CANDEL DECKMG ET AL
EAST MACKAY B-45

Drilling Authority No. 497

Date Issued 28 January 1971

WELL NAME Candel DECHO et al East Mackay B-45

FIELD ..... Area: .....

LOCATION: Unit B Section 45 Grid 64-50-125-30

Latitude 64-44-09 Longitude 125-38-18

U.W.L.R. 64.73583 --- 125.63833

U.W.I. 3006445645012530 0

Rig Release Date: .....

Status: .....

Information Release Date: .....

CHANGE OF NAME:

DATE RECEIVED	INDEX
28-1-71	Application for a Drilling Authority.
10-4-71	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.
	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.
26/5/71	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.....

LAND 52-90 (3-69)

File No. .....
Drilling Authority No. ...497.....

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

OIL AND MINERAL DIVISION

WELL-SITE INSPECTION REPORT

FROM: Field Office or Area: Norman Wells Date: May 26, 1971

TO: The Oil Conservation Engineer:

RE: Candel DEGOG et al East Kackay B-45

Location: 64°44'09" N., 136°38'18" W. Status: Suspended oil well

This location was inspected by the undersigned on May 19, 1971

The location is in satisfactory/~~unsatisfactory~~ condition.

The following items require attention:

1.
2.
3.
4.
5.
6.

Other comments and recommendations: (Include Map, if necessary for clarity)

Lease in good condition.

Explosives cabin approximately 500 yards N.E. (Observed from air)

Swedge and bull plug and valve on well head.

See picture.

Spudded: February 6, 1971

Rig Released: March 8, 1971

Inspected by [signature]

Original to Oil Conservation Engineer, Dept of IA & ND, Duplicate to Field Office or Inspecting Engineer.
IAND 52-90-14 (9-69)

APR 15 1971

Drilling Authority No. 497

Date Issued January 28, 1971

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
OIL AND MINERAL DIVISION

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: Candel DECHO et al East Mackay B-45

Permit No.: 5525 Lease No.: -

• See attachment (Permittee, Licensee, Lessee) Exploratory Licence No.:

Canadian Delhi Oil Ltd. (Operator) Exploratory Licence No.: 1797

Location: Unit: B Section: 45 Grid: 64°50', 125°30'

Latitude: 64°44'09" Longitude: 125°38'18"

Unique well identifier: 300B456450125300

Universal Well Location Reference: Lat. 64.73583°N. Long. 125.63833°W.

	DATE	DEPTH
Spudded	2/6/71	
Suspended		
Resumed Operations		
Finished Drilling	3/5/71	5286'
Deepened		
Complete (gas/oil) Potential Oil		5286'
Abandoned		
Rig released	3/8/71	5286'

Pool(s):

Interval(s) open to production: None

Cased and cemented to bottom - no perforations.

Elevation: Gr. 837' K.B. 851'

Rig No. 9

Drilling Contractor: Jennings International Drilling

Contractor's Business Licence No. 770

CASING RECORD

	Casing Size (inches)	Grade	Weight	Amount	Set at –	Sacks of Cement and Additives
1.	8-5/8"	J-55	24#	627'	627'	400 sacks + 2% $CaCl_2$
2.	5½"	J-55	14#	5298.45'	5286'	150 sacks + 4% Gel and 498 sacks neat cement
3.						
4.						
5.						
6.						

GEOLOGICAL TOPS	ELEVATION Depths	ELEVATION Sub-Sea
Tertiary	Surface	
Cretaceous	540	+ 311
Upper Sand	2084	-1233
Middle Sand	3094	-2243
Bituminous Shale	3852	-3001
Sil-Ord.		
Ronning-Cherty	3992	-3141
Lower Dolomite	5146	-4295

CORE RECORD

From	To	Rec.	From	To	Rec.
5264'	5286'	21'			

LOG RECORD

Run No.	Type of Log	From	To
1	DIEL	5280	627
1	BHCS	5282	627
1	SNP	5285	1600
1	FD	5285	1600
1	CDM	5275	627

Corexcal	Licence No.	1709
Petrorep	"	1711
Petrol Oil & Gas	"	1697
Kerr McGee of Canada Northwest Ltd.	"	1678
Western Decalta	"	1696

APR 15 1971

Drilling Authority No. 497
Date Issued January 28, 1971

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
OIL AND MINERAL DIVISION

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Resumed Operations		
Finished Drilling	3/5/71	5286'
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Interval(s) open to production: None

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Bituminous Shale	3852	-3001
Sil-Ord.		
Ronning-Cherty	3992	-3141
Lower Dolomite	5146	-4295

CORE RECORD

From	To	Rec.	From	To	Rec.
5264'	5286'	21'			

LOG RECORD

Run No.	Type of Log	From	To
1	DIKL	5280	627
1	BHCS	5282	627
1	SNP	5285	1600
1	FD	5285	1600
1	CDM	5275	627

CEMENTING RECORD (Plug, Squeeze, etc.)			
Date	From	To	Remarks
Mar. 8/71			Ran 5½" casing to 5286' and cemented with 150 sacks cement + 4% gel and 498 sacks oilwell cement. Picked up BOPs and set casing slips.

PERFORATING RECORD (Bullet, Jet)			
Date	From	To	Remarks

SERVICING RECORD (Acidizing, Fracing, etc.)			
Date	From	To	Remarks

DRILL STEM TESTS

No.	Date	Formation	From	To	V.O. Mins.	I.S.I. Mins.	F.S.I. Mins.	I.S.I.B.H.P.	F.S.I.B.H.P.	I.F.B.H.P.	F.F.B.H.P.	I.H.P.	F.H.P.	REMARKS
1.	2/22/71	Silurian-Ordovician	3990	4042	120	60	120	No pressures recorded due to rough trip in hole						Rec. 100' oil-cut mud 1830' oil 530' salt water (1925 ppm.) Fair blow throughout test.
2.	2/25/71	Silurian-Ordovician	4042	4196	120	60	120	1600	1600	1320	1600	1950	1950	Rec. 100' mud-cut water 3440' sulphurous salt water (3,847 ppm.) Good air blow, dead in 108 minutes.

Pressures reported are field readings.

ANALYSIS

Lab. No.	Sample	From	To	Source	Remarks
931-167 933-1219	Oil Water	3990'	4092'	D.S.T. #1	Asphaltenes = 3.47% Paraffin = 11.62%
933-1219	Water	4042'	4196'	D.S.T. #2	
933-1256	Water	4042	4196	D.S.T. #2	

PRESENT STATUS OF WELL

Oil (Potential)	X	3990-4042' (Interval.)
Gas		(Interval.)
Dry		
Susp.		

Company Canadian Delhi Oil Ltd.

Signed by B. K. Leach

Title Vice President, Production

Date April 12, 1971

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

Corexcal	Licence No.	1709
Petrorep	"	1711
Petrol Oil & Gas	"	1697
Kerr McGee of Canada		
Northwest Ltd.	"	1678
Western Decalta	"	1696

CORE LABORATORIES – CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

OIL ANALYSIS

Company: Canadian Dehli Oil Ltd.

Page: 1 of 2

931-167

Well: CanDel E. Mackay B-45

File: 933-1219

Field: Wildcat

Analysts: EM

Location: Elevation: K.B. Grd.

Formation: Depth: 3990' - 4092'

Sampled from: DST #1 (BJ Tool #50) by BJ Testers

Date sampled: Feb. 22/41 Date received: Feb. 26/71 Date analysed: Feb. 26/71

DST Recovery: Tool Recovery: 2000 cc Water, 1000 cc Oil

API Gravity @ 60°F: 20.4

Sp. Gravity @ 60°F: 0.9315

Sulphur, weight %: 2.02%

Pour Point: 55°F

Viscosity	S.U.S	cp
@ 70 °F	9973.22	2000.55
@ 90 °F	2723.44	541.66
@ 110 °F	973.92	191.96

Salt content: 55.31 lbs/1000 bbl oil

BS	&	W	
3.0	%	7.0	% (of oil received)
	%		% (of oil analysed)

ASTM DISTILLATION

% Recovery	Temperature °F @ 644 mmHg
Initial Boiling Point	192
5	200
10	214
15	218
20	268
25	522
30	554
35	564
40	600
45	612
50	618
55	630

59.0 % Recovery
40.0 % Residue
1.0 % Distillation loss

Remarks: Asphaltenes = 3.47%

Paraffin = 11.62%

Drilling Authority No. 497
Project No.
File No.

CANADA

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
OIL AND MINERAL DIVISION

JAN 25 1971

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: Candel ~~DECMG etal~~ East Mackay B-45

Location: Unit: B Section: 45 Grid: 64° 50', 125° 30'

Latitude: 64° 44' 09" Longitude: 125° 38' 18"

Unique Well Identifier: 300B5645012530O

Universal Well Location Reference: ~~Lat. 64.73583° N., Long. 125.63833° W.~~

Elevation: Ground 837' K.B. 850' Est. feet above sea-level.

Well is expected to produce from M & L Devonian, Sil-Ord. formation at a depth of about 4100 to 5800 feet. Expected total final depth 5850'

Area assigned to well

(For Oil Conservation Engineer's use only)

Permit No. 5525 Lease No. - Acreage 27373

Permittee, licensee, or lessee (see over)

Exploratory Licence No. 1696

Surface owned by Crown

(or alternate submit name and address of owner and occupant.)

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	Sacks of Cement
1. 8 5/8	24#	J-55	New	600	350
2.					
3.					
4.					
5.					

Expected water, gas, and oil horizons and type of control equipment: BOP stack & drilling fluid.
M & L Devonian - Hume and Sil-Ord. - Ronning

Well will be drilled with Rotary Rig No. 9 by Jennings International Drilling
(Drilling Contractor or company)
(Division of Western Electronics & Eng. Ltd.)

Responsible agent of applicant:— Contractor's Business Licence No. 770

At well: D. R. Nelson At registered office: R. K. Terrell

Address: 330 - 5th Ave. S.W., Calgary 1 Address: 330 - 5th Avenue S.W., Calgary 1, Alta.

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

Dated at Calgary, this 22nd day of January, 19 71

Signed by [signature] Company: Canadian Delhi Oil Ltd.

Title: Land Manager Operator's Licence No. 1797

(For Oil and Mineral Division use only)

APPROVED

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

1. Copies of this Drilling Authority shall be exhibited at the Drilling Rig in both the Doghouse and the Drilling Foreman's Office between spud and rig release dates.
2. The Company will submit to this office, on Tuesday of each week, the latest reports

Please see over page

Dated 28th January 19 71 Oil Conservation Engineer

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

IAND 52-90-1 (3-69)

received by radio on the progress of the well.

3. During well drilling and testing operations, every effort shall be made to ensure that 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.

4. We draw your attention to Sections 95 and 96 of the Canada Oil and Gas Land Regulations.

5. Surface casing is to be set at least 75 feet into a consolidated formation.

6. Any additional strings of casing are to be approved by the Oil Conservation Engineer prior to running.

B.H.J. Thoms, Oil Conservation Engineer

Corexcal	License No.	1709
Petrorep	" "	1711
Petrol Oil & Gas	" "	1697
Kerr McGee of Canada Northwest Ltd.	" "	1678
Western Decalta	" "	1696

Drilling Authority No. 497
Project No.
File No.

CANADA

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OIL AND MINERAL DIVISION

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Name and number of well: Candel DECKING etal East Mackay B-45

Location: Unit: B Section: 45 Grid: 64° 50', 125° 30'

Latitude: 64° 44' 09" Longitude: 125° 38' 18"

Unique Well Identifier: 300B4564501255300

Universal Well Location Reference: Lat. 64.73583° N., Long. 125.63833° W.

Elevation: Ground: 837' K.B. 850' Est. feet above sea-level.

Well is expected to produce from: M & L Devonian, Sil-Ord. formation at a depth of about: 4100 to 5800 feet. Expected total final depth: 5850'

Area assigned to well: (for Oil Conservation Engineer's use only)

Permit No.: 5525 Lease No.: - Acreage: 27373

Permittee, licensee, or lessee: (see over)

Exploratory Licence No.: 1696

Surface owned by Crown xx (If alienated submit name and address of owner and occupant.)

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	Sacks of Cement
1. 8 5/8	24#	J-55	New	600	350
2.					
3.					
4.					
5.					

Expected water, gas, and oil horizons and type of control equipment: BOP stack & drilling fluid.
M & L Devonian - Hume and Sil-Ord. - Ronning

Well will be drilled with Rotary Rig No. 9 by Jennings International Drilling (Drilling Contractor or company)
(Division of Western Electronics & Eng. Ltd.)

Responsible agent of applicant:— Contractor's Business Licence No. 770

At well: D. R. Nelson At registered office: R. K. Terrell

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(For Oil and Mineral Division use only)

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Dated 28th January 19 71 Please see over page
Oil Conservation Engineer

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

IAND 52-90-1 (3-69)

received by radio on the progress of the well.

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6. Any additional strings of casing are to be approved by the Oil Conservation Engineer prior to running.

B.H.J. Thorn, Oil Conservation Engineer

Corexcal — Licence No. 1709
Petrorep — " " 1711
Petrol Oil & Gas — " " 1697
Kerr McGee of Canada Northwest Ltd. — " " 1678
Western Decalta — " " 1695

GEOLOGICAL PROGNOSIS

Well Name: Candel et al East Mackay B-45

Location: B-45-64-50-125-30

Elevation: Ground 837' (shot point 527)

K.B. est. 850'

Operator: Canadian Delhi Oil Ltd.

Formation	Drilling Depth	Sub-Sea Depth
Tertiary	near surface	
Cretaceous		
Upper Sands	?	
Basal Sands	3260	-2410
U. Devonian		
Imperial	3360	-2510
Canol	4010	-3160
M & L Devonian		
Hume	4100	-3250
Bear Rock	4450	-3600
Sil-Ord		
Ronning	5450	-4600
Total Depth	5850	-5000

Note: 1. Anhydrite can be expected in the Bear Rock section.

Samples: One bag of washed samples will be taken at 10 foot intervals from surface to total depth.

Testing: All tests at discretion of wellsite geologist.

Coring: If water free hydrocarbons are recovered on a test, a core should be cut and further tests run if warranted.

Logging:

Dual Ind. Laterolog	2" T.D. to surface casing 5" T.D. to surface casing
BHC Sonic Gamma w/ Caliper	2" T.D. to surface casing 5" T.D. to surface casing
Formation Density	2" T.D. to surface casing 5" T.D. to surface casing

(Over)

Logging: Cont'd.

Sidewall Neutron Porosity 2" T.D. to surface casing

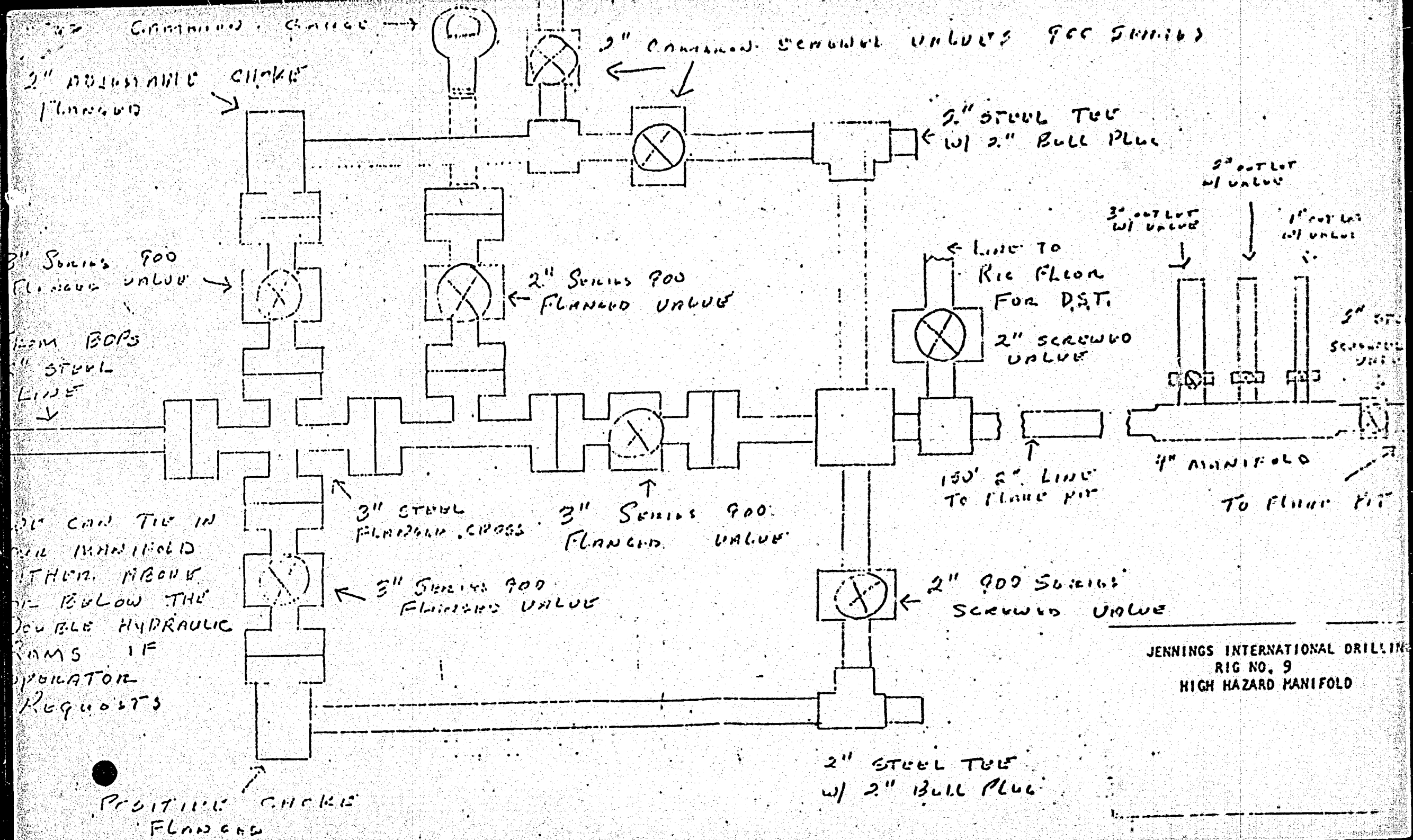
5" T.D. to surface casing

Canadian Delhi Oil Ltd.,
28th Floor, Calgary Place No. 1,
330 - 5th Avenue S.W.,
CALGARY 1, Alberta.

Phone: 265-3430

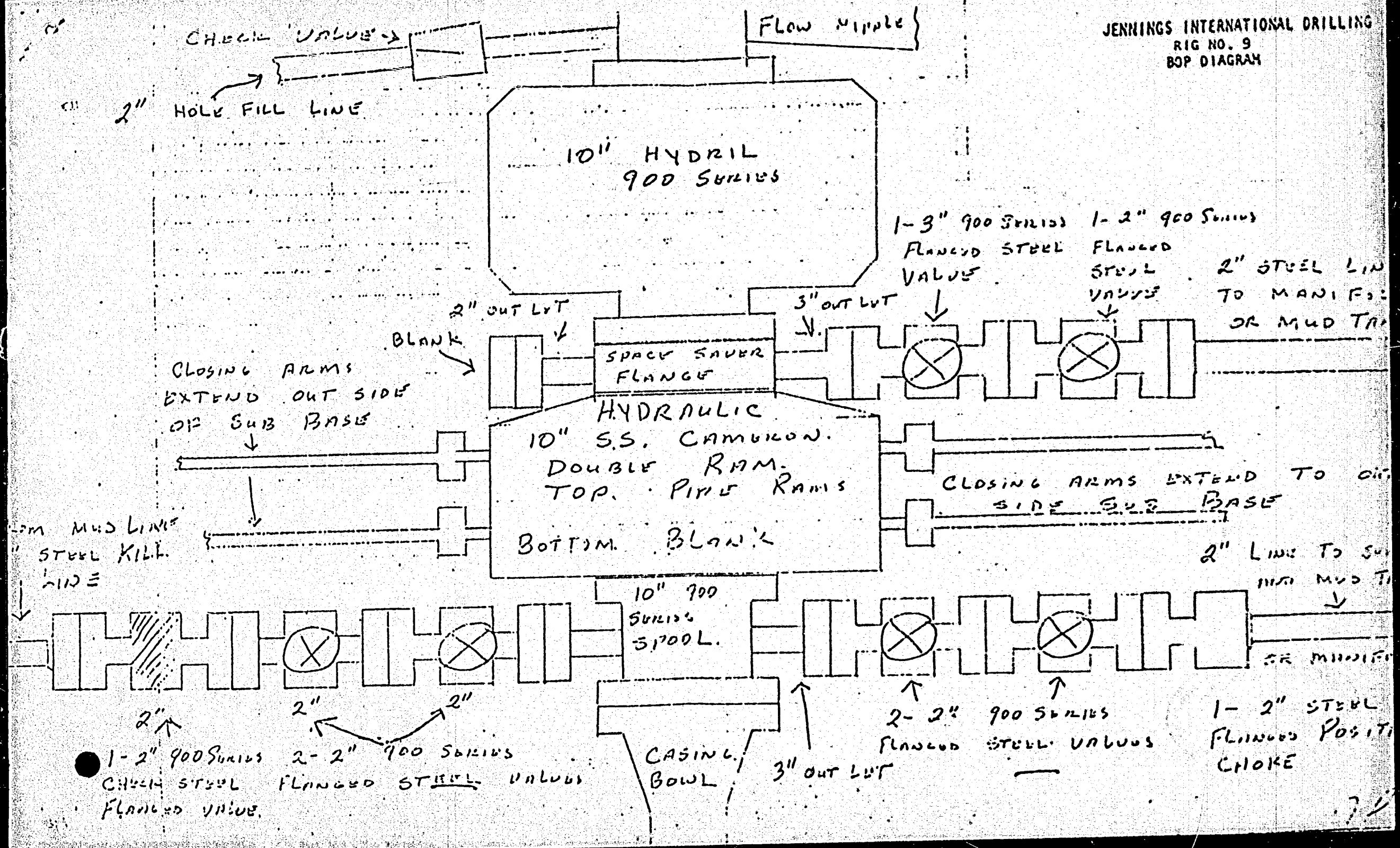
K. E. Basarsba — Home Phone: 282-4698
D. M. Ericson — " " 252-3277
R. K. Terrell — " " 289-7652

******



JENNINGS INTERNATIONAL DRILLING
RIG NO. 9
HIGH HAZARD MANIFOLD

JENNINGS INTERNATIONAL DRILLING
RIG NO. 9
BOP DIAGRAM



WELL HISTORY REPORT

ON

CANDEL DECKING ET AL EAST

MACKAY B-45

821-11-5-1

This is a concise report of the operations conducted at the well

CANDEL DECKMG ET AL EAST MACKAY B-45

Data in this report was compiled for Canadian Delhi Oil Ltd. by W. R. Smith, P. Eng., Geological Consultant at the well.

K. E. Basaraba,
Canadian Delhi Oil Ltd.
April 23, 1971

GEOLOGICAL REPORT

ON

CANDEL DECKMG ET AL EAST MACKAY B-45

64° 44' 09"N 125° 38' 18"W

NORTHWEST TERRITORIES

CANADA

APRIL 7, 1971.

Submitted By

W. R. Smith, P. Eng.

TABLE OF CONTENTS

GEOLOGICAL CONDITIONS AS FOUND IN THE WELL

Candel DECKING et al East MacKay B-45 was drilled into the Ronning Formation to test a seismic structure. The structure was found to be valid with the Cretaceous formations and the Paleozoic erosion surface encountered close to prognosis.

The Upper Sandstone and the Middle Sandstone of the Cretaceous were both porous but had no oil staining. A test was not deemed to be warranted. No sandstone was developed in the base of the Cretaceous but a bituminous shale was encountered at 3853 and underlying this a grey shale was penetrated to 3992 where the Ronning (cherty zone) was encountered. These cherty dolomites were poorly porous but oil saturated and were penetrated to 4042 in an attempt to ensure a positive drill stem test. Saturation was incomplete just above 4042 KB. A drill stem test yielded 1830' of 20° API gravity oil and 530' of salt water.

Drilling was resumed to 4196 when another drill stem test was called to ensure that the base of the oil zone had been encountered. Salt water only was recovered from this test.

The Ronning (cherty zone) was drilled to 5146 when the Lower Dolomite of the Ronning was encountered. The well bottomed in this formation.

This well revealed the following three conditions:

a) there existed a strong Pre-Cretaceous structure and subsequent profound Pre-Cretaceous erosion,

b) good porosity was present in the Ronning Formation, and

c) oil was present in the porosity.

The above conditions make the prospects of large and commercial oil fields a distinct probability for this area of the North West Territories.

SUMMARY OF WELL DATA

Name of Well:	Candel DECKMG et al East MacKay B-45	
Location:	64° 44' 09"N 125° 38' 18"W B - 45 - 64 - 50 - 125 - 30	
Universal Well Location Reference:		
	Lat 64.73583N	
	Long 125.63833W	
Permittees:	Corexcal	Licence No. 1709
	Petrorep	Licence No. 1711
	Petrol Oil & Gas	Licence No. 1697
	Kerr McGee of Canada Northwest Ltd.	Licence No. 1678
	Western Decalta	Licence No. 1696
Operator:	Canadian Delhi Oil Ltd., 28th Floor, Calgary Place, 330 - Fifth Avenue S. W., CALGARY 1, Alberta.	
Unique Well Identifier:	300B456450125300	
Permit No.	5525	
Drilling Contractor:	Jennings International Drilling, Rig No. 9, GA500 Emsco	
Drilling Authority:	No. 497 Issued January 28, 1971.	
Classification:	New field wildcat	
Elevations:	Ground level	837'
	Kelly Bushing	851'
Spudded:	1:30 P.M. February 6, 1971.	
Drilling Completed:	March 5, 1971.	

WELL DATA CONT'D.

Total Depth:	5286
Well Status:	Oil well (suspended)
Rig Released:	Midnight March 8, 1971.
Hole Sizes:	12¼ 0-627KB
	7 7/8" 627-5286KB
Surface Casing:	On February 9, 1971, ran 16 joints of 8 5/8", 24#, J-55, 8rd, Rge. 2, Mannesman casing, 627' set at 627' KB and cemented with 400 sacks of construction cement plus 2% $Cacl_2$.
Production Casing:	On March 8, 1971, ran 144 joints (5298.45'), 5½", 14#, J-55, Mannesman casing, landed at 5286 KB and cemented with 150 sacks cement plus 4% gel and 498 sacks oil well cement.
Engineer:	D. Nelson
Geologist:	W. R. Smith
Toolpusher:	G. Ludviksen

CANDEL DECKING ET AL EAST MACKAY B-45

TABLE OF FORMATIONS

Formations	Prognosis Depth	Elevation	Sample Depth	E-log Depth	E-log Elevation
Tertiary	Near surface		Surface		
Cretaceous			540		
Upper Sands	?		2080	2084	-1233
Middle Sands			3096	3094	-2243
Basal Sands	3260	-2410			
Bituminous Shale			3870	3852	-3001
U. Devonian					
Imperial	3360	-2510			
Canol	4010	-3160			
M & L Devonian					
Hume	4100	-3250			
Bear Rock	4450	-3600			
Sil-Ord					
Ronning	5450	-4600	3992	3992	-3141
Lower Dolomite (Rythmic)				5146	-4295
Total Depth	5850	-5000	5286	5286	-4435

CORE DESCRIPTIONS

5264 - 5286	Porous	Non-Porous	Core No1, Rec 21 ft., Times - 20, 26, 20, 20, 23, 24, 23, 26, 28, 24, 19, 23, 20, 22, 16, 19, 20, 20, 26, 31, 24, 20
A - B		5.3	Dolomite - light brown, medium hard, finely crystalline, calcite crystals infilling, argillaceous in part, former vugular porosity, calcite crystals brown in part (stained with feruginous material); shale as parting along bedding and in fractures - bright green, soft, waxy, fracture near horizontal, bedding at approximately 30°
B - C		3.6	Dolomite - light brown and grey with slight green caste, finely crystalline, slightly argillaceous, calcite crystals in former vug, fractured at approximately 30° to horizontal and fracture are infilled with calcite and shale - green, soft, waxy, bedding at 30° to horizontal
C - D		3.1	Dolomite - light to dark brown, medium hard, finely crystalline, slightly argillaceous in part, calcite infilling vugs; shale - black, soft, waxy, as partings, slickensiding, fractured approximately 20° to horizontal, bedding 30° to horizontal
D - E		5.8	Dolomite - grey with a green caste in part, fine to medium crystalline, very slightly argillaceous, calcite infilling of former porosity; shale - as parting and fracture filling - green, waxy, soft, multi-angled fracture, bedding at 30° to horizontal
E - F		3.3	Dolomite - grey-green to grey and red, medium hard, microcrystalline, slightly argillaceous in part, calcite veinlets and fracture filling, finely pyritic in part; shale - green, soft, waxy as shale partings and fracture filling, multi-angled fine fractures, bedding at 30° to horizontal

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SAMPLE & CORE DESCRIPTIONS

Surface - 20	Sandstone - buff, medium hard, salt & pepper, fine grained, poor sorting, quartzose (rounded grains), mafic (sub-rounded), clay matrix
20 - 50	Shale - grey, soft, carbonaceous partings common; trace of sandstone - buff, medium hard, fine grained to silty, quartzose (sub-rounded grains), micaeous, very argillaceous, unsorted; trace of coal - black, soft, fiberous
50 - 70	Shale - grey, soft, carbonaceous partings; siltstone - grey, medium hard, very slightly calcareous
70 - 80	Sandstone - light grey (salt & pepper), fine grained grading to silt, poor sorting, quartzose (rounded grains), mafics (sub-rounded), clay matrix; siltstone - cream & buff, medium hard, slightly calcareous
80 - 110	Shale - grey, soft carbonaceous partings, silty in part; sandstone - grey, very fine grained grading to siltstone, quartzose (sub-rounded grains), poorly sorted, clay matrix, mica (trace)
110 - 160	Sandstone - light grey (salt & pepper), soft to medium hard, fine grained grading to siltstone, unsorted, quartzose (rounded & frosted), mafics (sub-angular), clay matrix; shale - grey, soft, carbonaceous partings
160 - 180	Sandstone - light to dark grey, soft to medium hard, fine to medium grained, medium sorting, quartzose (rounded grains frosted), mafics (sub-rounded), calcareous, argillaceous in part, trace of poor porosity
180 - 230	Sandstone - grey to dark grey, soft to medium hard, fine grained, medium sorting, quartzose (sub-rounded grains, frosted in part), mafics (sub-rounded grains), argillaceous in part, slightly calcareous, trace of poor porosity
230 - 250	Shale - grey, soft, silty in part, carbonaceous partings; sandstone - grey to dark grey, medium hard to soft, fine to medium grained, medium sorting, quartzose (sub-rounded to angular), chert (trace) (sub-rounded), mafics (sub-rounded to sub-angular), very slightly calcareous, argillaceous, trace of poor porosity

250 - 280	Sandstone - grey to dark grey, fine to medium grained, poorly sorted, quartzose (sub-rounded grains), chert (sub-rounded grains), mafic (sub-angular grains), very slightly calcareous, argillaceous in part
280 - 310	Sandstone - grey to dark grey, soft to medium hard, fine grained grading to siltstone, poor sorting, quartzose (sub-rounded grains), mafics (sub-rounded grains) calcareous in part, argillaceous in part; siltstone - light grey to grey, soft to medium hard, slightly argillaceous
310 - 380	Siltstone - light to dark grey, soft, shaly in part, sandstone - grey to dark grey, soft to medium hard, very fine grained grading to siltstone, unsorted, quartzose (sub-rounded grains), chert (sub-rounded grains), mafics (sub-rounded grains), argillaceous in part; shale - grey, soft, carbonaceous partings in part
380 - 480	Shale - grey, soft; siltstone - grey, medium hard to soft, sandy in part; sandstone - grey, soft, fine grained grading to siltstone, unsorted, quartzose (sub-rounded grains), mafics (sub-rounded), micaeous, argillaceous
480 - 490	Shale - grey, soft, micromicaeous in part, silty in part, bentonitic in part
490 - 500	Siltstone - grey, soft to medium hard, slightly calcareous, sandy in part; shale - grey, soft, sandy in part
500 - 510	Shale - grey, soft, silty in part, slightly bentonitic
510 - 540	Siltstone - grey, soft to medium hard, sandy in part; shale - grey, soft, silty in part, carbonaceous partings
540 - 550	Shale - grey, soft, bentonitic in part, silty in part, micromicaeous in part, slightly calcareous in part, fossil fragments; shale - light grey-green, soft
550 - 560	Shale - grey, soft, micromicaeous in part, bentonitic in part, floating chert pebbles - grey to black, round, coarse; trace of shale - light grey-green, soft
560 - 570	Shale - grey, soft, micromicaeous in part, bentonitic in part, silty in part, trace of pyritic
570 - 620	Shale - grey, soft, micromicaeous in part, bentonitic in part, silty in part, pyritic, floating chert pebbles - grey to black, rounded, coarse; trace of shale - light grey-green, soft, pyritic, fossil debris

