

CIDR WOOD BUFFALO

L-42

Drilling Authority No. 367
Date Issued March 19, 1969

WELL NAME CDR Wood Buffalo I-42

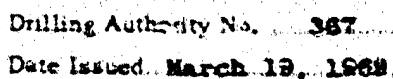
FIELD I Area: 42
LOCATION: Unit I Section 42 Grid 60-40-114-15
Latitude 60-31-38.96 Longitude 114-24-18.25
From Established Reference Marker

U.W.L.R. 60.52749 -- 114.40507
U.W.I. 3001426040114150

Rig Release Date:
Status
Information Release Date

CHANGE OF NAME:

DATE RECEIVED	INDEX
March 19, 1969	Application for a Drilling Authority. Well Completion Data. Well History Report.
	Application to Amend a Drilling Authority.
	Application to change a Well Name.
12-12-69	Application to Abandon a Well or Suspend Drilling.
	Application to Alter Condition of a Well.
Nov 26/69	Well History Supplement. Well Completion Data. Work-over Report No.
	Application to Commingle Production before Measurement.
	Data for Back Pressure Test on Natural Gas Wells — Monograph 7 Method.
	Data for Back Pressure Test on Natural Gas Wells — Vitter's Method.
	M.P.R. — Oil — Calculations.
	New Oil Well Report.
	New Gas Well Report.
	Well Inspection Report.
	Rig Inspection Report.
	Battery Inspection Report.
	Equipment Report.
	Well Card.
	New Service Well Report.
	Monthly Water Flood Operations Report
	Monthly Water Receipts and Disposal of Fluids Report Logs. Large scale Small scale



WELL COMPLETION DATA

To be submitted in duplicate within thirty days after the completion, rework, abandonment, recompletion or suspension of every well.

Well name and number CDE Ford Buffalo L-42-60-40-114-15

Permit No. 4731

Lease No.

Central-Del Rio Oils Limited
(Permitted, Licensed, Leased)

Exploratory Licence No.

1115 & 1228

Central-Del Rio Oils Limited
(Operator)

Exploratory Licence No.

1115 & 1228

Location: Unit L Section 42 Grid 60°40' 11°15'

Latitude 50° 31' 38.96" Longitude 114° 24' 18.95"

From Established Reference Marker EM 125

Universal Well Location Reference Lat. 60.527490° N., Long. 114.40507° E.

Pool(s) Wildcat

Interval(s) open to production..... Dry and

Abandoned

Spurred June 21/89

Suspended

Resumed Operations	
--------------------	--

Finished Drilling July 5/89 1085

Deepened

Complete (gas/oil).....	
-------------------------	--

Abandoned July 6/89

Rig released July 6/69

Elevation: Gr. 829 K.R. n/a

Rig No. 1

Drilling Contractor, Apollo Exploration Ltd.

Contractor's Business Licence No.

CASING RECORD

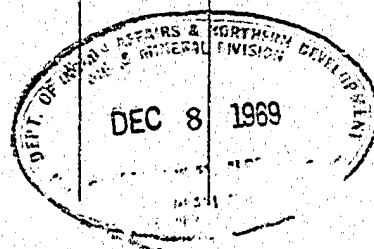
Casing Size (inches)	Grade	Weight	Amount	Set at -	Sacks of Cement and Additives
1. 2 1/2"	AX	2.9	160	160	5 sacks of cement
2.					
3.					
4.					
5.					
6.					

GEOLOGICAL TOPS	ELEVATION		CORE RECORD					
	Depth	Sub-Sea	From	To	Rec.	From	To	Rec.
Watt Mountain	98	+731	Continuous core from surface to T.D. See Section II of Report					
Muskeg Anhydrite	193	+636						
Keg River	716	+113	For recovery please see Well History					
Keg River Platform	890	- 61						
Chinchaga	1033	- 204						

LOG RECORD

Run No.	Type of Log	From	To
	No Logs Run		

DEPT. OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DEC 8 1968



CEMENTING RECORD (Plug, Squeeze, etc.)				PERFORATING RECORD (Bullet, Jet)				SERVICING RECORD (Acidizing, Fracing, etc.)			
Date	From	To	Remarks	Date	From	To	Remarks	Date	From	To	Remarks
July 6/69	T.D.	700'	12 sacks of cement								
July 6/69	200'	surface	5 sacks of cement								

DRILL STEM TESTS

No.	Date	Formation	From	To	V.O. Mins.	L.S.I. Mins.	F.S.I. Mins.	L.S.I.R.H. ²	F.S.I.R.H.P.	L.P.R.H.P.	F.F.R.H.P.	L.H.P.	F.H.P.	REMARKS

ANALYSIS				PRESENT STATUS OF WELL			
Lab. No.	Sample	From	To	Source	Remarks	Oil	(Interval)
						Gas	(Interval)
						Dry	Abandon
						Susp.	

Company: **Central Del Rio Oils Limited**
 Signed by: *[Signature]*
 Title: **Superintendent of Operations**
 Date: **November 26, 1969**
 (H. J. Scott)

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



File No. _____
Drilling Authority No. **367**

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

~~Resource Management Division~~
OIL AND MINERAL DIVISION

Application to Abandon a Well or ~~Suspend Drilling~~

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

Name and number of well **CDE Wood Buffalo L-42**
Location: Unit **L** Section **A2** Grid **60°40' 114°15'**
Latitude **60° 31' 38.05"** Longitude **114° 34' 18.25"**
From Established Reference Marker **BM 125**
Universal Well Location Reference **Lat. 60.52748° N., Long. 114.40507° W.**
Permit No. **4733** Lease No. _____

Central-Del Rio Oils Limited
(Permitter, Licensee, Lessee)

Date of commencement of proposed program **July 6, 1969**

OIL, GAS, AND WATER ENCOUNTERED
(Depths)

