.5, 4.5, 7.0, 7.0, 6.5, 7.0, 8.0, 7.0, 3.0	2325-2335	10.0, 6.5, 7.0, 6.5, 6.0, 6.0, 6.5, 7.0, 9.0, 10.0
2165-2175	6.0, 5.0, 5.0, 8.0, 6.0, 6.5, 4.5, 9.0, 5.0, 6.0	2335-2345	6.5, 7.0, 9.0, 5.0, 6.5, 5.5, 5.0, 5.0, 5.0, 5.5
2175-2185	9.0, 5.5, 3.5, 3.0, 4.0, 6.0, 4.5, 6.0, 6.0, 7.0	2345-2355	5.0, 4.5, 6.5, 5.0, 6.0, 4.5, 5.0, 6.0, 6.0, 6.0
2185-2195	7.0, 4.0, 4.0, 6.0, 5.0, 7.5, 7.0, 6.5, 7.0, 6.5	2355-2365	5.5, 6.5, 10.5, 4.5, 5.0, 4.5, 6.0, 4.5, 4.5, 4.5
2195-2205	5.0, 5.5, 8.0, 10.0, 8.0, 8.5, 4.0, 8.5, 8.5, 9.0	2365-2368	3.5, 3.0, 3.0
2205-2215	8.0, 8.5, 9.0, 10.0, 12.0, 11.5, 11.5, 14.0, 10.0, 10.0	<u>Coring Time</u>	
2215-2225	11.0, 11.0, 13.0, 6.0, 10.0, 11.5, 12.0, 11.5, 11.0, 7.0	2368-2378	14.0, 15.0, 15.0, 11.0, 11.0, 11.0, 13.0, 13.0, 9.0, 10.0
2225-2235	5.0, 13.0, 12.0, 8.0, 10.0, 13.0, 15.0, 11.0, 12.5, 10.0	2378-2388	10.0, 10.0, 12.0, 12.0, 10.0, 10.0, 11.0, 10.0, 12.0, 11.0
2235-2245	9.0, 8.0, 10.5, 10.0, 9.5, 7.0, 8.0, 6.0, 5.0, 5.5	2388-2393	10.0, 9.0, 10.0, 10.0, 11.0
2245-2255	7.0, 5.0, 5.0, 5.0, 4.5, 8.0, 8.0, 9.0, 6.5, 5.0	<u>Drilling Time</u>	
2255-2265	7.0, 7.0, 5.5, 6.0, 6.0, 6.0, 2.0, 3.0, 6.0, 8.0	2393-2403	11.0, 5.0, 5.5, 6.0, 6.5, 7.0, 7.0, 7.0, 6.0, 6.5
2265-2275	5.0, 5.0, 7.0, 8.0, 6.0, 6.0, 8.0, 6.0, 8.0, 10.0	2403-2413	7.5, 7.0, 6.0, 5.0, 7.0, 7.5, 6.0, 6.5, 7.0, 7.5
2275-2285	7.5, 8.0, 8.0, 3.0, 8.0, 8.0, 8.0, 7.5, 9.0, 8.0	2413-2423	8.0, 6.0, 7.0, 6.5, 6.0, 6.0, 6.0, 5.5, 5.5, 6.0
2285-2295	12.0, 7.0, 6.5, 9.0, 10.5, 7.0, 6.5, 3.0, 10.0, 10.0	2423-2433	5.5, 6.0, 5.5, 5.0, 5.0, 6.0, 6.0, 7.0, 6.0, 6.5
2295-2305	10.0, 9.0, 6.0, 6.5, 9.0, 10.0, 10.5, 10.0, 8.0, 12.0	2433-2443	6.0, 6.5, 6.5, 6.0, 6.0, 6.5, 6.0, 6.5, 7.0, 7.0

<u>Depth</u> <u>Feet</u>	<u>Time in Minutes</u>	<u>Depth</u> <u>Feet</u>	<u>Time in Minutes</u>
2443-2453	7.5, 6.0, 5.5, 6.0, 6.5, 7.0, 7.5, 7.5, 7.0, 6.5	2595-2605	12.0, 10.0, 5.5, 5.0, 5.0, 3.5, 4.0, 3.0, 3.5, 4.5
2453-2463	7.0, 8.0, 7.0, 8.0, 7.5, 7.5, 6.0, 6.0, 5.0, 5.0	2605-2615	3.0, 3.5, 3.0, 3.2, 3.0, 4.0, 3.0, 3.0, 4.0, 3.5
2463-2465	5.0, 4.5	2615-2625	4.0, 3.5, 3.5, 3.5, 4.0, 4.0, 3.0, 3.0, 3.0, 3.0
	<u>Coring Time</u>	2625-2635	3.0, 3.5, 3.0, 3.5, 4.0, 5.0, 5.0, 4.0, 5.0, 5.0
2465-2475	20, 10, 12, 10, 12, 11, 8, 9, 8, 10	2635-2645	6.0, 5.0, 4.0, 3.0, 3.0, 5.5, 5.5, 4.0, 4.5, 5.0
2475-2485	11, 10, 11, 10, 10, 9, 9, 8, 9, 9	2645-2655	5.5, 6.0, 5.0, 5.0, 8.0, 5.0, 7.0, 7.0, 6.0, 6.5
2485-2495	10, 10, 9, 10, 8, 9, 10, 9, 9, 10	2655-2665	6.5, 7.0, 7.0, 7.0, 8.0, 8.0, 7.0, 7.5, 6.5, 7.0
2495-2505	10, 9, 9, 11, 10, 8, 10, 9, 8, 8	2665-2675	6.5, 7.5, 7.5, 7.0, 7.0, 6.5, 6.5, 6.5, 6.0, 7.0
2505-2515	8, 9, 8, 9, 9, 9, 10, 9, 10, 11	2675-2685	5.5, 5.0, 7.5, 7.0, 8.0, 8.0, 7.0, 8.0, 8.0, 6.5
	<u>Drilling Time</u>	2685-2695	4.0, 6.0, 7.0, 7.0, 7.0, 7.0, 8.0, 9.0, 7.0, 8.0
2515-2525	4.0, 4.5, 5.0, 6.0, 5.0, 4.0, 7.0, 8.0, 6.5, 5.0	2695-2705	8.0, 9.0, 9.0, 9.0, 9.0, 10.0, 12.0, 9.0, 9.0, 10.0
2525-2535	5.0, 8.0, 7.5, 7.0, 5.5, 6.5, 8.0, 5.0, 6.0, 6.0	2705-2715	4.0, 12.0, 16.0, 9.0, 6.0, 8.0, 4.0, 13.0, 15.0, 10.0
2535-2545	4.0, 4.0, 4.0, 4.0, 3.5, 4.0, 4.0, 4.0, 4.0, 5.0	2715-2725	14.0, 15.0, 12.5, 11.5, 12.0, 12.0, 12.5, 11.0, 14.0, 15.0
2545-2555	4.5, 6.0, 3.5, 4.0, 5.0, 5.0, 5.5, 4.0, 4.0, 5.0	2725-2735	12.5, 12.0, 12.0, 12.5, 12.0, 11.5, 14.0, 17.0, 10.0, 15.0
2555-2565	5.5, 5.5, 5.0, 5.0, 6.0, 7.0, 4.0, 5.0, 5.0, 5.0	2735-2745	15.0, 15.0, 15.0, 11.5, 15.0, 14.0, 13.5, 10.0, 13.0, 15.0
2565-2575	6.0, 5.0, 5.5, 5.5, 5.5, 5.0, 5.0, 5.5, 5.0, 6.0	2745-2755	10.0, 10.0, 11.0, 12.5, 9.5, 15.0, 13.0, 12.0, 10.0, 17.0
2575-2585	6.5, 7.5, 7.0, 7.5, 7.5, 8.0, 6.5, 5.0, 8.0, 7.0		
2585-2595	5.0, 3.0, 7.0, 10.0, 10.0, 10.0, 11.0, 11.0, 11.0, 10.0		

<u>Depth</u> <u>Feet</u>	<u>Time in Minutes</u>
2755-2765	16.0, 16.5, 14.0, 13.0, 15.0, 10.0, 6.5, 6.5, 6.0, 7.0
2765-2775	6.5, 6.0, 7.0, 7.0, 5.0, 4.0, 4.0, 6.5, 6.0, 7.0
2775-2785	6.5, 6.5, 7.0, 7.0, 7.0, 7.0, 7.0, 7.0, 7.0, 7.0
2785-2795	7.0, 7.5, 8.0, 8.0, 9.5, 9.0, 10.0, 9.0, 8.5, 9.0
2795-2805	10.0, 10.0, 10.0, 11.5, 12.0, 15.0, 15.0, 13.0, 10.0, 18.0

Total Depth - Driller 2805'
Schlumberger 2806'

SAMPLE DESCRIPTIONWell Name: Murphy Canada Alexandra Falls No. 2Location: Latitude 60° 15' 30.8"
Longitude 116° 34' 41.96"Ground Elevation: 952.56' (above mean sea-level)
962.61' K.B.

<u>Depth</u> <u>Feet</u>	<u>Description</u>
Surface- 32	Overburden, muskeg, gravel and some clay. <u>UPPER DEVONIAN</u> <u>Grumbler-Alexandra Limestones</u>
32-50	Limestone (?), no sample, 100%.
50-90	Limestone, light grey to creamy, fine- to medium-grained, fossiliferous (brachiopods, etc.), locally reddish (hematite) stained and mottled, locally calcarenitic. From 70 to 90 feet concentration of red staining 99%. Trace of black bituminous shale and dark grey calcareous siltstone.
90-130	Limestone, white to creamy white, medium to cryptocrystalline, fossiliferous as above, trace of red stained limestone, trace of light green shale (partings), local clear calcite crystals, locally fragmental limestone, fragmental limestone - 100%. Shale, trace light green slightly calcareous.
130-240	Limestone, creamy white to white, locally light buff, medium- and fine-grained, locally calcarenitic, locally chalky, occasional red staining, trace <u>pin-point porosity</u> at 150 - 160 feet, clear calcite crystals at 170 - 180 feet, fossiliferous (brachiopods), locally a greenish grey silty limestone as at 220 - 230 feet. 100%. Siltstone, very sparse and dark grey, pyritic, calcareous, trace. Shale, very sparse, greenish grey, calcareous, trace.
240-260	Limestone (?), samples missing (conductor pipe washed out).
260-320	Limestone, medium grey to light grey, medium-grained, locally calcarenitic and sub-lithographic, scattered fluorescent specks in light buff limestone, locally silty and argillaceous. 100%.