627 - 810	Shale - grey to dark grey, soft, bentonitic, micromicaeous; shale - light grey-green, very poor samples, fossil fragments
810 - 840	Shale - grey to dark grey, soft to medium hard, micromicaeous; trace shale - light grey-green, very poor samples
840 - 860	Shale - grey to dark grey, soft to medium hard, micromicaeous in part, silty in part, bentonitic, very poor sample
860 - 890	Shale - grey to dark grey, soft to medium hard, micromicaeous in part, silty in part, bentonitic, poor sample; shale - light grey-green, soft
890 - 900	Shale - grey to dark grey, soft to medium hard, micromicaeous in part, bentonitic; shale - light grey-green, soft, poor sample
900 - 950	Shale - grey to dark grey, soft to medium hard, micromicaeous in part, silty in part, bentonitic in part; shale - light grey-green, soft, poor sample
950 - 1280	Shale - grey to dark grey, soft to medium hard, micromicaeous in part, bentonitic in part; shale - light grey-green, soft, poor sample, fossil fragments
1280 - 1470	Shale - grey to dark grey, medium hard, silty in part; chert pebbles - grey, brown & black, rounded, coarse grained, fossil fragments; shale - light grey-green, medium hard, poor sample
1470 - 1480	Shale - grey to dark grey, medium hard, slightly silty in part; shale - light grey-green, soft; trace of sandstone - light grey, soft, fine grained, well sorted, quartzose (sub-rounded), fair porosity, no show, fossil fragments, poor sample
1480 - 1500	Shale - grey to dark grey, medium hard; shale - light grey and light grey-green, medium hard; chert pebbles - grey & black, rounded, coarse, poor sample
1500 - 1540	Shale - grey to dark grey, medium hard, micromicaeous in part; silty in part; shale - grey-green, soft
1540 - 1550	Shale - grey to dark grey, medium hard, micromicaeous in part; silty in part; shale - light grey-green, soft, chert pebbles - black, rounded, coarse; trace coal - black, lustrous, hard, fossils
1550 - 1650	Shale - grey to dark grey, medium hard, micromicaeous in part, silty in part; shale - light grey-green, medium hard, fossil fragments, trace pyrite, trace chert pebbles

1650 - 1770	Shale - grey to dark grey, medium hard, micromicaeous, silty in part, trace slicken siding; shale - light grey-green, medium hard; chert pebbles - black, grey & dark brown, rounded, coarse, trace pyrite
1770 - 1790	Shale - grey to dark grey, medium hard, micaeous, silty in large part; sandstone - grey (salt & pepper), fine grained, medium sorting, quartzose (sub-rounded grains), chert (rounded grains), trace of porosity, no fluorescence in chlorothene
1790 - 1920	Shale - grey to dark grey, medium hard, micromicaeous; shale - white, cream & light grey-green, medium hard, pyritic; chert pebbles - varicolored, rounded, coarse grained, pyritic, fossil fragments
1920 - 1930	Shale - grey to dark grey, medium hard, micromicaeous; silty in part; shale - white, cream & light grey-green, medium hard; chert pebbles - grey, brown & black, rounded, coarse grained, fossil debris
1930 - 1940	Shale - grey to dark grey, medium hard, micromicaeous, silty in part; shale - white, cream & light grey-green, medium hard, pyrite fossil debris
1940 - 2020	Shale - grey to dark grey, medium hard, silty in part, micromicaeous in part; shale - cream to apple green, medium hard; chert pebbles - black and grey, round, coarse grained, fossil fragments, pyrite
2020 - 2090	Shale - dark grey, medium hard, silty in part, micromicaeous; shale - cream & light grey-green, medium hard, fossils, trace of pyrite
2090 - 2120	Chert - varicolored, angular fragments of round pebbles (large)
2120 - 2130	Sandstone - light grey (salt & pepper), soft to medium hard, fine grained, medium sorting, quartzose (sub-rounded grains), chert (rounded grains), argillaceous in part, poor porosity (12%) no staining, chert fragments - varicolored, pyrite
2130 - 2150	siltstone - light grey, medium hard, sandy in part; chert fragments - varicolored, pyrite; shale - light grey-green, medium hard
2150 - 2200	Sandstone - light grey, medium hard, fine grained, medium sorting, quartzose (rounded grains), chert (rounded grains), slightly micaeous, poor porosity, no fluorescence in chlorothene; chert - fragments - varicolored, angular

2200- 2240	Shale - grey to dark grey, medium hard, micromicaeous, calcareous in small part; shale - cream and light grey-green, medium hard; sandstone - light grey (salt & pepper), fine grained, medium sorting, quartzose (sub-rounded grains), chert (rounded grains), argillaceous in part, poor porosity (intergranular), no staining
2240 - 2270	Siltstone - grey to dark grey, medium hard, grading to sandstone - light grey, medium hard, fine grained grading in to silt, poor sorting, quartzose (sub-rounded grains), chert (rounded grains), argillaceous in part; shale - light grey-green, medium hard
2270 - 2280	Siltstone - grey to dark grey, medium hard, grading to sandstone - light grey, medium hard, fine grained grading to silt, poor sorting quartzose (sub-rounded grains), chert (sub-rounded grains), argillaceous in part, shale - buff, cream and light grey-green, medium hard; coal - black, hard, lustrous, sub-conchoidal fracture
2280 - 2290	Shale - dark grey to black, medium hard; siltstone - grey to dark grey, medium hard
2290 - 2310	Sandstone - light grey (salt & pepper), medium hard, fine grained, good sorting, quartzose (rounded grains), chert (rounded grains), argillaceous in small part, poor porosity, no stain; shale - dark grey to black, medium hard, micromicaeous
2310 - 2330	Sandstone - light grey (salt & pepper), medium hard, fine to medium grained, fair sorting, quartzose (sub-rounded grains), chert (sub-rounded grains, slightly argillaceous in part, a few coarse floating pebbles of chert - varicolored, round, fair porosity (15%), no staining
2330 - 2350	Sandstone - light grey (salt & pepper), medium hard to soft, fine grained, medium sorting, quartzose (sub-rounded grains), chert (sub-rounded grained), argillaceous in part, poor porosity, no staining
2350 - 2360	Sandstone - light grey to grey, fine grained grading to silt, medium hard, poor sorting, quartzose (sub-rounded grains), chert (sub-rounded grains), argillaceous, pyritic
2360 - 2380	Siltstone - grey to dark grey, medium hard, sandy in part; shale - dark grey, medium hard, carbonaceous partings

2380 - 2410	Siltstone - grey to dark grey, medium hard, sandy in part; shale - light brown, medium hard, calcareous, floating glauconitic pebbles - medium, pyrite
2410 - 2450	Sandstone - grey, medium hard, fine grained, medium sorting, quartzose (rounded grains), chert (rounded grains), argillaceous in small part, trace of intergranular porosity, no staining; siltstone - grey to dark grey, medium hard, shaly in part
2450 - 2470	Sandstone - light grey to grey, medium hard, very fine grained grading to siltstone, poorly sorted, quartzose (sub-rounded grains), chert (sub-rounded grains), argillaceous
2470 - 2480	Sandstone - light grey, soft, fine to medium grained, well sorted, quartzose (rounded grains), chert (rounded grains), poor intergranular porosity, no staining, siliceous cement
2480 - 2490	Shale - light to dark grey, medium hard; coal - black, fiberous in part, lustrous in part; sandstone - light grey, medium hard, fine grained, medium sorting, quartzose (rounded grains), chert (rounded grains), coal matrix in part, trace of porosity, no staining
2490 - 2560	Sandstone - light to dark grey, medium hard, fine to very fine grained, medium sorting, quartzose (sub-rounded, chert (sub-rounded grains), argillaceous in small part, trace of poor porosity, no staining
2560 - 2600	Sandstone - light to dark grey & brown, medium hard, very fine grained grading to silt, poor sorting, quartzose (sub-rounded grains), chert (sub-rounded), argillaceous, trace of mica
2600 - 2640	Siltstone - light grey to grey, medium hard, grading to sandstone - light to dark grey, medium hard, very fine grained, poor sorting, quartzose (sub-rounded grains), chert (sub-rounded grains), argillaceous; shale - light to dark grey, medium hard
2640 - 2670	Sandstone - light grey to grey & brown (salt & pepper), medium hard, very fine grained, medium sorting, quartzose (rounded grains), chert (rounded grains), argillaceous in part; siltstone - light grey to dark grey, medium hard
2670 - 2680	Siltstone - light grey to dark grey, medium hard, sandy in part
2680 - 2710	Siltstone - dark grey, medium hard, micromicaeous; shale - dark grey to black, medium hard, micromicaeous
2710 - 2740	Sandstone - light to dark grey, medium hard, very fine grained, medium sorting, quartzose (sub-rounded grains), chert (sub-rounded grains), argillaceous

2740 - 2750	Siltstone - grey, medium hard, slightly calcareous in part, micaeous in part; sandstone - light to dark grey, medium hard, very fine grained, medium sorted, quartzose (sub-rounded grains), chert (sub-rounded grains), argillaceous; slightly calcareous; shale - grey to dark grey, medium hard
2750 - 2770	Shale - grey to dark grey, medium hard; siltstone - grey, medium hard, slightly calcareous in part
2770 - 2780	Shale - grey to dark grey, medium hard; siltstone - grey, medium hard
2780 - 2820	Shale - grey to dark grey, medium hard; siltstone - grey, medium hard; sandstone - grey, medium hard, very fine grained, medium sorting, quartzose (sub-rounded grains), chert (sub-rounded grains), argillaceous
2820 - 2850	Shale - grey to dark grey, medium hard; siltstone - grey, medium hard, sandy in small part
2850 - 2860	Siltstone - grey to dark grey, medium hard, sandy in part; shale - dark grey, medium hard
2860 - 2880	Sandstone - grey, medium hard, very fine grained grading to siltstone; quartzose (sub-rounded grains), chert (sub-rounded grains), argillaceous in part, trace of glauconite, trace of mica
2880 - 2890	Siltstone - light grey to dark grey, medium hard, sandy in part; shale - dark grey, medium hard, micromicaeous
2890 - 2900	Sandstone - grey, medium hard, fine grained grading to siltstone, poorly sorted, quartzose (sub-rounded grains), chert (sub-rounded grains), argillaceous; siltstone - grey to dark grey, medium hard
2900 - 2910	Siltstone - grey to dark grey, medium hard, sandy in part; shale - grey to dark grey, medium hard, micromicaeous
2910 - 2950	Sandstone - light grey to grey, medium hard, fine grained grading to siltstone, unsorted, quartzose (sub-rounded grains), mafics (sub-rounded grains), argillaceous
2950 - 2970	Sandstone - light to dark grey, medium hard, very fine grained grading to siltstone, unsorted, quartzose (sub-rounded to sub-angular grains), chert (sub-angular grains), argillaceous, siltstone - grey to dark grey, medium hard, pyritic

2970 - 3010	Sandstone - light to dark grey and brown, medium hard, very fine grained grading to siltstone, unsorted, quartzose (sub-rounded to sub-angular), chert (sub-angular grains), argillaceous, trace of mica
3010 - 3040	Sandstone - light grey to grey and brown, medium hard, very fine grained grading to siltstone, unsorted, quartzose (sub-rounded to sub-angular), chert (sub-angular grains), argillaceous, trace of mica, pyrite; siltstone - grey and light brown, medium hard
3040 - 3110	Sandstone - light grey to grey and brown, medium hard, very fine grained, unsorted, quartzose (sub-rounded grains), chert (sub-rounded grains), argillaceous, trace of pyrite, trace of mica; siltstone - light to dark grey, medium hard; shale - dark grey, medium hard, micromicaeous in part, fossils
3110 - 3140	Sandstone - white (salt & pepper), soft, fine grained, medium sorted, quartzose (sub-angular grains), mafic (sub-angular grains), siliceous cement, fair intergranular porosity, no staining, trace of pyrite, trace of mica
3140 - 3150	Sandstone - white (salt & pepper), soft, fine grained, medium sorting, quartzose (sub-angular grains), mafic (sub-angular grains), siliceous cement, trace of pyrite, poor intergranular porosity, no staining
3150 - 3170	Sandstone - grey, medium hard, fine grained to very fine grained, medium sorting, quartzose (sub-angular grains), mafics (sub-angular grains), argillaceous in part; shale - dark grey, medium hard, micromicaeous, silty in part
3170 - 3220	Siltstone - grey to dark grey, medium hard; shale - grey to dark grey, medium hard, micromicaeous
3220 - 3230	Sandstone - grey, medium hard, fine grained grading to siltstone, unsorted, quartzose (sub-rounded grains), mafics (sub-angular grains), clay matrix in part; shale - grey to dark grey, medium hard, micromicaeous
3230 - 3280	Siltstone - grey to dark grey, medium hard; shale - grey to dark grey, medium hard, micromicaeous
3280 - 3300	Shale - grey to dark grey, medium hard, micromicaeous in part, silty in part
3300 - 3320	Shale - light to dark grey, medium hard, micromicaeous in part, silty in part; shale - white to light grey, splintery in part, pyritic; siltstone - light to dark grey, medium hard, fossil fragments

3320 - 3340	Shale - light to dark grey, medium hard, micromicaeous in part; sandstone - light grey to grey, medium hard, fine to very fine grained, poorly sorted, quartzose (sub-rounded grains), mafics (sub-rounded grains), argillaceous in part, silty in part
3340 - 3360	Siltstone - light to dark grey, medium hard; shale - grey to dark grey, medium hard, micromicaeous in part
3360 - 3440	Sandstone - light grey to grey, medium hard, very fine grained, poorly sorted, quartzose (sub-rounded grains), mafics (sub-rounded grains), pyritic, argillaceous in part, calcareous in part; siltstone - light to dark grey, medium hard; shale - grey to dark grey, medium hard, micromicaeous in part
3440 - 3460	Shale - dark grey to black, medium hard, micromicaeous; sandstone - grey, very fine grained grading to siltstone, poorly sorted, quartzose (sub-rounded grains), mafics (sub-rounded grains), argillaceous in part
3460 - 3480	Shale - dark grey to black, medium hard, micromicaeous; siltstone - dark grey, medium hard
3480 - 3500	Shale - cream, light to dark grey, medium hard, micromicaeous in part; bentonitic, siltstone - grey, medium hard, sandy in part
3500 - 3510	Shale - white, cream & grey, medium hard, micromicaeous in small part, bentonitic in part
3510 - 3520	Siltstone - grey, medium hard, sandy in part; shale - grey, medium hard,
3520 - 3540	Shale - grey and grey brown, medium hard, silty in part; sandstone - grey and light grey, medium hard, very fine grained, unsorted, quartzose (sub-rounded grains), slightly calcareous, argillaceous in part
3540 - 3580	Shale - grey to dark grey, medium hard, micromicaeous in part; sandstone - grey, medium hard, very fine grained grading to siltstone, quartzose (sub-rounded grains), argillaceous, slightly calcareous
3580 - 3610	Shale - dark grey, medium hard, micromicaeous,; siltstone - grey to dark grey, medium hard, sandy in small part, pyritic
3610 - 3690	Shale - grey-brown, medium hard, micromicaeous in part; sandstone - light grey to grey-brown, medium hard, fine grained to very fine grained, quartzose (sub-rounded grains), argillaceous in part; pyrite; siltstone - grey, medium hard

3690 - 3740	Shale - dark grey, medium hard, micromicaeous; siltstone - grey to dark grey, medium hard
3740 - 3780	Shale - grey-brown to dark grey, medium hard, micromicaeous in part; siltstone - grey and grey-brown, medium hard, sandy in part, pyritic
3780 - 3820	Shale - grey-brown, medium hard, micromicaeous; siltstone - grey, to grey-brown, medium hard
3820 - 3840	Shale - light brown to grey brown, medium hard, calcareous in small part, siltstone - grey to grey-brown, medium hard; sandstone - grey, medium hard, fine grained grading to siltstone, quartzose (sub-rounded grains), slightly argillaceous.trace of calcite, pyrite
3840 - 3870	Shale - grey to dark grey and grey-brown, medium hard, micromicaeous; siltstone - grey, medium hard, sandy in part, pyritic, trace of calcite crystals
3870 - 3880	Shale - grey to grey-brown and dark grey and black, medium hard, micromicaeous, pyritic
3880 - 3900	Shale - black and dark grey, medium hard, sightly micromicaeous, slightly fissile, slightly bituminous
3900 - 3910	Shale - dark brown to black, medium hard, bituminous, sandy in small part, trace sandstone - light grey, hard, fine grained, unsorted, quartzose (sub-angular grains), siliceous cement, sandstone is finely interbedded with shale, fish scales (trace)
3910 - 3950	Shale - dark brown to very dark grey, medium hard, bituminous in part, sandy in part, trace of fish scales; sandstone - light to dark grey, medium hard, fine grained grading to siltstone, poorly sorted, quartzose (rounded to sub-rounded), chert (rounded to sub-rounded grains), argillaceous, siliceous cement in part, pyritic in part
3950 - 3960	Shale - grey to black, medium hard, micromicaeous, fissile in part; siltstone - grey to dark grey, medium hard, sandy in part, pyritic
3960 - 3970	Shale - grey to black, medium hard, micromicaeous, fissile in part; finely interbedded with sandstone - grey to dark grey, medium hard to hard, medium grained grading to siltstone, quartzose (rounded grains), poorly sorted, argillaceous, siliceous cementing

3970 - 3990	Shale - dark grey to black, medium hard, fissile in part, micromicaeous in part; siltstone - grey, medium hard
3990 - 4000	Shale - grey to dark grey, medium hard, fissil in part, micromicaeous in part, sandstone - light grey to grey (salt & pepper), medium hard, fine grained grading to siltstone, poorly sorted, quartzose (sub-rounded grains), mafics (sub-rounded grains), trace of glauconite, argillaceous in part, trace of slickensides, trace of calcite crystals
4000 - 4030	Dolomite - white to light grey, medium hard, cryptocrystalline to finely crystalline, siliceous, sandy (clear medium grained, rounded, frosted, quartz), secondary dolomite crystals, quartz crystals common, poor porosity (2%) in small (5%) of cuttings in fine vugs and fine intercrystalline, saturated with light brown oil, pyritic in part; floating sandy grains of quartz - clear, medium grained, round, frosted
4030 - 4050	Dolomite - white to light grey, hard, finely crystalline to cryptocrystalline, very sandy (fine to medium quartz grains) - clear, round, frosted quartz in filling former porosity milky chert common, (as crystals), pyrite common, poor to fair porosity (6%) as fine vugs and intercrystalline (5% of cuttings), oil saturated in large part; trace of apple green dolomite, cryptocrystalline
4050 - 4070	Dolomite - cream to buff and grey with trace of green and pink, hard, finely crystalline, siliceous, milky chert common, pyritic, sandy in part (round grains of quartz - clear, medium grained, frosted), fair porosity (8%) in fine vugs and fine intercrystalline, oil stained in large part
4070 - 4100	Dolomite - cream to buff and grey with a trace of pink and green; hard to medium hard, finely crystalline to crypto-crystalline, microsucrosic in small part, siliceous, milky chert common, pyritic, trace of poor porosity in fine vugs and fine intercrystalline, staining in large part
4100 - 4130	Dolomite - cream to light grey, medium hard, finely crystalline, siliceous in small part, quartz crystals, trace of milky chert, trace poor porosity (inter-pyrite, crystalline, fine vugs, trace of staining)
4130 - 4140	Dolomite - cream to light grey, medium hard, finely crystalline, siliceous in part, trace of milky chert, pyrite, trace of poor vugular porosity, trace of pink dolomite, quartz crystals, some sand grains - quartz - clear, round frosted

4140 - 4170	Dolomite - buff to brown, hard, finely crystalline, very slightly argillaceous, minor floating sand grains, quartz - clear to grey, round, medium grained, secondary dolomite crystals, siliceous, trace of dolomite - pink
4170 - 4200	Dolomite - buff to brown, grey and pink, hard, finely crystalline, very slightly argillaceous, siliceous, trace of milky chert, secondary dolomite crystal, trace of poor vugular porosity, siltstone - light grey, medium hard, dolomitic, floating quartz grains - grey to clear, round; trace of shale - apple green, medium hard
4200 - 4240	Dolomite - white, cream, grey and pink, medium hard to hard, finely crystalline, siliceous, quartz crystals, secondary dolomite crystals, trace of milky chert, sandy in part, criteria for vugular porosity
4240 - 4280	Dolomite - white, cream, buff to light brown and pink, medium hard to hard, fine to microcrystalline, siliceous, trace of milky chert, quartz crystals, trace of glauconite, quartz sand grains, fine round; shale - grey-green, medium hard
4280 - 4300	Dolomite - white, cream, buff and pink, medium hard to hard, finely crystalline, siliceous, trace of milky chert, quartz crystals, sand grains (quartz - clear, round, fine grained, green clay in filling former porosity, criteria for vugular porosity, secondary dolomite crystals); shale - apple green and grey-green, siltstone - grey, medium hard, dolomitic
4300 - 4310	Dolomite - white, cream, buff to brown and pink, medium hard to hard, fine to microcrystalline, siliceous, trace of milky chert, secondary dolomite crystals, cream and green clay infilling in porosity, sandy in part, trace of pyrite, poor porosity in vugs; shale - grey-green and apple green, medium hard, dolomite, silty in part
4310 - 4330	Dolomite - white, buff, cream and pink, medium hard to hard, medium to microcrystalline, siliceous, limey in small part, quartz crystals, milky chert common, pyrite, poor porosity in vugs and intercrystalline; shale - grey-green, medium hard, dolomitic
4330 - 4340	Dolomite - white, buff, yellow and pink, medium hard to hard, finely crystalline, siliceous, milky chert, pyrite, limey in small part, white clay infilling some porosity, trace of poor porosity in vugs; siltstone - grey-green, medium hard, dolomitic, trace shale - grey-green, medium hard, dolomitic

4340 - 4360	Dolomite - white, buff, yellow and pink, medium hard to hard, finely crystalline, siliceous, milky chert, pyrite, limey in part, white and green clay infilling some porosity, poor porosity (3%) in vugs; shale - grey-green, medium hard, dolomitic
4360 - 4370	Dolomite - pink to cream, medium hard to hard, finely crystalline to microcrystalline, siliceous, trace of milky chert, trace of intercrystalline and vugular porosity; shale - grey-green, medium hard, dolomite; trace of siltstone - light grey to grey-green, medium hard, dolomitic
4370 - 4380	Dolomite - white, cream, buff and pink to red, medium hard, finely crystalline, siliceous, milky chert, poor intercrystalline and vugular porosity, quartz crystals; trace of shale - apple green, medium hard, dolomitic
4380 - 4410	Dolomite - white to buff and orange and red, medium hard, finely crystalline to microcrystalline, siliceous, quartz crystals, milky chert, secondary dolomite crystals, trace of intercrystalline and vugular porosity
4410 - 4470	Dolomite - cream to light grey and buff to pink and orange, hard to medium hard, finely crystalline, siliceous, quartz crystals, secondary dolomite crystals, trace of vugular porosity, much milky chert; shale - light grey to apple green, medium hard, dolomitic, silty in part; pyrite
4470 - 4490	Dolomite - cream, white, buff, orange, pink to red, medium hard, fine to microcrystalline, siliceous,trace of vugular porosity, milky chert common, quartz crystals; trace of siltstone - light grey and orange, medium hard, dolomitic; trace shale - apple green and grey-green, medium hard, dolomitic
4490 - 4520	Dolomite - cream, buff, orange and pink; medium hard to hard, fine to microcrystalline, siliceous,milky chert common, quartz crystals, pyrite sparse, trace of vugular porosity,fragmental in part
4520 - 4530	Dolomite - buff to orange, medium hard to hard, finely crystalline, siliceous, milky chert common, quartz crystals; siltstone - light grey to grey and grey-green, medium hard, dolomitic
4530 - 4550	Dolomite - buff to orange and red, medium hard to hard, finely crystalline to microcrystalline, siliceous, milky chert common, secondary dolomite crystals, dolomite crystals and fragment set in white clay (tripolitic chert?); trace of shale - grey-green and apple green, medium hard, dolomitic

4550 - 4710	Dolomite - buff to orange and red, medium hard to hard, finely crystalline to microcrystalline, siliceous, milky chert common, secondary dolomite crystal, infilled in part with white clay (tripolitic chert), quartz crystals, poor porosity (4%) in fine vugs and in fine intercrystalline porosity; trace of shale - grey-green and apple green, medium hard, dolomitic, sandy in part
4710 - 4760	Dolomite - buff to tan and orange, medium hard, fine to microcrystalline, microsucrosic in part, siliceous in part, milky chert sparse, some secondary dolomite crystals, trace of quartz crystals, trace of vugular porosity; shale - apple green, medium hard, dolomitic
4760 - 4770	Dolomite - buff to brown and red, medium hard to hard, fine to microcrystalline, siliceous in part, dolomite fragments and crystals with matrix of tripolitic chert, trace of milky chert, fracturing, some calcite infilling of fractures
4770 - 4790	Dolomite - buff to brown and red, medium hard to hard, fine to microcrystalline, siliceous in part, dolomite fragments and crystals with matrix of tripolitic chert, milky chert common, fracturing, trace of vugular porosity, trace of calcite crystals
4790 - 4820	Dolomite - buff to brown and red, medium hard to hard, finely to microcrystalline, siliceous in small part, milky white chert sparse, trace of vugular porosity; shale - red and green, medium hard, dolomitic
4820 - 4860	Dolomite - buff to brown and red, medium hard, finely crystalline to microcrystalline, siliceous in part; shale - red, medium hard, dolomitic
4860 - 4870	Dolomite - buff, pink, red and light brown, medium hard, siliceous, trace of milky chert, dolomitic fragments and crystals with tripolitic chert matrix, quartz crystals
4870 - 4900	Dolomite - buff to brown, pink and red, medium hard to hard, finely to microcrystalline, microsucrosic in part, siliceous, pyrite, dolomite crystals and fragments with tripolitic chert matrix, fractured, chert - white to grey, sparse; trace shale - red, medium hard, dolomitic
4900 - 4910	siltstone - buff to grey, medium hard, dolomitic; dolomite - buff, yellow and light brown, medium hard to hard, finely crystalline, siliceous, milky and grey chert sparse; trace of shale - red, medium hard, dolomitic, fractures

4910 - 4920	Chert - varicolored; siltstone - buff to grey, medium hard to hard, dolomitic; Dolomite - buff, yellow and light brown, medium hard to hard, finely crystalline, siliceous
4920 - 4940	Dolomite - buff to brown and pink to red, medium hard to hard, finely crystalline to microcrystalline, siliceous, chert - white and grey, dolomite fragments and crystals with a matrix of tripolitic chert; shale - red, medium hard
4940 - 4970	Dolomite - buff to light brown and red, medium hard to hard, finely crystalline to microcrystalline, siliceous, chert - varicolored, dolomite fragments and crystals with a matrix of tripolitic chert, fractured
4970 - 5000	Dolomite - buff to brown and red, medium hard to hard, microcrystalline, microsucrosic, siliceous in part, chert - varicolored (sparse), silty in part, fractured
5000 - 5020	Dolomite - buff to brown and red, medium hard to hard, microcrystalline, microsucrosic in part, siliceous in part, silty in part, fractured, quartz crystals
5020 - 5030	Dolomite - buff to brown and red, medium hard to hard, microcrystalline, microsucrosic in part, siliceous in part, trace of chert - white, fractured
5030 - 5040	Dolomite - buff to light brown and light grey and red, medium hard, microcrystalline, trace of chert; trace of limestone - white to pink, soft, cryptograined, chalky
5040 - 5090	Dolomite - buff to brown, medium hard to hard, microcrystalline, siliceous in small part, calcite crystals, fractured
5090 - 5110	Dolomite - buff to brown, pink, medium hard to hard, microcrystalline, siliceous, glauconitic in part, silty in small part, calcite crystals, fractures
5110 - 5130	Dolomite - buff to brown and red, medium hard to hard, fine to microcrystalline, siliceous, silty in part, glauconite (trace), calcite crystals, dolomite crystals and fragments with tripolitic chert matrix
5130 - 5170	Dolomite - buff to brown and red, medium hard to hard, microcrystalline, siliceous, silty in part,calcite crystals,trace of glauconite, fractured, dolomite (limey) as above
5170 - 5220	Dolomite - buff to very light grey and yellow to red, finely crystalline, siliceous in part, medium hard to hard, glauconitic, fractured, calcite crystals, dolomite crystals with tripolitic chert matrix

5220 - 5250	Dolomite - buff to brown and cream, medium hard to hard, finely to microcrystalline, microsucrosic in part, siliceous in small part, trace of calcite crystals, silty in part
5250 - 5264	No sample

DRILL STEM TEST REPORT

Company: Canadian Delhi Oil Ltd. Drill Stem Test No. 1

Name of Well: Candel DECKMG et al East MacKay B-45 Date Test Run: February 22 & 23, 1971

Testing Company: B I Services Ltd. Operator: W. Budverson

Type Packer: Dual bottomhole Size Packer(s): 2 at 6 5/8" Choke: ½"

Interval Tested: 3990 to 4042 Formation: Ronning

Test Data:

Initial shut in:	Time Packer set 10:30 PM.	Time Tool Opened 11:32 PM.	(elapsed) 62	mins.
Flow Period:	Time Tool Opened 11:32 PM.	Time Tool Closed 1:30 AM.	(elapsed) 120	mins.
Final shut in:	Time Tool Closed 1:30 AM.	Time Tool Pulled 3:30 AM.	(elapsed) 120	mins.
Preflow	" " Opened 10:20 PM	" " Closed 10:30 PM	(elapsed) 10	mins.

Tight Hole Test: Yes ..... No X Size of Chamber .....

Water Cushion: None Type of Hole: (Rathole) (Fullhole) (Cased)

T.D. Driller: 4042 T.D. Tester: 4038 Was Test A Misrun: No

Cause of Misrun: .....

Flow Data:

Description of Initial Blow: Medium blow

Did Blow die or Decrease: Increased for 45 mins. & then decreased to weak at end of test

Gas Flow To Surface In None mins. Initial Gas Flow ..... MCF/Day

Stabilized Gas Flow ..... MCF/Day Measured by: (Test) (Impact) (Side Static)

Time For Gas Flow to Stabilize ..... mins. Gas Description: (Sweet) (Sour) (Dry) (Wet)

Gas Sample Saved After ..... mins. Fluid To Surface In ..... mins.

Fluid Description: .....

Nature of Flow: .....

Remarks: .....

Recovery: 2¼ ID Drill Collars

Total fluid in (size) 4½	OD drill pipe:	2460	feet	barrels
(describe fluid)	Oil:	1830	feet	barrels
	Water:	530	feet	barrels
Oil Cut	Mud:	100	feet	barrels

Saved Samples At: 2460 ft. 2018 ft. 510 ft. above the test tool

Weight of mud before test 9.1 lbs./gal.: Chloride content too low to measure ppm

Weight of mud recovered ..... lbs./gal.: Chloride content ..... ppm

Weight of water recovered ..... lbs./gal.: Chloride content 1925 ppm

Oil Recovered: 17° app. °API Color dark brown Smell slight sulphur

Pressure Data: Clocks stopped while running into the hole

Initial Hydrostatic:	(Office)	(Field)	Final: (Office)	(Field) .....
Initial Shut In Pressure	.....	.....	Final:	.....
Initial Flow Pressure	.....	.....	Final:	.....

Well Bore Temp: 148 °F Bomb Capacity: Top 3600 Bottom 5500

Engineer D. Nelson

DRILL STEM TEST REPORT

Company: Candian Delhi Oil Ltd. Drill Stem Test No. 2

Name of Well: Candel DECKMIG et al East MacKay B-45 Date Test Run: February 25, 1971

Testing Company: B I Services Ltd. Operator: W. Budverson

Type Packer: Dual bobtail bottomhole Size Packer(s): 2 6 5/8" Choke: 1/2"

Interval Tested: 4042 to 4196 Formation: Ronning

Test Data:

Initial shut in:	Time Packer set 8:41 A.M.	Time Tool Opened 9:43 A.M.	(elapsed) 62	mins.
Flow Period:	Time Tool Opened 9:43 A.M.	Time Tool Closed 11:36 A.M.	(elapsed) 113	mins.
Final shut in:	Time Tool Closed 11:36A.M.	Time Tool Pulled 1:50 P.M.	(elapsed) 134	mins.
Preflow	" " Opened 8:30AM	" " Closed 8:41 AM	11	mins.

Tight Hole Test: Yes ..... No x Size of Chamber .....

Water Cushion: ..... Type of Hole: (Rathole) (Fullhole) (Cased)

T.D. Driller: 4196 T.D. Tester: 4196 Was Test A Misrun: No

Cause of Misrun: .....