Oil at _____
Gas at _____
Water at _____
Total Depth **1085'** Date of last operations **July 5, 1968**
Present condition of well **Dry Hole**

CASING RECORD

Casing Size O.D. Inches	Weight	Amount	Set At—	Seals of Cement and Additives	Amount Pulled
1. 2 1/2"	2.98/ft.	160	160	5 sacks of cement	2000
2. _____	_____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____	_____

PROPOSED ABANDONMENT PROGRAM

Plug		Geological Formation	Number of Sacks of Cement	Remarks
No.	Position			
1	T.D. to 700'	Covers Keg River Keg River Platform Chinohaga	12	
2	200' to surface	Watt Mountain Moskeg Anhydrite Slave Point	5	
3	Cut off casing 3 feet below ground level and cap with a welded plate and sign post			

The following logs have been run **none**
Other operations proposed **none**

Operations to be carried out by **Apollo Explorations Ltd.** Contractor Licence No. _____
Address **2 - 1347 12th Avenue S.W., Calgary, Alta.** Address _____
Responsible Agent in field **D. McTavish**
Dated at **Calgary, Alberta**, this **4th** Day of **July**, 19 **69**
Signed by **W. J. Scott** Company **Central-Del Rio Oils Limited**
Title **Operations Superintendent** Operator's Exploratory Licence No. **1115**

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

(For RESOURCE MANAGEMENT DIVISION use only)

APPROVAL

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

Confirm oral approval including Item No. 3, as given by
Mr. B.H.J. Thomas on the 6th July 1969.

Dated **12th December**, 19 **69** **B.H.J. Thomas**
Oil Conservation Engineer

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

Drilling Authority No. **367**

Project No.

File No.



DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

~~RESOURCE MANAGEMENT DIVISION~~

OIL AND MINERAL DIVISION

Application for a Drilling Authority

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

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

Name and number of well **CRA Wood Buffalo L 43,**Location: Unit **L** Section **42** Grid **60°40'; 114°13'**Latitude **60° 31' 38.96"** Longitude **114° 34' 18.25"**From Established Reference Marker **BM 125**Universal Well Location Reference Lat. **60.52749° N., Long. 114.40507° W.**Elevation: Ground **300 ft.** **K.B.** feet above sea-level.Well is expected to produce from **Keg River Reef** formation at a depthof about **670** feet. Expected total final depth **1200**

Area assigned to well

(For Oil Conservation Engineer's use only)

Permit No. **4730** Lease No. Acreage **36208**Permittee, licensee, or lessee **Central-Del Rio Oils Limited**Exploratory Licence No. **1115**Surface owned by Crown or **Crown**

(If specified, submit name and address of owner and agent.)

Petroleum and natural-gas rights owned by **Crown**

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

Casing Size O.D. (Inches)	Weight (Lb./Ft.)	Grade	New or Used	Estimated Depth	Section of Cement
1. 2 1/2	2.9	J-55	New	120	
2.					
3.					
4.					
5.					

Expected water, gas, and oil horizons and type of control equipment **adequately weighted drilling fluid and blowout preventors.**Well will be drilled with Rotary Rig No. **1** by **Apollo Exploration Ltd.**

(Drilling Contractor or company)

Responsible agent of applicant:-

Contractor's business Licence No. **Applied For**At well **D. McFavish** At registered office **F. J. Scott**Address **Weyburn, Saskatchewan** Address **736 - 8th Avenue S.W., Calgary 2, Alberta.**

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

Dated at **Calgary, Alberta** this **19th** day of **March** 19 **69**Signed by **[Signature]** Company **Central-Del Rio Oils Limited**Title **Staff Engineer** Operator's Licence No. **1115**

(For Resource Management Division use only)

APPROVED

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

1. The Company will submit to this office, on Tuesday of each week, the latest reports received by radio on the progress of the well.
2. During well drilling and testing operations, every effort shall be made to ensure that

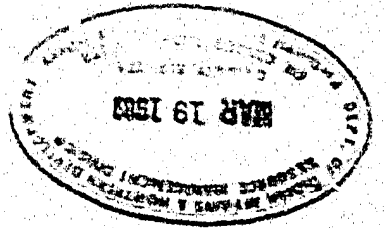
Dated **19th March** 19 **69**

Oil Conservation Engineer

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

IAND 52-90-1 (3-67)