<u>Depth</u> <u>Feet</u>	<u>Description</u>
320-330	Limestone, medium grey, light grey to almost white, medium- and fine-grained, locally oolitic, local calcite crystals in vugs, fossiliferous (brachiopods), local black mottling, in part argillaceous, scattered black specks throughout, stylolitic at 370'. 100%.
330-400	Limestone, medium and light grey, medium- to coarse-grained, fossiliferous (brachiopods), locally calcarenitic, very coarse cuttings (fractures?) 30%. Siltstone, medium grey, calcareous, (pepper and salt) 10%. Silty limestone, as above, 10%.
400-440	Limestone, medium and light grey, locally buff, medium and coarse-grained, fossiliferous (brachiopods), scattered pyrite, some gouge at 410 - 420 feet (fault?), very local black mottling, locally calcarenitic 100%.
440-500	Limestone, medium grey and buff, locally light grey, medium- and fine-grained, locally sub-lithographic and very locally coarse-grained, in part calcarenitic, fossiliferous (fragments), scattered black mottling in buff limestone, some gouge at 470 - 480 feet (fault), many black specks 490 - 500 feet, 100%.
500-510	Limestone, as above, 90%. Siltstone, light grey, calcareous, 10%.
510-520	Siltstone, as above, 30%. Limestone, as above, medium-grained, 20%.
520-530	Limestone, very light grey, medium-grained, silty, 100%.
530-540	Limestone, as above, 80%. Siltstone, as above, but very calcareous, 20%.
540-550	Limestone, medium and light grey, locally buff, medium- to fine-grained, silty, fossiliferous (crinoid and brachiopod fragments), sparsely disseminated pyrite.
550-570	Limestone, creamy to light buff, fine-grained, very locally coarse-grained, fossiliferous (as above), irregular black specks, 90%+. Siltstone, medium grey, very calcareous, 10%.
570-630	Limestone, very light grey and buff, medium- and fine-grained, fossiliferous (crinoid and brachiopod fragments), fine-grained limestone, minutely fractured and filled (calcite), local black specks, and local sub-rounded quartz grains in limestone at 580 - 590 feet, scattered disseminated pyrite, locally oolitic (590 - 600 feet) 90%+. Siltstone, medium grey, very calcareous 10%-. Shale, light grey, calcareous, trace possible fault at 590 - 600 feet.

Depth
FeetDescriptionHay River Shale Unit

630-650	Limestone, light grey to buff, medium-grained, locally calcarenitic, fossiliferous (fragments), 40%. Siltstone, medium and light grey, calcareous, "pepper and Salt" texture, 60%.
650-750	Siltstone, medium and light grey, calcareous, "pepper and salt" texture, very local finely crystalline pyrite as at 680 - 690 feet. Locally fossiliferous as at 730 - 740 feet and in part finely micaceous especially from 740 feet, 99%. Limestone, light grey and buff, fine-grained to lithographic, locally mottled, locally dolomitic and fossiliferous, 1%.
750-770	Siltstone, as above, 60%. Limestone, as above, 30%. Shale, light grey, calcareous, 10%.
770-800	Limestone, medium grey and buff, medium- and coarse-grained, dolomitic and fossiliferous (brachiopods and colonial corals), trace of galena at 780 - 790 feet, locally calcarenitic, 80%. Siltstone, light grey, micaceous, calcareous, 20%.
800-820	Limestone, light grey, locally buff, medium- and fine-grained to cryptocrystalline, fossiliferous (corals) 100%. Trace of greenish grey calcareous shale.
820-880	Limestone, very light grey, locally buff, medium- to fine-grained, in part lithographic, fossiliferous, (fragments) pyrite crystals in nodules and in small vugs, 95%. Shale, greenish grey, calcareous, finely micaceous, 5%.
880-910	Limestone, medium grey and buff, medium-grained to very fine-grained, very fossiliferous brachiopods, crinoid stems, etc. (mostly fragmental), trace of pyrite, local quartz grains 95%. Siltstone, medium grey, "salt and pepper" calcareous 5%. Shale, greenish grey, calcareous, micaceous, trace.
910-920	Limestone, medium grey and buff, medium-grained to very fine-grained, locally coarse-grained and <u>oil stained</u> , very fossiliferous (as above), 70%. Siltstone, medium grey, "salt and pepper" calcareous 20%. Shale, greenish grey, calcareous, finely micaceous 10%.
920-940	Limestone, medium grey and buff, medium- and fine-grained, locally coarse-grained and <u>oil stained</u> , very fossiliferous (as above) 85%. Shale, greenish grey, calcareous, finely micaceous 15%.
940-960	Limestone, as above, 60%. Shale, as above, 40%.

Depth Feet	Description
960-980	Limestone, buff, coarse-grained, detrital limestone, <u>poor inter-granular porosity</u> . Some almost white and reddish stained, locally very fine-grained and argillaceous. Fossiliferous, 95%. Shale, greenish grey, calcareous, finely micaceous, 5%.
980-1020	Limestone, light grey to buff, medium- and fine-grained, fossiliferous, scattered disseminated pyrite, minor <u>oil stain</u> 1000 - 1020, slightly argillaceous throughout, 50%. Shale, light grey and greenish grey, calcareous and slightly micaceous, 50%.
1020-1060	Limestone, medium grey and buff, medium-grained and fine-grained, locally calcarenitic, argillaceous, fossiliferous (crinoid stems, brachiopods, etc., mostly fragmental), locally a fragmental limestone, scattered disseminated pyrite, local limy siltstone lenses, 60%. Shale, greenish grey, calcareous, 40%.
1060-1100	Limestone, white to creamy white, buff to light brown, locally reddish stained as at 1090 - 1100, medium- to fine-grained, fossiliferous (as above) 60%. Siltstone, medium grey, calcareous, 30%. Shale, greenish grey, calcareous, 10%.
1100-1110	Shale, greenish grey, slightly calcareous, 40%. Limestone, as above, locally chalky, 30%. Siltstone, as above, 30%.
1110-1130	Limestone, white to creamy white, buff to light brown, medium- to fine-grained, locally chalky, fossiliferous (as above), 60%. Shale, as above, 30%+. Siltstone, as above, 10%.
1130-1180	Limestone, medium grey to light tan, locally creamy, locally reddish stained, medium- and fine-grained, slightly argillaceous, highly fossiliferous, especially at 1150 - 1160, scattered disseminated pyrite, very locally coarse-grained, 70%. Siltstone, medium grey, calcareous, 20%. Shale, greenish grey, slightly calcareous, 10%, two pieces of granite (cave).
1180-1190	Limestone, medium grey, medium-grained, buff and fine-grained, creamy white, medium- to coarse-grained, scattered pyrite, 60%. Siltstone, medium grey, very limy, 40%. Shale, as above, trace.
1190-1200	Sample missing.

<u>Depth Feet</u>	<u>Description</u>
1200-1210	Limestone, medium grey to creamy white, medium- and fine-grained, slightly argillaceous, fossiliferous (as above), 40%. Siltstone, as above, 30%. Shale, as above, 30%.
1210-1250	Limestone, buff to creamy white, medium- to fine-grained, argillaceous, fossiliferous, local reddish brown stained, 50%. Siltstone, very light grey, calcareous, 40%. Shale, greenish grey, calcareous, silty, 10%.
1250-1260	Shale, light grey, calcareous, slightly micaceous, few black carbonaceous specks, 80%. Siltstone, medium grey, limy, 10%+. Limestone, creamy to buff, medium- to fine-grained, 10%.
1260-1270	Shale, light grey to greenish grey, calcareous, fissile, 90%. Limestone, creamy white, medium-grained, 10%. Siltstone, as above, trace.
1270-1290	Shale, light grey to greenish grey, calcareous, fissile, 100%. Limestone, as above, trace.
1290-1320	Shale, light grey to greenish grey, calcareous and fissile, 95%. Limestone, as above, 5%, poor sample.
1320-1330	Sample missing.
1330-1390	Shale, light grey to greenish grey, calcareous and fissile, local black specks, 100%. Limestone, as above, local dark grey fragmental, trace.
1390-1410	Shale, light grey to greenish grey, calcareous, fissile, slightly silty, local black specks. Limestone, buff to creamy white, locally dark grey fragmental, very locally chalky and very argillaceous, trace.
1410-1420	Shale, as above, 90%. Siltstone, medium grey, very calcareous, 5%. Limestone, buff to light brown, sugary texture in part, to fine-grained and very argillaceous, 5%.
1420-1450	Shale, as above, 95%. Limestone, buff to brown, fine-grained, saccharoidal in part, some black dolomite and scattered crystalline, pyrite. 5%.
1450-1470	Shale, light grey and greenish grey, calcareous, local black specks, slightly silty, 95%. Limestone, as above, 5%.

<u>Depth Feet</u>	<u>Description</u>
1470-1510	Shale, as above, 95%. Limestone, buff to light brown, fine-grained, fossiliferous and fragmental, locally dark reddish stained and argillaceous, locally black and fragmental, 5%. Siltstone, medium grey, calcareous, micaceous, trace.
1510-1560	Shale, as above, fossiliferous at 1540-1550, probably fossiliferous 1550-1560, black specks and streaks, 90%. Limestone, creamy white to buff, and variegated to almost brownish black, fine-grained to medium-grained, scattered disseminated pyrite in medium-grained saccharoidal limestone, 10%.
1560-1600	Shale, as above (no fossils), 95%. Limestone, as above, fossiliferous, 5%
1600-1670	Shale, greenish grey, calcareous, slightly silty, dark grey, mottled, non-calcareous and silty, 100%. Limestone, as above, trace.
1670-1680	Shale, as above, 90%. Siltstone, medium grey, calcareous, micaceous, 10%. Limestone, as above, trace.
1680-1790	Shale, greenish grey, medium grey and locally light grey, calcareous and slightly silty, sparsely disseminated pyrite in medium grey shale, fissile, poor samples 1730-1740, 1750-1770, 100%. Limestone, creamy white and buff, locally light brown, locally pale green, clayey infilling, trace.
1790-1810	Shale, medium and dark grey, slightly to non-calcareous, locally greenish grey, fissile and calcareous, 100%. Limestone, as above, trace. Siltstone, dark grey, calcareous, trace.
1810-1850	Shale, as above, locally some brownish black bituminous shale with locally disseminated pyrite, 100%. Limestone, creamy white to white, medium- and fine-grained, trace.
1850-1870	Shale, as above, locally some very dark grey to black shale, 90%. Limestone, buff to light brown, very locally medium grey, medium- and fine-grained, scattered disseminated pyrite, many fine fluorescent specks, one piece medium grey limestone, oil stained, fossiliferous (?), 10%.