Flow Data:

Description of Initial Blow: Good air blow, died in 108 mins.

Did Blow die or Decrease: .....

Gas Flow To Surface In NA mins. Initial Gas Flow ..... MCF/Day

Stabilized Gas Flow ..... MCF/Day Measured by: (Test) (Impact) (Side Static)

Time For Gas Flow to Stabilize ..... mins. Gas Description: (Sweet) (Sour) (Dry) (Wet)

Gas Sample Saved After ..... mins. Fluid To Surface In NA mins.

Fluid Description: .....

Nature of Flow: .....

Remarks: .....

Recovery: 377 of 2¼ ID Drill

Total fluid in (size) Collars 4½ OD drill pipe: 3540 feet ..... barrels

(describe fluid) ..... Oil: ..... feet ..... barrels

sulphur salt Water: 3440 feet ..... barrels

mud cut water ~~Mud~~: 100 feet ..... barrels

Saved Samples At: ..... ft. ..... ft. ..... ft. above the test tool

Weight of mud before test 9.2 lbs./gal.: Chloride content too low to measure ppm

Weight of mud recovered 8.7 lbs./gal.: Chloride content ..... ppm

Weight of water recovered ..... lbs./gal.: Chloride content 3847 ppm

Oil Recovered: ..... °API Color ..... Smell .....

Pressure Data:

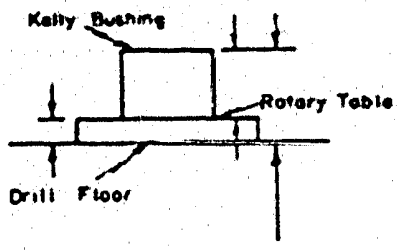
Initial Hydrostatic: (Office)	(Field) 1950	Final: (Office)	(Field) 1600		
Initial Shut In Pressure	1600	Final:	1600		
Initial Flow Pressure	1320	Final:	1600		

Well Bore Temp: 138 °F Bomb Capacity: Top 3600 Bottom 5500

Engineer: D. Nelson

Candel DECKMG et al East MacKay B-45 February 9, 1971

CASING TALLY



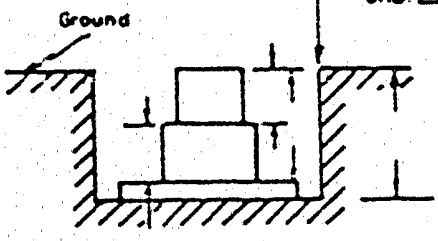
SURFACE ☒ INTERMEDIATE ☐ PRODUCTION ☐

SIZE 8 5/8" RANGE 2 NO. JOINTS 16
TYPE Mannesman WEIGHT 24# LANDING DEPTH 621.16
GRADE J-55 THREAD STC DEPTH BELOW K.B. 621

TOTALS
TOTAL JOINTS USED 16 LENGTH 627.16
TOTAL JOINTS LEFT 2 LENGTH
GRAND TOTAL 18

REMARKS Hole found to be 627 instead of 625

ELEVATIONS
K.B. 851
D.F.
GRD. 837

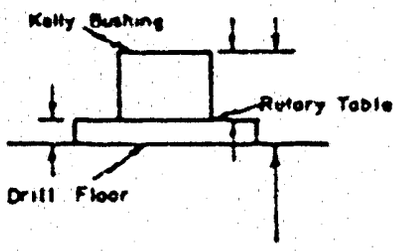


CEMENTING
NO. OF SACKS 400 TYPE CEMENT construction
% $CACL_2$ 2 HOURS TO SET 24
% GEL LENGTH CEMENT COLUMN
AVERAGE WEIGHT OF SLURRY 14.5

CEMENTING COMPANY B I Services DATE Feb. 9/71
TYPE SHOE Davis? TYPE COLLAR Davis?
LENGTH 1.45 LENGTH 0.93
CENTRALIZERS 1 on first joint, 1 between 3rd & 4th joint
SCRATCHERS

NO.	LENGTH		NO.	LENGTH		NO.	LENGTH		NO.	LENGTH		NO.	LENGTH		NO.	LENGTH		NO.	LENGTH		NO.	LENGTH	
1	38	60	11	39	65	21			31			41			51			61			71		
2	32	38	12	37	95	22			32			42			52			62			72		
3	37	66	13	40	86	23			33			43			53			63			73		
4	41	00	14	37	88	24			34			44			54			64			74		
5	40	21	15	40	67	25			35			45			55			65			75		
6	41	20	16	39	65	26			36			46			56			66			76		
7	39	90	17	FC1	45	27			37			47			57			67			77		
8	38	95	18	sh	95	28			38			48			58			68			78		
9	41	80	19			29			39			49			59			69			79		
10	36	40	20			30			40			50			60			70			80		
	388	10		239	06																		
Total				627	16																		
81			91			101			111			121			131			141			151		
82			92			102			112			122			132			142			152		
83			93			103			113			123			133			143			153		
84			94			104			114			124			134			144			154		
85			95			105			115			125			135			145			155		
86			96			106			116			126			136			146			156		
87			97			107			117			127			137			147			157		
88			98			108			118			128			138			148			158		
89			99			102			119			129			139			149			159		
90			100			110			120			130			140			150			160		

CASING TALLY



SURFACE ☐ INTERMEDIATE ☐ PRODUCTION ☒

SIZE 5½ RANGE 2 & 3 NO. JOINTS 144
TYPE J-55 WEIGHT #14 LANDING DEPTH 5286
GRADE THREAD 8RD DEPTH BELOW K.B. 12

TOTALS

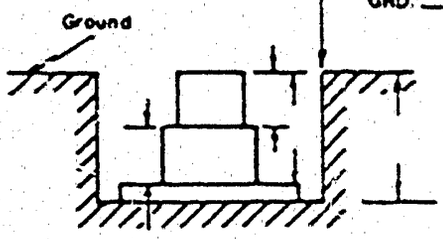
TOTAL JOINTS USED 144 LENGTH 5298.45
TOTAL JOINTS LEFT Dart LENGTH 25.45
GRAND TOTAL 144 5273

ELEVATIONS
K.B 851
D.F. 838
GRD. 837

REMARKS

CEMENTING
NO. OF SACKS 150 + 4% gel
% $CACL_2$ 498
% GEL

TYPE CEMENT Construction oil well (neat)
HOURS TO SET
LENGTH CEMENT COLUMN
AVERAGE WEIGHT OF SLURRY



CEMENTING COMPANY B J Services Ltd. DATE March 8/71
TYPE SHOE Guide Shoes TYPE COLLAR Float
LENGTH 0.82 LENGTH 1.55
CENTRALIZERS
SCRATCHERS

NO	LENGTH		NO	LENGTH		NO	LENGTH		NO	LENGTH		NO	LENGTH		NO	LENGTH		NO	LENGTH		NO	LENGTH	
1	40	45	11	41	40	21	41	10	31	41	12	41	40	80	51	33	55	61	41	55	71	31	50
2	39	80	12	39	48	22	42	98	32	34	70	42	38	55	52	28	98	62	40	56	72	40	88
3	41	15	13	41	20	23	42	48	33	32	50	43	41	50	53	32	30	63	41	22	73	39	58
4	41	05	14	41	10	24	32	15	34	39	02	44	40	10	54	30	40	64	41	16	74	41	92
5	39	96	15	40	20	25	43	20	35	40	05	45	41	10	55	31	65	65	39	93	75	41	46
6	41	87	16	42	95	26	41	45	36	39	53	46	41	45	56	29	55	66	42	54	76	40	48
7	41	50	17	44	04	27	41	46	37	40	70	47	41	05	57	31	45	67	39	53	77	31	15
8	39	94	18	39	80	28	40	00	38	40	90	48	43	40	58	30	30	68	42	05	78	40	66
9	29	40	19	39	42	29	40	71	39	41	88	49	38	10	59	42	25	69	32	56	79	32	00
10	42	25	20	33	20	30	43	46	40	39	15	50	31	15	60	39	90	70	39	75	80	29	30
	397	37		402	79		408	99		393	55		396	80		330	13		400	25		369	33
																						3099	21
81	29	55	91	42	61	101	37	50	111	32	22	121	32	08	131	31	23	141	31	13	151		
82	43	03	92	30	40	102	36	56	112	30	87	122	30	81	132	29	15	142	30	63	152		
83	40	15	93	42	36	103	40	71	113	28	83	123	29	08	133	29	96	143	33	27	153		
84	31	15	94	41	56	104	39	52	114	32	81	124	31	56	134	28	48	144	42	73	154		
85	41	25	95	40	53	105	42	94	115	32	88	125	31	07	135	30	59	145			155		
86	40	90	96	41	00	106	32	93	116	31	75	126	32	58	136	32	84	146	FC1	35	156		
87	31	95	97	41	88	107	30	14	117	31	21	127	30	12	137	29	44	147	GS	82	157		
88	41	10	98	41	68	108	29	84	118	31	50	128	31	66	138	32	18	148			158	3099	21
89	29	14	99	41	89	109	32	38	119	31	76	129	31	22	139	30	51	149			159	2199	24
90	40	52	100	39	64	110	32	00	120	31	23	130	31	14	140	31	94	150			160		
	368	74		403	55		354	52		315	06		315	06		306	12		139	93			
																			2199	29		5298	45

BIT RECORD

Well Candel DECKMG et al East MacKay B-45

Drilling Contractor Jenning International Drilling

Date Drilling Started February 6, 1971 Date Completed March 8, 1971.

Bit No	Size	Make and Kind	Serial	Depth From	Depth To	Total Feet	Total Hours	Remarks
1A	121/4	Security S3J	96702	0	113	113	4	
1	77/8	Hughes W X1G	22877	113	627	514	301/4	
2A	121/4	Reed HO		113	627	514		Reaming
1	77/8	Hughes W X1G	24673	627	1812	1186	311/4	
2	77/8	Hughes W X1G	24687	1812	2340	528	221/4	
3	77/8	Hughes W X1G	24929	2340	2828	488	333/4	
4	77/8	Hughes W XV	23265	2828	3268	440	391/2	
5	77/8	Hughes W J-44	CV817	3268	4585	1317	1603/4	
6	77/8	Hughes W J-44	CV813	4585	5155	570	533/4	
7	77/8	Hughes W WD-7	29441	5155	5264	111	151/4	
8	611/16	Christenson Diamond	09-70	5264	5286	22	81/4	

DAILY MUD RECORD

Date	Depth	Weight #/ Gal.	Viscosity Seconds	Water Loss 15 min. C.C.	Filter Cake 32nds	Ph.	Gel	Caustic	Remarks and Additives: Bicarb	DV-68	CMC	
Feb. 6/71	0											
Tour 1	0											
2	76		37				3000#	100#				
3	210	8.7	40				1000#	50#				
Feb. 7/71												
Tour 1	340	8.9	40				1500#					
2	440	9.8	40				1200#	50#				
3	557	9.8	45				1000#					
Feb. 8/71												
Tour 1	627	9.1	41									
2	627	9.1	42				600#					
3	627	9.4	45									
Feb. 9/71												Waiting o
Tour 1	627	9.5	87				2000#					cement
2	627											
3	627											
Feb 10/71												Waiting o
Tour 1	627											cement
2	627								100#			preparing
3	675											to drill
												out
Feb 11/71												
Tour 1	1085	8.4										
2	1355	8.5	28									
3	1540	8.7										
Feb 12/71												
Tour 1	1755	8.8										
2	1830	8.4	28									
3	2020	8.5										
Feb 13/71												
Tour 1	2240	8.6										
2	2340	8.8										
3	2420	8.9										
Feb 14/71												
Tour 1	2595	8.8										
2	2675											
3	3750											
Feb 15/71												
Tour 1	2828	8.8	32				6000#	100#		5 gals		
2	2875	8.4	32				2800#	100#				
3	2975	8.7	32	10.0	2	9.5	2700#			3 gals	150#	

DAILY MUD RECORD

Date	Depth	Weight #/ Gal.	Viscosity Seconds	Water Loss 15 min. CC	Filter Cake 32nds	Ph.	Gel	Caustic	Remarks and Additives Bicarb	DV-68	CMC
Feb. 16/71											
Tour 1	3057	8.7	32	9.6	2	9.5	1400#				100#
2	3157	9.1	38	9.2	2	9.0	3000#			3 gals	50#
3	3220	8.9	32	9.6	2	9.0	1000#			1 gal	50#

WATER ANALYSIS

FOR

CANADIAN DELHI OIL LTD.

CANDEL R. MACKAY B-45
WILDCAT
ALBERTA

CORE LABORATORIES - CANADA LTD.
Petroleum Reservoir Engineering
CALGARY - EDMONTON - REGINA

CORE LABORATORIES – CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

WATER ANALYSIS

File 933-1219 Page 1 of 1

Company: Canadian Delhi Oil Ltd.

Well: CdnDel E. Mackay B-45 K.B. _____ Grd. _____

Location _____ Field: Wildcat Province: Alberta

Formation _____ Interval: 4042' - 4196'

Sampled from: DST #2 (Top of Tool) by _____

Date sampled: Feb. 25/71 Date analyzed: Mar. 3/71 Analyst: LK

Recovery: Salt Water

Mud type _____ Water cushion _____

Resistivity: 0.275 Ohm-meters @ 73 °F

Specific gravity: 1.0171 @ 60°F

pH: 8.3 H_2S: Present

Refractive Index: 1.334 @ 73°F

Total Solids:

Calculated: 21,922 mg/liter

By evaporation @ 110°C: - mg/liter

By evaporation @ 180°C: - mg/liter

At ignition: - mg/liter

MILLIGRAMS PER LITER

Na + K	Ca	Mg	Fe	Ba	Br	I	Cl	HCO_3	SO_4	CO_3	OH
8114	217	49	Trace	Abs.	-	-	12158	922	462	Nil	Nil

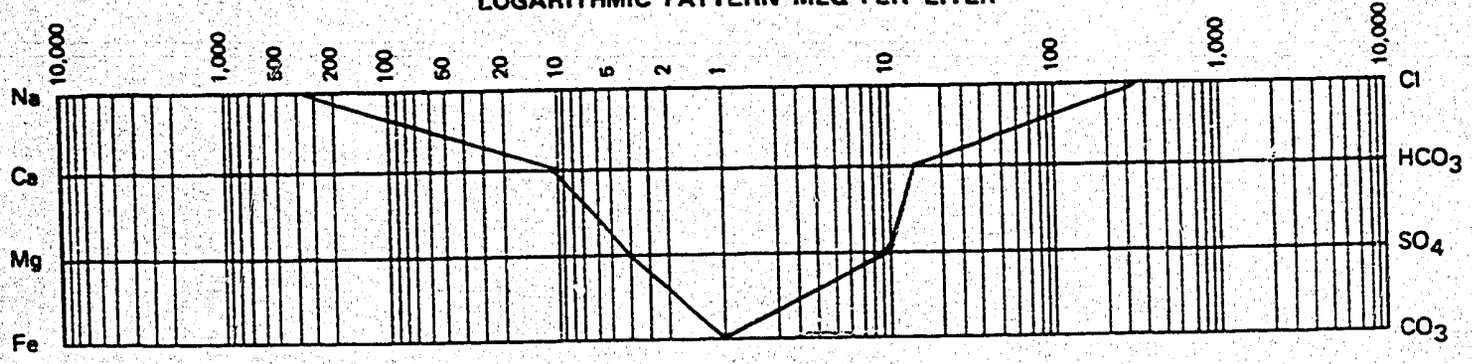
PER CENT CALCULATED SOLIDS

37.0	1.0	.2	Trace	Abs.	-	-	55.5	4.2	2.1	.0	.0

MEQ PER LITER

352.8	10.8	4.0	Trace	Abs.	-	-	342.9	15.1	9.6	.0	.0

LOGARITHMIC PATTERN MEQ PER LITER



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WATER ANALYSIS

FOR

CANADIAN DELHI OIL LTD.

CANDEL DECKING ET AL E. MACKAY B-45
WILDCAT

CORE LABORATORIES - CANADA LTD.
Petroleum Reservoir Engineering
CALGARY - EDMONTON - REGINA

CORE LABORATORIES – CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

WATER ANALYSIS

File 933-1256 Page 1 of 1

Company Canadian Delhi Oil Ltd.

Well CanDel Decking et al E. Mackay B-45 K.B. _____ Grd. _____

Location _____ Field Wildcat Province _____

Formation _____ Interval _____

Sampled from DST #2 (Tool #106) by _____

Date sampled Feb. 25/71 Date analyzed Mar. 5/71 Analyst EM

Recovery Tool Recovery: 3000 mls Water

_____ Mud type _____ Water cushion _____

Resistivity 0.314 Ohm-meters @ 68 °F

Specific gravity 1.0144 @ 60°F

pH 7.8 H_2S Present

Refractive Index 1.334 @ 68°F

Total Solids:

Calculated 22,103 mg/liter

By evaporation @ 110°C – mg/liter

By evaporation @ 180°C – mg/liter

At ignition – mg/liter

MILLIGRAMS PER LITER

Na + K	Ca	Mg	Fe	Ba	Br	I	Cl	HCO_3	SO_4	CO_3	OH
8204	189	43	Trace	Abs.	–	–	12158	1078	431	Nil	Nil

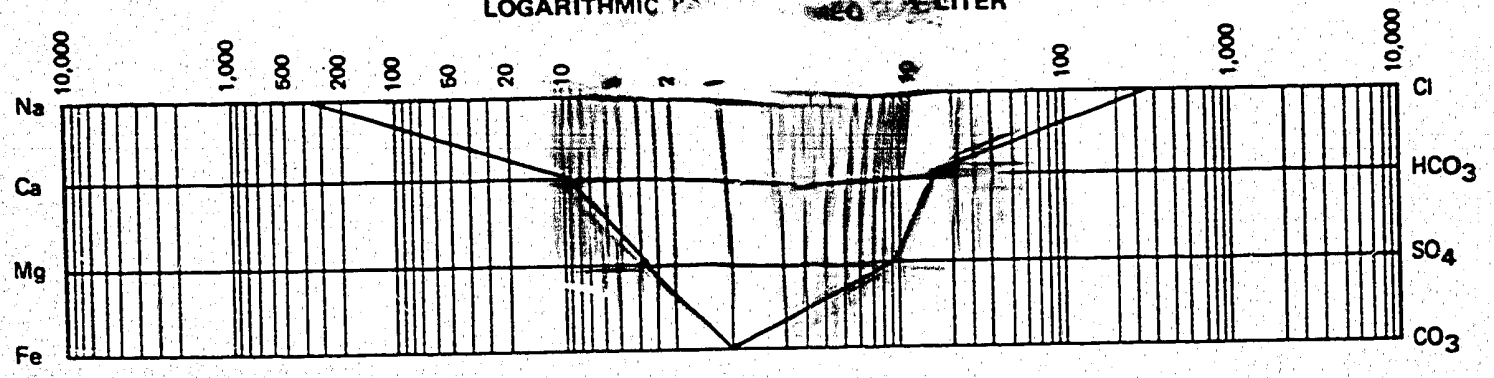
PER CENT CALCULATED SOLIDS

37.1	.9	.2	Trace	Abs.	–	–	55.0	4.9	1.9	.0	.0

MEQ PER LITER

356.7	9.4	3.5	Trace	Abs.	–	–	342.9	17.7	9.0	.0	.0

LOGARITHMIC PATTERN MEQ PER LITER



21135. 8204.0

FLUID ANALYSES

FOR

CANADIAN DELHI OIL LTD.

CANDEL E. MACKAY B-45
WILDCAT

CORE LABORATORIES - CANADA LTD.
Petroleum Reservoir Engineering
CALGARY - EDMONTON - REGINA

CORE LABORATORIES — CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

OIL ANALYSIS

Company: Canadian Dehli Oil Ltd.

Page: 1 of 2

931-167

Well: CanDel E. Mackay B-45

File: 933-1219

Field: Wildcat

Analysts: EM

Location: Elevation: K.B. Grd.

Formation: Depth: 3990' - 4092'

Sampled from: DST #1 (BJ Tool #50) by: BJ Testers

Date sampled: Feb. 22/41 Date received: Feb. 26/71 Date analysed: Feb. 26/71

DST Recovery: Tool Recovery: 2000 cc Water, 1000 cc Oil

API Gravity @ 60°F: 20.4

Sp. Gravity @ 60°F: 0.9315

Sulphur, weight %: 2.02%

Pour Point: 55°F

Viscosity	S.U.S	cp
@ 70 °F	9973.22	2000.55
@ 90 °F	2723.44	541.66
@ 110 °F	973.92	191.96

Salt content: 55.31 lbs/1000 bbl oil

BS	&	W	
3.0	%	7.0	% (of oil received)
	%		% (of oil analysed)

ASTM DISTILLATION

% Recovery	Temperature °F @ 644 mmHg.
Initial Boiling Point	192
5	200
10	214
15	218
20	268
25	522
30	554
35	564
40	600
45	612
50	618
55	630

59.0 % Recovery
40.0 % Residue
1.0 % Distillation loss

Remarks: Asphaltenes = 3.47%

Paraffin = 11.62%

CORE LABORATORIES – CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

WATER ANALYSIS

931-167

File 933-1219 Page 2 of 2

Company: Canadian Dehli Oil Ltd.

Well: CanDel E. Mackay B-45 K.B. _____ Grd. _____

Location _____ Field: Wildcat Province _____

Formation _____ Interval: 3990' - 4042'

Sampled from: DST #1 (B J Tool #50) by: BJ Testers

Date sampled: Feb. 22/71 Date analyzed: Mar. 1/71 Analyst: LK

Recovery: Tool Recovery: 2000 cc Water; 1000 cc Oil

_____ Mud type _____ Water cushion _____

Resistivity: 0.306 Ohm-meters @ 68 °F

Specific gravity: 1.0168 @ 60°F

pH: 8.0 H_2S: Present

Refractive Index: 1.340 @ 68°F

Total Solids:

Calculated: 22,279 mg/liter

By evaporation @ 110°C: - mg/liter

By evaporation @ 180°C: - mg/liter

At ignition: - mg/liter

MILLIGRAMS PER LITER

Na + K	Ca	Mg	Fe	Ba	Br	I	Cl	HCO_3	SO_4	CO_3	OH
8305	172	39	Trace	-	-	-	12466	1259	38	Nil	Nil

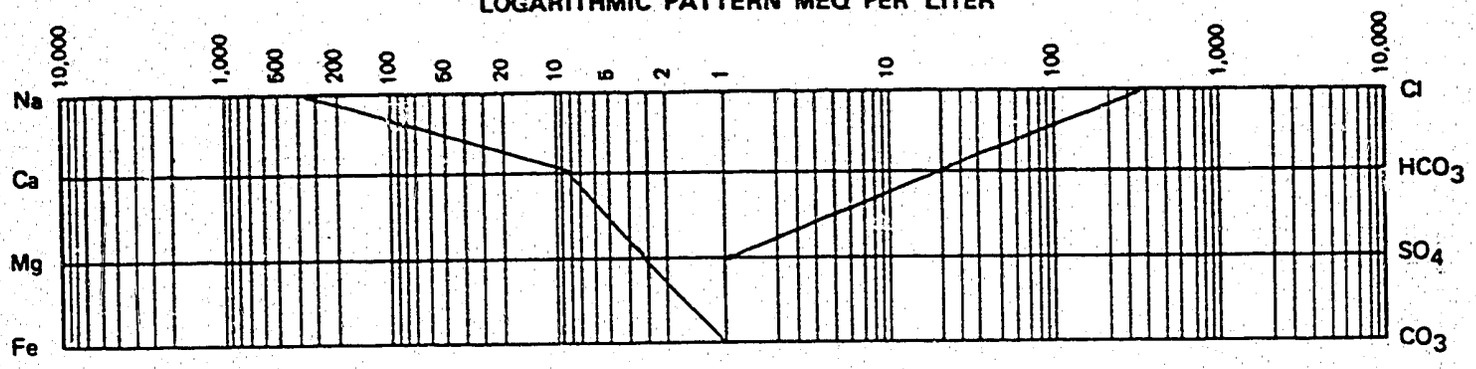
PER CENT CALCULATED SOLIDS

37.3	.8	.2	Trace	-	-	-	56.0	5.7	.2	.0	.0

MEQ PER LITER

361.1	8.6	3.2	Trace	-	-	-	351.5	20.6	.8	.0	.0

LOGARITHMIC PATTERN MEQ PER LITER



21371. 8305.0

Well Name	CANDEL DECKMG ET AL EAST MACKAY	Test No.	2
Well Number	8-45	Zone Tested	SILURIAN - ORDOVICIAN
Company	CANADIAN DELHI OIL LTD	Interval	4042 - 4196
Comp. Rep.	W.R. SMITH	Tester BUDVARSON	Date FEB. 25,1971

BJ SERVICE DIVI

BORG-WARNER (CANADA)

WELL NAME CANDEL DECKMG ET AL EAST MACKAY DST. NO. 2

LOCATION B- 45 REC. NO. 2227 DEPTH 4025.

MEASURED PRESSURES

	POINT NUMBER	TIME MIN	PRESSURE PSIG
	36	310.0	1584.4
	37	320.0	1585.3
FINAL FLOW PRESSURE	38	345.0	1586.2
START FINAL SHUT IN	39	345.0	1586.2
	40	375.0	1586.2
	41	405.0	1586.2
	42	435.0	1586.2
FINAL SHUT IN PRESSURE	43	465.0	1586.2
RUN OUT OF HOLE	44	465.0	1586.2
FINAL HYDRO PRESSURE	45	466.0	1961.6
	46	473.0	1961.6
OUT OF HOLE	47	620.0	0.0

WELL NAME CANDEL DECKMG ET AL EAST MACKAY DST. NO. 2

LOCATION B- 45 REC. NO. 2227 DEPTH 4025.

CALCULATIONS FOR LIQUID RECOVERY (FIRST SHUT-IN)

(A) EXTRAPOLATED RESERVOIR PRESSURE	1588.4
NO. OF POINTS CONSIDERED IN BUILD-UP	10
NO. OF POINTS USED IN EXTRAPOLATION	8
ROOT MEAN SQUARE DEVIATION OF BEST-FIT LINE (PSI)	0.21
EFFECTIVE PRODUCING TIME (MIN)	10.0
(B) IN SITU CAPACITY (KH - MD FT)	11499.02
SLOPE OF BUILD-UP CURVE (PSI/CYCLE)	36.86
PRODUCING RATE (BBL/DAY)	521.72
FLUID VISCOSITY (CP)	5.000
FORMATION VOLUME FACTOR (RES BBL/ST BBL)	1.000
(C) EFFECTIVE PERMEABILITY (MD)	1149.90
FORMATION THICKNESS	10.00
(D) PRODUCTIVITY INDEX (BBL/DAY/PSI)	2.03
FLOWING PRESSURE (PSIG)	1331.5
(E) APPROXIMATE DRAINAGE RADIUS (FT)	290.9
TOTAL FLOWING TIME (MIN)	10.0
(F) ESTIMATED DAMAGE RATIO	1.18
RESERVOIR POROSITY (PERCENT)	5.00
TOTAL COMPRESSIBILITY (VOL/VOL/PSI X 10-6)	9.50
WELL-BORE RADIUS (IN)	3.93
CALCULATED SKIN FACTOR	1.52
(G) PRODUCTION WITH DAMAGE REMOVED (BBL/DAY)	616.6

WELL NAME CANDEL DECKMG ET AL EAST MACKAY DST. NO. 2

LOCATION 8- 45 REC. NO. 2227 DEPTH 4025.

DATA FOR BUILD-UP PLOT (FIRST SHUT-IN)

POINT NUMBER	TIME MIN	PRESSURE PSIG	PRESSURE CALC FROM BEST FIT LINE	PRESSURE DIFFERENCE CALC - OBSERVED	T+DELTA(T)/ DELTA(T)
PORTION OF BUILD-UP CURVE NOT USED IN EXTRAPOLATION					
9	1.0	1567.5			11.00
10	5.0	1572.8			3.00
POINTS USED IN EXTRAPOLATION					
11	10.0	1578.2	1577.3	-0.9	2.00
12	15.0	1580.9	1580.2	-0.6	1.67
13	20.0	1581.8	1581.9	0.2	1.50
14	25.0	1582.7	1583.0	0.4	1.40
15	30.0	1584.4	1583.8	-0.6	1.33
16	35.0	1584.4	1584.4	-0.1	1.29
17	40.0	1585.3	1584.8	-0.5	1.25
18	58.0	1585.3	1585.9	0.5	1.17

ASSUMPTIONS AND LIMITATIONS

THE ENCLOSED DST INTERPRETATION CALCULATIONS REQUIRE SEVERAL NECESSARY ASSUMPTIONS TO PROVIDE A QUICK ESTIMATE OF MANY OF THE FACTORS INVOLVED. AS A RESULT THE INFORMATION GAINED SHOULD BE USED TO FORM AN OPINION OR ESTIMATE ONLY, UNTIL THE ASSUMPTIONS OF RESERVOIR AND FLUID PROPERTIES CAN BE WHOLLY OR PARTIALLY CLARIFIED BY MORE COMPLETE ANALYSIS AND TESTING.

WELL NAME CANDEL DECKMG ET AL EAST MACKAY DST. NO. 2

LOCATION B- 45 REC. NO. 2227 DEPTH 4025.