UNIQUE WELL IDENTIFIER - 300L4260406040114150



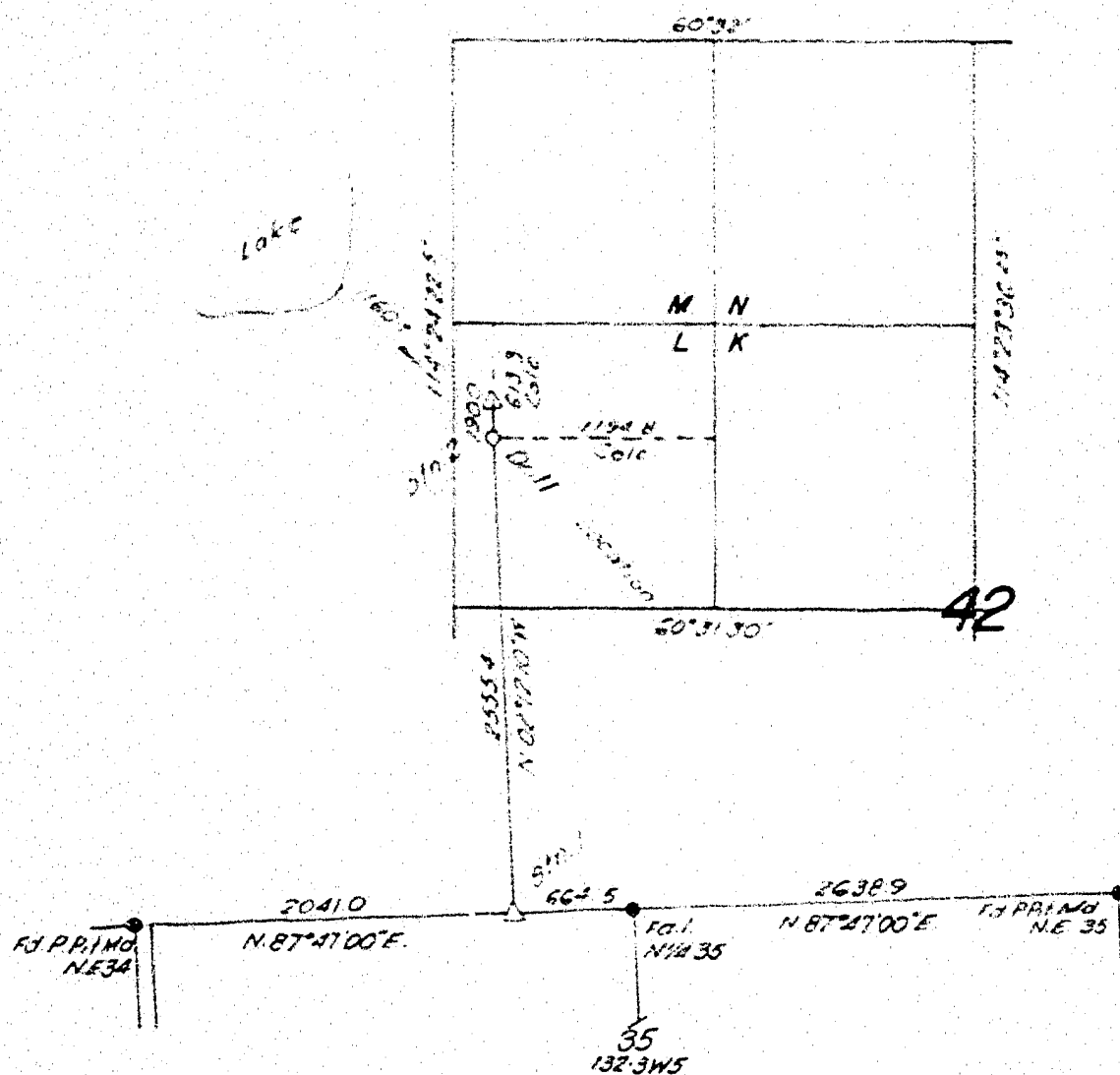
drilling fluids, chemicals and wastes shall be disposed of or contained in a manner that will prevent the contamination of adjacent vegetation and surface or sub-surface waters.

3. Surface casing shall be cemented at least 75 feet into a competent formation.
4. We draw your attention to Sections 95 and 96 of the Canada Oil and Gas Land Regulations.

B. J. Thomas

Oil Conservation Engineer

FINAL PLAN
CDR WOOD BUFFALO
L42,60-40,114-15
 Latitude $60^{\circ}31'38.96''$ Longitude $114^{\circ}24'18.25''$
 NORTHWEST TERRITORIES



CO-ORDINATE TABLE				
U.T.M. Values		Scale Factor 0.9999	Ref. Mer 117°00'	
Station	Bearing	Distance	North	East
NE 34	N. 87°41'00\"E.	2041.0	22,021,413.6	465,421.3
1	N. 02°12'10\"W.	2555.4	22,021,552.5	467,460.8
Well Loc.	N. 02°12'10\"W.	190.0	22,030,106.1	467,362.5
2			22,030,295.9	467,355.2

Scale: 1000' to 1"

Survey completed 8th day of March, 1967
 Certified correct.

NOTE:
 1. Distances are in feet and decimals

[Signature]
 Alberta Land Surveyor

CENTRAL-DEL RIO OILS LIMITED

ELEV: 829 Gr.
 DATUM: B.M. #125

[Signature]
[Signature]

MIDWEST SURVEYS CO. LTD.



C 178-69 a

WELL HISTORY RECORD
on the
DRILLING & ABANDONMENT
of
CDR Wood Buffalo L-12

Copy #3

26-11-4-9

26-11-4-9

00000000000000000000

WELL HISTORY RECORD

on the



DRILLING & ABANDONMENT

of

CDR Wood Buffalo L-42-60-40-114-15

Location: Latitude $60^{\circ} 31' 38.96''$
Longitude $114^{\circ} 24' 18.25''$

Northwest Territories

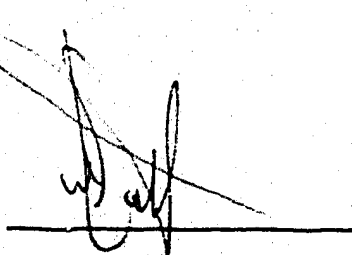
909090909090909090909090909090

CNR Wood Buffalo L-42 -60-4-114-16

I N D E X

Section I - Summary of Well Data	1 - 2
Section III - Engineering Summary	1
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Section II - Geological Summary	3 - 12

Approved By: _____

A handwritten signature in dark ink, appearing to be 'J. H. [unclear]', is written over a horizontal line that serves as a signature line.

Section I

- a) Well Name and Number - CDR Wood Buffalo L-42-60-40-114-15
- b) Permittee - Central-Del Rio Oils Limited
- c) Name of Operator - Central-Del Rio Oils Limited
- d) Location - Lat. 60.52749° N., Long 114.40307° W., Unit 1, Sec. 42, Grid 60° 40' 114° 15'
- e) Co-ordinates - Lat. 60° 31' 38.96", Long. 114° 24' 18.25"
- f) Permit - No. 4733
- g) Drilling Contractor - Apollo Exploration Ltd., Rig No.1, Rotary
- h) Drilling Authority - No. 367, March 19, 1969
- i) Classification - Wildcat
- j) Elevations - Ground 829'
All measurements are taken from ground level
- k) Spudded - June 21, 1969
- l) Completed Drilling - July 5, 1969
- m) Total Depth - 1085'
- n) Well Status - Dry and Abandon
- o) Rig Released - July 6, 1969
- p) Hole Size - 1 3/4" 160' - TD; 2 1/4" Surface - 160'
- q) Casing - 160' of AX 2 1/4" casing cemented to surface with 5 sacks of cement.