MIDDLE DEVONIANSlave Point Formation

1870-1880	Limestone, light brown to dark brown, locally creamy white, medium-grained, locally mottled, slickensided in part (fault?), slightly argillaceous, 50%.
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<u>Depth Feet</u>	<u>Description</u>
	Shale, medium grey, and greenish grey, slightly silty, calcareous, 50%. Siltstone, medium grey, micaceous, trace.
1830-1890	Shale, as above, 80%. Limestone, as above (finely disseminated pyrite), 20%. Siltstone, as above, trace.
1890-1895	Shale, as above, 90%. Limestone, as above, some black mottled, 10%. Siltstone, as above, trace.
1895-1896	Shale, as above, 80%. Limestone, as above, 20%. Sandstone, reddish stained, limy, trace.
1896 (Circulated sample)	Shale, as above, 60%. Limestone, light brown to dark brown, locally reddish brown, fine to microcrystalline, locally mottled, scattered disseminated pyrite, 40%. Siltstone, as above, trace.
1896-1935	Limestone, cored, <u>see core description</u> .
1935-1950	Limestone, light brown, fine- to medium-grained, locally coarse-grained, thin very dark brown bituminous partings, very local oil stain in coarse crystalline limestone, very local pyrite, 90%. Shale, as above (cave), 10%.
1950-1965	Limestone, light brown, fine- to medium-grained, locally coarse grained with some poor intercrystalline porosity, fair to strong oil stain, black bituminous partings, 80%. Shale, as above, 20%. Siltstone, medium grey, trace.
1965-1970	Limestone, as above, local oil stain, 70%. Shale, as above (cave), 30%.
1970-2000	Limestone, medium and dark brown, locally chalky, medium- to coarse-grained, locally medium brown fragmental (fossils?), local oil stain and poor porosity, in part pin-point, in part vugular, very local white anhydrite filling small vugs, fossiliferous in part (1980-1985), pseudo-oolitic at 1985-1990, 80%. Shale, as above (cave), 20%.
2000-2010	Limestone, medium and dark brown, some light brown, medium-grained, argillaceous local white chalky limestone, much disseminated pyrite, local black specks, very sparse oil staining, 70%. Shale, as above (cave), 20%. Siltstone, medium grey, pepper and salt texture, calcareous possibly not caved, 10%.

<u>Depth Feet</u>	<u>Description</u>
2060-2075	Limestone, buff to creamy, medium- to coarse-grained, <u>fair to good</u> porosity and oil stained, locally a medium grey, fine-grained, limestone, 70%. Shale, as above (cave), 30%. Siltstone, as above, trace.
2075-2080	Limestone, medium grey and dark brown, locally buff, medium- to fine-grained, very local <u>porous (poor)</u> and <u>oil stained</u> , 80%. Shale, as above (cave?), 10%. Siltstone, as above (cave?), 10%.
2080-2085	Limestone, light brown, buff and creamy white, medium- and fine-grained, locally coarse-grained and <u>porous (poor)</u> with weak oil staining, scattered black bituminous specks and fine stringers. Some white chalky calcite, 60%. Shale, medium grey and greenish grey, slightly silty, calcareous, very sparse pale green calcareous shale, probably all caved from above, 40%. Siltstone, medium and dark grey, calcareous and slightly micaceous, trace.
2085-2090	Limestone, as above but very scattered anhydrite crystals, 50%. Shale, as above, 50%.
2090-2100	Limestone, medium grey, fine-grained, buff and coarse-grained, porous (fair to good) and oil stained, local white chalky calcite, 60%. Shale, as above, 20%. Siltstone, medium and dark grey, calcareous and slightly micaceous, 20%.

Muskeg Formation

2100-2105	Limestone, medium grey, fine-grained, buff and coarse-grained, some <u>local porosity</u> and <u>minor oil stain</u> , 50%. Siltstone, medium and dark grey, calcareous and slightly micaceous, 30%. Shale, as above, 20%.
2105-2110	Limestone, as above, 40%. Dolomite and anhydrite, medium grey to buff, medium- to coarse-grained with white anhydrite infilling, 30%. Shale, as above (cave), 30%.
2110-2115	Dolomite and anhydrite, light brown, dense to finely crystalline, white and clear crystalline, anhydrite as infillings, 50%. Limestone, buff to creamy white, medium- and fine-grained, some scattered intercrystalline <u>porosity</u> , 10%. Shale, as above (cave), 40%.

Depth Feet	Description
2115-2130	Dolomite, light brown, dense to finely crystalline, some coarse-grained, <u>porous (poor)</u> , weakly oil stained, dolomitic limestone, 50%. Limestone, buff to creamy white, medium- and fine-grained, some scattered <u>intercrystalline porosity</u> , 10%. Shale, as above (cave), 40%. Anhydrite, crystalline, clear and white crystalline, scattered pyrite, trace+.
2130-2145	Dolomite, medium and light brown, medium-grained, poor to fair <u>intercrystalline porosity</u> , local oil stain, rare sulphur crystals, disseminated pyrite, very locally mottled black, 60%. Shale, as above (cave), 40%.
2145-2210	Dolomite and anhydrite, dolomite, medium brown, locally mottled black, occasional faint oil staining, locally porous and oil stained as at 2195-2205. Anhydrite clear, crystalline to black, stained and brown vug filling. This zone 2145-2210 is very probably a Dolomite-Anhydrite breccia similar to that in the cored section 2465-2515, 60%. Shale, as above (cave), 40%.
2210-2215	Dolomite limestone, buff to light brown, saccharoidal to finely crystalline, locally black stained, 50%+. Anhydrite, patchy, as above, 10%-. Shale, as above (cave), 30%. Siltstone, medium and dark grey, calcareous and slightly micaceous, probably caved material, 10%.
2215-2225	Limestone, black, medium-grained and locally mottled brown, 30%. Dolomite, medium brown, locally mottled black, occasional faint <u>oil stain</u> , 30%. Shale, as above (cave), 30%. Siltstone, as above (cave), 10%.
2225-2230	Dolomite, tan to medium brown, fine-grained and locally saccharoidal, trace of oil staining, fossiliferous, 50%. Limestone, as above, locally reddish brown, 10%+. Shale, as above (cave), 30%-. Anhydrite, crystalline, brown to black stained, some white, 10%-. Siltstone, as above, fossiliferous, trace.
2230-2245	Dolomite, tan to light brown and mottled, medium- to coarse-grained, locally saccharoidal, locally black and limy, sparsely disseminated pyrite, trace of oil staining, 50%. Shale, as above (trace), 50%. Anhydrite, as above, trace.
2245-2255	Dolomite, as above, fine fluorescent specks in tiny vugs, 60%. Shale, as above, 40%. Anhydrite, as above, trace.

Depth Feet	Description
2255-2270	Dolomite, medium brown and dark brown, fine- to coarse-grained, vugular with anhydrite crystals, locally fair <u>intercrystalline porosity</u> , 70%. Shale, as above (cave), 20%+. Anhydrite, as above, 10%-. Limestone, chalky white, trace.
2270-2300	Dolomite, medium and light brown, medium-grained, to saccharoidal, traces of <u>vugular porosity</u> , fair to good <u>vugular porosity</u> 2280-2285, with <u>strong oil staining</u> , light green shale partings at 2290-2295, black bituminous partings and mottled 2295-2300, 70%. Shale, as above (cave), 30%. Anhydrite, as above, trace. Limestone, white chalky, trace.
2300-2320	Dolomite, medium and dark brown, medium to very finely crystalline, considerable black stained (bituminous?) dolomite, local mottling, some poor <u>porous</u> sections and weak oil staining, local white chalky calcite, scattered disseminated pyrite, 80%. Anhydrite, as above, trace. Shale, as above (cave), 20%.
2320-2330	Dolomite, medium brown to very dark brown, medium-to coarse-grained, locally saccharoidal, fair to good <u>intercrystalline porosity</u> and local oil stain, 70%. Shale, as above (cave), 30%. Anhydrite, as above, trace.
2330-2340	Dolomite, as above, 20%. Shale, as above (cave), 70%. Siltstone, medium grey, calcareous, 10%. Anhydrite, as above, trace.
2340-2355	Dolomite, as above, black bituminous partings, 40%. Shale, as above (cave), 60%.
2355-2360	Dolomite, as above (very poor sample), 20%. Shale, as above, 80%. Anhydrite, as above, trace.
2360-2368	Dolomite, medium brown to buff, mottled black, medium- and fine-grained, mostly buff, saccharoidal and <u>porous</u> , <u>good oil staining</u> , 50%. Shale, as above (cave), 50%. Siltstone, as above, trace.
2368-2393	See core description.
2393-2405	Dolomite, light brown to buff, medium- and coarse-grained, in part mottled, local white chalky calcite, local black bituminous partings, occasional <u>oil staining</u> , 80%. Shale, as above, 20%. Siltstone, as above, trace.

<u>Depth Feet</u>	<u>Description</u>
2405-2445	Dolomite, medium brown and dark brown, locally buff, medium-grained and in part saccharoidal, locally mottled black, fair to good porosity as at 2405 - 2410 and 2425 - 2440, scattered weak oil staining 50%. Shale, as above, 50%.
2445-2460	Dolomite, very dark brown and medium brown, medium-grained, mottled and black bituminous partings, very local light buff and saccharoidal, <u>weak oil stain</u> and <u>poor intercrystalline porosity</u> at 2455 - 2460, 60%. Shale, as above (cave), 40%.
2460-2465	Dolomite, medium brown and dark brown, locally light buff, mottled black in part, <u>fair to good porosity</u> and <u>oil stain</u> , 70%. Shale, as above, 30%.
2465-2515	See core description.
2515-2520	Dolomite, medium and dark brown, black mottling and black bituminous partings, <u>local intercrystalline porosity</u> , <u>strong oil staining</u> , 70%. Shale, as above, 30%.
2520-2535	Dolomite, as above, very local oil stain, local gypsum.
<u>Keg River Formation</u>	
2535-2570	Dolomite, very light brown to buff, medium- and coarse-grained, locally saccharoidal, fossiliferous in part at 2535-2540, 2550-2555, 2560-2565, fair to good intercrystalline porosity, black bituminous partings, very locally black fine-grained dolomite, 80%. Shale, as above (cave), 20%.
2570-2640	Dolomite, as above, fossiliferous at 2570-2575, fair to good intercrystalline and vugular porosity, traces of anhydrite and gypsum from 2585-2620, 80%. Shale, as above (cave), 20%. Anhydrite, white, trace. Shale, bright green, slightly calcareous with disseminated pyrite 2635-2640, trace.
2640-2690	Dolomite, medium brown to light buff, medium- and fine-grained, locally mottled, scattered black bituminous partings, very locally coarse-grained and saccharoidal, 70%. Shale, as above (cave), 20%. Siltstone, as above (cave), 10%. Shale, pale greenish grey, silty and slightly calcareous at 2655-2660, trace.

<u>Depth Feet</u>	<u>Description</u>
2690-2715	Dolomite, medium brown to buff, medium- and fine-grained, locally mottled black, black bituminous partings, very local <u>weak oil stain</u> in medium brown, medium-grained, dolomite, fossiliferous at 2705, 60%. Shale, as above (cave), 30%. Siltstone, as above (cave). Anhydrite, grey to greyish brown, traces at 2695-2715, trace.
2715-2720	Dolomite, as above, 40%. Shale (1), as above (cave), 20%. Shale (2), light green, silty, calcareous, 40%.
<u>Chinchaga Formation</u>	
2720-2725	Dolomite, as above, 40%. Shale (1), as above (cave), 40%. Shale (2), light green, silty calcareous, 10%. Anhydrite, brownish to grey, 10%.
2725-2730	Dolomite, as above, 50%. Shale (1), as above (cave), 40%. Shale (2), light green, silty, calcareous, 10%. Anhydrite, as above, trace.
2730-2735	Dolomite, pale buff, finely crystalline, locally saccharoidal, 50%. Anhydrite, brown to dark brown, 20%+. Shale (1), as above (cave), 20%+. shale (2), greenish grey, as above, 10%-.
2735-2740	Dolomite, medium to light brown, medium- and fine-grained, fossiliferous (crinoid stems) and anhydritic, 40%. Anhydrite, light brown, dolomitic, 40%. Shale (1), as above (cave), 10%. Shale (2), as above, trace. Siltstone, medium grey, calcareous, 10%-.
2740-2745	Dolomite, as above (fossiliferous), 30%. Anhydrite, as above, 20%. Shale (1), as above (cave), 30%. Shale (2), as above, 10%-. Siltstone, as above (cave), 10%+.
2745-2750	Dolomite, as above, 30%. Shale, as above (cave), 40%. Siltstone, as above (cave), 20%. Anhydrite, creamy brown, 10%.
2750-2755	Dolomite, as above, 40%. Shale (1), as above (cave), 20%. Shale (2), light green, silty, calcareous, 20%. Anhydrite, creamy brown, 20%.