CALCULATIONS FOR LIQUID RECOVERY (SECOND SHUT-IN)

(A) EXTRAPOLATED RESERVOIR PRESSURE 1586.2

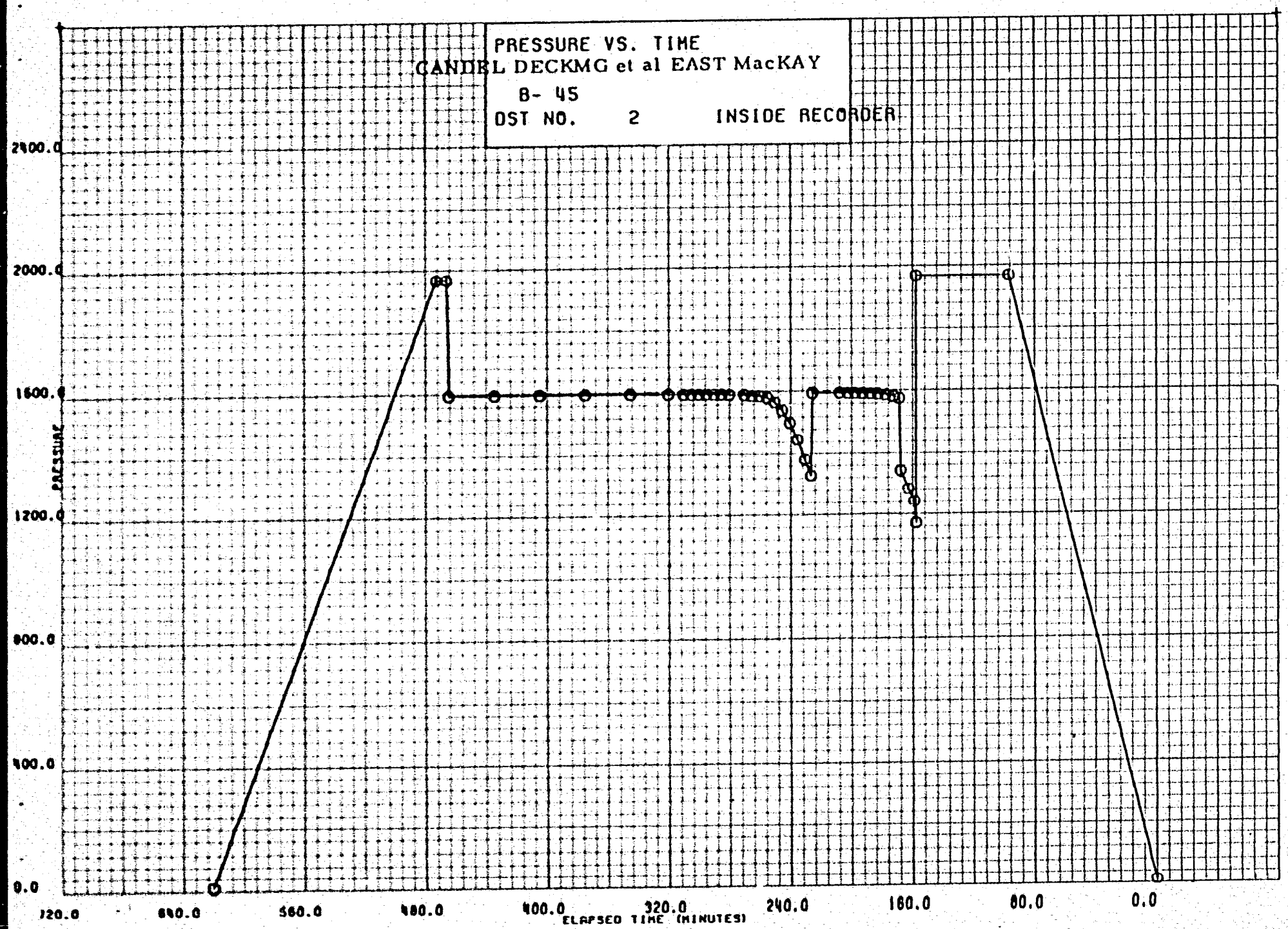
NO. OF POINTS CONSIDERED IN BUILD-UP 4
NO. OF POINTS USED IN EXTRAPOLATION 4
ROOT MEAN SQUARE DEVIATION OF BEST-FIT LINE (PSI)..... 0.00
EFFECTIVE PRODUCING TIME (MIN) 130.0

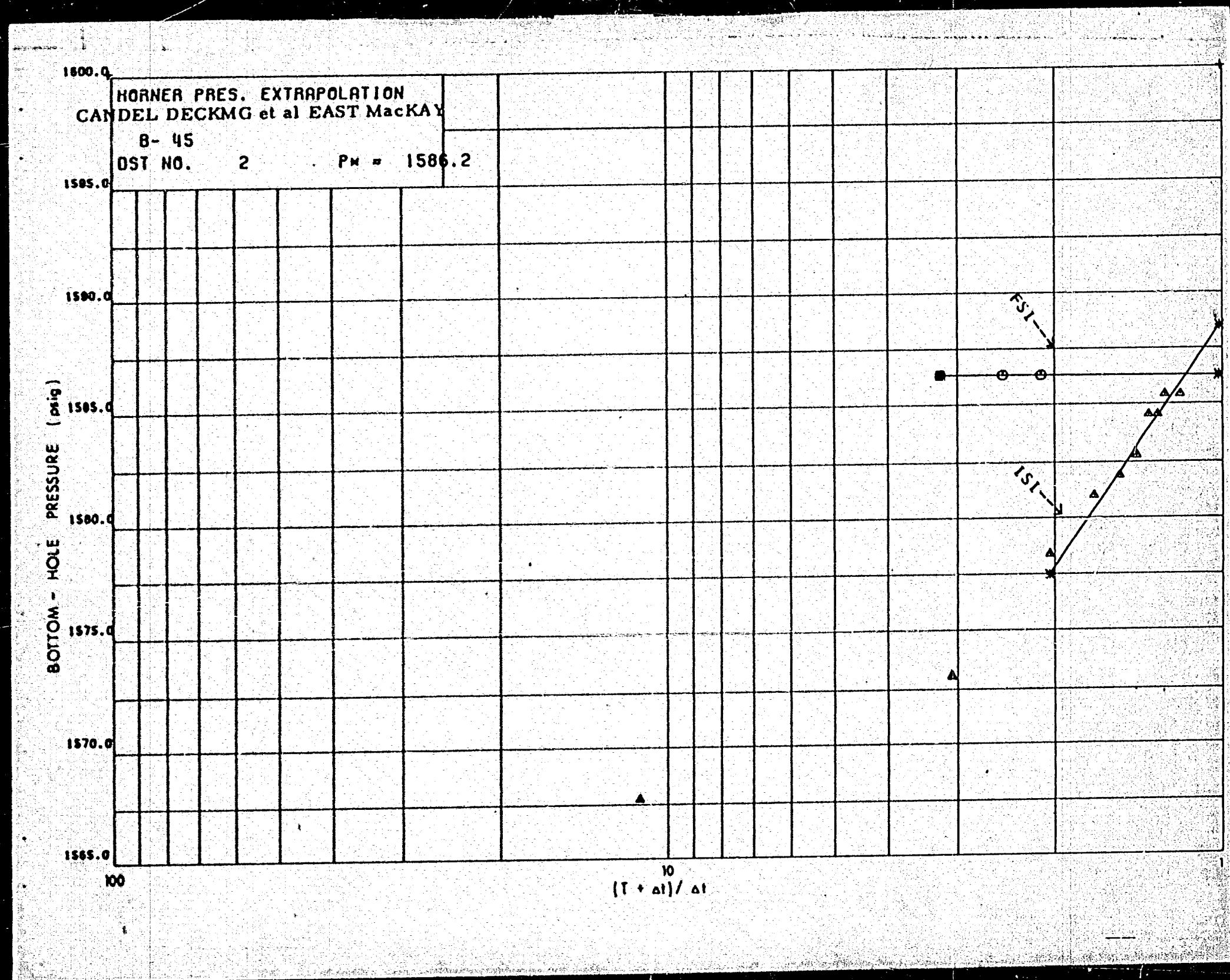
WELL NAME CANDEL DECKMG ET AL EAST MACKAY DST. NO. 2

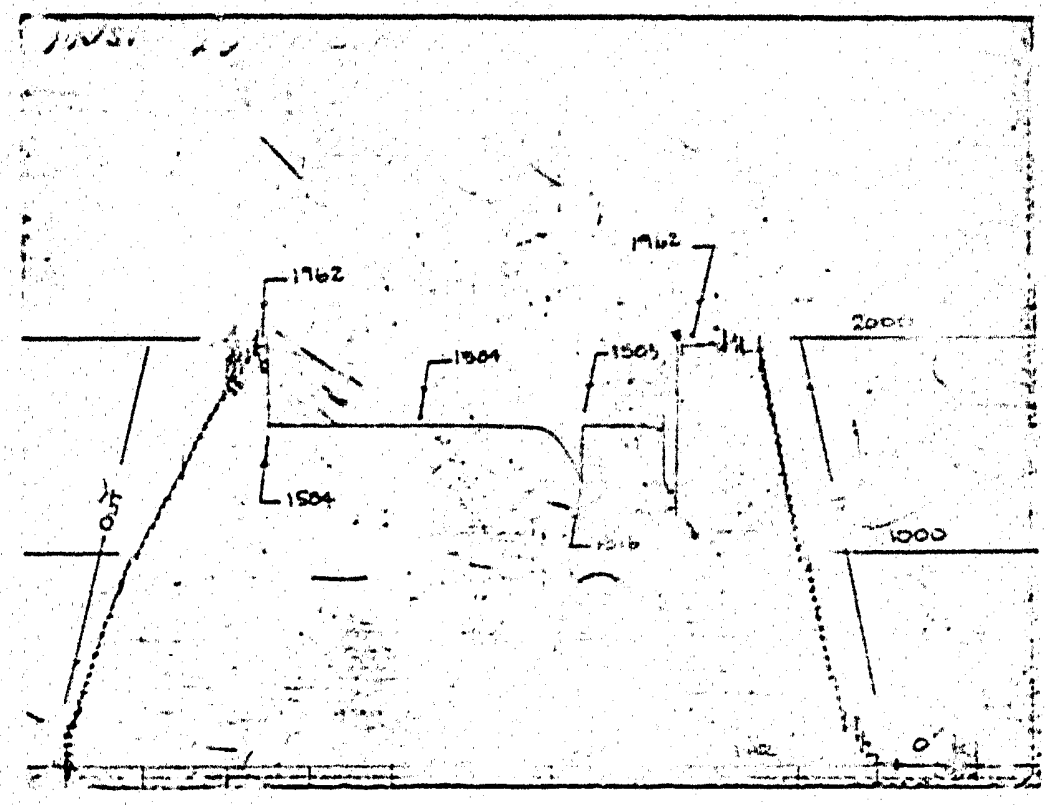
LOCATION 8- 45 REC. NO. 2227 DEPTH 4025.

DATA FOR BUILD-UP PLOT (SECOND SHUT-IN)

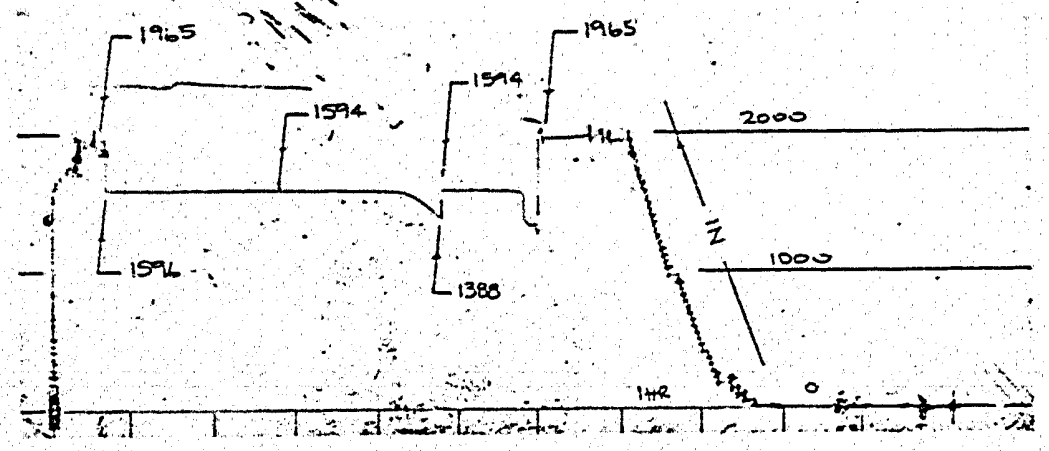
POINT NUMBER	TIME MIN	PRESSURE PSIG	PRESSURE CALC FROM BEST FIT LINE	PRESSURE DIFFERENCE CALC - OBSERVED	T+DELTA(T)/ DELTA(T)
POINTS USED IN EXTRAPOLATION					
41	60.0	1586.2	1586.2	-0.0	3.17
42	90.0	1586.2	1586.2	-0.0	2.44
43	120.0	1586.2	1586.2	0.0	2.08
44	120.0	1586.2	1586.2	0.0	2.08


PRESSURE VS. TIME
CANDEL DECKMG et al EAST MacKAY
B- 45
DST NO. 2 INSIDE RECORDER
2400.0
2000.0
1600.0
1200.0
800.0
400.0
0.0
PRESSURE
720.0
640.0
560.0
480.0
400.0
320.0
240.0
160.0
80.0
0.0
ELAPSED TIME (MINUTES)


HORNER PRES. EXTRAPOLATION
CANDEL DECKMG et al EAST MacKAY
8- 45
DST NO. 2
Pw = 1586.2
1600.0
1595.0
1590.0
1585.0
1580.0
1575.0
1570.0
1565.0
BOTTOM - HOLE PRESSURE (psig)
FSI
ISI
100
10
1
(T + Δt) / Δt



DUTS. # 2011, CANDEL E. MACKAY B-45. TEST # 20



Well Name	Candel Declong et al East MacKay			Test No.	1
Well Number	B 45			Zone Tested	Silurian - Ordovicia
Company	Canadian Delhi Oil Ltd.			Interval	3990 - 4042
Comp. Rep.	W. R. Smith	Tester	Budvarson	Date	February 22, 1971.

BJ SERVICE DIVI

BORG-WARNER (CANADA)

BORG WARNER

DRILL-STEM TEST DATA

Well Name	Cande . Deckmg et al East MacKay	Test No.	1
Well Number	B 45	Zone Tested	Silurian - Ordovician
Company	Canadian Delhi Oil Ltd.	Interval	3990 - 4042
Comp. Rep.	W. R. Smith — Tester: Budvarson	Date	February 22, 1971.

Type of Test: Dual Bottom Hole — R F S Tool No. 50 (To Core Lab, Edmonton)

Preflow ____ mins. ISI ____ mins. Flow ____ mins. FSI ____ mins.

Specify Inside or Outside	Ins. REC. No. 2227	Out. REC. No. 2011	REC. No.
	3600 RANGE 12 HR. CLOCK	5500 RANGE 12 HR. CLOCK	RANGE HR. CLOCK
DEPTH	3914	3992	
Initial Hydro Mud Press			
Initial Shut-In Press	No Pressures Recorded		
Initial Flow Press			
Final Flow Press			
Final Shut-In Press			
Final Hydro Mud Press			

Mud Drop: Nil — Fluid Loss: 7.8 — Mud Weight: 9.2
Viscosity: 60 — Temperature °F: 148 — Net Pay Tested: ____
Top Packer Depth: 3925 — Bottom Packer Depth: 3990 — Total Depth: 4042
Drill Pipe Size: 4½" E. H. — Wt. 16.60 — Drill Collar I.D. 2 7/8" — Ft. Run: 534
Surface Choke Size: Closed — Bottom Choke Size: ½" — Main Hole Size: 7 7/8"
Anchor Size: ____ — Rat Hole Size: ____ — Feet of Rat Hole: ____
Cushion Amount: ____ — Type: ____ — Rubber Size: 6 5/8"

Fluid Recovery Total Feet: 2460
Recovered 100 Feet of Oil Cut Mud
Recovered 1830 Feet of Oil
Recovered 530 Feet of Salt Water (1925 ppm)
Recovered ____ Feet of ____
Recovered ____ Feet of ____

Gas Recovery — How Measured: ____ — Riser size: ____

____ mins. ____ Temp. °F Press Rdg. ____ psi Orifice Size ____ = ____ MCF/Day
____ mins. ____ Temp. °F Press Rdg. ____ psi Orifice Size ____ = ____ MCF/Day
____ mins. ____ Temp. °F Press Rdg. ____ psi Orifice Size ____ = ____ MCF/Day
____ mins. ____ Temp. °F Press Rdg. ____ psi Orifice Size ____ = ____ MCF/Day
____ mins. ____ Temp. °F Press Rdg. ____ psi Orifice Size ____ = ____ MCF/Day
____ mins. ____ Temp. °F Press Rdg. ____ psi Orifice Size ____ = ____ MCF/Day

Bleed Off Time for Drill Pipe: 18

REMARKS: Fair blow through out test.
Both recorders had stylus disengage due to rough trip in hole.

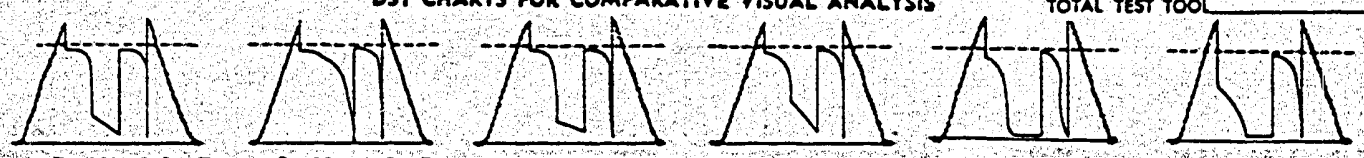
A. Core Lab Gas Cont. No. ____ Chem - Geo. Lab Gas Cont. No. ____

BJ BORG-WARNER

TESTING REPORT

4S LANDING SUB		
C. O. Sub	1.00	
P.O. SUB	1.00	
Rec. Well	4.00	
SHUT IN TOOL	5.20	
R.F.S. No. 50	3.50	
R.F.S. No.		
HYDRAULIC TOOL	7.15	
JARS Sutliff # 19	5.50	
RECORDER No. 2227	5.00	DEPTH 3914
RECORDER No.		DEPTH
SAFETY JOINT	1.75	
BY PASS SUB		
1. PACKER DEPTH 3925 — PACKER	5.00	
	1.00	
Drill Collars & C.O. Subs	59.00	
2. PACKER DEPTH 3990 — PACKER	5.00	TOTAL TOOL ABOVE INTERVAL 104.10
	1.00	
ANCHOR—SPECIFY		
BLANK OFF OR BY PASS SUB		
RECORDER No. 2011	5.00	DEPTH 3992
3. PACKER DEPTH — PACKER		TOTAL INTERVAL 52.00
4. PACKER DEPTH — PACKER		
ANCHOR—SPECIFY		
Perfs.	43.00	
RECORDER No.		DEPTH
TOTAL DEPTH 4042 — BULLNOSE	3.00	TOTAL TAIL PIPE 52.00
		TOTAL TEST TOOL 99.10

DST CHARTS FOR COMPARATIVE VISUAL ANALYSIS



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

BJ BORG WARNER

TESTING REPORT

R.F.S. LEASE ANALYSIS

R.F.S. No. 50	Test No. 1

Sampler Press.	P.S.I.	
Gas Volume	C.F.	Temp. °F (at meter)
Total Fluid Volume	C.C.'s	Temp. °F (at separator)

B S & W

Percentage of Water = $\frac{\text{volume of water} \_\_\_\_ \text{C.C.'s}}{\text{total volume} \_\_\_\_ \text{C.C.'s} - \text{volume of solvent} \_\_\_\_ \text{C.C.'s}} \times 100 =$ %

Percentage of Oil = $\frac{\text{volume of oil} \_\_\_\_ \text{C.C.'s}}{\text{total volume} \_\_\_\_ \text{C.C.'s} - \text{volume of solvent} \_\_\_\_ \text{C.C.'s}} \times 100 =$ %

Percentage of Solids = $\frac{\text{volume of solids} \_\_\_\_ \text{C.C.'s}}{\text{total volume} \_\_\_\_ \text{C.C.'s} - \text{volume of solvent} \_\_\_\_ \text{C.C.'s}} \times 100 =$ %

G.O.R. DETERMINATION

G.O.R. = $\frac{\_\_\_\_ \text{C.F.} \times 1000 \times 160}{\_\_\_\_ \text{C.C.'s of Oil}} =$ c.f./bbl. oil

CRUDE A.P.I.

Gravity	20.4	A.P.I.°	Temp.	60	°F

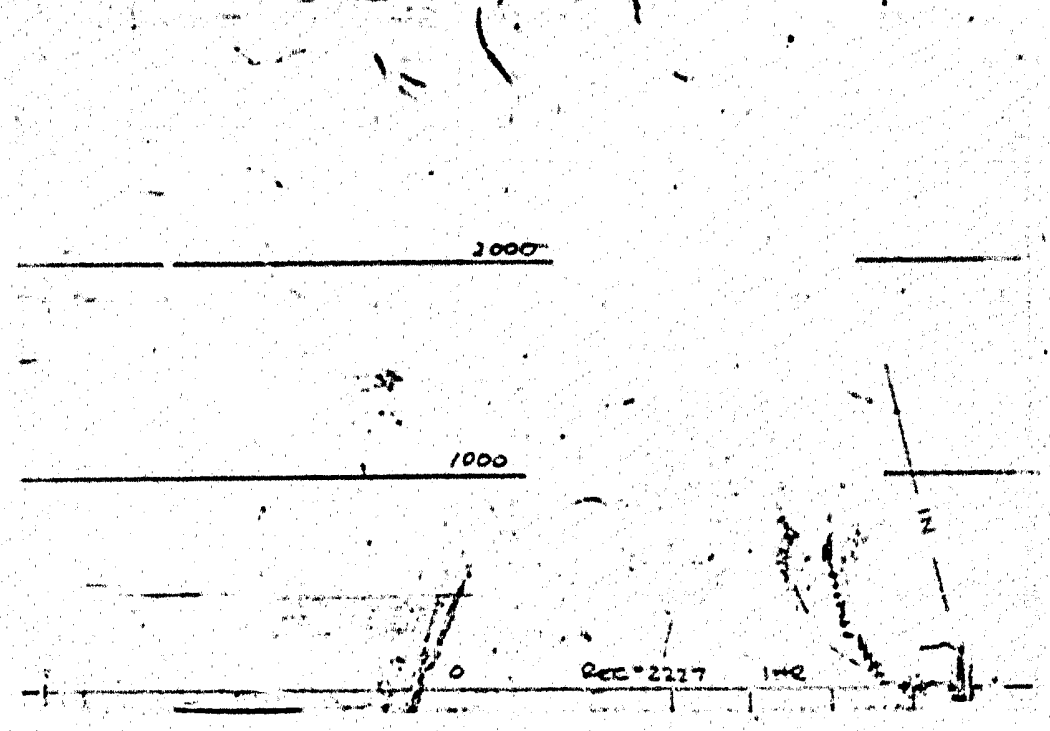
TOTAL DISOLVED SOLIDS (P.P.M. SALT)

Refractometer Reading 2.2 % = from conversion chart 1925 P.P.M.

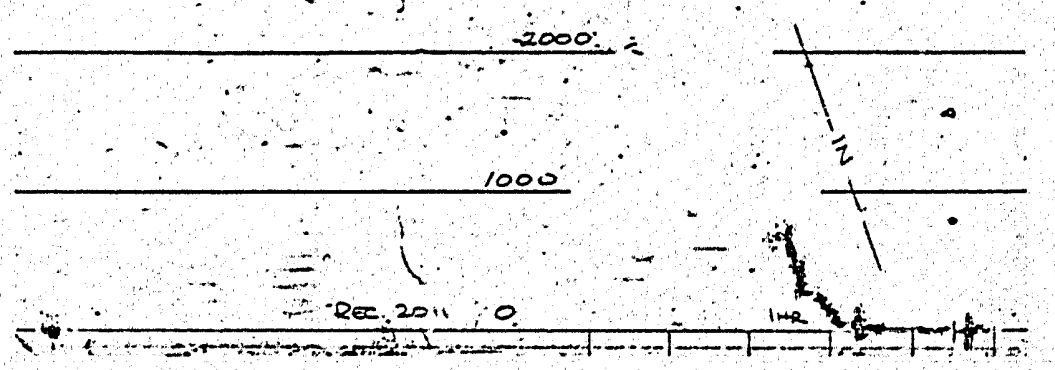
REMARKS:

R. F. S. # 50 & 1 Doz. (12) Fluid Sample Containers shipped to Edmonton via P. W. A. & BJ Service Division Borg-Warner (Canada) Ltd. to Core Lab.

INS. #5007 CANDEL E. MACKAY B-45 TEST #1



OUTS. #2051 CANDEL E. MACKAY B-45 TEST #1 79



64-50-125-30

PALEO SERVICES LIMITED

PALEONTOLOGY AND PALEOECOLOGY OF THE CANDEL ETAL EAST MACKAY WELL (64°50' ; I25°30')

B-45

by

D. M. Loranger, P. Geol.

November I7, I97I

Calgary, Alberta.

SUMMARY AND CONCLUSIONS

Fourteen samples from the Candel etal East MacKay well were studied to determine age and paleoecology. Early Neocomian fauna, possibly Valanginian, were present from 3690 - 3800'. Late Jurassic material was present below 3800' and could represent the Kimmeridgian - Oxfordian interval in this area. A small diastem was observed, which appears to mark the uppermost limit of brackish sedimentation at this location. Fauna present in this lower section include forms that have been considered Lower Jurassic elsewhere. The possibility exists, however, that they may represent facies-controlled faunas.

The Neocomian section was deposited in reasonably shallow marine waters that had strongly developed turbidity (or longshore) currents. This should have a marked effect on the accumulation and distribution of sand bodies in this shallow epicontinental sea. The Jurassic can be divided into two somewhat different environments, separated by a diastem similar to the section in the Keele River well.

The MacKay well exhibits more of the characteristics that are present in areas where potential reservoirs are developed in comparison to the Keele River well; and although the environment of preservation appears to have been a predominantly reducing one, much of this has subsequently been oxidized. The strong currents present in the Early Neocomian and Uppermost Jurassic in the MacKay well had a marked effect on the form and distribution of stratigraphic traps in this part of the inland sea.

INTRODUCTION

A second section from 3690 - 3960' in the Candel etal East MacKay well (64°50' ; I25°30') was studied for microfossil content to substantiate the age of a section that had been placed provisionally within the Upper Jurassic in the Decalta LRI etal Keele River well.

Samples were taken from cuttings in 20' intervals and given standard laboratory treatment with Quaternary O. Picking for microfossil content was done by the same technician throughout to keep the results as standardized as possible.

Recovery was excellent throughout, both qualitatively and quantitatively, so that the ages could readily be determined for the section processed. The interpretation of the fossil population and the key to the faunal composition are shown on two plates at the end of this report. The fauna was dissimilar in many respects to the Keele River well and shows a marked difference in the environment of deposition. This was considered significant, and a comparison has been made of the well sections to indicate how this may be used to indicate developing reservoir trends. Due to lack of detailed information from government reports this well section can only be related in a very general way to the Mount Toughenough section. It would appear then, that the Neocomian and Late Jurassic sections are present over more of this part of the Territories than previously shown in G.S.C. publications. The possibility of transgressive and regressive facies at this stratigraphic level in an inland sea or embayment where currents appear to have been well developed, and the total organic productivity high, augurs well for the development of producing sand reservoirs.

AGE

Neocomian microfauna were abundant in the interval 3690 - 3800'. This appears to be Early Neocomian, i.e. pre-Barremian and could represent the Hauterivian-Valanginian-Berresian interval in this area. Maps by Jeletsky* suggest that the Valanginian seas left more of a transgressive record than the preceding Berresian. His sections are not detailed enough to include, as a third control point, but suggest strongly that the North Branch and Husky Formations (in part) of the headwaters of the Vittrekwa River and Mount Toughenough sections** can be related in time to deposition in the MacKay well. The section 3690 - 3800' is Early Neocomian in age, possibly Valanginian.

The top of the Late Jurassic section from 3800-3960' inclusive, was picked on the basis of predominantly well developed foraminifera that are known to range from Late Jurassic (i.e. Kimmeridgian) down to Oxfordian, as well as certain changes in the environment which suggests a major diastem at this level. Some minor elements in the base of this assemblage suggest facies faunas whose range is given as Pleinsbachian and/or Toarcian in Alaska, but are related to Callovian assemblages in the Arctic. Possibly a more complete section would show a transgressive/regressive relationship such as has been indicated for the Bug Creek Formation in the Teeweechee and Toughenough Mountain areas.

* Jeletsky, J. A. (I97I) Marine Cretaceous Biotic Provinces and Paleogeography of Western and Arctic Canada etc. G.S.C. Pap. 70-22

** ----------(I967) Jurassic and(?) Triassic Rocks of the eastern slope of Richardson Mountains Northwestern District of Mackenzie I06M and I07 B. G.S.C. Pap 66-50.

It appears that a shallow inland basin was developed through the Jurassic into Lower Cretaceous time, and that the transgressive/regressive facies are separated by minor diastems as suggested by the fossil record. Documented diastems of this sort can be expected to be reflected on the mechanical logs and should add to the stratigraphic interpretation. The section shown in this well between 3800 - 3960' may thus be represent a long interval of Jurassic time, i.e. a condensed Upper/Lower section, or could be Late Jurassic deposited in a similar habitat to some of the Lower Jurassic sections illustrated and described from Alaska.

ENVIRONMENT

The Neocomian environment of deposition in the MacKay well shows reasonably shallow waters that had well developed turbidity currents. The total organic productivity is generally low and little alteration is indicated. This would appear to be located in an offshore situation where currents moved or removed sand to quieter sites of deposition.

The Upper Jurassic in this well suggests that a small diastem probably occurred at 3860' which would compare favorably with one in the Keele River well at 3600'. This is still shallow marine but the radiolarians present in both wells (3840' in MacKay and 3580' in Keele River) suggest access to the open sea. Below those footages one encounters brackish facies faunas, very shallow depths (littoral likely), little deposition of sediment, little current activity but enough wave action to keep some material in suspension. Some foraminifers that tolerated lowered salinities are present and sediments appear to have been deposited under reducing conditions which later were

oxidized to a marked degree.

Comparing this section to the Keele River section suggests shallower depths, slower rate of deposition due to reworking by wave activity, steady current (possibly longshore currents ?) , material in suspension, and a higher degree of oxidation of the original reducing environment.

MICROFOSSIL LOG

3690 - 3700	Saccammina M (n.sp.)
	Bathysiphon granulocoelia Chamney
	Haplophragmoides inflatigrandis Chamney
	Ammobaculites cf. barrowensis Tappan
	Textularia S (n.sp.)
	Haplophragmoides sp.
3700 - 3720	Bathysiphon granulocoelia Chamney
	Saccammina M
	Haplophragmoides cf. goodenoughensis Chamney
	Textularia S
	Involutina sp.
	Lagenammina sp.
	Bathysiphon sp.
3720 - 3740	Haplophragmoides topagarukensis Tappan
	H. cf. goodenoughensis Chamney
	Trochammina M (n.sp.)
	T. S (n.sp.)
	Lagenammina sp.
	Verneuilina sp.
	Saccammina sp.
3740 - 3760	Bathysiphon granulocoelia Chamney
	B. sp.
	Haplophragmoides inflatigrandis Chamney
	Gaudryina sp.
	Textularia S
	Involutina sp. (broken)
	Ammobaculites cf. humei Nauss
	Reophax cf. metensis Franke
	Ammobaculites cf. reophacoides Bartenstein
3760 - 3780	Reophax cf. metensis Franke
	Ammobaculites sp.
	Haplophragmoides sp.

	Bathysiphon granulocoelia Chamney
	Saccammina sp.
	Leptodermella sp.
	Trochammina sp.
3780 - 3800	Lagenammina sp.
	Involutina sp.(broken)
	Haplophragmoides cf. goodenoughensis Chamney
	H. sp.
	Bathysiphon granulocoelia Chamney
	Saccammina M
3800 - 3820	H. cf. inflatigrandis Chamney
	Reophax minuta Chamney
	Ammobaculites fragmentaria Cushman
	A. cf. alaskensis Tappan
	Saccammina M
	Lagenammina sp.
	Involutina M
	I. silicea Terquem
	Haplophragmoides inflatigrandis Chamney
	Bathsyiphon granulocoelia Chamney
	Marginulina sp. (replaced)
	Cartilage
	Aragonite
3820 - 3840	Saccammina M
	Involutina sp.
	Bathysiphon granulocoelia Chamney
	Haplophragmoides goodenoughensis Chamney
	H. inflatigrandis Chamney
	Pelosina sp.
	Reophax sp.
	Lagenammina sp.
	Trochammina sp.

3840 - 3860	Haplophragmoides inflatigrandis Chamney
	Involutina sp.
	Saccammina M
	Haplophragmoides cf. goodenoughensis Chamney
	Reophax metensis Franke
	Gaudryina sp. (broken)
	Ammobaculites sp.
	Trochammina sp.
	Bathysiphon granulocoelia Chamney
	B. sp.
	Dentalina ?? sp.
	Radiolarian
3860 - 3880	Reophax metensis Franke
	Haplophragmoides inflatigrandis Chamney
	Bathysiphon granulocoelia Chamney
	Involutina silicea Terquem
	Lituotuba sp.
	H. goodenoughensis Chamney
	Gaudryina sp.
	Cartilage
3880 - 3900	Haplophragmoides inflatigrandis Chamney
	Trocham ina cf. sablei Tappan
	Bathysiphon granulocoelia Chamney
	Haplophragmoides sp.
	Involutina sp.
	Reophax metensis Franke
	Ammobaculites cf. humei Nauss
	Pelecypod
	Plant remains
	Cartilage
3900 - 3920	Saccammina M
	Ammobaculites M (n.sp.)
	Reophax metensis Franke

	Haplophragmoides sp.
	Gaudryina sp.
	Aragonite
	Spines (indet.)
	Carbonaceous material
3920 - 3940	Haplophragmoides sp.
	Bathysiphon granulocoelia Chamney
	Ammobaculites sp.
	Gaudryina ? sp.
	Involutina sp.
	Cartilage
	Plant fragment
3940 - 3960	Ammobaculites sp.
	Haplophragmoides cf. goodenoughensis Chamney
	H. sp.
	Verneuilinoides sp.
	Involutina silicea Terquem
	Bathysiphon granulocoelia Chamney
	Ammodiscus sp.
	Cartilage
	Aragonite

Plate 1

LEGEND

CARBONACEOUS MATERIAL

ALGA

FORAMINIFERA

OSTRACODA

ECHINOID

OPHURIAN

GASTROPOD

REDUCING

PELECYPODS

CRINOIDS

BRACHIOPODS

RADIOLARIA

TENTACULITES

CARTILAGE

SPINES INDETERMINATE

OXIDIZING

Plate 2

WELL CANDEL et al EAST MAC KAY

BASED ON CUTTINGS 3690 - 3960'

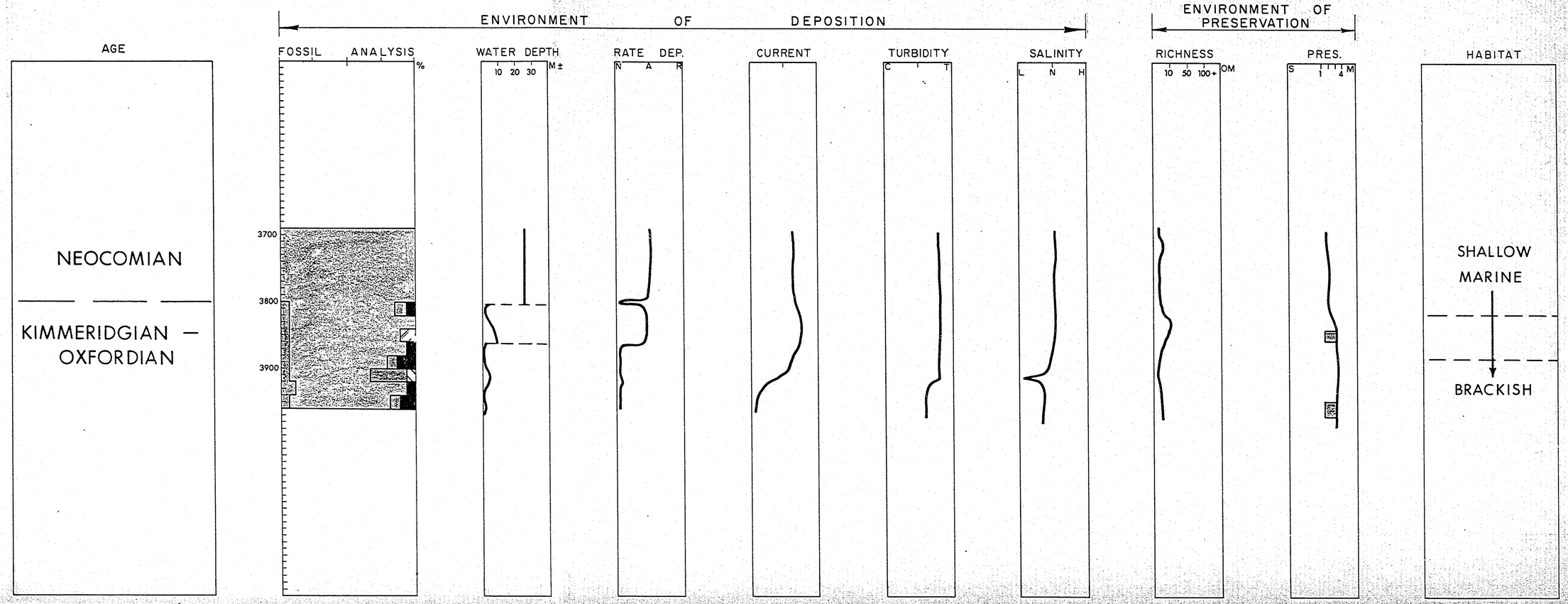
PALEOECOLOGIC LOG

LOCATION 64° 50', 125° 30'

K.B. _____

CORE _____

PREPARED FOR CDN. DELHI OIL
By
D.M. LORANGER P.Geol.
OCT. 1971



DAILY DRILLING REPORT | REPORT NO. | DATE MAR 10 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI					

CONTRACTOR: Jennings International Drilling
A Division of Western Electronics & Engineering Ltd.