Section II - Engineering Summary

- a) Drill Stem Tests - No Drill Stem Tests were run
- b) Casing Record - Ran and cemented 160' of AX Diamond core drilling casing 2 1/4" O.D. 2.9#/ft. with 5 sacks of cement @ 160'
- c) Bit Record - None kept according to mining custom
- d) Mud Report - Water only used
- e) Deviation Record - None taken
- f) Abandonment Plugs - 12 sacks of cement from T.D. to 700'
5 sacks of cement from 200' to surface.

Section VI - Completion Record

- a) July 6, 1969 ran Plug No. 1, T.D. to 700' with 12 sacks of cement
July 6, 1969 ran Plug No. 2, 200' to surface with 5 sacks of cement

1-42-66-40-134-15

Spudded June 21 Surface hole with new EX casing and shoe.
June 22 8:00 a.m. 56'
June 23 8:00 a.m. 120' Bed rock 74' AX core.
June 23 2:00 p.m. 151' cement AX casing with 5 sacks cement.
June 24 Men in town.
June 25 Install B.O.P., Flare line etc. Drilled out cement at
2:30 p.m. to 160'. Cement not set. Drilled AX casing
to 160'. Ran 5 sacks cement and burnt AX casing shoe
into bed rock.
June 26 8:00 a.m. 215'
June 27 8:00 a.m. 287'
June 28 8:00 a.m. 357'
June 29 8:00 a.m. 493'
June 30 8:00 a.m. 616'
July 1 8:00 a.m. 722'
July 2 8:00 a.m. 827'
July 3 6:00 a.m. 912'
July 4 8:00 a.m. 968'
July 5 8:00 a.m. 1053'
July 5 10:30 p.m. 1085' Chinchaga at 1038'
July 6 Ran 12 bags cement from 700' to T.D.
Ran 5 bags cement from 200' to surface.

D. McTavish
D. McTavish

CDR Wood Buffalo L-42

<u>GEOLOGICAL TOPS</u>	<u>DEPTH</u>	<u>SUB-SKA</u>
Watt Mountain	98	+731
Muskeg Anhydrite	193	+636
Keg River	716	+113
Keg River Platform	890	-51
Chinchaga	1033	-204

CDF, WOOD BUFFALO L-42 60-40, 114-15
60° 31' 38.96", 114° 24' 18.25"

Ground Elev. 829

Core begins in Fort Vermillion

74.4 - 77.4 (3.0')

Limestone, light brownish grey, micrograined with cryptograined matrix, cemented partially dolomitized tending towards granular texture. No visible porosity, contains abundant thin black inclusions which generally tend to line up giving a dip of approximately 45°. They appear to be a staining or dark carbonate. No shows. Ineffective.

77.4 - 80 (2.6')

Core Missing.

80 - 82 (2')

Limestone, light grey, micro to very fine grained with crypto grained matrix. Grading to very fine granular in lower 1 foot with fair to good intergranular porosity. Partially dolomitized. Contains scattered brown carbonaceous imprints, (plant?) No shows, effective.

82 - 85 (3')

Core missing.

85 - 98 (13')

Interbedded limestone, dolomite, anhydrite, gypsum and minor shale inclusions. Dolomite is buff, cryptocrystalline dense; limestone is light greenish grey, micro to very fine grained in crypto grained matrix, argillaceous, dense; gypsum is clear crystalline in fine bands infilling shrinkage cracks. Anhydrite is white to brown, primary, with some secondary white crystalline. From 93.6 to 98 there are numerous blebs of apple green shale. Trace of pyrite blebs. Core Missing 86 - 89., 90 - 93.6

WATT MOUNTAIN 98

98 - 98.7 (0.7')

Shale, light green, calcareous, contains fine rounded grains of buff limestone and very fine pyrite crystals, very calcareous.

98.7 - 101.2 (2.5')

Dolomite, anhydrite and gypsum interbedded and intermixed with blebs of light green shale. Dolomite is buff, crypto to micro crystalline, subhedral, interlocking, anhydrite is brown, primary and gypsum is clear.

101.2 - 109 (7.8')

Limestone and shale, intermixed in a brecciated zone. Limestone varies from light brown lithographic mud to light grey cryptograined. Shale is light green and infills spaces between fragments of limestone. Scattered fine crystals of pyrite. Some blebs of native sulfur. Core missing 102.5 - 104.

Note: A 1" piece of tight granite wash core is present at the base of the interval.

Sulphur Point 98

109 - 113 (4')

Limestone, light grey, lithographic.

113 - 128 (15')

Lump limestone in chalky matrix, limestone light brown to light grey, fine grained with some crypto to micrograined matrix, partial calcite cementation. Porosity is poor with traces of fair. Trace fine interlump vug porosity. Fine black bitumen present throughout, no fluorescence, cuts freely in chloroform. Poorly effective. Core missing 114.5 - 115

120 - 120.6

123 - 125.5

128 - 134.2 (6.2)

Limestone, light grey micrograined, with chalky matrix, partially dolomitized, no visible porosity, fine black bitumen, scattered throughout, ineffective.

134.2 - 135.0 (0.8')

Dolomite, light brown, fine crystalline, subhedral interlocking dense, with clear coarsely crystalline dolomite infilling vugs and intercrystalline pore spaces. Fine black bitumen, scattered throughout. Ineffective.