<u>Depth Feet</u>	<u>Description</u>
2755-2760	Dolomite, as above, 40%. Shale (1), as above (cave), 10%. Shale (2), pale green, as above, 30%. Anhydrite, creamy brown, 10%. Siltstone, as above (cave), 10%.
2760-2765	Dolomite, very pale brown and buff, medium- and fine-grained, 10%. Anhydrite, buff, 10%. Shale, medium grey, calcareous, dark grey, silty, olive green, calcareous, pale greyish green, 70%. Siltstone, as above, 10%.
2765-2770	Dolomite, as above, 10%. Shale (1), as in 2760-2765, 80%. Shale (2), very silty, black speckled, non-calcareous, 10%. Granite, sandstone, mixed grains of granite appear highly weathered, trace+.
<u>PRECAMBRIAN (2773 E-log)</u>	
2770-2775	Granite, pink orthoclase, weathered with admixture of caved shale, dolomite and siltstone.
2775-2780	Granite, quartz hornblend, porphyritic, much caved dolomite, shale and siltstone.
2780-2785	Granite and grano-diorite with caved shale, dolomite and siltstone.
2785-2790	Grano-diorite with caved shale, etc.
2790-2805	Diorite with caved shale, etc.
2805 (Circulated sample)	Diorite, 90%. Shale and siltstone, cave, 10%.
T.D.	2805 - Driller 2806 - Schlumberger

Note: While the Granite-Wash is not recognized in the samples nor indicated on the logs it is possible that a thin section of it may be present between 2760 and 2770. The nature of the samples would indicate the Wash was eroded, as was the surface of the Precambrian, and scattered remnants of wash and granite were included in the basal Chinchaga.

The Pine Point could be represented at around 2220 in a thin limestone section, but is most likely absent.

CORE DESCRIPTION - CORE NO. 1

Well Name: Murphy Canada Alexandra Falls No. 2

Location: Latitude 60° 15' 30.8"
Longitude 116° 34' 41.96"

39 feet cut - 39 feet recovered.

Slave Point Formation

- 1896-1901 Limestone - brown to reddish brown, fine-grained to micro-crystalline, stylolitic, bituminous streaks and pyrobituminous small fractures, very local and sparse white anhydrite in small vugs (filled), core bleeds a little brown oil from very locally spaced areas of pin-point porosity.
- 1901-1925 Limestone - brown to reddish brown in part greyish brown, fine-grained to micro-crystalline, stylolitic in part, bituminous in part, local pyrobitumen, very tight, slight salty taste in fresh fractures.
- 1925-1935 Limestone - brown to reddish brown, in part greyish brown to medium grey, fine-grained, locally medium-grained, local pyrobitumen on bedding (?) plane, very sparse white anhydrite in vugs (filled) bleeds a little oil in spots, salty taste on some fresh fractures.

CORE DESCRIPTION - CORE NO. 2

Well Name: Murphy Canada Alexandra Falls No. 2

Location: Latitude 60° 15' 30.8" N.
Longitude 116° 34' 41.96" W.

25 feet cut - 25 feet recovered.

Muskeg Formation

- 2368-2371.2 Dolomite and gypsum, dolomite, brown, medium and coarse grained, stylolitic, fair porosity, oil stained and salt water.
- 2371.2-2372.6 Dolomite, anhydrite and gypsum, dolomite as above, but tight, bedding plane fault at 2371.9, slickensided, dead oil on fault plane.
- 2372.6-2377.4 Dolomite, medium grey to reddish brown, medium-grained, gypsiferous in part, stylolitic, evidence of bedding plane movement, bituminous partings and petroliferous odour on fresh fracture.
- 2377.4-2378.0 Dolomite, anhydritic, reddish brown, medium-grained, fair to good intercrystalline, porosity, locally vugular, oil weep at 2377.7 to 2378.1, salt water in balance of porosity to 2377.9.
- 2378.0-2379.8 Dolomite, medium grey, medium to coarse grained, oil weep at 2378.1, salt water to 2379.8, poor porosity.
- 2379.8-2380.3 Shale or dolomitic shale, medium grey, stylolitic, bituminous partings, slickensided on bedding planes, scattered pyrite. Fault?
- 2380.3-2381.6 Dolomite, medium grey to brownish grey, gypsiferous and coarsely crystalline, anhydritic inclusions on bedding planes, shaly partings.
- 2381.6-2383.3 Dolomite, brownish grey, medium- and fine-grained, shale parting at 2381.6, bituminous partings throughout, local anhydrite.
- 2383.3-2383.9 Dolomite, brownish, oil stained and porous (fair), weeps little oil through small vugular pores, laminated bituminous partings, salt water.
- 2383.9-2384.4 Dolomite, brown, medium- to fine-grained, stylolitic, gypsiferous and anhydritic, especially at 2384.4.
- 2384.4-2385.4 Dolomite, as above, considerable anhydrite at 2384.4 and in blebs throughout, weeps oil and salt water saturated to 2385.4.

- 2385.4-2390.2 Dolomite, light grey, medium- and coarse-grained, stylolitic, gypsiferous, poor porosity at 2387.1 - 2388.0, salt water and bituminous partings.
- 2390.2-2392.3 Dolomite, very light grey, medium- to coarse-grained, stylolitic and gypsiferous, fair porosity, trace of oil.
- 2392.3-2393.0 Dolomite, light grey and brownish grey, medium- and coarse-grained, stylolitic, bituminous partings and gypsiferous.

Following samples sent to Chemical and Geological Laboratories:

2368 - 2368.7
2370.3 - 2370.8
2377.4 - 2378.0
2383.3 - 2383.9
2384.4 - 2385.0
2391.8 - 2392.3

CORE DESCRIPTION - CORE NO. 3

Well Name: Murphy Canada Alexandra Falls No. 2

Location: Latitude 60° 15' 30.8" N.
Longitude 116° 34' 41.96" W.

50 feet cored - 50 feet recovered.

- 2465 -2477.8 Dolomite, brown, medium- to fine-grained, very local small vugular porosity, stylolitic, gypsum and crystalline anhydrite in blebs and fillings, salty, dead oil on bedding planes.
- 2477.8-2479.2 Dolomite, brown, coarsely crystalline, oolitic (?), crystalline, anhydrite to smoky white, stylolitic, dead oil on bedding planes, smells gassy (H₂S).
- 2479.2-2488.6 Dolomite, medium grey and light grey, locally brownish, medium and very finely crystalline, gypsiferous, local vugular porosity, salt water, slight odour of H₂S, dead oil on bedding planes. 2484.0-2485.0 vugular porosity with salt water, scattered porosity with salt water to 2488.6.
- 2488.6-2489.0 For the most part gypsum and anhydrite in blebs with medium grey to brownish grey, coarsely crystalline dolomite. Solution breccia (?).
- 2489.0-2491.0 Dolomite, reddish brown, medium to coarsely crystalline, porous and weeps salt water.
- 2491.0-2491.7 Dolomite, brown, medium-grained, some intercrystalline porosity, salty.
- 2491.7-2492.7 Dolomite, medium grey to brownish grey, local porosity, weeps little brown oil, gypsiferous in blebs.
- 2492.7-2493.3 Dolomite, medium grey, stylolitic, anhydritic, slight trace intercrystalline porosity.
- 2493.3-2494.7 Dolomite, as above, porous, salt water, crystalline, anhydrite and gypsum.
- 2494.7-2495.7 Dolomite, reddish brown, medium-grained, good intercrystalline porosity, veined anhydrite, oil stained and weeps brown oil.
- 2495.7-2506.9 Dolomite, brown, medium-grained, fair intercrystalline and some scattered vugular porosity, salt water and weeps little oil, anhydrite and gypsiferous.

- 2506.9-2511.4 Dolomite, brown, medium-grained, locally very coarse-grained, considerable anhydrite, scattered vugular porosity, weeps salt water.
- 2511.4-2515 Dolomite and anhydrite, breccia (solution) dolomite is dark brown, medium- and fine-grained, local intercrystalline porosity, black bituminous partings.

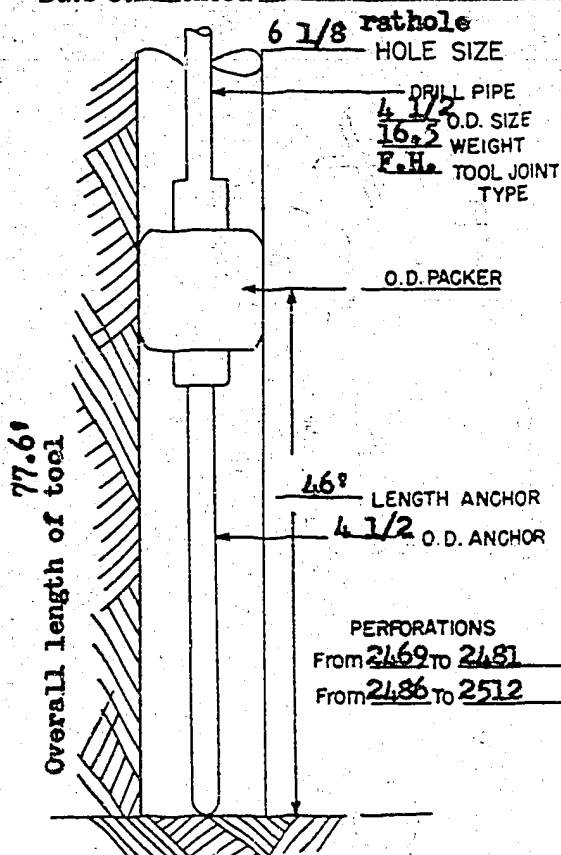
Notes: In all cored section all sections showed dead oil and/or bitumen in partings on knobby bedding planes.