RIG NO.

DRILL PIPE STRING NO.	SIZE	TOOL JOINT TYPE THD.	O.D.

SIGNATURE OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindbergh

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.			
2.			
3.			

LAST CASING TUBING OR LINER

SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS

TIME DISTRIBUTION—HOURS

	MORN.	DAY	EVE.
RIG UP & TEAR DOWN			8
DRILLING ACTUAL			
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG			
DEVIATION SURVEY			
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS			

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK			
HRS. W/DP			
HRS. WO/DP			
HRS. STANDBY			
TOTAL DAY WORK			

WIRE LINE RECORD

REEL NO.	
NO. OF LINES	SIZE
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	
CUMULATIVE ROTATING HRS.	

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
STANDS D.P.			FT.
SINGLES D.P.			FT.
D.C. I.D. O.D.			FT.
D.C. I.D. O.D.			FT.
STB. BODY O.D.			FT.
STB. BODY O.D.			FT.
RMR. BODY O.D.			FT.
SUBS O.D.			FT.
BIT OR C.B.			FT.
			FT.
KELLY DOWN			FT.
TOTAL			FT.
WT. OF STRING			LBS.

BIT RECORD

BIT NO.			
SIZE			
MFG.			
TYPE			
NOZZLE NO.			
NOZZLE SIZE			
SER. NO.			
DEPTH OUT			
DEPTH IN			
TOTAL FTG.			
TOTAL HR. RUN			
COND. OF BIT			
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME			
WEIGHT			
VISC.-SEC			
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Dave Fykas

FOOTAGE

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SCL.-S PAR'EL-P COM'D-C

DEVIATION RECORD

DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
			MOVE TO NEW LOCATION
			LAY MATTING

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
STANDS D.P.			FT.
SINGLES D.P.			FT.
D.C. I.D. O.D.			FT.
D.C. I.D. O.D.			FT.
STB. BODY O.D.			FT.
STB. BODY O.D.			FT.
RMR. BODY O.D.			FT.
SUBS O.D.			FT.
BIT OR C.B.			FT.
			FT.
KELLY DOWN			FT.
TOTAL			FT.
WT. OF STRING			LBS.

BIT RECORD

BIT NO.			
SIZE			
MFG.			
TYPE			
NOZZLE NO.			
NOZZLE SIZE			
SER. NO.			
DEPTH OUT			
DEPTH IN			
TOTAL FTG.			
TOTAL HR. RUN			
COND. OF BIT			
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME			
WEIGHT			
VISC.-SEC			
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Dave Fykas

FOOTAGE

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SCL.-S PAR'EL-P COM'D-C

DEVIATION RECORD

DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8 AM			MOVE RIG TO NEW LOCATION
			SPOT SUB

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
STANDS D.P.			FT.
SINGLES D.P.			FT.
D.C. I.D. O.D.			FT.
D.C. I.D. O.D.			FT.
STB. BODY O.D.			FT.
STB. BODY O.D.			FT.
RMR. BODY O.D.			FT.
SUBS O.D.			FT.
BIT OR C.B.			FT.
			FT.
KELLY DOWN			FT.
TOTAL			FT.
WT. OF STRING			LBS.

BIT RECORD

BIT NO.			
SIZE			
MFG.			
TYPE			
NOZZLE NO.			
NOZZLE SIZE			
SER. NO.			
DEPTH OUT			
DEPTH IN			
TOTAL FTG.			
TOTAL HR. RUN			
COND. OF BIT			
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME			
WEIGHT			
VISC.-SEC			
W.L.-C.C.			
FLTR. CK			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Brian Sadowski

FOOTAGE

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SCL.-S PAR'EL-P COM'D-C

DEVIATION RECORD

DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	12:00	16	MOVE CAMP + RIG UP
			SPOT MATTING
			SPOT SUB

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 32 DATE MARCH 9, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKING ETAL EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR	RIG NO.	DRILL PIPE STRING NO.	SIZE	TOOL JOINT	TYPE THD.
Jennings International Drilling, A Division of Western Electronics & Engineering Ltd.	9	2	4 1/2	6 1/4 O.D.	XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindenbau

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	Emsco	DA 500	16"
2.	Emsco	DA 500	16"
3.			

	SIZE	WAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
LAST CASING	8 5/8	MM	24 J-55	16	627		614	
TUBING OR LINER	5 1/2			144				

MORNING TOUR

TIME DISTRIBUTION–HOURS	MORN	DAY	EVE
RIG UP & TEAR DOWN	4	8	8
DRILLING ACTUAL			
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG			
DEVIATION SURVEY			
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER	4		
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8		8

DRILLING ASSEMBLY AT END OF TOUR NO.		
STANDS D.P.		FT.
SINGLES D.P.		FT.
D.C. I.D. O.D.		FT.
D.C. I.D. O.D.		FT.
STB. BODY O.D.		FT.
STB. BODY O.D.		FT.
RMR. BODY O.D.		FT.
SUBS O.D.		FT.
BIT OR C.B.		FT.
		FT.
KELLY DOWN		FT.
TOTAL		FT.
WT. OF STRING		LBS.

BIT RECORD		
BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD		
TIME		
WEIGHT		
VISC.-SEC		
W.L.-C.C.		
FLTR. CK.		
PH		
SD. CONT. %		
PRESSURE GRADIENT		

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Dave Fryfam

FOOTAGE FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12 00	4 00	4	LAY DOWN B.O.P.s
			PUT ON WELL HEAD
4 00	8 00	4	TEAR OUT
			Rig Released 12 noon March 9, 1971

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR NO.		
STANDS D.P.		FT.
SINGLES D.P.		FT.
D.C. I.D. O.D.		FT.
D.C. I.D. O.D.		FT.
STB. BODY O.D.		FT.
STB. BODY O.D.		FT.
RMR. BODY O.D.		FT.
SUBS O.D.		FT.
BIT OR C.B.		FT.
		FT.
KELLY DOWN		FT.
TOTAL		FT.
WT. OF STRING		LBS.

BIT RECORD		
BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD		
TIME		
WEIGHT		
VISC.-SEC		
W.L.-C.C.		
FLTR. CK.		
PH		
SD. CONT. %		
PRESSURE GRADIENT		

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER

FOOTAGE FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8 00	4 00	8	TEAR OUT RIG
			MOVE RIG OFF HOLE

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR NO.		
STANDS D.P.		FT.
SINGLES D.P.		FT.
D.C. I.D. O.D.		FT.
D.C. I.D. O.D.		FT.
STB. BODY O.D.		FT.
STB. BODY O.D.		FT.
RMR. BODY O.D.		FT.
SUBS O.D.		FT.
BIT OR C.B.		FT.
		FT.
KELLY DOWN		FT.
TOTAL		FT.
WT. OF STRING		LBS.

BIT RECORD		
BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD		
TIME		
WEIGHT		
VISC.-SEC		
W.L.-C.C.		
FLTR. CK		
PH		
SD. CONT. %		
PRESSURE GRADIENT		

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Brian Sadowy

FOOTAGE FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	12:00	16	TEAR OUT RIG
			WASH BOILER
			TEAR OUT CAMP

WIRE LINE RECORD	
REEL NO.	
NO. OF LINES	SIZE
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	
CUMULATIVE ROTATING HRS.	

TIME SUMMARY (OFFICE USE ONLY)			
DAY WORK			
HRS. W/DP			
HRS. WO/DP			
HRS. STANDBY			
TOTAL DAY WORK			

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 31 DATE MARCH 8, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKING. EFAL EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling, A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4 1/2

TOOL JOINT 6 1/4 O.D. TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindenbergen

PUMPS			
NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	Emsco	DA 500	16"
2.	Emsco	DA 500	16"
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8 5/8	MM	24-J-55	16	627		614	
	5 1/2			144				

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL			
REAMING			
CONDITIONING MUD & CIRCULATING	1		
TRIPS			
LUBRICATE RIG			
DEVIATION SURVEY			
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING	7		
WAITING ON CEMENT PLUG			3 1/2
DRILL STEM TEST			
OTHER			4 1/2
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8		8

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK

HRS. W/DP

HRS. WO/DP

HRS. STANDBY

TOTAL DAY WORK

WIRE LINE RECORD

REEL NO.

NO. OF LINES SIZE

FEET SLIPPED

FEET CUT OFF

PRESENT LENGTH

TON MI. OR TRIPS SINCE LAST CUT

CUMULATIVE TON MI. OR TRIPS

NO. OF DAYS FROM SPUD

CUMULATIVE ROTATING HRS.

MORNING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR	
	STANDS D.P.	FT.
	SINGLES D.P.	FT.
	D.C. I.D. O.D.	FT.
	D.C. I.D. O.D.	FT.
	STB. BODY O.D.	FT.
	STB. BODY O.D.	FT.
	RMR. BODY O.D.	FT.
	SUBS O.D.	FT.
	BIT OR C.B.	FT.
		FT.
	KELLY DOWN	FT.
	TOTAL	FT.
WT. OF STRING		LBS.

BIT RECORD		
BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD		
TIME		
WEIGHT		
VISC.-SEC		
W.L.-C.C.		
FLTR. CK.		
PH		
SD. CONT. %		
PRESSURE GRADIENT		

MUD & CHEMICALS ADDED: TYPE | AMT. | TYPE | AMT.

DRILLER Dave Trykas

FOOTAGE FROM	TO	DR-D RM-R CORE-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL-S PAR'EL-P COM'D-C

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	7:00	7	RUN CASING + ~~WAIT ON PLUGS~~
7:00	8:00	1	CIRC. + WAIT ON PLUGS

DAY TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR	
	STANDS D.P.	FT.
	SINGLES D.P.	FT.
	D.C. I.D. O.D.	FT.
	D.C. I.D. O.D.	FT.
	STB. BODY O.D.	FT.
	STB. BODY O.D.	FT.
	RMR. BODY O.D.	FT.
	SUBS O.D.	FT.
	BIT OR C.B.	FT.
		FT.
	KELLY DOWN	FT.
	TOTAL	FT.
WT. OF STRING		LBS.

BIT RECORD		
BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD		
TIME	10:00	1:00
WEIGHT	9.5	9.5
VISC.-SEC	55	46
W.L.-C.C.		
FLTR. CK.		
PH		
SD. CONT. %		
PRESSURE GRADIENT		

MUD & CHEMICALS ADDED: TYPE | AMT. | TYPE | AMT.

DRILLER Sal Bergeron

FOOTAGE FROM	TO	DR-D RM-R CORE-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL-S PAR'EL-P COM'D-C

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	7:30	3 1/2	CIR CASING + WAIT ON PLUGS
7:30	9:30	2	CEMENT CASING.
9:30	12:00	2 1/2	PICK UP BOPs

Ran 144 Jts (5298.45 ft) of 8 5/8" 24# J-55 Casing Shoe @ 5286 KB. Cemented w/ 150 sks + 420 sks + 400 sks cl A w/ Cement. Displaced w/ 9.3

EVENING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR	
	STANDS D.P.	FT.
	SINGLES D.P.	FT.
	D.C. I.D. O.D.	FT.
	D.C. I.D. O.D.	FT.
	STB. BODY O.D.	FT.
	STB. BODY O.D.	FT.
	RMR. BODY O.D.	FT.
	SUBS O.D.	FT.
	BIT OR C.B.	FT.
		FT.
	KELLY DOWN	FT.
	TOTAL	FT.
WT. OF STRING		LBS.

BIT RECORD		
BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD		
TIME	6:00	
WEIGHT	9.5	
VISC.-SEC	35	
W.L.-C.C.		
FLTR. CK		
PH		
SD. CONT. %		
PRESSURE GRADIENT		

MUD & CHEMICALS ADDED: TYPE | AMT. | TYPE | AMT.

DRILLER Brian Galloway

FOOTAGE FROM	TO	DR-D RM-R CORE-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL-S PAR'EL-P COM'D-C
				KB. 13.05' C.B.								

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	7:30	3 1/2	CIR CASING + WAIT ON PLUGS
7:30	9:30	2	CEMENT CASING.
9:30	12:00	2 1/2	PICK UP BOPs

& SET CASING SLIP. 5 1/2" 14# J-55 Casing Shoe @ 5286 KB. Cemented w/ 150 sks + 420 sks + 400 sks cl A w/ Cement. Displaced w/ 9.3

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 30 DATE MARCH 1, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKMG ETAL EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling, A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4½

TOOL JOINT 6¼ O.D. TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Ludwikow

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	Emsco	DA 500	16"
2	Emsco	DA 500	16"
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8 5/8	MM	24 J-55	16	627		614	

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL			
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS	1/4	1	
LUBRICATE RIG	1/4	1/4	
DEVIATION SURVEY			
TEST B.O.P.			
CUT OFF DRILLING LINE			
~~REPAIR RIG~~ Lay down D.P		1 3/4	
~~CORING~~ B.C.		1/4	
WIRE LINE LOGGING	6 3/4		
RUNNING CASING & CEMENTING			2 1/2
WAITING ON ~~CEMENT~~ ORDERS		4	
DRILL STEM TEST			
OTHER	3/4	3/4	7
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	7

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK			
HRS. W/DP			
HRS. WO/DP			
HRS. STANDBY			
TOTAL DAY WORK			

WIRE LINE RECORD

REEL NO.	
NO. OF LINES	SIZE
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	
CUMULATIVE ROTATING HRS.	

MORNING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
	SUBS O.D.		FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
WT. OF STRING			LBS.

BIT RECORD: BIT NO., SIZE, MFG., TYPE, NOZZLE NO., NOZZLE SIZE, SER. NO., DEPTH OUT, DEPTH IN, TOTAL FTG., TOTAL HR. RUN, COND. OF BIT, REAMER NO., REAMER TYPE

MUD RECORD: TIME, WEIGHT, VISC.–SEC, W.L.–C.C., FLTR. CK., PH, SD. CONT. %, PRESSURE GRADIENT

MUD & CHEMICALS ADDED: TYPE, AMT., TYPE, AMT.

DRILLER: Clare Prykas

FOOTAGE FROM	TO	DR.,D RM. R CORE..C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
5286												

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	1/4	RIG SERVICE
12:15	7:00	6 3/4	LOG W/ SCHLUMBERGER
7:00	7:15	1/4	TEAR OUT SCHLUMBERGER
7:15	7:45	1/2	LAY DOWN COLLARS
7:45	8:00	1/4	RUN IN

DAY TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
	SUBS O.D.		FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
WT. OF STRING			LBS.

BIT RECORD: BIT NO., SIZE, MFG., TYPE, NOZZLE NO., NOZZLE SIZE, SER. NO., DEPTH OUT, DEPTH IN, TOTAL FTG., TOTAL HR. RUN, COND. OF BIT, REAMER NO., REAMER TYPE

MUD RECORD: TIME, WEIGHT, VISC.–SEC, W.L.–C.C., FLTR. CK., PH, SD. CONT. %, PRESSURE GRADIENT

MUD & CHEMICALS ADDED: TYPE, AMT., TYPE, AMT.

DRILLER

FOOTAGE FROM	TO	DR–D RM–R CORE–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
5286												

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8 am	8:15	1/4	RIG SER. + CHECK B.O.P.
8:15	9:15	1	FINISH IN
9:15	10:00	3/4	PICK UP 17 SINGLES
10:00	10:15	1/4	BREAK CIRC. CLEAN TO BOTTOM. 10' FILL
10:15	2:15	4	WAIT ON ORDERS.
2:15	4:00	1 3/4	LAY DOWN DRILL PIPE

EVENING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
	SUBS O.D.		FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
WT. OF STRING			LBS.

BIT RECORD: BIT NO., SIZE, MFG., TYPE, NOZZLE NO., NOZZLE SIZE, SER. NO., DEPTH OUT, DEPTH IN, TOTAL FTG., TOTAL HR. RUN, COND. OF BIT, REAMER NO., REAMER TYPE

MUD RECORD: TIME, WEIGHT, VISC.–SEC, W.L.–C.C., FLTR. CK., PH, SD. CONT. %, PRESSURE GRADIENT

MUD & CHEMICALS ADDED: TYPE, AMT., TYPE, AMT.

DRILLER

FOOTAGE FROM	TO	DR–D RM–R CORE–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	5:15	1 1/4	LAY DOWN DRILL PIPE
5:15	5:45	1/2	BREAK DOWN KELLY
5:45	9:30	3 3/4	DRESS CASEING
9:30	12:00	2 1/2	RUN CASEING.

APPROVED APPROVED

A.A.O.D.C.–A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 29 DATE MARCH 6, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DECHI	CANDEL DECHANG ETAL EAST MACKAY	3-45T	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling, A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4 1/2

TOOL JOINT: 6 1/4 O.D. TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Ludwick

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	Emsco	DA500	16"
2.	Emsco	DA500	16"
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8 5/8	MM	24 J-55	16	627		614	

TIME DISTRIBUTION—HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL			
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG	1/4		
DEVIATION SURVEY			
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING	7 3/4		3
RUNNING CASING & CEMENTING			
WAITING ON ~~CEMENT~~ LOGGERS		8	5
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL	8		
TOTALS			

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK			
HRS. W/DP			
HRS. WO/DP			
HRS. STANDBY			
TOTAL DAY WORK	8		

WIRE LINE RECORD

RFEL NO.	
NO. OF LINES	8 SIZE 1 1/8
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	29
CUMULATIVE ROTATING HRS.	

MORNING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR	
	STANDS D.P.	FT.
	SINGLES D.P.	FT.
	D.C. I.D. O.D.	FT.
	D.C. I.D. O.D.	FT.
	STB. BODY O.D.	FT.
	STB. BODY O.D.	FT.
	RMR. BODY O.D.	FT.
	SUBS O.D.	FT.
	BIT OR C.B.	FT.
		FT.
	KELLY DOWN	FT.
	TOTAL	FT.
WT. OF STRING		LBS.

BIT RECORD: BIT NO.; SIZE; MFG.; TYPE; NOZZLE NO.; NOZZLE SIZE; SER. NO.; DEPTH OUT; DEPTH IN; TOTAL FTG.; TOTAL HR. RUN; COND. OF BIT; REAMER NO.; REAMER TYPE

MUD RECORD: TIME; WEIGHT; VISC.-SEC; W.L.-C.C.; FLTR. CK.; PH; SD. CONT. %; PRESSURE GRADIENT

MUD & CHEMICALS ADDED: TYPE, AMT., TYPE, AMT.

DRILLER: Dave Frykas

FOOTAGE: FROM 5286; TO

DR.-D RM.-R CORE.-C; CORE NO.

FORMATION (SHOW CORE RECOVERY); ROTARY RPM; WT. ON BIT 1000#; PUMP PRESS; PUMP NO. LINER SIZE, S.P.M.; PUMP NO. LINER SIZE, S.P.M.; METHOD RUN SGL.-S PAR'EL-P CON'D-C

DEVIATION RECORD: DEPTH, DEV., DIRECTION, DEPTH, DEV., DIRECTION, DEPTH, DEV., DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12 00	12 15	1/4	RIG SERVICE
12 15	8 00	7 3/4	LOG W/ SCHLUMBERGER

DAY TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR	
	STANDS D.P.	FT.
	SINGLES D.P.	FT.
	D.C. I.D. O.D.	FT.
	D.C. I.D. O.D.	FT.
	STB. BODY O.D.	FT.
	STB. BODY O.D.	FT.
	RMR. BODY O.D.	FT.
	SUBS O.D.	FT.
	BIT OR C.B.	FT.
		FT.
	KELLY DOWN	FT.
	TOTAL	FT.
WT. OF STRING		LBS.

BIT RECORD: BIT NO.; SIZE; MFG.; TYPE; NOZZLE NO.; NOZZLE SIZE; SER. NO.; DEPTH OUT; DEPTH IN; TOTAL FTG.; TOTAL HR. RUN; COND. OF BIT; REAMER NO.; REAMER TYPE

MUD RECORD: TIME; WEIGHT; VISC.-SEC; W.L.-C.C.; FLTR. CK.; PH; SD. CONT. %; PRESSURE GRADIENT

MUD & CHEMICALS ADDED: TYPE, AMT., TYPE, AMT.

DRILLER: Red Bergum

FOOTAGE: FROM 5286; TO

DR.-D RM.-R CORE.-C; CORE NO.

FORMATION (SHOW CORE RECOVERY); ROTARY RPM; WT. ON BIT 1000#; PUMP PRESS; PUMP NO. LINER SIZE, S.P.M.; PUMP NO. LINER SIZE, S.P.M.; METHOD RUN SGL.-S PAR'EL-P CON'D-C

DEVIATION RECORD: DEPTH, DEV., DIRECTION, DEPTH, DEV., DIRECTION, DEPTH, DEV., DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8 00	4 00	8	~~[illegible] w/ Schlum. [illegible]~~ WAITING ON SCHLUMBERGER. DUAL IND LATEROLOG BHC SONIC GAMMA W/ CALIPER FORMATION DENSITY SIDEWALL NEUTRON POROSITY HDT TO CSG

EVENING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR	
	STANDS D.P.	FT.
	SINGLES D.P.	FT.
	D.C. I.D. O.D.	FT.
	D.C. I.D. O.D.	FT.
	STB. BODY O.D.	FT.
	STB. BODY O.D.	FT.
	RMR. BODY O.D.	FT.
	SUBS O.D.	FT.
	BIT OR C.B.	FT.
		FT.
	KELLY DOWN	FT.
	TOTAL	FT.
WT. OF STRING		LBS.

BIT RECORD: BIT NO.; SIZE; MFG.; TYPE; NOZZLE NO.; NOZZLE SIZE; SER. NO.; DEPTH OUT; DEPTH IN; TOTAL FTG.; TOTAL HR. RUN; COND. OF BIT; REAMER NO.; REAMER TYPE

MUD RECORD: TIME; WEIGHT; VISC.-SEC; W.L.-C.C.; FLTR. CK; PH; SD. CONT. %; PRESSURE GRADIENT

MUD & CHEMICALS ADDED: TYPE, AMT., TYPE, AMT.

DRILLER: Dave Frykas

FOOTAGE: FROM 5286; TO

DR.-D RM.-R CORE.-C; CORE NO.

FORMATION (SHOW CORE RECOVERY); ROTARY RPM; WT. ON BIT 1000#; PUMP PRESS; PUMP NO. LINER SIZE, S.P.M.; PUMP NO. LINER SIZE, S.P.M.; METHOD RUN SGL.-S PAR'EL-P COM'D-C

DEVIATION RECORD: DEPTH, DEV., DIRECTION, DEPTH, DEV., DIRECTION, DEPTH, DEV., DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4 00	9 00	5	WAIT ON SCHLUMBERGER.
9 00	12 00	3	LOG W/ SCHLUMBERGER

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 28 DATE MARCH 5, 1971

OPERATOR: CANADIAN DELHI

LEASE: CANDEL DECKMC ETAL EAST MACKAY

WELL NO. B-45 | FIELD OR AREA: EAST MACKAY | COUNTY: FORT NORMAN | STATE: N.W.T.

CONTRACTOR: Jennings International Drilling, A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4 1/2

TOOL JOINT: 6 1/4 O.D. TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Ludwikson

PUMPS			
NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16"
2.	EMSCO	DA 500	16"
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8 5/8	MM	24 J-55	16	627		614	

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL			
REAMING	5 1/4		
CONDITIONING MUD & CIRCULATING	1 1/2		
TRIPS	1 1/4	1/2	
LUBRICATE RIG	1/4	1/4	
DEVIATION SURVEY	1/4		
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
~~CORING~~ LOGGING		1/4	
WIRE LINE LOGGING		7	8
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/DP; HRS. WO/DP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD: REEL NO.; NO. OF LINES 8 SIZE 1/8; FEET SLIPPED; FEET CUT OFF; PRESENT LENGTH; TON MI. OR TRIPS SINCE LAST CUT; CUMULATIVE TON MI. OR TRIPS; NO. OF DAYS FROM SPUD 28; CUMULATIVE ROTATING HRS.

MORNING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
50	STANDS D.P.	4712.49	FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
18	D.C. 6 1/4 I.D. O.D.	534.00	FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS 6 O.D.	1.76	FT.
	BIT ~~OR C.B.~~	.65	FT.
			FT.
	KELLY DOWN	32.00	FT.
	TOTAL	5286.	FT.
WT. OF STRING	118,000		LBS.

BIT RECORD		
BIT NO.	RR #7	
SIZE	7 7/8	
MFG.	H.W.	
TYPE	WD-7	
NOZZLE NO.	3 x	
NOZZLE SIZE	12 11	
SER. NO.	9441	
DEPTH OUT	5286	
DEPTH IN	5064	
TOTAL FTG.	222	
TOTAL HR. RUN	6 1/2	
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME	1:00	3:00	5:00
WEIGHT	9.6	9.7	9.7
VISC.-SEC	75	85	92
W.L.-C.C.	7.9	8.0	8.0
FLTR. CK.	2/32	2/32	2/32
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	2000#		

DRILLER: Dave Fryfogel

FOOTAGE 19'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL.-P COM'D.-C
5267	5286	RM			52	4-5M	1350	5 1/2	60			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	5284	4 1/4°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	1/4	RIG SERVICE
12:15	5:30	5 1/4	REAM ~~[illegible]~~ BRI Hole to 7 7/8
5:30	6:00	1/2	CIRC.
6:00	6:15	1/4	SURVEY 5284
6:15	8:00	1 3/4	TRIP OUT to LOG

DAY TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
	SUBS O.D.		FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
WT. OF STRING			LBS.

BIT RECORD		
BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME			
WEIGHT			
VISC.-SEC			
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Ted Bergum

FOOTAGE

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL.-P COM'D.-C
5286												

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8 AM	9:00	1/4	RIG SER. & CHECK B.O.P.
9:00	9:45	1/2	FINISH OUT
9:45	9:00	1/4	RIG UP SCHLUMBERGER
9:00	4:00	7	LOGGING

EVENING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
	SUBS O.D.		FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
WT. OF STRING			LBS.

BIT RECORD		
BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME			
WEIGHT			
VISC.-SEC			
W.L.-C.C.			
FLTR. CK			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: David Fryfogel

FOOTAGE

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL.-P COM'D.-C
5286												

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	8:00	8	LOGGING

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 27 — DATE MARCH 4, 1971

OPERATOR	LEASE	WEL. NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKMG ETAL EAST MACKAY	B-45	EAST MACKAY	FOR NORMAN	NWT

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4 1/2 — TOOL JOINT 6 1/4 O.D. — TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindenhuer

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	Emsco	DA 500	16"
2.	Emsco	DA 500	16"
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	9 5/8	MM	24 J-55	16	627		614	

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL			
REAMING			1 1/4
CONDITIONING MUD & CIRCULATING	1	1 1/2	
TRIPS	4 1/4	1 1/4	4
LUBRICATE RIG	1/4	1/4	
DEVIATION SURVEY			
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING	4	7	1 3/4
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER	2		1
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	4

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/DP; HRS. WO/DP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD: REEL NO.; NO. OF LINES 8 SIZE 1/8; FEET SLIPPED; FEET CUT OFF; PRESENT LENGTH; TON MI. OR TRIPS SINCE LAST CUT; CUMULATIVE TON MI. OR TRIPS; NO. OF DAYS FROM SPUD 27; CUMULATIVE ROTATING HRS.

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
49	STANDS D.P.	4617.82	FT.
	SINGLES D.P.		FT.
18	D.C. I.D. O.D.	534.18	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	RMR. BODY O.D.		FT.
1	SUBS C/O O.D.	1.76	FT.
	BIT OR C.B.		FT.
	CORE BARREL	60.00	FT.
	KELLY DOWN		FT.
	TOTAL		FT.
WT. OF STRING	118,000	LBS.	

BIT RECORD: BIT NO. RR=6; SIZE 7 7/8; MFG. HJ; TYPE W0-7; NOZZLE NO. 4 1, SIZE 12 11; SER. NO. 29441; DEPTH OUT; DEPTH IN 5264; TOTAL FTG.; TOTAL HR. RUN; COND. OF BIT; REAMER NO.; REAMER TYPE

MUD RECORD: TIME 3:00; WEIGHT 9.5; VISC.-SEC 60; W.L.-C.C.; FL.TR. CK; PH; SD. CONT. %; PRESSURE GRADIENT; MUD & CHEMICALS ADDED (TYPE, AMT., TYPE, AMT.); DRILLER David Fryhas

FOOTAGE

FROM	TO	DR-D RM-R CORE-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL-S PAR'EL-P COM'D-C
5264		D						5 1/2				

DEVIATION RECORD: DEPTH, DEV., DIRECTION, DEPTH, DEV., DIRECTION, DEPTH, DEV., DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	1/4	RIG SERVICE & ✓ B.O.P.S
12:15	1:45	1 1/2	FINISH RUNNING
1:45	2:15	1/2	BREAK CIRC. & CLEAN TO BOTTOM
2:15	3:15	1	CIRC & CONDITION MUD
3:15	4:45	1 1/2	TRIP OUT
4:45	6:15	1 1/2	PICK UP CORE BARREL
6:15	8:00	1 3/4	RUN IN W/ CORE BARREL

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
49	STANDS D.P.	4617.82	FT.
1	SINGLES D.P.	31.58	FT.
18	D.C. 6 1/4 I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
1	~~RMR. BODY~~ C.O. O.D.	2.68	FT.
1	SUBS C/O O.D.	1.76	FT.
	~~BIT~~ OR C.B.	60.00	FT.
			FT.
	KELLY DOWN	28.43	FT.
	TOTAL	5282.00	FT.
WT. OF STRING	118 M	LBS.	

BIT RECORD: BIT NO.; SIZE 6 11/16; MFG. CHRIS.; TYPE C; NOZZLE NO.; SIZE; SER. NO. 09-70; DEPTH OUT; DEPTH IN 5264; TOTAL FTG. 18; TOTAL HR. RUN 7; COND. OF BIT O/B; REAMER NO.; REAMER TYPE

MUD RECORD: TIME 8:30 12:30; WEIGHT 9.5 9.5; VISC.-SEC 55 66; W.L.-C.C. 9.6 9.6; FL.TR. CK. 2/32 2/32; PH 10.0 10.0; SD. CONT. %; PRESSURE GRADIENT; MUD & CHEMICALS ADDED: TYPE Gel, AMT. 2400#; TYPE DV-68, AMT. 2 gal; DRILLER Ed Bergum

FOOTAGE 18

FROM	TO	DR-D RM-R CORE-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL-S PAR'EL-P COM'D-C
5264	5282	C			70	12M	850	5 1/2	46			

DEVIATION RECORD: DEPTH, DEV., DIRECTION, DEPTH, DEV., DIRECTION, DEPTH, DEV., DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	1/4	RIG SER & CHECK B.O.P.S.
8:15	8:30	1/4	FINISH IN W/ CORE BARREL. Core #1
8:30	9:00	1/2	CIRC HOLE CLEAN TO BOTTOM. 5264-5286
9:00	9:00	7	CUT CORE #1
			~~HOIST CORE~~ #1 Rec'd 22'

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
50	STANDS D.P.	4712.49	FT.
	SINGLES D.P.		FT.
18	D.C. 6 1/4 I.D. O.D.	537.00	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	RMR. BODY O.D.		FT.
1	SUBS C/O O.D.	1.76	FT.
	BIT ~~OR C.B.~~	.65	FT.
			FT.
	KELLY DOWN	13.00	FT.
	TOTAL	5267	FT.
WT. OF STRING	118,000	LBS.	