135.0 - 147.3 (12.3')

Limestone, tan, mud textured with some thin lenses of lump limestone as above. Scattered pin point bubble like vugs in mud textured limestone. Fine black bitumen present in lump limestone, no cut. Abundant fossil debris with some intra fossil porosity, Poor to fair porosity in lump limestone. Poorly effective. Core Missing 146.7 - 147.1

147.3 - 152.5 (5.2')

Dolomite, light brown, finely crystalline, subhedral, interlocking. Trace intercrystalline porosity. Scattered areas with fine black bitumen, no cut. Ineffective.

- 152.5 - 153.5 (1') Dolomite, greyish-brown, microcrystalline, subhedral, interlocking, dense.
- 153.5 - 157 (3.5') Core missing.
- 157 - 163.3 (6.3') Dolomite, light brown, micro to coarse crystalline, subhedral grading towards rhombic in part, interlocking, trace poor intercrystalline porosity. Abundant fine black bitumen, no cut. Ineffective.
- 163.3 - 169.8 (6.5') Limestone, buff, fine pelleted in cryptograined matrix. Majority of porosity destroyed by chalkiness. Abundant fine black bitumen, no cut. Ineffective. Core missing 165.0 - 165.8, 167.8 - 169.3
- 169.8 - 179.8 (10.0') Dolomite, light greyish brown, micro crystalline, subhedral interlocking occasionally fine blind vug. Ineffective. Core missing:
170.7 - 174.2 (cave)
175.2 - 176.7 (cave)
178.1 - 179.8 (cave)
Caves noted by drilling crew).
- 179.8 - 181.8 (2') 0.8' dolomite, conglomerate underlain by 1.2' dolomitized algal laminate. Conglomerate composed of up to 1" fragments of light grey, microcrystalline, dolomite set in a buff, earthy dolomite with some isolated vugs, partially infilled with bitumen. No cut. Ineffective, the algal laminate consists of buff, earthy dolomite alternating with light grey micro crystalline dolomite. Trace of isolated vugs coated with bitumen. Ineffective.
- 181.8 - 182.3 (0.5') (Cave)
- 182.3 - 184.9 (2.6') Limestone, medium brown, fine granular in chalky matrix, no visible porosity, no shows, lightly laminated. Ineffective.
- 184.9 - 185.9 (1') Dolomite - light grey micro to cryptocrystalline, laminated, algal origin?
- 185.9 - 191.2 (5.3') No core - (drillers note as being too soft to core)
- 191.2 - 193 (1.8') Dolomite, buff, fine crystalline, subhedral, partial interlocking. Set in cryptograined matrix. Porosity is fair intercrystalline with much chalk plugging. Poorly effective.

Muskeg Anhydrite 193'

193 - 203.5 (10.5')

Dolomite, light buff, mud textured, alternating with thin laminae of clear gypsum. Grades downward into anhydrite, brown, primary with abundant shrinkage cracks, infilled with white crystalline anhydrite or gypsum. Contains minor dolomite mud.

Core missing 203.5 - 204.5 (Cave).

204.5 - 224 (19.5')

Dolomite, light brown to buff, microcrystalline in crypto crystalline (chalky) matrix. Subhedral, interlocking, dense. Some shrinkage cracks infilled with clear gypsum. Scattered wispy light brown argillaceous laminae with no appreciable dip. From 215 - 217 is a bed of light brown and grey primary anhydrite.

Core missing - 213.8 - 214.8

218.5 - 220.5

224.0 - 229.5 (5.5')

Anhydrite, medium brown, primary, small amount dolomite, medium grey, mud texture laminated with thin beds clear gypsum, algal origin.

229.5 - 244.8 (15.3')

Core Missing.

244.8 - 248 (3.2')

Anhydrite, brown and grey as above, with interbeds of dolomite, light buff, microcrystalline, subhedral, interlocking, dense and containing clear gypsum infilling vertical fractures and shrinkage cracks.

248 - 255.7 (7.7)

Core Missing.

255.7 - 258.3 (2.6')

Anhydrite, dolomite and gypsum as above, interbedded.

258.3 - 259.8 (1.5')

Dolomite, light brown, fine crystalline, subhedral grading to rhombic but partially interlocking and cemented, dense.

259.8 - 267.5 (7.7')

Core Missing - (Washed down).

267.5 - 385.5 (118')

Series of interbedded dolomite and anhydrite. Dolomite beds vary from inches up to 10 feet. Anhydrite varies from inches up to 13 feet. Dolomite varies from light brown, fine crystalline, subhedral interlocking to buff, cryptocrystalline (chalky) texture. Also some mud textured dolomite with thin shrinkage cracks infilled with clear gypsum. Some wispy fine brown argillaceous laminae present with dips to 10°. Gypsum laminae indicate dips to 35°. Anhydrite varies from dark to light brown to white to dark grey, primary. Some sections contain a fine shrinkage crack network infilled with white crystalline gypsum.

Core missing: 289 - 291 (Cave)
297 - 298 (Cave)
298.5 - 300 (Cave)
301 - 301.5 (Cave)
304 - 305 (Cave)
319.5 - 321 (Ground up)

385.5 - 549 (163.5')

Same as previous interval with the exception of a number of thin white gypsum laminae overlain by $\frac{1}{2}$ " to 4" of light green shale, slightly dolomitic. Resembles open marine shale of Watt Mountain. At 397 is a 6" zone of intraformational conglomerate composed of up to 1" fragments of grey anhydrite enclosed in green shale and overlain by white gypsum. Minor vertical fractures, partially open. Percentage dark brown anhydrite decreases with depth.

Core Missing 461 - 462.2 (grinding)
506.5 - 513
534 - 535.8

549 - 573 (24')

Anhydrite, dark brown and light brown, banded, with light brown dominating.