Following samples sent to Geological and Chemical Laboratories:

2491.3' - 2492.1'
2496.1' - 2496.5'

DRILL STEM TEST REPORT

Murphy Canada
 Well Name Alexandra Well No. 2 TEST No. 1 Run No. 1
 Field Wildcat District South Tathlina Lake Area
 Province Northwest Territories
 Testing Company Johnson Testers Operator H. Beaver
 Date Commenced March 7, 1960 Date Completed March 7, 1960



Formation Tested Presquile Dolomite (Muskeg)
 Section Tested. From 2469 To 2515 ft.
 Mud Properties: Wt. 10.8 Vis. 9.3 sec.
 Filtrate 6.4 c.c. Filter Cake _____ Gel _____
 Water Cushion NIL ft.
 Type of Packer Conventional
 Choke Size, surface _____ Bottom Hole 1/2

Time	Remarks
Tester started in hole 11:00 A.M.	Initial shut in
Tester on bottom 12:00 P.M.	tool didn't operate. No blow so
Tester opened 12:31 P.M.	pulled after 34
Tester closed 1:05 P.M.	mts. for re-run
Tester pulled loose 1:05 P.M.	if test charts
Tester out of hole 2:00 P.M.	showed re-run
Total time tester open 34 mts.	and have time for re-run before dark.

Weight:
 Set on Packer 32000 lbs. Pull Packer Loose 40000 lbs.
 Weight drill pipe Before Test 32000 After Test 32000
 Mud level in casing Full throughout
 Nature of Blow None to very faint
 Maximum Surface Pressure _____
 Maximum Trap Pressure _____

Gas Flow: _____ MCF/day: How Gauged _____ By _____
 Oil Flow _____ bbls. in _____ hrs: Est. 24-hr. Flow Rate _____ How Gauged _____
 Size flow line _____ Inch. I.D. Size Orifice _____ inch.

Recovery in Drill Pipe:

Remarks

Free oil _____ stands _____ feet _____ bbls. _____
 Mud _____ stands 64 feet 1 bbls. _____
 Water _____ stands _____ feet _____ bbls. _____
 Gravity of oil _____ ° API @ _____ °F.
 Oil sample obtained _____ Water sample obtained _____

Pressures:

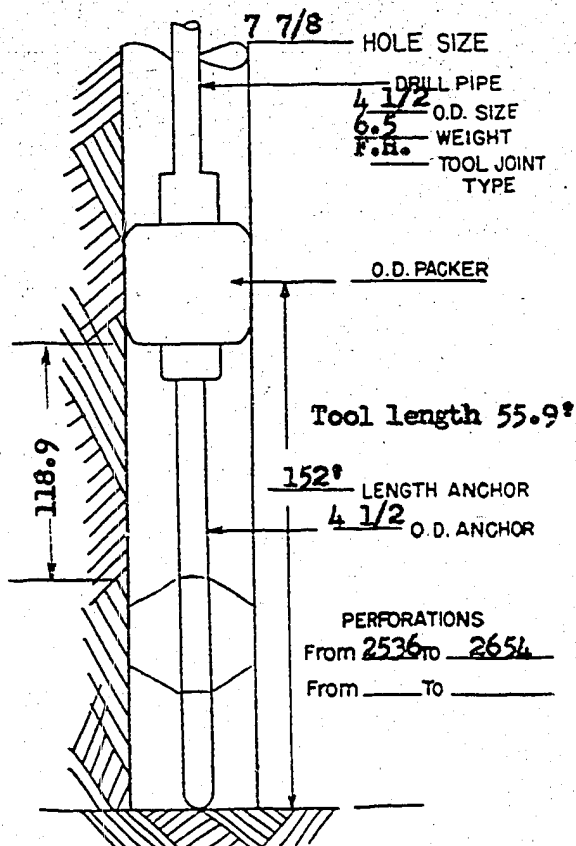
Type of pressure bomb (s) used _____
 Maximum Flowing Pressure Initial - zero Final - zero PSI
 Minute Shut in Pressure _____ PSI
 Static Mud Pressure after unseating packer _____ PSI
 Mechanically, was Test satisfactory? Yes

REMARKS: Hydrostatic pressure 1600 psi
" in hole final 1600 psi
Chart indicated normal operation of tester.
Core from this section showed some bleeding oil, good porosity and s.w.

Engineer: Angus G. MacKenzie, P.Eng.
J. C. SPROULE & ASSOCIATES, CALGARY.

DRILL STEM TEST REPORT

Murphy Canada
 Well Name Alexandra Falls Well No. 2 District South Tathlina Lake Area
 Field Wildcat Province Northwest Territories
 Testing Company Johnson Testers Operator H. Beaver
 Date Commenced March 24, 1960 Date Completed March 24, 1960



Formation Tested Chinchaga
 Section Tested. From 2536 To 2654 ft.
 Mud Properties: Wt. 11.1 Vis. 105 sec. } Gyp.
 Filtrate 4.7 c.c. Filter Cake 2/37 Gel
 Water Cushion N11 ft.
 Type of Packer Bobtail - straddles - bypass
 Choke Size, surface 1/2" Bottom Hole 1/2"

Time	Remarks
Tester started in hole <u>4:15 A.M.</u>	
Tester on bottom <u>6:11 A.M.</u>	
Tester opened <u>6:15 A.M.</u>	
Tester closed <u>7:20 A.M.</u>	
Tester pulled loose <u>7:50 A.M.</u>	
Tester out of hole <u>9:50 A.M.</u>	
Total time tester open <u>65 mts.</u>	

Weight:

Set on Packer 38000 lbs. Pull Packer Loose 55000 lbs.
 Weight drill pipe Before Test 38000 After Test 47000
 Mud level in casing Full throughout test
 Nature of Blow Strong initial blow (air)
 Maximum Surface Pressure _____
 Maximum Trap Pressure _____

Gas Flow: N11 MCF/day: How Gauged _____ By _____
 Oil Flow N11 bbls. in _____ hrs: Est. 24-hr. Flow Rate _____ How Gauged _____
 Size flow line _____ Inch. I.D. Size Orifice _____ inch.

Recovery in Drill Pipe:

	stands	feet	bbls.	Remarks
Free oil				
Mud		<u>250</u>		<u>Mud, slightly salty</u>
Water		<u>1344</u>		<u>Mud and salt water</u>
Gravity of oil		° API @ _____	° F.	
Oil sample obtained				Water sample obtained <u>4 samples in quart sealers</u>

Pressures:

(1) top (2) middle (3) 240' above tool (4) bottom
 Type of pressure bomb (s) used Two T-recorders 1 meg std
 Maximum Flowing Pressure Initial hydrostatic 1420 PSI
30 Minute Shut in Pressure 1150 PSI
 Static Mud Pressure after unseating packer Initial flow 205 PSI
 Mechanically, was Test satisfactory? Final flow 800 PSI
" hydrostatic 1420

REMARKS: Mechanically, was Test satisfactory? Yes
Strong initial air blow gradually died down (about 25%) came back strong toward end test. Slight odour from salt water.

Engineer: Angus G. MacKenzie, P.Eng.
J. C. SPROULE & ASSOCIATES, CALGARY.

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field Northwest Territories Well No. Murphy Canada Alexandra No. 2.
 Operator Murphy-Canada Oil Company Date Received March 29, 1960.
 Formation _____ Depths _____
 Other pertinent data D.S.T. No. 2. Top fluid.

Date April 7, 1960Lab. No. C 2812-1

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₂	HCO ₃	OH	H ₂ S
9714	7765	1021		1475	30500		195		

MILLIGRAM EQUIVALENTS

422.58	387.47	83.93		30.68	860.10		3.20		
--------	--------	-------	--	-------	--------	--	------	--	--

MILLIGRAM EQUIVALENTS IN PERCENT

23.64	21.67	4.69		1.72	48.10		0.18		
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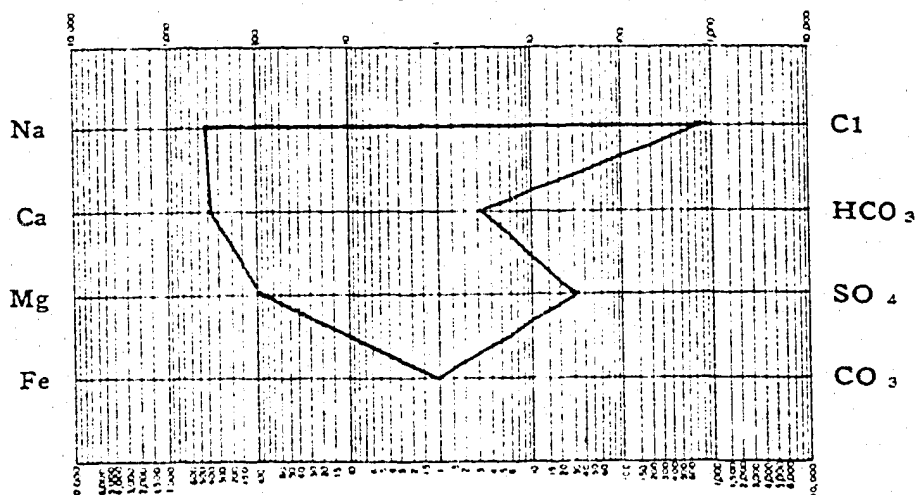
Total Solids in Parts per Million

By evaporation 68,720
 After ignition 45,520
 Calculated 50,571
 Specific Gravity 1.037
 Observed pH 7.4
 Resistivity 0.165 ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity 47.28
 Secondary salinity 52.36
 Primary alkalinity ---
 Secondary alkalinity 0.36
 Chloride salinity 96.55
 Sulfate salinity 3.45

Remarks and conclusions Heavy organic matter present in total solids.

LOGARITHMIC PATTERN
MEQ per unit

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WATER ANALYSIS REPORT

Field.....Northwest Territories..... Well No. Murphy Canada Alexandra No. 2.....

Operator Murphy-Canada Oil Company..... Date Received March 29, 1960.....

Formation..... Depths.....

Other pertinent data D.S.T. No. 2. Middle Fluid.....

Date April 7, 1960 Lab. No. C 2812-2

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na + K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
20591	18335	2808		1095	71500		145		

MILLIGRAM EQUIVALENTS

895.72	914.92	230.82		22.78	2016.30		2.38		
--------	--------	--------	--	-------	---------	--	------	--	--

MILLIGRAM EQUIVALENTS IN PERCENT

21.94	22.41	5.65		0.56	49.38		0.06		
-------	-------	------	--	------	-------	--	------	--	--

Total Solids in Parts per Million

By evaporation 139,820.....

After ignition 110,600.....

Calculated 114,400.....

Specific Gravity 1.085.....

Observed pH 6.7.....

Resistivity 0.088 ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity 43.88.....

Secondary salinity 56.00.....