BIT RECORD: BIT NO. RR-6; SIZE 7 7/8 6 7/8; MFG. HJ CHRIS; TYPE W0-7 D; NOZZLE NO. 4 1, SIZE 12 11; SER. NO. 29441 09-70; DEPTH OUT 5246; DEPTH IN 5264 5264; TOTAL FTG. 22; TOTAL HR. RUN 8 3/4; COND. OF BIT; REAMER NO.; REAMER TYPE

MUD RECORD: TIME 11:00; WEIGHT 9.6; VISC.-SEC 65; W.L.-C.C. 7.8; FL.TR. CK 2/32; PH; SD. CONT. %; PRESSURE GRADIENT; MUD & CHEMICALS ADDED: TYPE 2000 GEL, AMT.; DRILLER Dave Fryhas

FOOTAGE 4'

FROM	TO	DR-D RM-R CORE-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL-S PAR'EL-P COM'D-C
5282	5286	C			70	12M	850	5 1/2	46			
5264	5267	R										

DEVIATION RECORD: DEPTH, DEV., DIRECTION, DEPTH, DEV., DIRECTION, DEPTH, DEV., DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	5:45	1 3/4	CUT CORE #1
5:45	7:45	2	HOIST CORE #1
7:45	8:15	1/2	RETRIEVE CORE
8:15	8:45	1/2	LAY DOWN CORE BARREL
8:45	10:00		RUN IN TO REAM
10:00	12:00	1 1/4	REAM ~~RAT HOLE TO 7 7/8~~

APPROVED — APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 26 — DATE MARCH 3, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DEVONG LTD EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling, A Division of Western Electronics & Engineering Ltd. — RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4½ — TOOL JOINT 6¼ O.D. — TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Fredrickson

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16"
2.	EMSCO	DA500	16"
3.			

	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
LAST CASING	[illegible]	MM	24-J-55	16	627		614	
TUBING OR LINER	8 5/8							

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	6¾		
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS	1/2		4½
LUBRICATE RIG	¼	¼	
DEVIATION SURVEY			
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER	½		1½
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8		

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/DP; HRS. WO/DP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD: REEL NO.; NO. OF LINES 8 SIZE 1 1/8; FEET SLIPPED 49; FEET CUT OFF 49; PRESENT LENGTH; TON MI. OR TRIPS SINCE LAST CUT; CUMULATIVE TON MI. OR TRIPS; NO. OF DAYS FROM SPUD 26; CUMULATIVE ROTATING HRS. 341

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
49	STANDS D.P.	4617.82	FT.
	SINGLES D.P.		FT.
18	D.C. I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C/O O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	41.00	FT.
	TOTAL	5201.	FT.
WT. OF STRING		118,000	LBS.

BIT RECORD: BIT NO. 7; SIZE 7⅞; MFG. HW; TYPE WD-7; NOZZLE NO. 4 ½ / SIZE 11; SER. NO. 29441; DEPTH OUT; DEPTH IN 5155; TOTAL FTG. 46; TOTAL HR. RUN 6¾; COND. OF BIT 0/B; REAMER NO.; REAMER TYPE

MUD RECORD

TIME	2:00	4:00	6:00
WEIGHT	9.3	9.3	9.3
VISC.-SEC	38	40	44
W.L.-C.C.	9.4	9.4	9.4
FLTR. CK.	2/32	2/32	2/32
PH	10.5	10.0	10.0
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	2200#		
DV/68	2 Gal.		

DRILLER: Vane Frykas

FOOTAGE 46

FROM	TO	DR., D RM., R CORE, C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL-S PAR'EL-P COM'D-C
5155	5201	D		36" FUEL	52	28	1325	5½	60			

DEVIATION RECORD: DEPTH / DEV. / DIRECTION / DEPTH / DEV. / DIRECTION / DEPTH / DEV. / DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	¼	RIG SERVICE & V B.O.P.
12:15	12:45	½	FINISH RUNNING IN HOLE
12:45	1:15	½	BREAK CIRC. & CLEAN TO BOTTOM
1:15	8:00	6¾	DRILL 7⅞" HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
49	STANDS D.P.		FT.
2	SINGLES D.P.	4680.91	FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C/O O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	2903.00	FT.
	TOTAL	5253.00	FT.
WT. OF STRING		118,000	LBS.

BIT RECORD: BIT NO. 7; SIZE 7⅞; MFG. HW; TYPE WD7; NOZZLE NO. 2 1 / SIZE 12 11; SER. NO. 29441; DEPTH OUT; DEPTH IN 5155; TOTAL FTG. 98; TOTAL HR. RUN 14; COND. OF BIT 0/B; REAMER NO.; REAMER TYPE

MUD RECORD

TIME	8:00	12:30	4:00
WEIGHT	9.4	9.5	9.5
VISC.-SEC	42	40	52
W.L.-C.C.	9.6	9.6	8.6
FLTR. CK.	2/32	2/32	2/32
PH	9.5	10.5	10.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
CAUSTIC	100#		
PERTEX	100#		
GEL	2000#		

DRILLER: Ed Bergum

FOOTAGE 52'

FROM	TO	DR., D RM., R CORE, C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL-S PAR'EL-P COM'D-C
5201	5253				52	28	1350	5½	60			

DEVIATION RECORD: DEPTH 5190 / DEV. 4¼° / DIRECTION / DEPTH / DEV. / DIRECTION / DEPTH / DEV. / DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SER + CHECK B.O.P.
8:15	8:45	½	SURVEY @ 5190
8:45	4:00	7¼	DRILL 7⅞ HOLE

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
49	STANDS D.P.		FT.
2	SINGLES D.P.	4680.91	FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C/O O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	41.00	FT.
	TOTAL	5264	FT.
WT. OF STRING		118,000	LBS.

BIT RECORD: BIT NO. 7; SIZE 7⅞; MFG. HW; TYPE WD7; NOZZLE NO. 2 1 / SIZE 12 11; SER. NO. 29441; DEPTH OUT 5264; DEPTH IN 5155; TOTAL FTG. 109; TOTAL HR. RUN 15¼; COND. OF BIT; REAMER NO.; REAMER TYPE

MUD RECORD

TIME			
WEIGHT			
VISC.-SEC			
W.L.-C.C.			
FLTR. CK			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Dave Frykas

FOOTAGE 11'

FROM	TO	DR., D RM., R CORE, C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL-S PAR'EL-P COM'D-C
5253	5264				52	28	1350	5½	60			

DEVIATION RECORD: DEPTH 5260 / DEV. 4° / DIRECTION / DEPTH / DEV. / DIRECTION / DEPTH / DEV. / DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SER
4:15	5:30	1¼	DRILL 7⅞ HOLE
5:30	1:00	1½	SURVEY @ 5260
1:00	9:00	3½	[illegible] DOUBLE STRAP OUT DIFF - 1.82
9:00	10:30	1½	SLIP & CUT 49'
10:30	12:00	1½	RUN w/ JUNK SUB

Tally - 5264.00
STRAP - 5262.18
No Core

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 25 DATE MARCH 2, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELTA	CANADA DECMC ETAL EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T

CONTRACTOR: Jennings International Drilling, A Division of Western Electronics & Engineering Ltd. — RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4 1/2 — TOOL JOINT 6 1/4 O.D. — TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lachance

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	Emsco	DA 500	16"
2	Emsco	DA 500	16"
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8 5/8	MM	24 J55	16	627		614	

TIME DISTRIBUTION—HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	7 1/4	7 1/4	2
REAMING			
CONDITIONING MUD & CIRCULATING			1
TRIPS			4 3/4
LUBRICATE RIG	1/4	1/4	1/4
DEVIATION SURVEY	1/2	1/2	
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK			
HRS. W/OP			
HRS. WO/DP			
HRS. STANDBY			
TOTAL DAY WORK			

WIRE LINE RECORD

REEL NO.	
NO. OF LINES 8	SIZE 1 1/8
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD 25	
CUMULATIVE ROTATING HRS.	

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
48	STANDS D.P.	4523.55	FT.
	SINGLES D.P.		FT.
18	D.C. I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C/O O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	41.00	FT.
	TOTAL	5106	FT.
WT. OF STRING		112,000	LBS.

BIT RECORD

BIT NO.	6	
SIZE	7 7/8	
MFG.	H.W.	
TYPE	J-44	
NOZZLE NO.	3 1/2	
NOZZLE SIZE	12 closed	
SER. NO.	CU 813	
DEPTH OUT		
DEPTH IN	4585	
TOTAL FTG.	511	
TOTAL HR. RUN	46	
COND. OF BIT	0/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	12:00	3:00	6:00
WEIGHT	9.9	9.3+	9.3
VISC.-SEC	46	44	90
W.L.-C.C.	9.2	9.2	9.3
FLTR. CK.	2/32	2/32	2/32
PH	10.5	10.5	10.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
Gel	1000#		
DV/E8	1 Gal		

DRILLER: Dave Frykas

FOOTAGE 63

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 2 LINER SIZE	PUMP NO. 2 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
5043	5106	D			44	30M	1500	5 1/2	48			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	5064	5°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	1/4	RIG SERVICE & ✓ B.O.P.
12:15	3:15	3	DRILL 7 7/8" HOLE
3:15	3:45	1/2	SURVEY @ 5064
3:45	8:00	4 1/4	DRILL 7 7/8" HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
48	STANDS D.P.		FT.
2	SINGLES D.P.	4586.46	FT.
18	D.C. 6 1/4 I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C/O O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	15.40	FT.
	TOTAL	5145.00	FT.
WT. OF STRING		118,000	LBS.

BIT RECORD

BIT NO.	6	
SIZE	7 7/8	
MFG.	H.W.	
TYPE	J-44	
NOZZLE NO.	3 1/2	
NOZZLE SIZE	12 closed	
SER. NO.	CU 813	
DEPTH OUT		
DEPTH IN	4585	
TOTAL FTG.	550	
TOTAL HR. RUN	53 1/4	
COND. OF BIT	0/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	8:00	12:00	
WEIGHT	9.3	9.3	
VISC.-SEC	40	40	
W.L.-C.C.	9.4	9.4	
FLTR. CK.	2/32	2/32	
PH	10.0	10.0	
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Ed Bergum

FOOTAGE 36

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
5106	5145	D			44	30M	1500	5 1/2	48			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	5120	5°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	1/4	RIG SER & CHECK B.O.P.
8:15	2:15	6	DRILL 7 7/8" HOLE
2:15	2:45	1/2	SURVEY @ 5129
2:45	4:00	1 1/4	DRILL 7 7/8" HOLE

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
48	STANDS D.P.		FT.
2	SINGLES D.P.	4586.46	FT.
8	D.C. I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C/O O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	27.00	FT.
	TOTAL	5155	FT.
WT. OF STRING		118,000	LBS.

BIT RECORD

BIT NO.	6	
SIZE	7 7/8	
MFG.	H.W.	
TYPE	J-44	
NOZZLE NO.	2 closed	
NOZZLE SIZE	12	
SER. NO.	CU 813	
DEPTH OUT	5155	
DEPTH IN	4585	
TOTAL FTG.	560	
TOTAL HR. RUN	55 1/4	
COND. OF BIT	8.1.1	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME			
WEIGHT			
VISC.-SEC			
W.L.-C.C.			
FLTR. CK			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Dave Frykas

FOOTAGE 10

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
5145	5155	D			44	30M	1500	5 1/2	48			
					44	28M	1500	5 1/2	48			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	1/4	RIG SER.
4:15	6:15	2	DRILL 7 7/8 HOLE
6:15	7:15	1	CIRC HOLE
7:15	9:45	2 1/2	PULL OUT — REMOVE RUBBER
9:45	12:00	2 1/4	RUN IN W/ BIT #7

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 24 — DATE MARCH 1, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DEEKME ET AL EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR	RIG NO.	DRILL PIPE STRING NO.	SIZE	TOOL JOINT	TYPE THD.
Jennings International Drilling — A Division of Western Electronics & Engineering Ltd.	9	2	4½	6¼ O.D.	XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindrush

PUMPS NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA500	16
2.	EMSCO	DA500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8⅝	MM	24 J-55	16	627		614	

TIME DISTRIBUTION—HOURS	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	7¼	6¾	7¼
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG	¼	¼	¼
DEVIATION SURVEY	½	1	¼
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8		8

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/DP; HRS. WO/DP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD: REEL NO.; NO. OF LINES 8 SIZE ⅝; FEET SLIPPED; FEET CUT OFF; PRESENT LENGTH; TON MI. OR TRIPS SINCE LAST CUT; CUMULATIVE TON MI. OR TRIPS; NO. OF DAYS FROM SPUD 24; CUMULATIVE ROTATING HRS.

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR		
45	STANDS D.P.	4240.14 FT.
2	SINGLES D.P.	63.14 FT.
18	D.C. I.D. O.D.	534.00 FT.
	D.C. I.D. O.D.	FT.
1	STB. BODY O.D.	5.73 FT.
	STB. BODY O.D.	FT.
	RMR. BODY O.D.	FT.
1	SUB C/O O.D.	1.76 FT.
	BIT OR C.B.	.65 FT.
		FT.
	KELLY DOWN	20.00 FT.
	TOTAL	4865 FT.
WT. OF STRING	112,000	LBS.

BIT RECORD	
BIT NO.	6
SIZE	7⅞
MFG.	HW
TYPE	J44
NOZZLE NO.	2 1
NOZZLE SIZE	12 Closed
SER. NO.	CU813
DEPTH OUT	4865
DEPTH IN	4585
TOTAL FTG.	280
TOTAL HR. RUN	24½
COND. OF BIT	0.B.
REAMER NO.	
REAMER TYPE	

MUD RECORD			
TIME	2:00	4:00	6:00
WEIGHT	9.5	9.5	9.5
VISC.-SEC	43	43	45
W.L.-C.C.	8.2	8.2	8.0
FLTR. CK.	2/32	2/32	2/32
PH	10.5	10.5	10.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
Gel	1000#		

DRILLER: Brian Ladouceur

FOOTAGE 70

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4795	4865	D		7 FEET FUEL	45	25M	1750	5½	54			
					45	27M	1750	5½	54			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	4813	4¾							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	¼	RIG SERVICE + CHECK B.O.P.
12:15	3:00	2¾	DRILL 7⅞" HOLE
3:00	3:30	½	SURVEY @ 4813
3:30	8:00	4½	DRILL 7⅞" HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR		
46	STANDS D.P.	FT.
2	SINGLES D.P.	4397.62 FT.
18	D.C. I.D. O.D.	534.00 FT.
	D.C. I.D. O.D.	FT.
1	STB. BODY O.D.	5.73 FT.
	STB. BODY O.D.	FT.
	RMR. BODY O.D.	FT.
1	SUB C/O O.D.	1.76 FT.
	BIT OR C.B.	.65 FT.
		FT.
	KELLY DOWN	41.50 FT.
	TOTAL	4949 FT.
WT. OF STRING	112,000	LBS.

BIT RECORD	
BIT NO.	6
SIZE	7⅞
MFG.	HW
TYPE	J44
NOZZLE NO.	4 1
NOZZLE SIZE	12 Closed
SER. NO.	CU813
DEPTH OUT	
DEPTH IN	4585
TOTAL FTG.	354
TOTAL HR. RUN	31½
COND. OF BIT	0/B
REAMER NO.	
REAMER TYPE	

MUD RECORD			
TIME	8:00	11:00	2:00
WEIGHT	9.5+	9.5	9.4+
VISC.-SEC	43	43	45
W.L.-C.C.	8.2	8.6	8.6
FLTR. CK.	2/32	2/32	2/32
PH	10.5	10.5	10.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	1600#	DV/68	2 Gal.
CAUSTIC	50#		
PELTEX	100#		

DRILLER: Clare Frykas

FOOTAGE 84

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4865	4949	D			45	22M	1750	5½	54			
						30M	1500	5½	48			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	4876	4½		4939	4°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE + V.B.O.P.
8:15	10:00	1¾	DRILL 7⅞" HOLE
10:00	10:30	½	SURVEY @ 4876
10:30	3:30	5	DRILL 7⅞" HOLE
3:30	4:00	½	SURVEY @ 4939

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR		
47	STANDS D.P.	4427.25 FT.
1	SINGLES D.P.	31.33 FT.
18	D.C. 6¼ I.D. O.D.	534.00 FT.
	D.C. I.D. O.D.	FT.
1	STB. BODY O.D.	5.73 FT.
	STB. BODY O.D.	FT.
	RMR. BODY O.D.	FT.
1	SUB C/O O.D.	2.68 FT.
	BIT OR C.B.	.65 FT.
		FT.
	KELLY DOWN	41.00 FT.
	TOTAL	5043.00 FT.
WT. OF STRING	112,000	LBS.

BIT RECORD	
BIT NO.	6
SIZE	7⅞
MFG.	HW
TYPE	J44
NOZZLE NO.	2 1
NOZZLE SIZE	12 Closed
SER. NO.	CU813
DEPTH OUT	
DEPTH IN	4585
TOTAL FTG.	448
TOTAL HR. RUN	38¾
COND. OF BIT	0/B
REAMER NO.	
REAMER TYPE	

MUD RECORD			
TIME	4:00	8:00	11:00
WEIGHT	9.4	9.4	9.4
VISC.-SEC	47	38	45
W.L.-C.C.	8.8	9.2	9.8
FLTR. CK	2/32	2/32	2/32
PH	10.5	10.5	10.0
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
Gel	2100#		
DV-68	2 gal		

DRILLER: Ed Bergum

FOOTAGE 94'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4949	5043				45	30M/50M	5½	48				
					24	5M	450	5½				

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	5000	4¼							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SER.
4:15	8:45	4¼	DRILL 7⅞" HOLE
8:45	9:15	½	SURVEY @ 5000
9:15	12:00	2¾	DRILL 7⅞" HOLE

APPROVED — APPROVED

A.A.O.D.C.—A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 23 — DATE ~~Nov~~ Feb 28, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKMR ET AL EAST MACKAY	8-45	EAST MACKAY	FORT NORMAN	N W T

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd. — RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4½ — TOOL JOINT 6¼ O.D. — TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Ludwikson

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16
2.	EMSCO	DA 500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8⅝	MM	24 J-55	16	627		614	

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	3½	6¾	7¼
REAMING	4¼		
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG	¼	¼	¼
DEVIATION SURVEY		1	½
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. STABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/DP; HRS. WO/DP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD: REEL NO.; NO. OF LINES 8 SIZE 1⅛; FEET SLIPPED; FEET CUT OFF; PRESENT LENGTH; TON MI. OR TRIPS SINCE LAST CUT; CUMULATIVE TON MI. OR TRIPS 23; NO. OF DAYS FROM SPUD; CUMULATIVE ROTATING HRS.

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
43	STANDS D.P.	4040.93	FT.
	SINGLES D.P.		FT.
18	D.C. I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS 8" O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	32.00	FT.
	TOTAL	4625	FT.
WT. OF STRING	110,000		LBS.

BIT RECORD: BIT NO. 6; SIZE 7⅞; MFG. HW; TYPE J-44; NOZZLE NO. 2 1; NOZZLE SIZE 12 CLOSED; SER. NO. CU813; DEPTH OUT 4625; DEPTH IN 4585; TOTAL FTG. 40; TOTAL HR. RUN 3½; COND. OF BIT 0/B; REAMER NO.; REAMER TYPE

MUD RECORD

TIME	2:00	4:00	6:00
WEIGHT	9.5	9.4	9.5
VISC.-SEC	40	38	40
W.L.-C.C.	8.2	8.2	8.2
FLTR. CK.	2/32	2/32	2/32
PH	10.5	10.5	10.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT.

DRILLER: Brian Dedoway

FOOTAGE 40

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4585	4625			FULL BIT	62	21	1750	5½	54			

DEVIATION RECORD: DEPTH / DEV. / DIRECTION / DEPTH / DEV. / DIRECTION / DEPTH / DEV. / DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	¼	RIG SERVICE + CHECK BOPs
12:15	4:30	4¼	REAM UNDER GAUGE HOLE 100 FEET.
4:30	8:00	3½	DRILL 7⅞" HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
44	STANDS D.P.	4145.74	FT.
	SINGLES D.P.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS 8" O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	41.00	FT.
	TOTAL	4728	FT.
WT. OF STRING	110,000		LBS.

BIT RECORD: BIT NO. 6; SIZE 7⅞"; MFG. H.W.; TYPE J-44; NOZZLE NO. 2 1; NOZZLE SIZE 12 (used); SER. NO. CU813; DEPTH OUT; DEPTH IN 4585; TOTAL FTG. 143; TOTAL HR. RUN 10¼; COND. OF BIT 0/B; REAMER NO.; REAMER TYPE

MUD RECORD

TIME	8:00	12:00	3:00
WEIGHT	9.6	9.6	9.5
VISC.-SEC	37	38	42
W.L.-C.C.	8.0	8.0	8.0
FLTR. CK.	2/32	2/32	2/32
PH	10.5	10.5	10.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT.
SUP COL 2200#; CAUSTIC 100#; DUVEG 2 EM

DRILLER: Dave Frykas

FOOTAGE 103

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4625	4728	D		GREASED CROWN & BLOCKS	60	31	1750	5½	54			

DEVIATION RECORD: DEPTH 4624 / DEV. 5¾° / DIRECTION ~~4687~~ / DEPTH 4687 / DEV. 5½° / DIRECTION / DEPTH / DEV. / DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE & BOP'S
8:15	8:30	¼	DRILL 7⅞" HOLE
8:30	9:00	½	SURVEY @ 4624
9:00	1:15	4¼	DRILL 7⅞" HOLE
1:15	1:45	½	SURVEY @ 4687
1:45	4:00	2¼	DRILL 7⅞" HOLE

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
45	STANDS D.P.	4240.14	FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	STB. BODY O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	RMR. BODY O.D.		FT.
1	SUBS 8" O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	14.00	FT.
	TOTAL	4795	FT.
WT. OF STRING	112,000		LBS.

BIT RECORD: BIT NO. 6; SIZE 7⅞; MFG. H.W.; TYPE J-44; NOZZLE NO. 4 1/32 (used); SER. NO. CU813; DEPTH OUT 4795; DEPTH IN 4585; TOTAL FTG. 210; TOTAL HR. RUN 17½; COND. OF BIT 0 8; REAMER NO.; REAMER TYPE

MUD RECORD

TIME	4:00	6:00	10:00
WEIGHT	9.5	9.5	9.5
VISC.-SEC	37	37	36
W.L.-C.C.	8.0	9.1	8.2
FLTR. CK	2/32	2/32	2/32
PH	10.5	10.5	10.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT.
Gel 2000#

DRILLER: Brian Ledoway

FOOTAGE 67

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4728	4795	D		"	45	25M	1750	5½	52			

DEVIATION RECORD: DEPTH 4750 / DEV. 5° / DIRECTION / DEPTH / DEV. / DIRECTION / DEPTH / DEV. / DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICE & ✓ B.O.P.
4:15	7:15	3	DRILL 7⅞" HOLE
7:15	7:45	½	SURVEY @ 4750
7:45	12:00	4¼	DRILL 7⅞" HOLE
		8	

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 22 — DATE FEB 27, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKING ETAL EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd. — RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4½ — TOOL JOINT 6¼ O.D. — TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindsay

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	Emsco	DA 500	16"
2.	Emsco	DA 500	16"
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8⅝	IPM	24 J-55	16	627		614	

TIME DISTRIBUTION—HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	7¼	7¼	2
REAMING			
CONDITIONING MUD & CIRCULATING			½
TRIPS	½	½	4½
LUBRICATE RIG	¼	¼	¼
DEVIATION SURVEY	½	½	¼
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			½
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	18		8

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/DP; HRS. WO/DP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD: REEL NO.; NO. OF LINES 8 SIZE 1⅛; FEET SLIPPED; FEET CUT OFF; PRESENT LENGTH; TON MI. OR TRIPS SINCE LAST CUT; CUMULATIVE TON MI. OR TRIPS; NO. OF DAYS FROM SPUD 22; CUMULATIVE ROTATING HRS.

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
41	STANDS D.P.		FT.
2	SINGLES D.P.	3894.77	FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUB 6/0 O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
		24.00	FT.
	KELLY DOWN	4466	FT.
	TOTAL	4466	FT.
WT. OF STRING	108,000		LBS.

BIT RECORD

BIT NO.	RR-5	
SIZE	7⅞	
MFG.	HW	
TYPE	J-44	
NOZZLE NO.	2 1/32	
NOZZLE SIZE	12 Chokes	
SER. NO.	CU917	
DEPTH OUT	4466	
DEPTH IN	4196	
TOTAL FTG.	270	
TOTAL HR. RUN	30½	
COND. OF BIT	0/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	2:00	4:00	6:00
WEIGHT	9.3	9.4	9.4
VISC.-SEC	43	40	42
W.L.-C.C.	8.2	8.2	8.2
FLTR. CK.	2/32	2/32	2/32
PH	11.5	11.5	11.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT.

DRILLER: Brian Sadoway

FOOTAGE 75

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 2 LINER SIZE	PUMP NO. 2 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PART'L.-P COM'D.-C
4391	4466	DR		FUEL 2'	60	18M	1450	5½	59			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	4435	6°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	¼	RIG SERVICE & ✓ B.O.P.s
12:15	5:15	5	DRILL 7⅞" HOLE
5:15	5:45	½	SURVEY @ 4435
5:45	8:00	2¼	DRILL 7⅞" HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
42	STANDS D.P.		FT.
1	SINGLES D.P.	3988.32	FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUB 6/0 O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	18.00	FT.
	TOTAL	4548	FT.
WT. OF STRING	110,000		LBS.

BIT RECORD

BIT NO.	RR-5	
SIZE	7⅞	
MFG.	HW	
TYPE	J-44	
NOZZLE NO.	2 1/32	
NOZZLE SIZE	12 Chokes	
SER. NO.	CU817	
DEPTH OUT		
DEPTH IN	4196	
TOTAL FTG.	352	
TOTAL HR. RUN	37¾	
COND. OF BIT	0/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	8:00	10:00	2:00
WEIGHT	9.3	9.3	9.3
VISC.-SEC	38	38	37
W.L.-C.C.	9.2	8.3	8.2
FLTR. CK.	2/32	2/32	2/32
PH	11.0	11.0	10.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT.

DRILLER: Dave Lyckal

FOOTAGE 82

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 2 LINER SIZE	PUMP NO. 2 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PART'L.-P COM'D.-C
4466	4548	D			60	20M	1450	5½	59			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	4498	6°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE & ✓ B.O.P.s
8:15	11:30	3¼	DRILL 7⅞" HOLE
11:30	12:00	½	SURVEY @ 4498'
12:00	4:00	4	DRILL 7⅞" HOLE

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
42	STANDS D.P.		FT.
2	SINGLES D.P.	4019.34	FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUB 6/0 O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	24.00	FT.
	TOTAL	4585	FT.
WT. OF STRING	110,000		LBS.

BIT RECORD

BIT NO.	RR-5	6
SIZE	7⅞	7⅞
MFG.	HW	HW
TYPE	J-44	J-44
NOZZLE NO.	2 1/32	
NOZZLE SIZE	12 Chokes	
SER. NO.	CU817	CU813
DEPTH OUT	4585	
DEPTH IN	4196	
TOTAL FTG.	389	
TOTAL HR. RUN	39¾	
COND. OF BIT	7-6-8	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME			
WEIGHT			
VISC.-SEC			
W.L.-C.C.			
FLTR. CK			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT.

DRILLER: Brian Sadoway

FOOTAGE 37

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PART'L.-P COM'D.-C
4548	4585	D			50	20M	1750	5½	54			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	4575	6°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICE
4:15	6:15	2	DRILL 7⅞" HOLE
6:15	6:30	¼	DROP SURVEY
6:30	9:00	2½	HOIST BIT # RR-5
9:00	9:30	½	REPAIR 2ND CHAIN + OIL LINES
9:30	11:20	2	RUN IN WITH BIT #6
11:30	12:00	½	BREAK CIR

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 21 — DATE FEB 26, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKMR ET AL EAST MACKAY	B-43	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2 SIZE 7 7/8 — TOOL JOINT 6 5/8 O.D. — TYPE THD. X H

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Sudrabin

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	D-500	16
2.	EMSCO	D-500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8 5/8	MM	24 J-55	16	627		614	

TIME DISTRIBUTION—HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	7 1/4	7 3/4	6 1/4
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG	1/4	1/4	1/4
DEVIATION SURVEY	1/2		1
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY): DAY WORK — HRS. W/DP — HRS. WO/DP — HRS. STANDBY — TOTAL DAY WORK

WIRE LINE RECORD: REEL NO. — NO. OF LINES — SIZE — FEET SLIPPED — FEET CUT OFF — PRESENT LENGTH — TON MI. OR TRIPS SINCE LAST CUT — CUMULATIVE TON MI. OR TRIPS — NO. OF DAYS FROM SPUD 21 — CUMULATIVE ROTATING HRS.

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
39	STANDS D.P.	3674.95	FT.
	SINGLES D.P.		FT.
18	D.C. 6 1/4 I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUB O.D.	1.76	FT.
	BIT ~~OR C.B.~~	.65	FT.
			FT.
	KELLY DOWN	41.00	FT.
	TOTAL	4258.	FT.

WT. OF STRING 106 000 LBS.

BIT RECORD

BIT NO.	RR5	
SIZE	7 7/8	
MFG.	HW	
TYPE	J-44	
NOZZLE NO.	2 1	
NOZZLE SIZE	12 Closed	
SER. NO.	CU817	
DEPTH OUT	4258	
DEPTH IN	4196	
TOTAL FTG.	62	
TOTAL HR. RUN	8 3/4	
COND. OF BIT	OB	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	2:00	4:00	6:00
WEIGHT	9.4	9.4	9.4
VISC.-SEC	60	50	50
W.L.-C.C.	8.6	8.6	8.8
FLTR. CK.	2/32	2/32	2/32
PH	11.0	11.0	11.0
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE — AMT. — TYPE — AMT.

DRILLER B. Sadoway

FOOTAGE 55'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 2 LINER SIZE	PUMP NO. 2 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4203	4258	DR.			60	15M	1400	5 1/2	59			

DEVIATION RECORD: DEPTH 4247 — DEV. 6° — DIRECTION — DEPTH — DEV. — DIRECTION — DEPTH — DEV. — DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	1/4	RIG SERVICE + CHECK BOPs
12:15	7:15	7	DRILL 7 7/8" HOLE
7:15	7:45	1/2	SURVEY @ 4247
7:45	8:00	1/4	DRILL 7 7/8" HOLE
		8	

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
39	STANDS D.P.		FT.
2	SINGLES D.P.	3738.43	FT.
18	D.C. 6 1/4 I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUB O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	41.00	FT.
	TOTAL	4321	FT.

WT. OF STRING 107,000 LBS.

BIT RECORD

BIT NO.	RR-5	
SIZE	7 7/8	
MFG.	H.W	
TYPE	J-44	
NOZZLE NO.	4 1/2	
NOZZLE SIZE	12 Closed	
SER. NO.	CU817	
DEPTH OUT		
DEPTH IN	4196	
TOTAL FTG.	125	
TOTAL HR. RUN	16 1/2	
COND. OF BIT	OB	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	8:00	10:00	1:00
WEIGHT	9.3	9.3	9.3
VISC.-SEC	46	44	45
W.L.-C.C.	9.0	8.9	8.9
FLTR. CK.	2/32	2/32	2/32
PH	10.5	11.0	11.0
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE CAUSTIC — AMT. 100# — TYPE — AMT.

DRILLER David Frykas

FOOTAGE 63'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 2 LINER SIZE	PUMP NO. 2 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4258	4321	D			60	15M	400	5 1/2	59			

DEVIATION RECORD: DEPTH — DEV. — DIRECTION — DEPTH — DEV. — DIRECTION — DEPTH — DEV. — DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	1/4	RIG SERVICE + CHECK BOPs
8:15	4:00	7 3/4	DRILL 7 7/8" HOLE

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
40	STANDS D.P.		FT.
2	SINGLES D.P.	3832.03	FT.
18	D.C. 6 1/4 I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUB O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	17.00	FT.
	TOTAL	4391	FT.

WT. OF STRING 108 000 LBS.