573 - 716 (143')

Interbedded anhydrite and dolomite with some thin clear gypsum interbeds and infilling fractures. Anhydrite ranges from dark brown to light brown to light grey and is normally banded. Bed thickness ranges from inches up to 15 feet. Dolomite varies from buff, cryptocrystalline chalky, with fine anhydrite inclusions to dolomite, light brown, fine crystalline, subhedral, interlocking with occasional blind vugs, partially infilled with white crystalline anhydrite and/or clear gypsum. Numerous thin brown argillaceous laminae with 10° - 15° dip. Beds vary from inches to 5 feet. Ineffective.

Core Missing: 586 - 592.6
595.5 - 596.2
641 - 642 (Cave)
664 - 668.5 (Grinding)
686.6 - 694.5 (Very soft - grinding)
697.0 - 702.6
704 - 712

Keg River 716

716 - 717.6 (1.6')

Dolomite, light brown, micro to very fine crystalline, subhedral, partial interlocking, poor to fair inter-crystalline porosity with scattered vugs ($\frac{1}{2}$ - 1") which contain fine dolomite rhombs in part and in part are infilled with clear gypsum. Scattered wispy dark argillaceous partings, 5° dip.

- 717.6 - 721 (3.4') Core Missing.
- 721 - 741 (20') Dolomite, light brown, fine crystalline, subhedral grading to near rhombic in part, partial interlocking, fair to good intercrystalline porosity with scattered vug porosity, (fossil casts) filled in part with clear gypsum. Much of the original intercrystalline porosity has also been infilled with gypsum and or a cryptograined chalky matrix, laminae as above. Effective. Core missing. 736.8 - 738.10 (Too soft to core).
- 741 - 748.5 (7.5') Core missing -(too soft to core).
- 748.5 - 761.6 (13.1') Dolomite, light grey, fine crystalline, subhedral, partial interlocking, some cryptocrystalline matrix, fair intercrystalline porosity with some tight patches. Vug porosity is generally good. Composed of pin point to 1" intra fossil, partially lined with brown fine rhombic dolomite and occasionally infilled with clear gypsum. Dark black bituminous coating present within vugs occasionally. No cut or fluorescence. Organic lattice, effective..
- 761.6 - 764 (2.4') Core Missing (Too soft to core).
- 764 - 765 (1') Dolomite, light grey, micro to very fine crystalline subhedral interlocking, dense, scattered fine vug porosity, (collapsed fossil casts) ineffective.
- 765 - 773 (8') Core missing (too soft to core)
- 773 - 777 (4') Dolomite, light grey to light brown, fine crystalline subhedral, partial interlocking, poor to occasional fair intercrystalline porosity. Scattered vugs - pin point to $\frac{1}{2}$ ". Partial collapsed fossil casts, with brown fine rhombic dolomite partially infilling. Effective.
- 777 - 786.6 (9.6') Core missing - (too soft to core).
- 786.6 - 787.6 (1') Dolomite as above but with minor intercrystalline porosity and good vuggy porosity. Trace crinoid fragments. Effective.
- 787.6 - 806 (18.4') Core missing - (too soft to core and grinding)
806. --808.5 (2.5') Dolomite, light brown, fine crystalline, set in crypto-crystalline earthy matrix, abundant crinoid debris, abundant dark wispy argillaceous partings. Minor fine vug porosity. Ineffective.

808.5 - 813 (4.5')	Dolomite, light grey to brown, fine crystalline, subhedral, partial interlocking, poor to fair inter-crystalline porosity. Some cryptocrystalline dolomite plugging. Trace crinoid debris. Effective.
813.0 - 813.6 (0.6')	Dolomite, grey brown, fine crystalline, subhedral, interlocking, dense. Fair to good fine to coarse vug porosity formed by both branching and cup corals. Organic lattice. Effective.
813.6 - 821.3 (7.7')	Core missing. (too soft to core)
821.3 - 824.3 (3.0')	Dolomite - organic lattice as above. Trace crinoids. Effective.
824.3 - 828.3 (4')	Core missing - (too soft to core)
828.3 - 834.6 (6.3')	Dolomite, organic lattice as above.
834.6 - 837.9 (3.3')	Core missing. (too soft to core).
837.9 - 838.8 (0.8')	Dolomite, light grey brown, fine crystalline, subhedral, interlocking trace fossil cast vug porosity as above, skeletal debris as above, poorly effective.
838.8 - 840 (1.2')	Core missing (too soft to core).
840 - 841 (1')	Dolomite, light brown, micro to very fine crystalline, subhedral, interlocking, dense, trace vug porosity. Ineffective.
841 - 843.5 (2.5')	Core missing. (too soft to core).
843.5 - 844 (0.5')	Dolomite as above.
844 - 851.7 (7.7')	Core missing (too soft to core)
851.7 - 853 (1.3')	Dolomite, light brown, very fine to fine crystalline subhedral, interlocking, dense. Scattered fine to coarse intrafossil vugs, partially lined with coarse dolomite rhombs, some coral debris as before. Trace oblique fractures, partially open. Poorly effective.
853.0 - 855.0 (2')	Core missing (too soft to core).
855 - 858 (3')	Dolomite as above. Minor fossil debris however with corresponding decrease in vuggy porosity. Trace oblique fractures, partially open. Ineffective.