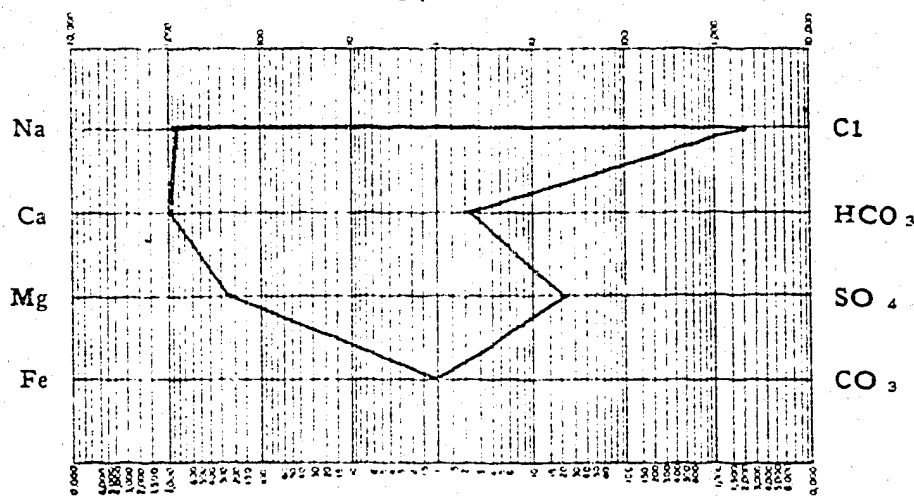
Primary alkalinity ---.....

Secondary alkalinity 0.12.....

Chloride salinity 98.88.....

Sulfate salinity 1.12.....

Remarks and conclusions Heavy Organic matter present in total solids.....

LOGARITHMIC PATTERN
MEQ per unit

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

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Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field.....Northwest Territories..... Well No. Murphy Canada Alexandra No. 2.....

Operator Murphy-Canada Oil Company..... Date Received March 29, 1960.....

Formation..... Depths.....

Other pertinent data D.S.T. No. 2..... Bottom Fluid.....

Date April 7, 1960 Lab. No. C 2812-3

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
27257	25453	2808		938	94500		135		

MILLIGRAM EQUIVALENTS

1185.70	1270.10	230.82		19.51	2664.90		2.21		
---------	---------	--------	--	-------	---------	--	------	--	--

MILLIGRAM EQUIVALENTS IN PERCENT

22.07	23.64	4.29		0.36	49.60		0.04		
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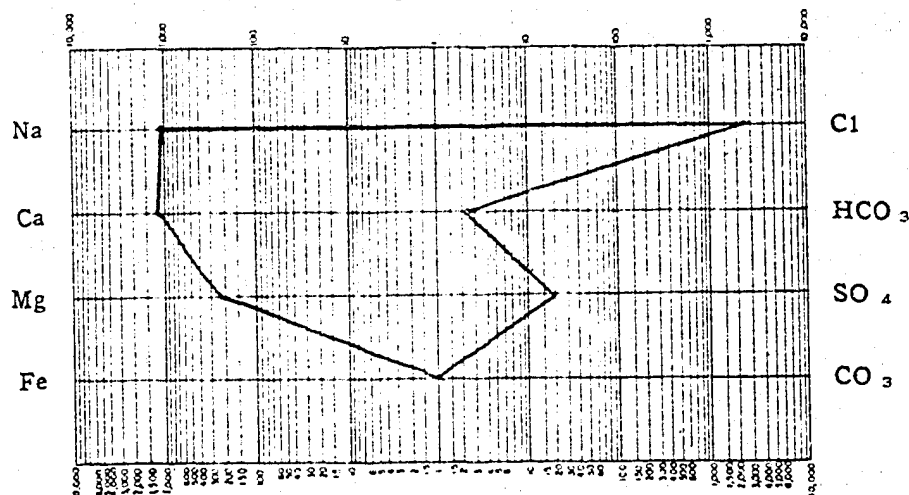
Total Solids in Parts per Million

By evaporation	183,540
After ignition	144,020
Calculated	151,022
Specific Gravity	1.108
Observed pH	6.5
Resistivity	0.076 ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity	44.14
Secondary salinity	55.78
Primary alkalinity	---
Secondary alkalinity	0.08
Chloride salinity	99.28
Sulfate salinity	0.72

Remarks and conclusions Heavy organic matter present in total solids.

LOGARITHMIC PATTERN
MEQ per unit

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

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Edmonton

Fort St. John

Calgary

WATER ANALYSIS REPORT

Field.....Northwest Territories Well No. Murphy Canada Alexandra No. 2.....

Operator Murphy-Canada Oil Company.....Date Received March 29, 1960.....

Formation.....Depths.....

Other pertinent data D.S.T. No. 2. 240 feet above tool.....

Date April 7, 1960 Lab. No. C 2812-4

PARTS PER MILLION (MILLIGRAMS PER LITER)

Na & K	Ca	Mg	Fe	SO ₄	Cl	CO ₃	HCO ₃	OH	H ₂ S
27054	25021	3319		846	95000		100		

MILLIGRAM EQUIVALENTS

1176.87	1248.55	272.82		17.60	2679.00		1.64		
---------	---------	--------	--	-------	---------	--	------	--	--

MILLIGRAM EQUIVALENTS IN PERCENT

21.81	23.14	5.05		0.33	49.64		0.03		
-------	-------	------	--	------	-------	--	------	--	--

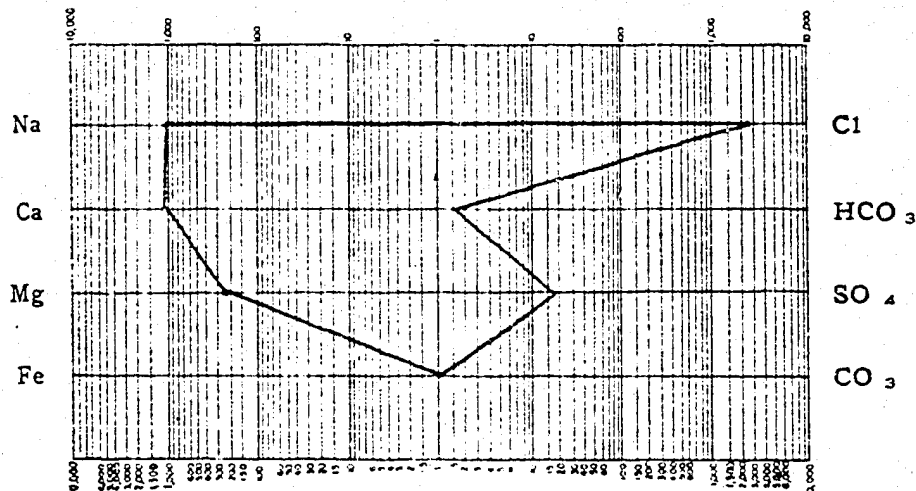
Total Solids in Parts per Million

By evaporation185,880
 After ignition145,580
 Calculated151,289
 Specific Gravity1.108
 Observed pH6.6
 Resistivity0.076 ohm meters @ 68° F.

Properties of Reaction in Percent

Primary salinity43.68
 Secondary salinity56.32
 Primary alkalinity---
 Secondary alkalinity0.06
 Chloride salinity99.34
 Sulfate salinity0.66

Remarks and conclusions Heavy organic matter present in total solids.

LOGARITHMIC PATTERN
MEQ per unit

GEOLOGICAL AND ENGINEERING SUMMARY

Well Name: Murphy Canada Alexandra Falls No. 2

Location: Latitude 60° 15' 30.3" N.
Longitude 116° 34' 41.96" W.

Murphy Canada Alexandra Falls No. 2 is located in the east-central portion of Permit No. 1400, approximately one mile west of the Mackenzie Highway at mile 53. The well was drilled to the Precambrian at a total depth of 2906 feet.

The top of the Middle Devonian Slave Point formation was encountered at a depth of 1870 feet. Part of this formation was cored and showed tight, though petroliferous, limestone. The top of the Watt Mountain was cut at 2032 feet and showed some porosity. The Muskeg formation started at 2100 feet, was quite anhydritic, had some porosity and oil staining, particularly between 2300 and 2400 feet. This formation was cored from 2368 to 2393 feet. This section did not warrant testing. A lower zone, from 2465 to 2515 feet, was cored and a rat-hole drill stem test run. Returns were 60 feet of mud. The core showed some scattered porous sections and a little bleeding brown oil.

The Keg River formation was topped at 2536 feet and showed very sparse oil staining but fair to very good porosity from 2520 to 2640 feet. A drill stem test on the zone from 2536 to 2654 feet returned mud and considerable salt water.

The Chinchaga, topped at 2720 feet, was quite anhydritic throughout and shaly toward the base.

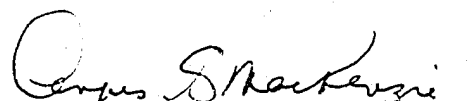
No Granite Wash was evident and the Precambrian was cut at 2773 feet.

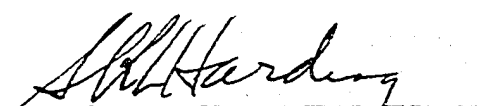
Comparative Formation Thicknesses

	<u>No. 1 Well</u>	<u>No. 2 Well</u>
	<u>Feet</u>	<u>Feet</u>
Hay River Formation	1215	1240
Slave Point Formation	131	162
Watt Mountain Formation	48	68
Muskeg Formation	336	436
Keg River Formation	303	184
Chinchaga Formation	100	53
Granite Wash	40	111
Totals	<u>2173</u>	<u>2145</u>

The hole presented no problems whatever and drilling continuity was maintained from spud to abandonment.

After drilling into the Precambrian the hole was logged, tested in the Chinchaga and plugged in accordance with good practice. With the approval of the Conservation Board the hole was abandoned.


Angus G. Mackenzie, P. Eng.


S.R.L. Harding, P. Eng.

1009 - 4th Avenue S.W.,
Calgary, Alberta,
April 29, 1960.

JOHNSTON TESTERS LTD.

321 - 50th AVENUE S.E., CALGARY, ALBERTA

PHONE CH 3-3461



SERVICE REPORT

Pressure Recorder: No. A-139		Cap. 7000#		Location Outside 2515'	
PRESSURE DATA		Point	Pressure	Point	Pressure
A Initial Hyd.	1506#				
B Initial Shut-In	-				
C Initial Flow	47#				
D Final Flow	47#				
E Final Shut-In	-				
F Final Hyd.	1470#				
Remarks:					

SECONDARY RECORDER

Pressure Recorder: No. T-50		Cap. 7000#		Location Outside 2486'	
PRESSURE DATA		Point	Pressure	Point	Pressure
A Initial Hyd.	1406#				
B Initial Shut-In	-				
C Initial Flow	29#				
D Final Flow	28#				
E Final Shut-In	-				
F Final Hyd.	1398#				
Remarks:					

PRIMARY RECORDER

JOHNSTON TESTERS LTD.

321 - 50th Avenue S.E.



Calgary, Alberta

Phone CH 3-3461

COMPANY	Murphy Canada Oil Company	TICKET #	B-1156
FIELD	Wildcat	P.O. #	14068
WELL NAME	Murphy Canada Alexandra #2		
COMPANY REP.	C. Irving	JOHNSTON OP.	H. Beaver

GENERAL TEST DATA

TYPE TEST	Open hole-rat hole	BOTTOM HOLE TEMP.	94°F
TOTAL DEPTH	2515'	CHOKE SIZE	1/2"
INTERVAL TESTED	2469'-2515'	FLUID CUSHION TYPE	AMT
TIME STARTED IN HOLE	11:00 A.M. P.M.	AIR CHAMBER SIZE I.D.	AMT
TIME TOOL ON BOTTOM	A.M. P.M.	WAS TOOL CHASED TO BOTTOM	NO
TIME TOOL OPENED	A.M. P.M.	DID PACKERS HOLD	YES
INITIAL SHUT-IN PERIOD		WAS TOOL PLUGGED	NO
FLOW PERIOD	34 mins.	WAS JARRING NECESSARY	NO
FINAL SHUT-IN PERIOD		WAS TEST REVERSED OUT	NO

REMARKS Test was pulled and re-set tool thought to be plugged, charts revealed dead zone-----Test satisfactory

AIR OR GAS BLOW Good initial puff dying to nil in 10 minutes.