BIT RECORD

BIT NO.	RR-5	
SIZE	7 7/8	
MFG.	H.W	
TYPE	J-44	
NOZZLE NO.	4 1/2	
NOZZLE SIZE	12 Closed	
SER. NO.	CU817	
DEPTH OUT	4391	
DEPTH IN	4196	
TOTAL FTG.	195	
TOTAL HR. RUN	23 1/4	
COND. OF BIT	OB	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	9:00	8:00	10:00
WEIGHT	9.3	9.3	9.3
VISC.-SEC	45	43	43
W.L.-C.C.	9.0	9.2	8.2
FLTR. CK	2/32	2/32	2/32
PH	10.5	10.5	10.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE CMC — AMT. 100# — TYPE Caustic — AMT. 100# — TYPE Pelletex — AMT. 200#

DRILLER Brian Sadoway

FOOTAGE 70

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 2 LINER SIZE	PUMP NO. 2 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4321	4391	D			60	16M	1400	5 1/2	59			

DEVIATION RECORD: DEPTH 4311 — DEV. 6° — DIRECTION — DEPTH 4373 — DEV. 6° — DIRECTION — DEPTH — DEV. — DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	1/4	RIG SERVICE
4:15	4:45	1/2	SURVEY @ 4311'
4:45	10:45	6	DRILL 7 7/8" HOLE
10:45	11:15	1/2	SURVEY @ 4373
11:15	12:00	3/4	DRILL 7 7/8" HOLE
		8	

APPROVED — APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 20 DATE FEB 25, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKMC ET AL EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling, A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2 SIZE 4½ TOOL JOINT 6¼ O.D. TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindsbury

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16
2	EMSCO	DA 500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8⅝	[illegible]	14 55	16	627		614	

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL			1½
REAMING			
CONDITIONING MUD & CIRCULATING			½
TRIPS	4½	2¼	2¼
LUBRICATE RIG	¼	¼	¼
DEVIATION SURVEY			½
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST MAKE UP DSTS		5½	
OTHER	3¼		2½
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK	
HRS. W/DP	
HRS. WO/DP	
HRS. STANDBY	
TOTAL DAY WORK	

WIRE LINE RECORD

REEL NO.	
NO. OF LINES	SIZE
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	
CUMULATIVE ROTATING HRS.	

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
	SUBS O.D.		FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
WT. OF STRING			LBS.

BIT RECORD

BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	1200
WEIGHT	
VISC.-SEC	60
W.L.-C.C.	TESTING
FLTR. CK.	Report
PH	on back
SD. CONT. %	sheet
PRESSURE GRADIENT	

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Brian Sadoway

FOOTAGE

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SCL.-S PAR'EL-P COM'D-C

DEVIATION RECORD

DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG

FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	¼	RIG SERVICE + CHECK B.O.Ps
12:15	2:45	2½	HOIST BIT & RR5 TO TEST STRAP OUT
2:45	6:00	3¼	MAKE UP DST #2 STRAP - 4198.44
6:00	8:00	2	RUN IN WITH DST #2 TALLY - 4196.43 NO CORRECTION
			DIFF - 2.01

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
	SUBS O.D.		FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
WT. OF STRING			LBS.

BIT RECORD

BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	
WEIGHT	
VISC.-SEC	
W.L.-C.C.	TESTING
FLTR. CK.	
PH	
SD. CONT. %	
PRESSURE GRADIENT	

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: David Fiskar

FOOTAGE

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SCL.-S PAR'EL-P COM'D-C
4196												

DEVIATION RECORD

DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG

FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE INTERVAL TESTING
8:15	8:45	½	PRE FLOW 4042 - 4196
8:45	9:45	1	INTIAL SHUT IN
9:45	11:45	2	FLOW PERIOD Details on back
11:45	1:45	2	FINAL SHUT IN
1:45	4:00	2¼	PULL D.S.T. #2

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
38	STANDS D.P.	3580.67	FT.
2	SINGLES D.P.	62.76	FT.
18	D.C. I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS 8 O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	18.00	FT.
	TOTAL	4203	FT.
WT. OF STRING		106 000	LBS.

BIT RECORD

BIT NO.	RR5	
SIZE	7⅞	
MFG.	HW	
TYPE	J-44	
NOZZLE NO.	4 1	
NOZZLE SIZE	12 CHSEL	
SER. NO.	CU817	
DEPTH OUT	4203	
DEPTH IN	4196	
TOTAL FTG.	7	
TOTAL HR. RUN	1½	
COND. OF BIT	OB	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME		11:00
WEIGHT		9.4
VISC.-SEC		66
W.L.-C.C.		8.2
FLTR. CK		2/32
PH		11.5
SD. CONT. %		
PRESSURE GRADIENT		

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Brian Sadoway

FOOTAGE 7

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 2 LINER SIZE	PUMP NO. 2 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SCL.-S PAR'EL-P COM'D-C
4196	4203				60	15	1400	5½	59			

DEVIATION RECORD

DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
4049	6¼							

TIME LOG

FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICE
4:15	5:00	¾	FINISH HOISTING DST #2
5:00	7:30	2½	BREAKUP + LAYdown TOOL
7:30	9:30	2	RUN IN WITH RR#5
9:30	10:00	½	CIRC
10:00	10:30	½	SURVEY @ 4059
10:30	12:00	1½	DRILL 7⅞" HOLE

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. ~~18~~ 19 — DATE FEB 24, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKMC ET AL EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4½ — TOOL JOINT 6¼ O.D. — TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindsay

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16
2.	EMSCO	DA500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8⅝	MM	24 J55	16	527		514	

TIME DISTRIBUTION—HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	6¾	7	
REAMING			
CONDITIONING MUD & CIRCULATING			6½
TRIPS			1
LUBRICATE RIG	¼	¼	1¼
DEVIATION SURVEY	½	¾	
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			¼
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK			
HRS. W/DP			
HRS. WO/DP			
HRS. STANDBY			
TOTAL DAY WORK			

WIRE LINE RECORD

REEL NO.	
NO. OF LINES 8	SIZE ⅛
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	19
CUMULATIVE ROTATING HRS.	

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
38	STANDS D.P.	3580.67	FT.
	SINGLES D.P.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS XO O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	26.00	FT.
	TOTAL	4148	FT.
WT. OF STRING	104,000		LBS.

BIT RECORD

BIT NO.	RR 5	
SIZE	7⅞	
MFG.	HW	
TYPE	J-44	
NOZZLE NO.	2 1	
NOZZLE SIZE	12 CLOSED	
SER. NO.	CU817	
DEPTH OUT	4148	
DEPTH IN	4042	
TOTAL FTG.	106	
TOTAL HR. RUN	11¼	
COND. OF BIT	OB	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	2:00	4:00	6:00
WEIGHT	9.3	9.3	9.3
VISC.-SEC	42	38	3.8
W.L.-C.C.	8.8	7.4	7.4
FLTR. CK.	2/32	2/32	2/32
PH	10.5	11.0	11.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
PELTEX	200		
CAUSTIC	100		

DRILLER: Brian Lodoway

FOOTAGE 60

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4088	4148	DR		5½ FT FUEL.	50	15M	1750	5½	54			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	4090	6°		4122	6°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	¼	RIG SERVICE + CHECK BOPS.
12:15	1:00	¾	DRILL 7⅞" HOLE.
1:00	1:30	½	SURVEY @ 4090
1:30	5:00	3½	DRILL 7⅞" HOLE
5:00	5:30	½	SURVEY @ 4122.
5:30	8:00	2½	DRILL 7⅞" HOLE.

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
38	STANDS D.P.		FT.
	SINGLES D.P.	3642.75	FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C/O O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	11.00	FT.
	TOTAL	4196	FT.
WT. OF STRING	104,000		LBS.

BIT RECORD

BIT NO.	RR-5	
SIZE	7⅞	
MFG.	H.W	
TYPE	J-44	
NOZZLE NO.	2 1	
NOZZLE SIZE	12 CLOSED	
SER. NO.	CU817	
DEPTH OUT		
DEPTH IN	4042	
TOTAL FTG.	154	
TOTAL HR. RUN	18¼	
COND. OF BIT	O/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	8:30	4:00	6:00
WEIGHT	9.1	8.9	9.0
VISC.-SEC	38	35	36
W.L.-C.C.	7.8	7.8	7.8
FLTR. CK.	2/32	2/32	2/32
PH	11.5	11.5	11.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER

FOOTAGE 48

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4148	4196	D			50	15m	1250	5½	54			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	4153	6°	4186	6°					

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE + CHECK B.O.P.S
8:15	10:15	2	DRILL 7⅞" HOLE
10:15	10:45	½	SURVEY @ 4153
10:45	3:45	5	DRILL 7⅞" HOLE
3:45	4:00	¼	SURVEY @ 4185

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C/O O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
WT. OF STRING	104,000		LBS.

BIT RECORD

BIT NO.	RR-5	
SIZE	7⅞	
MFG.	H.W	
TYPE	J-44	
NOZZLE NO.	2 1	
NOZZLE SIZE	12 CLOSED	
SER. NO.	CU817	
DEPTH OUT		
DEPTH IN	4042	
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	11:30	8:00	10:00
WEIGHT	9.2	9.2	9.2
VISC.-SEC	60	40	45
W.L.-C.C.	9.2	8.0	8.0
FLTR. CK	2/32	2/32	2/32
PH	11.5	11.5	11.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
SUPER COL	3900		

DRILLER B. Lodoway

FOOTAGE

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4196												

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICE + ✓ B.O.P.'S
4:15	4:30	¼	WORK ON PUMP
4:30	6:00	1½	CIRC + CONDITION MUD PRIOR TO TEST
6:00	7:00	1	DUMMY TRIP, WORK PIPE
7:00	12:00	5	CIRC @ CONDITION MUD

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 18 DATE FEB 23, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI.	CANDEL DECKMC ET AL EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING NO.	SIZE	TOOL JOINT	TYPE THD.
2	4½	6¼ O.D.	XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindskien

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16
2.	EMSCO	DA 500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8⅝	MM	24 J-55	16	627		614	

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL			4½
CIRC. & REAMING			½
CONDITIONING MUD & CIRCULATING			
TRIPS	¾	4¾	1½
LUBRICATE RIG	¼	1¼	¼
DEVIATION SURVEY			½
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON ~~CEMENT~~ DAYLIGHT	3½	¾	
DRILL STEM TEST	3½		
OTHER		2¾	¾
FISHING			
COMPLETION WORK A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK
HRS. W/DP
HRS. WO/DP
HRS. STANDBY
TOTAL DAY WORK

WIRE LINE RECORD

REEL NO.
NO. OF LINES — SIZE
FEET SLIPPED
FEET CUT OFF
PRESENT LENGTH
TON MI. OR TRIPS SINCE LAST CUT
CUMULATIVE TON MI. OR TRIPS
NO. OF DAYS FROM SPUD: 17
CUMULATIVE ROTATING HRS.

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
	SUBS O.D.		FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN	13.00	FT.
	TOTAL		FT.
WT. OF STRING			LBS.

BIT RECORD

BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME			
WEIGHT			
VISC.–SEC			
W.L.–C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Brian Sadoway

FOOTAGE

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
				FUEL 6 FT.								

DEVIATION RECORD

DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	1:30	1½	FLOW PERIOD
1:30	3:30	2	FINAL SHUTIN.
3:30	4:15	~~½~~ ¾	HOIST 12 STANDS
4:15	4:30	¼	~~WAIT ON DAYLIGHT~~ RIG SERVICE
4:30	8:00	3½	WAIT ON DAYLIGHT
		8	

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
37	STANDS D.P.	3486.39	FT.
	SINGLES D.P.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	14.80	FT.
	TOTAL	4042	FT.
WT. OF STRING		102,000	LBS.

BIT RECORD

BIT NO.	RR-5	
SIZE	7⅞	
MFG.	H.W	
TYPE	J-44	
NOZZLE NO.	2 ½	
NOZZLE SIZE	12	
SER. NO.	CV817	
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME			
WEIGHT			
VISC.–SEC			
W.L.–C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Dave Frykas

FOOTAGE

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
4042												

DEVIATION RECORD

DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
9:00	8:15	11¼	RIG SERVICE + CHECKED MOTOR KILLS
8:15	9:00	¾	WAIT ON DAYLIGHT
9:00	12:00	3	PULL DST #1
12:00	2:45	2¾	BREAK UP + LAY down Tool
2:45	4:00	1¼	RUN W/ BIT

DST #1 9042-3990
IS1 60, VO-180, FS1 [illegible]
Med blow incr. shut down decr. @ end of blow.
Rec 2-1830' oil, 100' MUD
IS1 IH-
Flow Nom FH-
FS1 Recorded

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
37	STANDS D.P.	3486.39	FT.
1	SINGLES D.P.	31.32	FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS O.D.	1.76	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
WT. OF STRING		102,000	LBS.

BIT RECORD

BIT NO.	RR-5	
SIZE	7⅞	
MFG.	H.W	
TYPE	J-44	
NOZZLE NO.	2 ½	
NOZZLE SIZE	12	
SER. NO.	CV817	
DEPTH OUT	4042	
DEPTH IN		
TOTAL FTG.	46	
TOTAL HR. RUN	4¾	
COND. OF BIT	0-8	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME		8:00	10:00
WEIGHT		9.3	9.3
VISC.–SEC		50	50
W.L.–C.C.		8.8	8.8
FLTR. CK		2/32	2/32
PH		9.5	9.0
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
PELTEX	200#		
CACTUS	100#		

DRILLER: Brian Sadoway

FOOTAGE 46

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
4042	4088	D			75	14M	1100	5½	54			
					50	15M	1250	5½	52			

DEVIATION RECORD

DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
4059	5°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICED & B.O.P.
4:15	5:45	1½	RUN IN
5:45	6:30	¾	THAW KELLY OUT RAT HOLE
6:30	7:00	½	CLEAN OUT FILL TO BOTTOM 50'
7:00	9:30	2½	DRILL 7⅞" HOLE
9:30	10:00	½	SURVEY @ 4059'
10:00	12:00	2	DRILL 7⅞" HOLE.

APPROVED APPROVED

A.A.O.D.C.–A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 17 DATE FEB 22 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKING ETAL EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T

CONTRACTOR: Jennings International Drilling, A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 12 SIZE 4½ TYPE THD. X.H. TOOL JOINT 6¼ O.D.

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16
2.	EMSCO	DA 500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8 5/8	MM	24 J55	16	627		614	

SIGNATURE OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Ludwig

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	5¼	2¾	
REAMING			
CONDITIONING MUD & CIRCULATING	1	1½	
TRIPS		3	1¾
LUBRICATE RIG	¼	½	¼
DEVIATION SURVEY	¼	½	
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			2
OTHER			3
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK

HRS. W/DP

HRS. WO/DP

HRS. STANDBY

TOTAL DAY WORK

WIRE LINE RECORD

REEL NO.

NO. OF LINES 8 SIZE 1/8

FEET SLIPPED

FEET CUT OFF

PRESENT LENGTH

TON MI. OR TRIPS SINCE LAST CUT

CUMULATIVE TON MI. OR TRIPS

NO. OF DAYS FROM SPUD 16

CUMULATIVE ROTATING HRS.

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
36	STANDS D.P.	3392.03	FT.
2	SINGLES D.P.	62.78	FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	7.53	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUB CO O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	12.38	FT.
	TOTAL	4062.00	FT.
WT. OF STRING	102.000		LBS.

BIT RECORD

BIT NO.	5	
SIZE	7⅞	
MFG.	H.W	
TYPE	J.44	
NOZZLE NO.	3	
NOZZLE SIZE	12	
SER. NO.	CU817	
DEPTH OUT		
DEPTH IN	3268	
TOTAL FTG.	744	
TOTAL HR. RUN	100	
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	2 A.M	4 A.M	6 A.M.
WEIGHT	9.2	9.2	9.1
VISC.-SEC	36	35	34
W.L.-C.C.	7.4	7.6	7.8
FLTR. CK.	2/32	2/32	2/32
PH	10.5	10.5	10.0
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Ted Bergum

60' FOOTAGE

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
3952	4012			T FUEL	25	14M	1750	5½	54			S
					25	15M	1750	5½	54			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3966	6°		4007	6¼°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	¼	RIG SER.
12:15	2:00	1¾	DRILL 7⅞ HOLE
2:00	3:00	1	SURVEY @ 3964
3:00	5:45	2¾	DRILL 7⅞" HOLE
5:45	6:45	1	CIRC HOLE & SAMPLE
6:45	7:15	½	SURVEY @ 4007
7:15	8:00	¾	DRILL 7⅞ HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
37	STANDS D.P.	3486.39	FT.
	SINGLES D.P.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUB X/O O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	13.00	FT.
	TOTAL	4042	FT.
WT. OF STRING	102,000.		LBS.

BIT RECORD

BIT NO.	5	
SIZE	7⅞	
MFG.	HW	
TYPE	J-44	
NOZZLE NO.	2 1	
NOZZLE SIZE	12 Clock	
SER. NO.	CU817	
DEPTH OUT	4042	
DEPTH IN	3268.	
TOTAL FTG.	774	
TOTAL HR. RUN	102¾	
COND. OF BIT	4 4 4	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	10:00	12:00
WEIGHT	9.1	9.1
VISC.-SEC	40	45
W.L.-C.C.	8.0	8.6
FLTR. CK.	2/32	2/32
PH	9.5	9.5
SD. CONT. %		
PRESSURE GRADIENT		

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
SUPER COL	330 #		
CAUSTIC	50#		

DRILLER: Bruce Sadoway

FOOTAGE 30

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
4012	4042				50	15	1750	5½	54			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	4028	6½°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE + CHECK BOPs.
8:15	10:30	2¼	DRILL 7⅞" HOLE
10:30	11:00	½	SURVEY @ 4028 - 6½°
11:00	11:30	½	DRILL 7⅞" HOLE.
11:30	12:15	¾	CIR SAMPLE + CONDITION MUD
12:15	1:15	1	DUMMY TRIP 13 STANDS + REMOVE RUBBERS.
1:15	2:00	¾	CIR CONDITION MUD
2:00	4:00	2	HOIST BIT # 5 DOUBLE STRAP

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
37	STANDS D.P.	3486.39	FT.
	SINGLES D.P.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUB X/O O.D.	2.68	FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN	13.00	FT.
	TOTAL	4042	FT.
WT. OF STRING			LBS.

BIT RECORD

BIT NO.	5	
SIZE	7⅞	
MFG.	HW	
TYPE	J-44	
NOZZLE NO.	2 1	
NOZZLE SIZE	12 Clock	
SER. NO.	CU817	
DEPTH OUT	4042	
DEPTH IN	3268	
TOTAL FTG.	774	
TOTAL HR. RUN	102¾	
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME		
WEIGHT		
VISC.-SEC		
W.L.-C.C.		
FLTR. CK		
PH		
SD. CONT. %		
PRESSURE GRADIENT		

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: David Fyfe

FOOTAGE

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
	4042							5½				

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICE
4:15	5:00	¾	FINISH HOISTING BIT #5
5:00	8:00	3	PICKUP + MAKE UP TEST TOOL
8:00	10:00	2	RIH W/ DST # I
10:00	11:30	1½	INITIAL SHUT IN
11:30	12:00	½	FLOW PERIOD

Strap 4026.69
Table 4024.38
D. 2.31

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 15 — DATE FEB 21 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKING-ETAL EAST MACKAY	B-45	EAST MACKAY	Fort NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4½ — TOOL JOINT 6¼ O.D. — TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: Eleanor Lindrickson

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA-500	16
2.	EMSCO	DA-500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8 5/8	MM	24355	16	627		614	

MORNING TOUR

TIME DISTRIBUTION–HOURS	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	6¼	7¾	6¼
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG	¼	¼	¼
DEVIATION SURVEY	1	½	¼
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

DRILLING ASSEMBLY AT END OF TOUR	NO.		
STANDS D.P.	35	3278.95	FT.
SINGLES D.P.			FT.
D.C. 6¼ I.D. O.D.	18	534.00	FT.
D.C. I.D. O.D.			FT.
STB. BODY O.D.			FT.
STB. BODY O.D.	1	5.73	FT.
RMR. BODY O.D.			FT.
SUBS C.O. O.D.	1	2.68	FT.
BIT OR C.B.	1	.65	FT.
			FT.
KELLY DOWN		12.99.00	FT.
TOTAL		3855.04	FT.
WT. OF STRING		102.000	LBS.

BIT RECORD		
BIT NO.	5	
SIZE	7⅞	
MFG.	HW	
TYPE	J44	
NOZZLE NO.	3	
NOZZLE SIZE	12	
SER. NO.	CU817	
DEPTH OUT		
DEPTH IN	3268	
TOTAL FTG.	578	
TOTAL HR. RUN	81	
COND. OF BIT	B/B.	
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME	12:00	2:00	6:30
WEIGHT	9.1	9.1	9.2
VISC.-SEC	34	33	38
W.L.-C.C.	9.2	9.2	8.0
FLTR. CK.	2/32	2/32	2/32
PH	10.0	10.5	10.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
Gel	1400#		
CMC	150#		
DU-68	1 gal		

DRILLER: Ted Bergum

FOOTAGE 55'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL.-P COM'D.-C
3800	3855	D			80	12M	1200	5½	60			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3819	6⅛°		3850'	6°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12 00	12 15	¼	RIG SER.
12 15	2 30	2¼	DRILL 7⅞ HOLE
2 30	3 00	½	Survey @ 3819
3 00	7 00	4	DRILL 7⅞ HOLE
7 00	7 30	½	SURVEY @ 3850
7 30	8 00	½	DRILL 7⅞ HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR	NO.		
STANDS D.P.	35	3330.40	FT.
SINGLES D.P.	1		FT.
D.C. 6¼ I.D. O.D.	18	534.00	FT.
D.C. I.D. O.D.			FT.
STB. BODY O.D.	1	5.73	FT.
STB. BODY O.D.			FT.
RMR. BODY O.D.			FT.
SUBS O.D.	1	2.68	FT.
BIT OR C.B.		.65	FT.
			FT.
KELLY DOWN		39.00	FT.
TOTAL		3912	FT.
WT. OF STRING		102,000	LBS.

BIT RECORD		
BIT NO.	5	
SIZE	7⅞	
MFG.	HW	
TYPE	J-44	
NOZZLE NO.	3	
NOZZLE SIZE	12	
SER. NO.	CU817	
DEPTH OUT	3912	
DEPTH IN	3268	
TOTAL FTG.	644	
TOTAL HR. RUN	88¼	
COND. OF BIT	OB	
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME	10:00	12:00	2:00
WEIGHT	9.3	9.2	9.1
VISC.-SEC	38	35	35
W.L.-C.C.	8.0	8.2	7.8
FLTR. CK.	2/32	2/32	2/32
PH	9.5	9.5	9.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
CMC	150#		
GEL	1000#		
DU68	1 GAL		

DRILLER: Brian Dadoway

FOOTAGE 57

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL.-P COM'D.-C
3855	3912	D			80	12M	1200	5½	60			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3870	6°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE + CHECK B.O.Ps
8:15	10:45	2½	DRILL 7⅞" HOLE
10:45	11:15	½	SURVEY @ 3870 - 6°
11:15	4:00	4¾	DRILL 7⅞" HOLE
		8	

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR	NO.		
STANDS D.P.	36	3372.03	FT.
SINGLES D.P.			FT.
D.C. 6¼ I.D. O.D.	18	534.00	FT.
D.C. I.D. O.D.			FT.
STB. BODY O.D.	1	5.73	FT.
STB. BODY O.D.			FT.
RMR. BODY O.D.			FT.
SUBS O.D.	1	2.68	FT.
BIT OR C.B.		.65	FT.
			FT.
KELLY DOWN		1691.00	FT.
TOTAL		3952.00	FT.
WT. OF STRING		102,000	LBS.

BIT RECORD		
BIT NO.	5	
SIZE	7⅞	
MFG.	HW	
TYPE	J44	
NOZZLE NO.	3	
NOZZLE SIZE	12	
SER. NO.	CU817	
DEPTH OUT		
DEPTH IN	3268	
TOTAL FTG.	684	
TOTAL HR. RUN	94¼	
COND. OF BIT	OB	
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME	6:00	8:00	10:00
WEIGHT	9.2		
VISC.-SEC	38		
W.L.-C.C.	7.2		
FLTR. CK	2/32		
PH	9.5		
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Ted Bergum

FOOTAGE 40'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL.-P COM'D.-C
3912	3952	D			80	13M	1200	5½	60			
					75	14M	1300	5½	54			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3905	6°		3934'	6⅛°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICE CHECK BOPs + CHECK MOTOR KILLS OK.
4:15	4:45	½	SURVEY @ 3905 6°
4:45	10 00	5¼	DRILL 7⅞" HOLE.
10 00	10 15	¼	SURVEY @ 3934
10 15	12 00	1¾	DRILL 7⅞ HOLE

WIRE LINE RECORD

REEL NO.	
NO. OF LINES	8 — SIZE 1/8
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	15
CUMULATIVE ROTATING HRS.	

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK	
HRS. W/DP	
HRS. W/O/DP	
HRS. STANDBY	
TOTAL DAY WORK	

APPROVED — APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 15 — DATE FEB 20 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
Canadian Delhi	CANDEL DECKING-ETAL East Mackay	B-45	East Mackay	Fort Norman	N.W.T.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4½ — TOOL JOINT 6¼ O.D. — TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: [illegible]

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16
2.	EMSCO	DA-500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	9⅝	MM	24.155	16	627		614	

TIME DISTRIBUTION—HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	6¾	7¼	7
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG	¼	¼	¼
DEVIATION SURVEY	1	½	¾
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK	
HRS. W/DP	
HRS. WO/DP	
HRS. STANDBY	
TOTAL DAY WORK	

WIRE LINE RECORD

REEL NO.	
NO. OF LINES 8	SIZE 1/8
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	15
CUMULATIVE ROTATING HRS.	

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
33	STANDS D.P.	3109.44	FT.
	SINGLES D.P.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS CO O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	31.50	FT.
	TOTAL	3688.00	FT.
WT. OF STRING	100,000		LBS.

BIT RECORD

BIT NO.		5	
SIZE		7⅞	
MFG.		HW	
TYPE		544	
NOZZLE	NO.	3	
	SIZE	12	
SER. NO.		CU817	
DEPTH OUT			
DEPTH IN		3268	
TOTAL FTG.		420	
TOTAL HR. RUN		60	
COND. OF BIT		O/B	
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME	2:00	4:00	6:00
WEIGHT	9.0	9.0	9.0
VISC.-SEC	32	32	34
W.L.-C.C.	10.0	10.0	9.2
FLTR. CK.	2/32	2/32	2/32
PH	9.0	9.0	9.0
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	1500#		
C.M.C.	150#		
DV68	1 gal		

DRILLER: Ed Bergum

FOOTAGE 58'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
3630	3688	D			95	12M	1200	5½	60			
					80	12M	1150	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3630	4¾°		3660	5°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	¼	Rig Service
12:15	12:30	¼	Drill 7⅞ Hole
12:30	1:00	½	Survey @ 3630
1:00	4:45	3¾	Drill 7⅞ Hole
4:45	5:15	½	SURVEY @ 3660
5:15	8:00	2¾	DRILL 7⅞ HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
33	STANDS D.P.	3109.44	FT.
2	SINGLES D.P.	33.05	FT.
18	D.C. I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS XO O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	31.00	FT.
	TOTAL	3748	FT.
WT. OF STRING	100,000		LBS.

BIT RECORD

BIT NO.		5	
SIZE		7⅞	
MFG.		HW	
TYPE		544	
NOZZLE	NO.	3	
	SIZE	12	
SER. NO.		CU817	
DEPTH OUT		3748	
DEPTH IN		3268	
TOTAL FTG.		480	
TOTAL HR. RUN		67¼	
COND. OF BIT		OB	
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME	10:00	12:00	2:00
WEIGHT	9.2	9.2	9.2
VISC.-SEC	35	36	36
W.L.-C.C.	8.8	7.0	7.0
FLTR. CK.	2/32	3/32	2/32
PH	8.5	9.5	9.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
Gel	1000#	DV68	1 GAL
CMC	150#		
Caustic	100#		

DRILLER: Brian Lodowsky

FOOTAGE 60

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
3688	3748	D			80	12M	1100	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3685	5°		3720	5½°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE + CHECK BOPS
8:15	8:45	½	DRILL 7⅞" HOLE
8:45	9:00	¼	SURVEY @ 3685 – 5°
9:00	12:45	3¾	DRILL 7⅞" HOLE
12:45	1:00	¼	SURVEY @ 3720 – 5½°
1:00	4:00	3	DRILL 7⅞" HOLE
		8	

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
34	STANDS D.P.	3204.11	FT.
1	SINGLES D.P.	31.66	FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS XO O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	21.12	FT.
	TOTAL	3800.00	FT.
WT. OF STRING	100,000		LBS.

BIT RECORD

BIT NO.		5	
SIZE		7⅞	
MFG.		HW	
TYPE		544	
NOZZLE	NO.	3	
	SIZE	12	
SER. NO.		CU817	
DEPTH OUT			
DEPTH IN		3268	
TOTAL FTG.		532	
TOTAL HR. RUN		74¼	
COND. OF BIT		O/B	
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME	6:00	8:00	10:00
WEIGHT	9.1	9.0	9.0
VISC.-SEC	37	35	35
W.L.-C.C.	7.5	4.8	9.0
FLTR. CK	2/32	3/32	3/32
PH	9.0	8.5	8.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
Gel	1500#		
Caustic	200#		
DV68	1 gal		

DRILLER

FOOTAGE 52'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
3748	3800	D			80	12M	1150	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3750	6°		3785	6°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICE + CHECK BOPS
4:15	5:00	¾	DRILL 7⅞" HOLE
5:00	5:15	¼	SURVEY @ 3750 6°
5:15	9:45	4½	DRILL 7⅞" HOLE
9:45	10:15	½	SURVEY @ 3785
10:15	12:00	1¾	DRILL 7⅞ HOLE

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 14 — DATE FEB 19 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKING ETAL EAST MACKAY	8-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2 SIZE 4½

TOOL JOINT: 6¼ O.D. TYPE THD. X.H.

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindsay

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA500	16
2.	EMSCO	DA500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8⅝	MM	24 J55	16	627		614	

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	6¼	6¼	7¼
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG	¼	¼	¼
DEVIATION SURVEY	1	1	1
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
C/APLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/DP; HRS. WO/DP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD: REEL NO.; NO. OF LINES 8 SIZE 1/8; FEET SLIPPED; FEET CUT OFF; PRESENT LENGTH; TON MI. OR TRIPS SINCE LAST CUT; CUMULATIVE TON MI. OR TRIPS; NO. OF DAYS FROM SPUD 14; CUMULATIVE ROTATING HRS.

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
31	STANDS D.P.		FT.
2	SINGLES D.P.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUB C.O. O.D.	2.68	FT.
	BIT OR ~~C.B.~~	.65	FT.
			FT.
	KELLY DOWN	24.66	FT.
	TOTAL	3551.00	FT.

WT. OF STRING 100,000 LBS.

BIT RECORD: BIT NO. 5; SIZE 7⅞; MFG. H.W.; TYPE J44; NOZZLE NO. 3; NOZZLE SIZE 12; SER. NO. CU817; DEPTH OUT; DEPTH IN 3268; TOTAL FTG. 283; TOTAL HR. RUN 39¼; COND. OF BIT O/B; REAMER NO.; REAMER TYPE

MUD RECORD

TIME	2 A.M.	4 A.M.	6 A.M.
WEIGHT	9.0	9.0	9.1
VISC.–SEC	35	36	39
W.L.–C.C.	10.4	9.8	9.4
FLTR. CK.	Trace	Trace	Trace
PH	9.5	9.5	9.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	1200#		
C.M.C.	100#		
DV 68	1 Gal		

DRILLER: Ted Bergum

FOOTAGE 47

FROM	TO	DR.,D RM.,R CORE..C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
3504	3551	D			95	11M	1100	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3504	4°		3535	4°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12 00	12 15	¼	RIG SER
12 15	12 45	½	SURVEY
12 45	5 15	4½	DRILL 7⅞" HOLE
5 15	5 45	½	SURVEY 3535'
5 45	8 00	2¼	DRILL 7⅞" HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
32	STANDS D.P.	3014.90	FT.
	SINGLES D.P.		FT.
18	D.C. I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C.O. O.D.	2.68	FT.
	BIT OR ~~C.B.~~	.65	FT.
			FT.
	KELLY DOWN	39.00	FT.
	TOTAL	3584	FT.

WT. OF STRING 100,000 LBS.