858 - 869.8 (11.8')	Core missing (too soft to core).
869.8 - 873 (3.2')	Dolomite, light brown, fine crystalline, subhedral, interlocking. Contains scattered crinoid remains, minor dark grey wispy argillaceous partings. Dense. Ineffective.
873 - 885 (12')	Core missing. (Very soft).
885 - 887.5 (2.5')	Dolomite, light brown as above with some thin (up to 1/4") dark grey shale partings. Some partially open oblique fractures and some oblique fractures infilled with white dolomite. Minor crinoid debris. Ineffective.
887.5 - 900.5 (13.0')	Core missing. (too soft - just grinds away).
KEG RIVER PLATFORM 890 (estimated)	
900.5 - 903 (2.5')	Dolomite as above.
903 - 903.1 (0.1')	Limestone, light tan, mud textured, scattered crinoids and thin shelled brachiopods.
903.10 - 906 (2.9')	Core missing.
906 - 907.6 (1.6')	Limestone, as above with fairly abundant well preserved crinoid stems and cups. Trace pyrite blebs.
907.6 - 918 (10.4')	Core missing (very soft - grinding). At 912 one small piece of shale, light grey, very calcareous, contains abundant fine pyrite crystals disseminated throughout. (Very similar to open marine shale of C-74. Well interval (1036 - 1058)
918 - 919.8 (1.8')	Limestone, light tan to brown, mud textured, abundant crinoid debris, scattered brachiopod fragments, some thin pyrite lined veins as well as scattered blebs. Occasional white calcite film enclosing brachiopod or infilling them. A few fragments of limey shale from previous interval in rubble of this interval.
919.8 - 926 (6.2')	Core missing (too soft to core).
926 - 928 (2')	Limestone, light brownish grey, mud textured, grades into a shale, medium brownish grey, limey with scattered crinoid debris. Vague boudinage structure. Some oblique fractures. Open marine environment.
928 - 936 (8')	Core missing.
936 - 937.5 (1.5')	Limestone, medium brown, micro grained, cemented, some thin dark brown argillaceous partings. Scattered crinoid fragments.

- 937.5 - 963.6 (36.1') Core Missing (very blocky) At 945 are two small pieces of Dolomite, medium brown, fine crystalline, subhedral, interlocking, dense, contains some skeletal debris outlined by white dolomite (crinoids?) Has a fracture and a vug lined with coarse white dolomite rhombs. Similar fragments present at 956 except has abundant crinoid debris some of which form fine isolated vugs. Ineffective.
- 963.6 - 965.6 (2.0') Dolomite, medium grey, micro to fine crystalline, subhedral, interlocking, argillaceous (grading towards shale in part). Some crinoidal debris, one small piece of limestone, medium brown, mud textured in rubble at base of interval.
- 965.6 - 968 Core missing- (too soft to core).
- 968 - 968.6 (0.6') Skeletal limestone, light brown, micrograined, abundant crinoid and thin shell brachiopods. Trace pyrite. Dense.
- 968.6 - 981.6 (13') Core missing (too soft to core).
- 981.6 - 987.3 (5.7') Skeletal limestone as above.
- 987.3 - 992.9 (5.6') Core missing (too soft to core).
- 992.9 - 995.3 (2.4') Dolomite, light brown, micro to very fine crystalline, subhedral, interlocking, scattered crinoid fragments, some vugs created by partially collapsed brachiopods, trace pyrite. Ineffective.
- 995.3 - 1006.0 (10.7') Core missing. (too soft to core).
- 1006.0 - 1010.9 (4.9') Dolomite, light greyish brown, very fine crystalline, subhedral, interlocking, contains some crinoidal debris, and scattered partially collapsed brachiopod shells which have been lined with medium to coarse white dolomite rhombs and occasionally pyrite. Blebs of pyrite scattered throughout. Scattered dark grey, wispy, argillaceous partings, ineffective.
- 1010.9 - 1022.9 (12') Core missing (would not core).
- 1022.9 - 1025.9 (3') Dolomite, light greyish brown, fine crystalline, subhedral, interlocking with scattered pinpoint to $\frac{1}{2}$ " vug porosity. Mainly intra fossil porosity lined with medium to coarse dolomite rhombs. Fossils appear mainly to be brachiopods. Trace pyrite. Doubtful effective.
- 1025.9 - 1032.6 (6.7') Core missing.

1032.6 - 1033.3 (0.7') Dolomite, light brown, very fine to fine crystalline, (subhedral, interlocking to partial interlocking), dense to fair intercrystalline porosity, contains thin dark brown argillaceous laminæ dipping 20° , poorly effective.

Chinchaga 1033

1033.3 - 1033.5 (0.2') Anhydrite, medium brown, contains thin algal laminations of clear gypsum and buff dolomite, mud textured.

1033.5 - 1050 Core missing.

1050 - 1085 (35') Anhydrite, light to dark brown with dolomitic, algal structures as above. From 1072.5 to 1073 is a bed of shale fragments, light grey rotten appearing, set in medium brown anhydrite with some gypsum. This is underlain by a 2" bed of shale (in place) with laminæ of buff dolomite mud with some clear gypsum. Scattered oblique fractures. About 20° - 25° dip on anhydrite. Core missing 1053 - 1057.5, 1060 - 1064.3, 1083 - 1085. T.D. 1085.

Central Del Rio Wells Ltd

DRILLING RECORD

APOLLO EXPLORATION LTD.

Company:

Wood Buffalo

Hole No:

#3

Size:

Casing:

Inclination:

T.D:

Property Location:

Day River M. W. T.

Date Began:

Date Finished:

Date	Employees	Footages	Hours	Remarks
June 17	D Frank	From	8	One trip to set up # 3 Road very left in places
	H Stan	To	8	
	D John	From	8	
	H Mike	To	8	
June 18	D Jerry	From	10	Tear down cookhouse and sleeping tent. move and set same on new site
	H Frank	To	16	
	D Stan	From	16	
	H John	To	16	
	D Mike	From	16	One trip of drill gear and start building
	H Jerry	To	18	
June 19	D Frank	From	13	
	H Stan	To	13	
	D John	From	13	Set up road very left in places Start laying out 1500 ft of road thru bush to a small lake
	H Mike	To	13	
	D Jerry	From	15	
	H Frank	To	11	
June 20	D Stan	From	11	Building set up put up tripod Install supply pump
	H John	To	11	
	D Mike	From	11	
	H Jerry	To	14	
June 21	D Frank	From	0	D.R. casing was mixed. Helpers made one last trip to set up # 2 to pick up the rest of drill gear. very hard going boulders & gravel
	H Stan	To	34	
	D John	From	34	
	H Mike	To	36	
	D Jerry		18	
Foreman:		Authorized Company Rep.		