FLUID RECOVERY. 64 feet of dead mud.

SURFACE INFORMATION WHEN CHOKE OR ORIFICE USED

TIME	MAXIMUM PRES.	CHOKE SIZE
TIME	MAXIMUM PRES.	CHOKE SIZE
TIME	MAXIMUM PRES.	CHOKE SIZE
TIME	MAXIMUM PRES.	CHOKE SIZE
TIME	MAXIMUM PRES.	CHOKE SIZE

OTHER TEST DATA

MAIN HOLE SIZE	7 7/8"	RAT HOLE SIZE	6 1/8"	DRILL PIPE SIZE	4 1/2 F.E.
TYPE MUD	Gyp	WEIGHT	10.7	VISCOSITY	93
TYPE PACKER'S	1 Conv.	SIZE	5 1/2"	TYPE	SIZE

RECORDERS:

TOP NO.	T-50	CAPACITY	7000#	INSIDE ☐	OUTSIDE ☒	DEPTH	2486'
BOTTOM	A-139	CAPACITY	7000#	INSIDE ☐	OUTSIDE ☒	DEPTH	2515'
EXTRA		CAPACITY		INSIDE ☐	OUTSIDE ☐	DEPTH	

NO. SERVICE REPORTS 12 - Amurex Oil Company Calgary

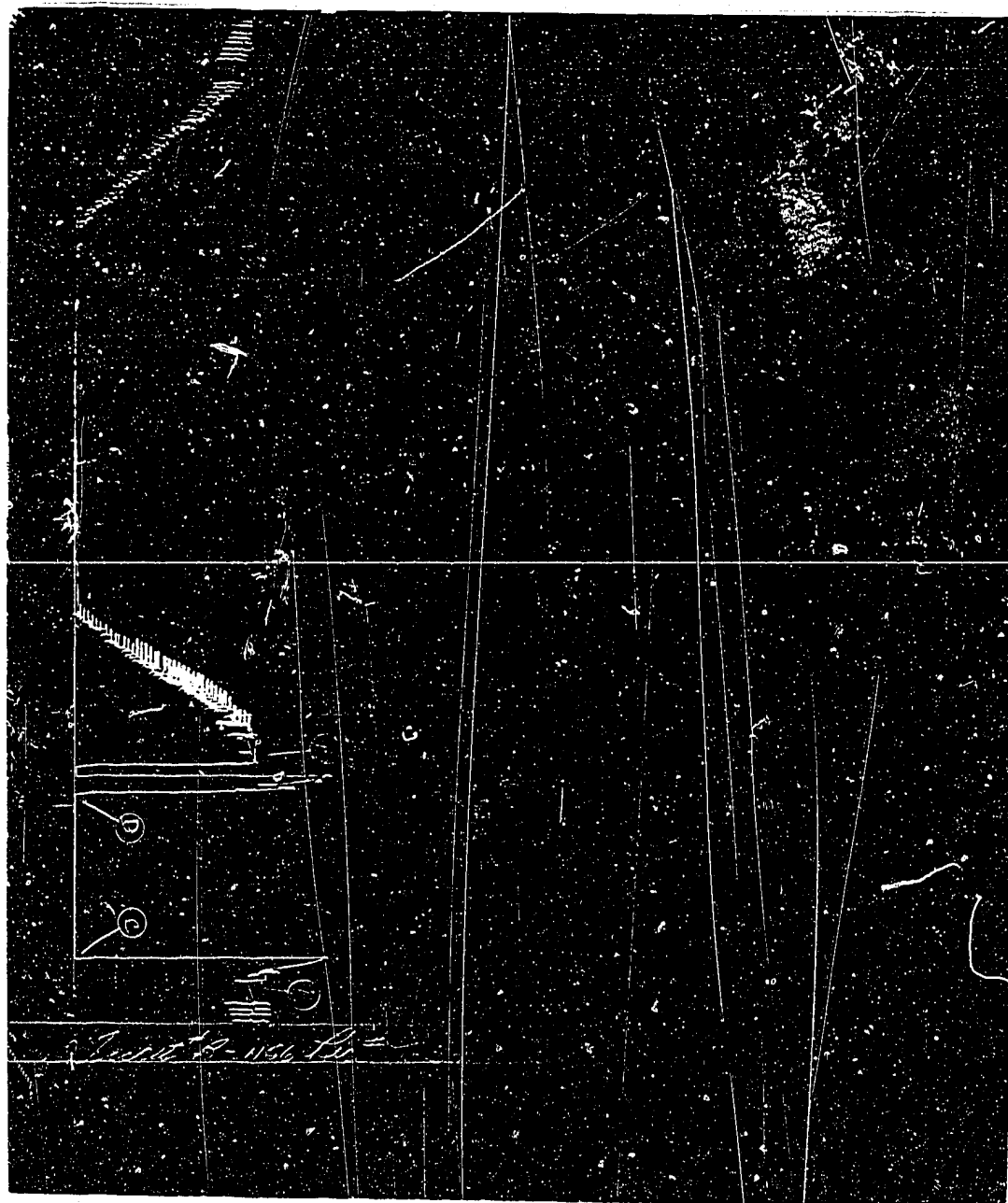
MURPHY CANADA OIL COMPANY

60° 15' 3.8" Lat 116° 34' 41.96" Long
MURPHY CANADA ALEXANDRA #2

WELL NAME AND NUMBER

TEST NO. 1
DATE MARCH, 23, 1960

DA 79





JOHNSTON TESTERS LTD.

321 - 50th AVENUE S.E., CALGARY, ALBERTA

PHONE CH 3-3461



SERVICE REPORT

Pressure Recorder: No. T-50 Cap. 7000# Location Outside 2565'

PRESSURE DATA		Point	Pressure	Point	Pressure
A Initial Hyd.	1439#				
B Initial Shut-In					
C Initial Flow	232#				
D Final Flow	783#				
E Final Shut-In	1061#				
F Final Hyd.	1435#				
Remarks:					

SECONDARY RECORDER

Pressure Recorder: No. T-4955 Cap. 3000# Location Inside 2526'

PRESSURE DATA		Point	Pressure	Point	Pressure
A Initial Hyd.	1420#				
B Initial Shut-In					
C Initial Flow	212#				
D Final Flow	769#				
E Final Shut-In	1045#				
F Final Hyd.	1415#				
Remarks:					

PRIMARY RECORDER

JOHNSTON TESTERS LTD.

321 - 50th Avenue S.E.



Calgary, Alberta

Phone CH 3-3461

COMPANY Murphy Canada Oil Company TICKET # B-1157
 FIELD Wildcat P.O. #
 WELL NAME Murphy Canada Alexandra #2
 COMPANY REP. A. Mackenzie JOHNSTON OP. H. Beaver

GENERAL TEST DATA

TYPE TEST	By-pass straddle	BOTTOM HOLE TEMP.	93°F
TOTAL DEPTH	2806'	CHOKE SIZE	1/2"
INTERVAL TESTED	2536'-2654'	FLUID CUSHION TYPE	AMT
TIME STARTED IN HOLE	4:15 A.M. P.M.	AIR CHAMBER SIZE I.D.	AMT
TIME TOOL ON BOTTOM	A.M. P.M.	WAS TOOL CHASED TO BOTTOM	NO
TIME TOOL OPENED	A.M. P.M.	DID PACKERS HOLD	YES
INITIAL SHUT-IN PERIOD		WAS TOOL PLUGGED	NO
FLOW PERIOD	60 mins.	WAS JARRING NECESSARY	NO
FINAL SHUT-IN PERIOD	30 mins.	WAS TEST REVERSED OUT	NO

REMARKS Test satisfactory

AIR OR GAS BLOW Good initial puff steady air blow throughout test weakening slightly then recovering 5 minutes before shut in time.

FLUID RECOVERY. 1594 feet of salty water.

SURFACE INFORMATION WHEN CHOKE OR ORIFICE USED

TIME	MAXIMUM PRES.	CHOKE SIZE
TIME	MAXIMUM PRES.	CHOKE SIZE
TIME	MAXIMUM PRES.	CHOKE SIZE
TIME	MAXIMUM PRES.	CHOKE SIZE
TIME	MAXIMUM PRES.	CHOKE SIZE

OTHER TEST DATA

MAIN HOLE SIZE 7 7/8" RAT HOLE SIZE DRILL PIPE SIZE 4 1/2" F.H.
 TYPE MUD Gyp WEIGHT 11.1 VISCOSITY 105 WATER LOSS 4.7 FILTER CAKE 2/32
 TYPE PACKER'S 2 B.T. SIZE 6 5/8" TYPE SIZE

RECORDERS:

TOP NO. T-4955 CAPACITY 3000# INSIDE ☒ OUTSIDE ☐ DEPTH 2526'
 BOTTOM T-50 CAPACITY 7000# INSIDE ☐ OUTSIDE ☒ DEPTH 2565'
 EXTRA CAPACITY INSIDE ☐ OUTSIDE ☐ DEPTH
 NO. SERVICE REPORTS 12 - Amurex Oil Company Calgary