Company: <i>Central Hel. Rpt. Oil</i>		Hole No. <i>3</i>		DRILLING RECORD		APOLLO EXPLORATION LTD.	
Property Location: <i>Wood Buffalo Park</i>		Size:		Casing:		Inclination:	
Date Began:		Date Finished:		T.D:			
Date	Employees	Footages	Hours	Remarks			
<i>June 22</i>	D <i>Frank</i>	56	15	<i>drill B.X. Casing down to 74 ft in bed rock drill A.X. casing down to 81 ft. Frank and Stan build up casing on top of after supper</i>			
	H <i>Stan</i>	81	15				
	D <i>John</i>	91	12				
	H <i>Mike</i>	120	12				
<i>June 22</i>	D <i>Curry</i>		17	<i>Casing</i>			
	H						
<i>June 23</i>	D <i>Frank</i>	120	10 1/2	<i>drill B.X. core all the way down to 151 ft deep. Set down 151 ft of AX casing and cement</i>			
	H <i>Stan</i>	151	10 1/2				
	D <i>Curry</i>		12				
	H						
<i>June 25</i>	D <i>Frank</i>	151	13	<i>NO night shift. Driller gone to town while cement set</i>			
	H <i>Stan</i>	160	13				
	D <i>Charles Hiranick</i>	13					
	H <i>Curry</i>		14				
<i>June 26</i>	D <i>Stan</i>	150	12	<i>drill cement cleaned out hole works on B.O.P. AX casing not set. Drill AX casing down to 160 with cement and cleaned in rock casing cement</i>			
	H <i>Charley</i>	205	12				
	D <i>Frank</i>	215	12				
	H <i>Mike</i>	277	12				
<i>June 26</i>	D <i>Curry</i>		14	<i>Core and very broken ground very hard to core. Small zone of shale to left to core.</i>			
	H						
<i>June 27</i>	D <i>Stan</i>	287	12	<i>delay 3 hrs repairs B.O.P and set up</i>			
	H <i>Charles</i>	317	12				
	D <i>Frank</i>	317	12				
	H <i>Mike</i>	357	12				
				<i>Core and very broken ground very hard to core. Small zone of shale to left to core.</i>			
				<i>Good casing. Delay 5 hrs. Repair supply pump. water line stage up. rain</i>			
				<i>Take to drill</i>			

Foreman: _____

Authorized Company Rep. _____

DRILLING RECORD APOLLO EXPLORATION LTD.

Company:

Hole No:

Size:

Casing:

Inclination:

T D:

Property Location:

Date Began:

Date Finished:

Date	Employees	Footages	Hours	Remarks
28	D. Allen	457	12	GOOD - CONTINUED DELAY 1 HOUR
	H. Charlie	414	12	REPAIR SUPPLY PUMP.
29	D. Frank	414	12	Good casing
	H. Mike	493	12	
29	D. Allen	492	12	Good casing.
	H. Charlie	553	12	
29	D. Frank	553	12	Good casing delay 3 hrs repair generator
	H. Mike	616	12	
30	D. STAN	616	12	Left and Plumber arrived.
	H. CHARLIE	664	12	
30	D. Frank	664	12	Left muddy ground. Working
	H. Mike	732	12	
1	D. Allen	722	12	Left and Plumber arrived.
	H. Charlie	765	12	
1	D. Frank	765	12	very soft and muddy very poor casing
	H. Mike	827	12	
2	D. Allen	827	12	Left
	H. Charlie	867	12	
2	D. Frank	869	12	Very soft muddy
	H. Mike	912	12	
2	D. Allen	912	12	Very soft muddy
	H. Charlie	936	12	
3	D. FRANK	100	12	Very soft
	H. Mike	100	12	
Foreman: _____				Authorized Company Rep. _____

Company: *Central Del Rio, Inc.* Hotel No: *112*

DRILLING RECORD APOLLO EXPLORATION LTD.

Size:

Casing:

Inclination:

TD:

Property Location:

Date Began:

Date Finished:

Date	Employees	Footages	Hours	Remarks
4	D H	968	12	VERY SOFT AND BLOCKY
	H Claude	1010	17	PUMP CORE RECORDED
4	D Frank	1040	12	very soft and muddy
	H Mike	1053	12	
5	D H	1053	14	very soft and muddy
	H Mike	1074	14	2 hours leading hole toward S.
5	D Frank	1074	5	
	H Milt	1085	5	Rods finished Drilling Rods and preparing to cement
	D			
	H			
	D			
	H			
	D			
	H			
	D			
	H			
	D			
	H			
	D			
	H			
	D			
	H			

Foreman:

Authorized Company Rep.

Company: <i>Central Del Rio Oil Field</i>		Hole No: <i>Wood Buffalo No 1</i>		DRILLING RECORD	APOLLO EXPLORATION LTD.	Inclination: <i>2°</i>	T D:
Property Location: <i>Day River N.W.T.</i>		Date Began:		Date Finished:			
Date	Employees	Footages	Hours	Remarks			
<i>July</i>	D <i>Frank</i>	<i>17</i>	<i>17</i>	<i>Tear down set up. Cement hole from 700ft</i> <i>level down to bottom 12 bags cement</i> <i>plug hole at 200ft level and cement to</i> <i>surface 5 bags cement 5 hrs cementing</i> <i>Tear down all camp and load up</i> <i>160 ft AX casing and 1 casing shoe ^{Cemented} bottom in</i> <i>the hole</i>			
	H <i>Mike</i>	<i>17</i>	<i>17</i>				
	D <i>Stan</i>	<i>17</i>	<i>17</i>				
	H <i>Charlie</i>	<i>17</i>	<i>17</i>				
	D <i>Harry</i>	<i>17</i>	<i>17</i>				
	H						
	D						
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	H						
Foreman. _____		Authorized Company Rep. _____					