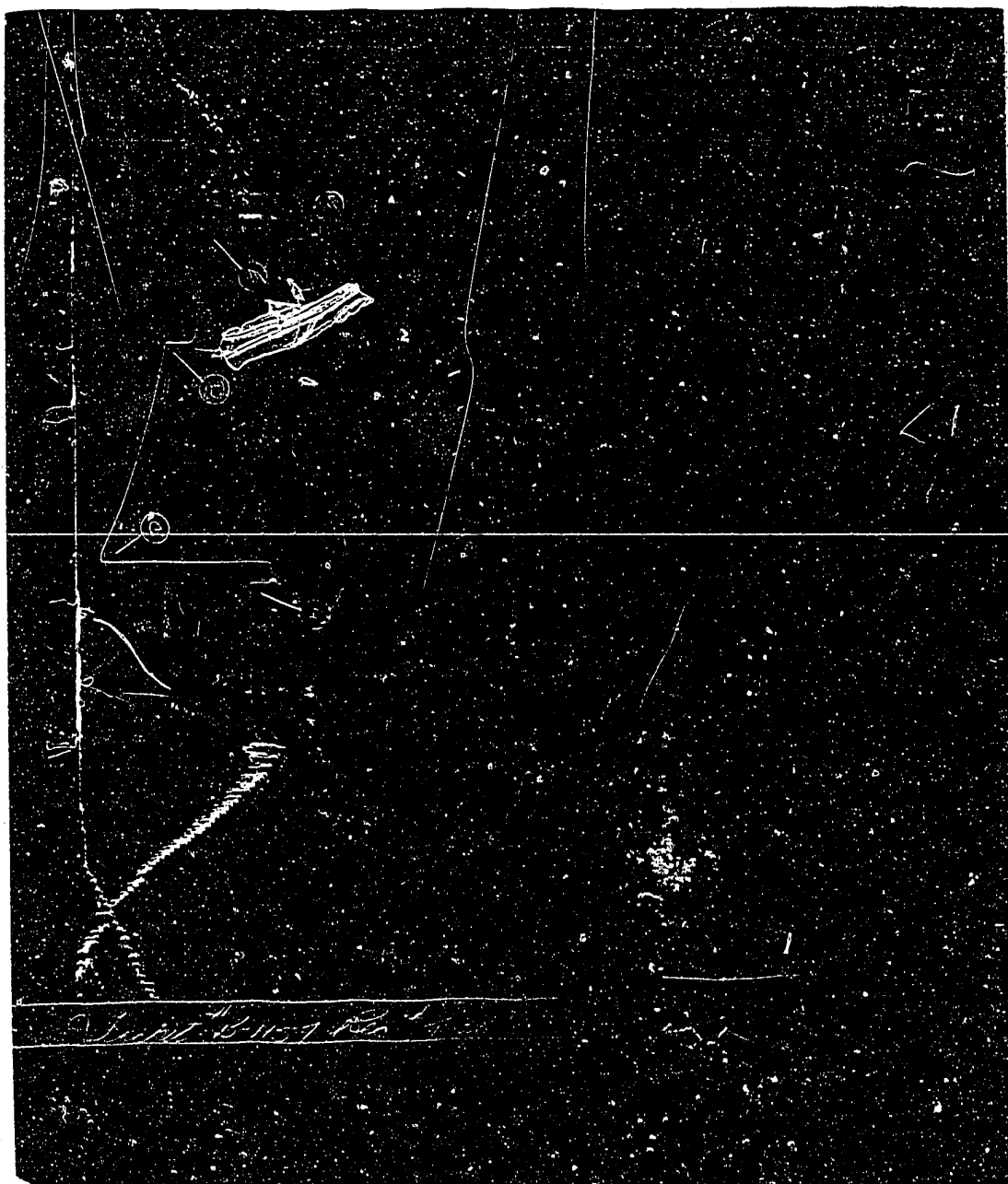
MURPHY CANADA OIL COMPANY
COMPANY

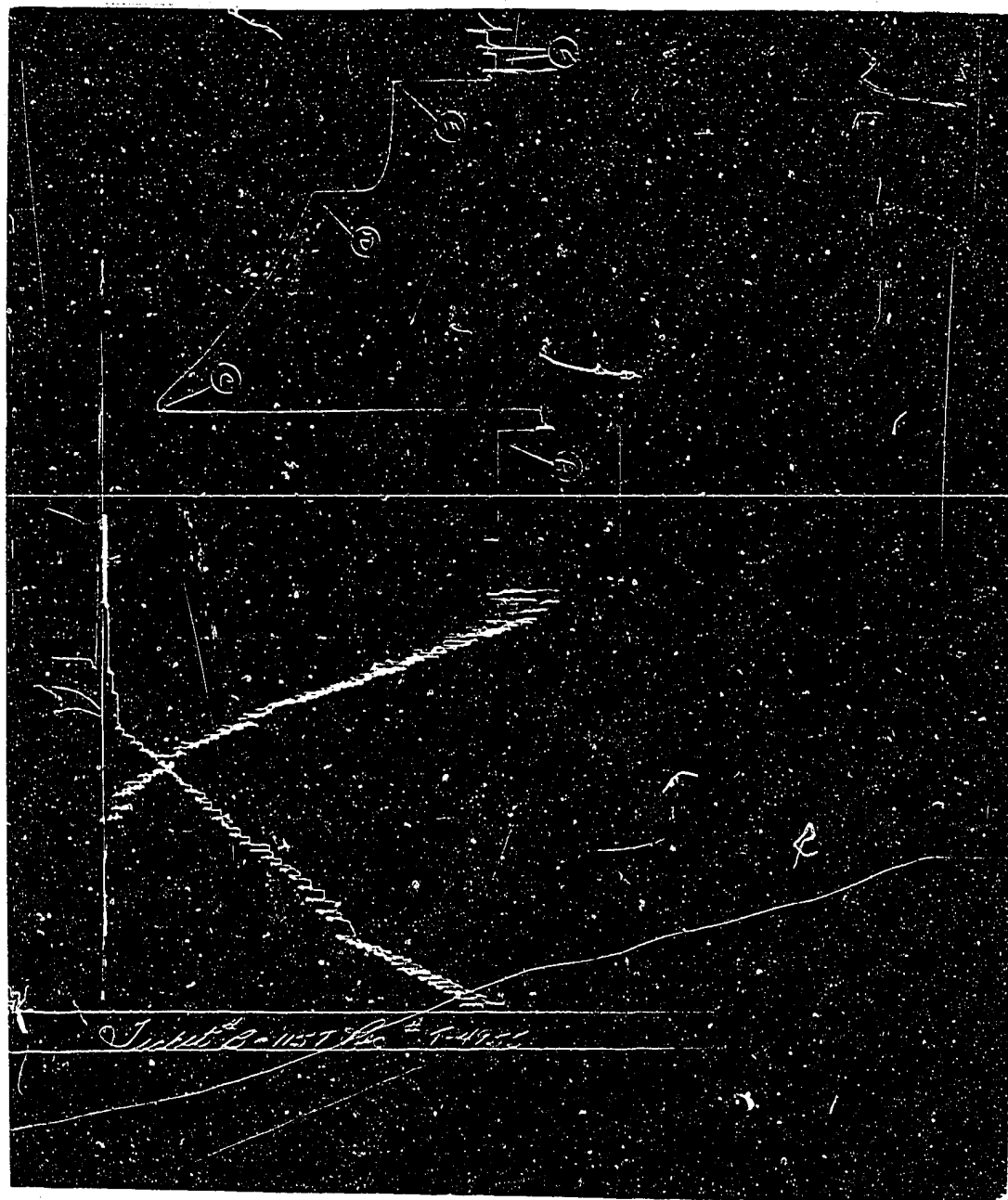
60° 15' 3.8" Lat. 116° 34' 41.96" Long
 MURPHY CANADA ALEXANDRA #2
 WELL NAME AND NUMBER

TEST NO. 2

MARCH 24, 1960
DATE

DA 79

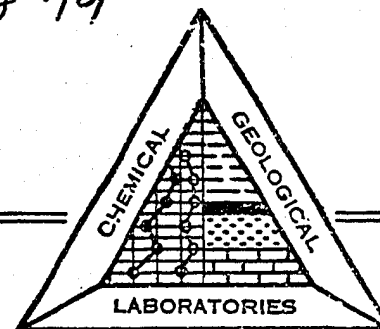




DA 79

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

EDMONTON — CALGARY — REGINA — FORT ST. JOHN



April 5, 1960

Laboratory Report Number C 2823

Alexandra Falls No. 2

Core Numbers 2 & 3.

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

EDMONTON, ALBERTA

PHONES: 25624

42562

10568 - 114 St.

FULL DIAMETER CORE STUDY

OPERATOR Murphy-Canada Oil CompanyArea: Alexandra Falls, North West Territories.WELL NO. Alexandra Falls No. 2.LOCATION 60° 15' 30" N. Lat.116° 34' 40" W. Long.

FORMATION ?

Core Nos. 2 & 3 DATE April 5, 1960 LAB NO. C 2823.

Footage of ?	formation cored ?	No. of representative samples selected for analysis	8.
<u>FEET OF CORE:</u>			
Received at laboratory for analysis	5.2'	Compared (to tested samples)	---
		Dense sections not represented	---
Represented by samples	5.2'	Badly fractured sections not represented	---
<u>SUMMARY OF REPRESENTED SECTIONS:</u>		(1) $\frac{\text{represented}}{\text{received}} = \frac{5.2}{5.2}$	(2) $\frac{\text{represented}}{\text{cored}} = \frac{5.2}{?}$
Weighted average porosity	2.17 %	Maximum porosity	4.2 %
Weighted average K_H permeability	0.24 md.	Minimum porosity	0.1 %
Weighted average K' permeability	0.16 md.	Maximum K_H permeability	0.88 md.
Weighted average vertical permeability	0.04 md.	Minimum K_H permeability	0.03 md.
Weighter average maximum permeability	0.24 md.	Maximum vertical permeability	0.14 md.
Porosity Feet	11.30	Minimum vertical permeability	<0.01 md.

CORE WITH MAXIMUM PERMEABILITY:

10.0 md. or greater

between 1.0 and 9.9 md.
inclusive

less than 1.0 md.

Footage			5.2'
Weighted average porosity	%	%	2.17 %
Weighted average K_H permeability	md.	md.	0.24 md.
Weighted average vertical permeability	md.	md.	0.04 md.
Porosity feet			11.30

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

Operator Murphy-Canada Oil Company Well No. Alexandra Falls No. 2 Lab. No. C 2823 Date April 5, 1960.

Sample Number	Midpoint of Sample in Ft.	Representative of Feet	Footage Rep.	Vertical	Permeability md.		% Porosity	Porosity Feet	Description	Oil and Water Saturation		Barrels Per Water	Acre Ft. Oil
					K _H	K'				Residual Saturation			
										% Water	% Oil		
Analysis of representative core samples received.													
1		2368.0-2368.7	0.7	<0.01	0.03	0.03	2.1	1.47	R1 SI SV AX	47.6	Trace	77.59	Trace
2		2370.3-2370.8	0.5	0.14	0.12	0.08	0.6	0.30	Dol SI SV VC A	33.3	Trace	15.65	Trace
3		2377.4-2378.0	0.6	<0.01	0.05	0.04	1.6	0.96	R1 SI SV A	16.9	Trace	20.96	Trace
4		2383.3-2383.9	0.6	<0.01	0.07	0.06	3.5	2.10	R1 SI SV AX	19.7	Trace	53.58	Trace
5		2384.4-2385.6	1.2	0.09	0.50	0.50	4.2	5.04	R1 SI SV A	20.7	Trace	67.48	Trace
6		2391.8-2392.3	0.5	<0.01	0.14	0.07	2.0	1.00	R1 SI SV A	44.0	0	68.20	0
7		2491.3-2492.0	0.7	<0.01	0.13	0.03	0.1	0.07	Dol SI A	71.8	23.1	5.74	1.85
8		2496.1-2496.5	0.4	<0.01	0.88	0.09	0.9	0.36	Dol SI A	61.7	31.6	43.19	22.12

CORE DESCRIPTION SYMBOLS

- R1 Slightly reactive to cold 15% HCl
- SI Slightly Intergranular
- SV Slightly Vuggy
- ~~Sw~~ A Anhydrite
- ~~Sw~~ VC Vertical Crack
- X Crystals
- Dol Dolomite
- K_H Maximum Horizontal Permeability
- K' Taken 90° to the Horizontal Permeability