BIT RECORD: BIT NO. 5; SIZE 7⅞; MFG. HW; TYPE J44; NOZZLE NO. 3; NOZZLE SIZE 12; SER. NO. CU817; DEPTH OUT 3584; DEPTH IN 3268; TOTAL FTG. 316; TOTAL HR. RUN 46; COND. OF BIT OB; REAMER NO.; REAMER TYPE

MUD RECORD

TIME	10:00	12:00	2:00
WEIGHT	9.0	9.0	9.0
VISC.–SEC	35	38	33
W.L.–C.C.	12	7	9.2
FLTR. CK.	2/32	2/32	2/32
PH	9.0	9.5	9.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
CAUSTIC	100#		
CMC	100#		

DRILLER: Brian Ladbury

FOOTAGE 33

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
3551	3584	D			95	10	1100	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3555	4½°		3570	4¾				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE + CHECK BOPs
8:15	9:15	1	DRILL 7⅞" HOLE
9:15	9:45	½	SURVEY @ 3555 — 4½°
9:45	1:00	3¼	DRILL 7⅞" HOLE
1:00	1:30	½	SURVEY @ 3570 — 4¾
1:30	4:00	2½	DRILL 7⅞" HOLE
		8	

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
32	STANDS D.P.	3014.90	FT.
1	SINGLES D.P.	31.32	FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C.O. O.D.	2.68	FT.
	BIT OR ~~C.B.~~	.65	FT.
			FT.
	KELLY DOWN	41.00	FT.
	TOTAL	3630.00	FT.

WT. OF STRING LBS.

BIT RECORD: BIT NO. 5; SIZE 7⅞; MFG. H.W.; TYPE J44; NOZZLE NO. 3; NOZZLE SIZE 12; SER. NO. CU817; DEPTH OUT; DEPTH IN 3268; TOTAL FTG. 362; TOTAL HR. RUN 53¼; COND. OF BIT O/B; REAMER NO.; REAMER TYPE

MUD RECORD

TIME			
WEIGHT			
VISC.–SEC			
W.L.–C.C.			
FLTR. CK			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
Gel	1000#		
DV-7.5	1 gal		

DRILLER: Ted Bergum

FOOTAGE 46

FROM	TO	DR–D RM–R CORE–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
3584	3630				95	11M	1150	5½	58			
					85	11M	1200	5½	60			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3590	4¾°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICE + CHECK BOPs
4:15	7:00	2¾	DRILL 7⅞" HOLE
7:00	7:30	½	SURVEY @ 3590 —
7:30	12 00	4½	DRILL 7⅞" HOLE

APPROVED APPROVED

A.A.O.D.C.–A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 13 — DATE FEB 18 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKMG ETAL EAST MACKAY	B-43	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling, A Division of Western Electronics & Engineering Ltd. — RIG NO. 9

DRILL PIPE STRING: NO. 2 SIZE 4½ — TOOL JOINT 6¼ O.D. — TYPE THD. X.H

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Ludwikow

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16"
2.	EMSCO	DA 500	16"
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8⅝	M.M	24 J55	16	627		614	

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	7¼	7½	6¾
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG	¼	¼	¼
DEVIATION SURVEY	¼	¼	¼
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/DP; HRS. W/O DP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD: REEL NO.; NO. OF LINES 8 SIZE 1/8; FEET SLIPPED; FEET CUT OFF; PRESENT LENGTH; TON MI. OR TRIPS SINCE LASY CUT; CUMULATIVE TON MI. OR TRIPS; NO. OF DAYS FROM SPUD 13; CUMULATIVE ROTATING HRS.

MORNING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
30	STANDS D.P.	2825.52	FT.
2	SINGLES D.P.	63.03	FT.
18	D.C. 6¼" I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS CO O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	11.39	FT.
	TOTAL	3443.00	FT.
	WT. OF STRING 100000		LBS.

BIT RECORD		
BIT NO.	5	
SIZE	7⅞	
MFG.	HW	
TYPE	J.44	
NOZZLE NO.	3	
NOZZLE SIZE	12	
SER. NO.	CU817	
DEPTH OUT		
DEPTH IN	3268	
TOTAL FTG.	175	
TOTAL HR. RUN	18¼	
COND. OF BIT	0/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD	2 AM	4 AM	6 AM
WEIGHT	8.9	9.0	9.0
VISC.-SEC	30	30	36
W.L.-C.C.	9.8	9.8	8.5
FLTR. CK.	2/32	2/32	2/32
PH	8.0	8.5	9.0
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
Gel	2800#		
DV-68	4 gal		
CMC	300#		

DRILLER: Ted Benjum

FOOTAGE 48'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SCL.-S PAR'EL-P COM'D-C
3395	3443				80	20m	1000	5½	58			
					95	10m	1000	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3409'	3¾		3441	4°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12 00	12 15	¼	RIG SER.
12 15	1 00	¾	DRILL 7⅞" HOLE
1 00	1 15	¼	SURVEY @
1 15	7 00	5¾	DRILL 7⅞ HOLE
7 00	7 15	¼	SURVEY @ 3441
7 15	8 00	¾	DRILL 7⅞ HOLE

DAY TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
31	STANDS D.P.	2920.13	FT.
	SINGLES D.P.		FT.
18	D.C. I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	RMR. BODY O.D.		FT.
1	SUBS XO O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	14.00	FT.
	TOTAL	3478	FT.
	WT. OF STRING 100000		LBS.

BIT RECORD		
BIT NO.	5	
SIZE	7⅞	
MFG.	HW	
TYPE	J.44	
NOZZLE NO.	3	
NOZZLE SIZE	12	
SER. NO.	CU817	
DEPTH OUT	3478	
DEPTH IN	3268	
TOTAL FTG.	210	
TOTAL HR. RUN	25¾	
COND. OF BIT	OB	
REAMER NO.		
REAMER TYPE		

MUD RECORD	10:00	12:00	2:00
WEIGHT	9.0	9.0	9.0
VISC.-SEC	40	38	35
W.L.-C.C.	8.6	8.9	9.2
FLTR. CK.	2/32	2/32	2/32
PH	9.0	9.0	8.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
CAUSTIC	100#		

DRILLER: Brian Ladrway

FOOTAGE 35

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SCL.-S PAR'EL-P COM'D-C
3443	3478				95	10	100	5½	58			
					95	5M	100	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3473	4⅛°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE + CHECK BOPs
8:15	12:45	4½	DRILL 7⅞" HOLE
12:45	1:00	¼	SURVEY at 3460 4⅛°
1:00	4:00	3	DRILL 7⅞" HOLE
		8	

EVENING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
31	STANDS D.P.	2920.13	FT.
	SINGLES D.P.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS CO O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	41.00	FT.
	TOTAL	3504.00	FT.
	WT. OF STRING 100000		LBS.

BIT RECORD		
BIT NO.	5	
SIZE	7⅞	
MFG.	HW	
TYPE	J.44	
NOZZLE NO.	3	
NOZZLE SIZE	12	
SER. NO.	CU817	
DEPTH OUT		
DEPTH IN	3268	
TOTAL FTG.	236	
TOTAL HR. RUN	32¼	
COND. OF BIT	0/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD	600	800	
WEIGHT	9.0	9.0	
VISC.-SEC	35	35	
W.L.-C.C.			
FLTR. CK	2/32	2/32	
PH	9.5	9.5	
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
Gel	1000#		
DV-68	1 gal		

DRILLER: Ted Benjum

FOOTAGE 26'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SCL.-S PAR'EL-P COM'D-C
3478	3504				95	1000	1000	5½				

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3482	4°		3492	4°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICE + CHECK BOPs
4:15	6:30	2¼	DRILL 7⅞" HOLE
6:30	7:00	½	SURVEY @ 3482
7:00	9:15	2¼	DRILL 7⅞" HOLE
9:15	9:45	½	SURVEY @ 3492
9:45	12:00	2¼	DRILL 7⅞ HOLE

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 12 — DATE FEB 17 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKMC. ETAL EAST MACKAY	8-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd. — RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4½ — TOOL JOINT 6¼ O.D. — TYPE THD. X.H.

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindsay

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16
2.	EMSCO	DA 500	16
3.			

	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
LAST CASING TUBING OR LINER	8⅝	MM	24 J55	16	627		614	

TIME DISTRIBUTION—HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	4	7	
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS	2½		
LUBRICATE RIG	¼	¼	
DEVIATION SURVEY		¾	
TEST B.O.P.			
CUT OFF DRILLING LINE	½		
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	7	9	

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK			
HRS. W/DP			
HRS. WO/DP			
HRS. STANDBY			
TOTAL DAY WORK			

WIRE LINE RECORD

REEL NO.	
NO. OF LINES	8 SIZE 1⅛
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	12
CUMULATIVE ROTATING HRS.	

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
28	STANDS D.P.	2636.53	FT.
2	SINGLES D.P.	63.36	FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUB X.O. O.D.	2.68	FT.
	BIT OR CB.	.65	FT.
			FT.
	KELLY DOWN	30.78.00	FT.
	TOTAL	3268	FT.
WT. OF STRING		104,000	LBS.

BIT RECORD

BIT NO.	4	
SIZE	7⅞	
MFG.	H.W.	
TYPE	X.V.	
NOZZLE NO.	2	
NOZZLE SIZE	#12	
SER. NO.	23065	
DEPTH OUT	3268	
DEPTH IN	2828	
TOTAL FTG.	430	
TOTAL HR. RUN	39½	
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	10⁰⁰	4⁰⁰	7⁰⁰
WEIGHT	8.8	8.8	
VISC.-SEC	35	32	
W.L.-C.C.	9.6	9.8	
FLTR. CK.	2/32	2/32	
PH	9.0	9.0	
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	1600#		
D.V.68	2 GALS		
C.M.C.			

DRILLER: Ted Bugyem

FOOTAGE 48'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. 2 LINER SIZE	PUMP NO. 2 S.P.M.	METHOD RUN
3220	3268				95	20m	1150	5½	56	5½	64	S

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3246	1¾°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12⁰⁰	12¹³	¼	RIG SER.
12¹³	6⁴⁵	6½	DRILL 7⅞ HOLE
6⁴⁵	7⁰⁰	¼	SURVEY @ 3246
7⁰⁰	8⁰⁰	1	TRIP FOR BIT (REMOVE RUBBERS)

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
29	STANDS D.P.	2731.26	FT.
	SINGLES D.P.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUB X.O. O.D.	2.68	FT.
	BIT OR CB.	.65	FT.
			FT.
	KELLY DOWN	27.00	FT.
	TOTAL	3305	FT.
WT. OF STRING		100,000	LBS.

BIT RECORD

BIT NO.	5	
SIZE	7⅞	
MFG.	HW	
TYPE	F-44	
NOZZLE NO.	3	
NOZZLE SIZE	12	
SER. NO.	CU817	
DEPTH OUT	3305	
DEPTH IN	3268	
TOTAL FTG.	37	
TOTAL HR. RUN	4	
COND. OF BIT	0B	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	2:00		
WEIGHT	9.0		
VISC.-SEC	32		
W.L.-C.C.	12		
FLTR. CK.	2/32		
PH	8.5		
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER: Brian Ladouceur

FOOTAGE 37

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN
3268	3305				80	20	1000	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3246	1¾							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE + CHECK BOPs + BLIND RAMS
8:15	8:45	½	FINISH HOISTING BIT #4
8:45	9:45	1	RUN IN COLLARS + PICK UP STABILIZER
9:45	11:00	1¼	CUT + SLIP 44' DRILLING LINE
11:00	12:00	1	RUN IN WITH BIT #5 BREAK CIR + CLEAN 15' FILL
12:00	4:00	4	DRILL 7⅞" HOLE
		8	

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
30	STANDS D.P.	2825.52	FT.
	SINGLES D.P.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
1	STB. BODY O.D.	5.73	FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS X.O. O.D.	2.68	FT.
	BIT OR CB.	.65	FT.
			FT.
	KELLY DOWN	26.72	FT.
	TOTAL	3395.00	FT.
WT. OF STRING		100,000	LBS.

BIT RECORD

BIT NO.	5	
SIZE	7⅞	
MFG.	HW	
TYPE	F-44	
NOZZLE NO.	3	
NOZZLE SIZE	15	
SER. NO.	CU917	
DEPTH OUT		
DEPTH IN	3268	
TOTAL FTG.	127	
TOTAL HR. RUN	11	
COND. OF BIT	0/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	6:00	8:00	10:00
WEIGHT	9.0	9.0	9.0
VISC.-SEC	30	30	30
W.L.-C.C.	9.6	9.6	9.7
FLTR. CK	2/32	3/32	2/32
PH	8.5	8.5	8.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	1500#		
CAUSTIC	100#		
C.M.C.	100#		

DRILLER

FOOTAGE 90'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN
3305	3395				80	20m	1000	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	3305	2°		3346	1½°		3378	2¾°	

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICE + CHECK BOPs
4:15	5:00	¾	DRILL 7⅞" HOLE
5:00	5:15	¼	SURVEY @ 3305 2°
5:15	8⁰⁰	2¾	DRILL 7⅞" HOLE
8⁰⁰	8¹⁵	¼	SURVEY @ 3346
8¹⁵	10³⁹	2¼	DRILL 7⅞ HOLE
10³⁹	10⁴⁵	¼	SURVEY @ 3378
10⁴⁵	12⁰⁰	1¼	DRILL 7⅞ HOLE

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A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 11 — DATE FEB 16 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECKMA ETAL EAST MACKAY	8-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling, A Division of Western Electronics & Engineering Ltd. — RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4½ — TOOL JOINT 6¼ O.D. — TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lachowsky

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA500	16
2.	EMSCO	DA500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8⅝	NM	36.24	16	627		614	

TIME DISTRIBUTION—HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	7¼	7¼	7¼
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG	¼	¼	¼
DEVIATION SURVEY	¼	½	¼
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK	
HRS. W/DP	
HRS. WO/DP	
HRS. STANDBY	
TOTAL DAY WORK	

WIRE LINE RECORD

REEL NO.	
NO. OF LINES	8 SIZE 1/16
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	11
CUMULATIVE ROTATING HRS.	

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
26	STANDS D.P.	2478.94	FT.
1	SINGLES D.P.		FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C.O. O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	41.00	FT.
	TOTAL	3057.32	FT.
	WT. OF STRING	102,000	LBS.

BIT RECORD

BIT NO.	4		
SIZE	7⅞		
MFG.	H.W.		
TYPE	X.V.		
NOZZLE NO.	1	2	
NOZZLE SIZE	11	12	
SER. NO.	23265		
DEPTH OUT			
DEPTH IN	2828		
TOTAL FTG.	229		
TOTAL HR. RUN	18¼		
COND. OF BIT	O/B		
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME	12:00	4:00	6:00
WEIGHT	8.6	8.7	8.7
VISC.-SEC	34	33	32
W.L.-C.C.	9.2	9.4	9.6
FLTR. CK.	2/32	2/32	2/32
PH	9.5	9.5	9.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
Gel	1400#		
CMC	[illegible]		

DRILLER: Ted Bergum

FOOTAGE 821

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.
2975	3057	D	

FORMATION (SHOW CORE RECOVERY): 75 20M 1000 5½ 58 5½

ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C

DEVIATION RECORD: DEPTH 2994 — DEV. 1¼°

DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	¼	RIG SER
12:15	4:00	3¾	DRILL 7⅞ HOLE
4:00	4:15	¼	SURVEY @ 2994
4:15	8:00	3¾	DRILL 7⅞ HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
27	STANDS D.P.	2542.13	FT.
2	SINGLES D.P.	62.81	FT.
18	D.C. 6¼ I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C.O. O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	15.00	FT.
	TOTAL	3157	FT.
	WT. OF STRING	104,000	LBS.

BIT RECORD

BIT NO.	4		
SIZE	7⅞		
MFG.	HW		
TYPE	XV		
NOZZLE NO.	1	2	
NOZZLE SIZE	11	12	
SER. NO.	23265		
DEPTH OUT	3157		
DEPTH IN	2828		
TOTAL FTG.	329		
TOTAL HR. RUN	25½		
COND. OF BIT	O.B.		
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME	10:00	12:00	2:00
WEIGHT	9.0	9.0	9.1
VISC.-SEC	37	38	38
W.L.-C.C.	9.5	9.5	9.2
FLTR. CK.	2/32	2/32	2/32
PH	9.5	9.0	9.0
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	3000#		
DV-68	36 Al		
CMC	40#		

DRILLER: Brian Ladouceur

FOOTAGE 700

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.
3057	3157		

FORMATION (SHOW CORE RECOVERY): 75 20M 1000 5½ 50

ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C

DEVIATION RECORD: DEPTH 3045 — DEV. 1¾° — DIRECTION — DEPTH 3110 — DEV. 1½°

DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE + CHECK B.O.P.s
8:15	11:15	3	DRILL 7⅞" HOLE
11:15	11:30	¼	SURVEY @ @ 3045
11:30	3:15	3¾	DRILL 7⅞" HOLE
3:15	3:30	¼	SURVEY @ 3110
3:30	4:00	½	DRILL 7⅞" HOLE
		8	

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
28	STANDS D.P.	2625.53	FT.
1	SINGLES D.P.	31.83	FT.
18	D.C. I.D. O.D.	534.00	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C.O. O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	14.31	FT.
	TOTAL	3220.03	FT.
	WT. OF STRING	104,000	LBS.

BIT RECORD

BIT NO.	4		
SIZE	7⅞		
MFG.	HW		
TYPE	XV		
NOZZLE NO.	1	2	
NOZZLE SIZE	11	12	
SER. NO.	23265		
DEPTH OUT			
DEPTH IN	3126		
TOTAL FTG.	332		
TOTAL HR. RUN	33		
COND. OF BIT	O/B		
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME	6:00	8:00	10:00
WEIGHT	9.1	9.0	8.9
VISC.-SEC	35	34	32
W.L.-C.C.	9.4	9.4	9.6
FLTR. CK.	2/32	2/32	2/32
PH	9.0	9.0	9.0
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	1000#		
CMC	50#		
DV 68	16 Al		

DRILLER: Ted Bergum

FOOTAGE 63'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.
3157	3220	D	

FORMATION (SHOW CORE RECOVERY): 75 20M 1150 5½ 5½ 60 5

ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. 2 LINER SIZE	PUMP NO. 2 S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C

DEVIATION RECORD: DEPTH 3183 — DEV. — DIRECTION — DEPTH — DEV. — DIRECTION — DEPTH — DEV. — DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICE + CHECK B.O.P.s
4:15	11:00	6¾	DRILL 7⅞ HOLE
11:00	11:15	¼	SURVEY @ 3183
11:15	12:00	¾	DRILL 7⅞" HOLE
		8	

APPROVED — APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 10 — DATE FEB-15, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DECHI	CANDEL DECKMC ETAL EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4 1/2 — TOOL JOINT 6 1/4 O.D. — TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: Gene Sandberg

PUMPS			
NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16"
2.	EMSCO	DA 500	16"
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8 5/8	WHN	24	16	627		614	
			J55					

TIME DISTRIBUTION–HOURS	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	7	3 1/4	7 1/4
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS	1/2	N	
LUBRICATE RIG	1/4	1/4	1/4
DEVIATION SURVEY	1/4		1/4
TEST B.O.P.			
CUT OFF DRILLING LINE			
SLIP & CUT DRILLING LINE		1/4	
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST		3/4	
OTHER CLEAN MUD TANK		1	
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS		8	8

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/DP; HRS. WO/DP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD: REEL NO.; NO. OF LINES 8 SIZE 1/8; FEET SLIPPED; FEET CUT OFF; PRESENT LENGTH; TON MI. OR TRIPS SINCE LAST CUT; CUMULATIVE TON MI. OR TRIPS; NO. OF DAYS FROM SPUD 10; CUMULATIVE ROTATING HRS.

DAY TOUR (MORNING TO 12)

DRILLING ASSEMBLY AT END OF TOUR		
25	STANDS D.P.	2353.34 FT.
	SINGLES D.P.	FT.
	D.C. I.D. O.D.	FT.
15	D.C. I.D. O.D.	443.34 FT.
	STB. BODY O.D.	FT.
	STB. BODY O.D.	FT.
	RMR. BODY O.D.	FT.
1	SUBS C/O O.D.	2.68 FT.
	BIT OR C.B.	.65 FT.
		FT.
	KELLY DOWN	28.00 FT.
	TOTAL	2828 FT.
WT. OF STRING	94,000 LBS.	

BIT RECORD		
BIT NO.	3	
SIZE	7 7/8	
MFG.	H.W	
TYPE	X16	
NOZZLE NO.	1 2	
NOZZLE SIZE	11 12	
SER. NO.	24929	
DEPTH OUT	2828	
DEPTH IN	2340	
TOTAL FTG.	493	
TOTAL HR. RUN	33 3/4	
COND. OF BIT	6-4-1	
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME	12:00	3:00	6:00
WEIGHT	8.7	8.7	8.8
VISC.-SEC	28	28	32
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
DV-68	5 gal		
GEL	6000		
CAUSTIC	100		

DRILLER: Dave Fryhas

FOOTAGE 78

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL.-P COM'D-C
2750	2828	D			75	20M	1000	5 1/2	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	2778	1°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	1/4	RIG SERVICE & CHECK B.O.Ps
12:15	5:15	5	DRILL 7 7/8" HOLE
5:15	5:30	1/4	SURVEY @ 2778
5:30	7:30	2	DRILL 7 7/8" HOLE
7:30	8:00	1/2	TRIP OUT W/ BIT # 3

EVENING TOUR (12 TO MORNING)

DRILLING ASSEMBLY AT END OF TOUR		
24	STANDS D.P.	FT.
2	SINGLES D.P.	2322.27 FT.
18	D.C. 6 1/4" I.D. O.D.	534.00 FT.
	D.C. I.D. O.D.	FT.
	STB. BODY O.D.	FT.
	STB. BODY O.D.	FT.
	RMR. BODY O.D.	FT.
1	SUBS C.O. O.D.	2.68 FT.
	BIT OR C.B.	.65 FT.
		FT.
	KELLY DOWN	15.40 FT.
	TOTAL	2825.00 FT.
WT. OF STRING	96,000 LBS.	

BIT RECORD		
BIT NO.	4	
SIZE	7 7/8	
MFG.	H.W.	
TYPE	X.V.	
NOZZLE NO.	1 N	
NOZZLE SIZE	11 12	
SER. NO.	23265	
DEPTH OUT		
DEPTH IN	2828	
TOTAL FTG.	47	
TOTAL HR. RUN	3 1/4	
COND. OF BIT	0-0-5	
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME	2:00	4:00	
WEIGHT	8.4	8.4	
VISC.-SEC	32	32	
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
Hydrasage	2800#		
Caustic	100#		

DRILLER: Bert Bergum

FOOTAGE 49

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL.-P COM'D-C
2828	2875	D			75	20	KREB	5 1/2	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	2809	1°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	1/4	RIG SER & CHECK B.O.Ps
8:15	9:15	1	FINISH OUT W/ BIT # 3 (MEASURE OUT) 2828.00
9:15	10:00	3/4	PICK UP 3 D.C.'S STRAP TALLY 2832.01
10:00	11:00	1	CLEAN MUD TANK DIFF. 4.01
11:00	12:00	1	RUN IN W/ BIT # 4
12:00	12:30	1/2	BREAK CIRC & CLEAN 20' FILL
12:30	8:00	3 1/2	DRILL 7 7/8 HOLE

EVENING TOUR (12 TO MORNING)

DRILLING ASSEMBLY AT END OF TOUR		
25	STANDS D.P.	2353.24 FT.
2	SINGLES D.P.	62.69 FT.
18	D.C. 6 1/4 I.D. O.D.	534.00 FT.
	D.C. I.D. O.D.	FT.
	STB. BODY O.D.	FT.
	STB. BODY O.D.	FT.
	RMR. BODY O.D.	FT.
1	SUBS X O O.D.	2.68 FT.
	BIT OR C.B.	.65 FT.
		FT.
	KELLY DOWN	FT.
	TOTAL	FT.
WT. OF STRING	100,000 LBS.	

BIT RECORD		
BIT NO.	3	
SIZE	7 7/8	
MFG.	HW	
TYPE	XV	
NOZZLE NO.	1 2	
NOZZLE SIZE	11 12	
SER. NO.	23265	
DEPTH OUT	2975	
DEPTH IN	2828	
TOTAL FTG.	147	
TOTAL HR. RUN	10 3/4	
COND. OF BIT	0 B	
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME	6:00	8:00	10:00
WEIGHT	8.5	8.6	8.7
VISC.-SEC	32	32	32
W.L.-C.C.		18	10
FLTR. CK.	2/32	2/32	2/32
PH	9.5	9.5	9.5
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	2700		
DV68	36 GAL		
CMC	150		

DRILLER: Bryan Jadowsky

FOOTAGE 100

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL.-P COM'D-C
2875	2975	D			75	20	1000	5 1/2	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	2860	1 1/4		2920	1 1/4				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	1/4	RIG SERVICE & CHECK B.O.Ps
4:15	6:00	1 3/4	DRILL 7 7/8" HOLE
6:00	6:15	1/4	SURVEY @ 2860 1 1/4°
6:15	10:30	4 1/4	DRILL 7 7/8" HOLE
10:30	10:45	1/4	SURVEY @ 2920 1 1/4
10:45	12:00	1 1/4	DRILL 7 7/8 HOLE
		8	

APPROVED — APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 9 — DATE FEB. 14, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL DECHINE ETAL EAST MACKAY	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. ? SIZE 4½ — TOOL JOINT 6½ O.D. — TYPE THD. X H

SIGNATURE OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONT. TOOL PUSHER: George Bendickson

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	Emsco	D4 500	16"
2.	Emsco	D4 500	16"
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8 5/8	MM	24	16	627		614	

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	7¼	9¼	7¼
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG	¼	¼	¼
DEVIATION SURVEY	½	¼	½
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/OP; HRS. WO/OP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD: REEL NO.; NO. OF LINES 8 SIZE 1 1/8; FEET SLIPPED; FEET CUT OFF; PRESENT LENGTH; TON MI. OR TRIPS SINCE LAST CUT; CUMULATIVE TON MI. OR TRIPS; NO. OF DAYS FROM SPUD 9; CUMULATIVE ROTATING HRS.

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
22	STANDS D.P.	2070.20	FT.
2	SINGLES D.P.	63.53	FT.
	D.C. I.D. O.D.		FT.
15	D.C. 6¼ I.D. O.D.	443.34	FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS 6¼ O.D.	2.68	FT.
	BIT OR ~~C.B.~~	.65	FT.
			FT.
	KELLY DOWN	14.60	FT.
	TOTAL	2595	FT.
WT. OF STRING		90,000	LBS.

BIT RECORD

BIT NO.	3	
SIZE	7⅞	
MFG.	H.W	
TYPE	X.1G	
NOZZLE NO.	1 3	
NOZZLE SIZE	11 12	
SER. NO.	249.29	
DEPTH OUT		
DEPTH IN	2340	
TOTAL FTG.	255	
TOTAL HR. RUN	12	
COND. OF BIT	0/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME	12.00	3.00	7.00
WEIGHT	8.7	8.8	8.8
VISC.–SEC			
W.L.–C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT. — WATER

DRILLER: Dave Fryksa

FOOTAGE 195'

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
2420	2595	D			80	10M	1000	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	2433'	1 3/4°		2495'	1½°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12.00	12.15	¼	RIG SERVICE & V BOPS
12.15	2.00	1 3/4	DRILL 7⅞" HOLE
2.00	2.15	¼	SURVEY @ 2433
2.15	4.30	2¼	DRILL 7⅞" HOLE
4.30	4.45	¼	SURVEY @ 2495
4.45	8.00	3¼	DRILL 7⅞" HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
33	STANDS D.P.	2166.22	FT.
1	SINGLES D.P.	31.60	FT.
15	D.C. 6¼ I.D. O.D.	443.34	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS 6¼ O.D.	2.68	FT.
	BIT OR ~~C.B.~~	.65	FT.
			FT.
	KELLY DOWN	30.51	FT.
	TOTAL	2625.00	FT.
WT. OF STRING		92,000	LBS.

BIT RECORD

BIT NO.	3	
SIZE	7⅞	
MFG.	H.W	
TYPE	X.1G	
NOZZLE NO.	1 2	
NOZZLE SIZE	11 12	
SER. NO.	249.29	
DEPTH OUT		
DEPTH IN	2340	
TOTAL FTG.	340	
TOTAL HR. RUN	19¼	
COND. OF BIT	0/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME			
WEIGHT			
VISC.–SEC			
W.L.–C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT.

DRILLER: Ed Bergum

FOOTAGE 85'

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
2595	2675				80	10M	1000	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	2590	1¾							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
~~2595~~			CHECKED MOTOR SHUTOFFS (OKAY)
8.00	8.15	¼	RIG SER. + CHECK B.O.P.S
8.15	11.00	2¾	DRILL 7⅞" HOLE
11.00	11.15	¼	SURVEY @ 2590
11.15	4.00	4¾	DRILL 7⅞ HOLE

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
24	STANDS D.P.		FT.
1	SINGLES D.P.	2290.75	FT.
15	D.C. 6¼ I.D. O.D.	443.34	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS 6¼ O.D.	2.68	FT.
	BIT OR ~~C.B.~~	.65	FT.
			FT.
	KELLY DOWN	12.58	FT.
	TOTAL	2750	FT.
WT. OF STRING		92,000	LBS.

BIT RECORD

BIT NO.	3	
SIZE	7⅞	
MFG.	H.W.	
TYPE	X.1G	
NOZZLE NO.	1 2	
NOZZLE SIZE	11 12	
SER. NO.	24929	
DEPTH OUT		
DEPTH IN	2340	
TOTAL FTG.	415	
TOTAL HR. RUN	26¾	
COND. OF BIT	0/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD

TIME			
WEIGHT			
VISC.–SEC			
W.L.–C.C.			
FLTR. CK			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT.

DRILLER: Dave Fryksa

FOOTAGE 75

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
2675	2750	D			70	12M	1000	5½	58			
					70	20M						

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	2654	1°		2775	1°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4.00	4.15	¼	RIG SER.
4.15	5.30	1¼	DRILL 7⅞ HOLE
5.30	5.45	¼	SURVEY @ 2654
5.45	11.15	5½	DRILL 7⅞" HOLE
11.15	11.30	¼	SURVEY @ 2775
11.30	12.00	½	DRILL 7⅞" HOLE

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 8 — DATE FEB 13, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL ETAL EAST MACKAY B-45	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd. — RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4 1/2 — TOOL JOINT 6 1/4 O.D. — TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindstrom

PUMPS			
NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	Emsco	DA 500	16"
2.	Emsco	DA 500	16"
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	8 5/8	MM	24	16	627		[redacted]	
							614	

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	7	7 1/4	4 1/4
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			2 1/2
LUBRICATE RIG	1/4	1/4	1/4
DEVIATION SURVEY	3/4	1/4	1/4
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			1/4
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/DP; HRS. WO/DP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD

REEL NO.; NO. OF LINES 8 SIZE 1 1/8; FEET SLIPPED; FEET CUT OFF; PRESENT LENGTH; TON MI. OR TRIPS SINCE LAST CUT; CUMULATIVE TON MI. OR TRIPS; NO. OF DAYS FROM SPUD 8; CUMULATIVE ROTATING HRS.

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR	NO.		FT.
STANDS D.P.	18		
SINGLES D.P.	2	1760.34	
D.C. I.D. O.D.			
D.C. 6 1/4 I.D. O.D.	15	443.34	
STB. BODY O.D.			
STB. BODY O.D.			
RMR. BODY O.D.			
SUB 3/0 O.D.	1	2.68	
BIT OR C.B.		.65	
KELLY DOWN		34.00	
TOTAL		2270.34	
WT. OF STRING 85,000 LBS.			

BIT RECORD	
BIT NO.	2
SIZE	7 7/8
MFG.	H.W
TYPE	X1G
NOZZLE NO.	1 N
NOZZLE SIZE	11 12
SER. NO.	24687
DEPTH OUT	
DEPTH IN	1812
TOTAL FTG.	428
TOTAL HR. RUN	15 1/4
COND. OF BIT	0/8
REAMER NO.	
REAMER TYPE	

MUD RECORD			
TIME	12:00	3:00	7:00
WEIGHT	8.5	8.5	8.5
VISC.–SEC			
W.L.–C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT.

DRILLER: Dave Fryfogel

FOOTAGE 220

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000 #	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
2020	2240	D		PUT NEW HEAD + LINER ON Flywheel SIDE ON No 1 Pump	90	10M	1000	5 1/2	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	2057	2°	~~2120~~	2120	1 3/4°		2183	2°	

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	1/4	RIG SERVICE AND CHECK B.O.P.s
12:15	1:15	1	DRILL 7 7/8" HOLE
1:15	1:30	1/4	SURVEY @ 2057
1:30	4:00	2 1/2	DRILL 7 7/8" HOLE
4:00	4:15	1/4	SURVEY @ 2120
4:15	7:00	2 3/4	DRILL 7 7/8" HOLE
7:00	7:15	1/4	SURVEY @ 2183'
7:15	8:00	3/4	DRILL 7 7/8" HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR	NO.		FT.
STANDS D.P.	19		
SINGLES D.P.	2	1863.57	
D.C. 6 1/4 I.D. O.D.	15	443.34	
D.C. I.D. O.D.			
STB. BODY O.D.			
STB. BODY O.D.			
RMR. BODY O.D.			
SUB 3/0 O.D.	1	2.68	
BIT OR C.B.		.65	
KELLY DOWN		71.08	
TOTAL		2340.00	
WT. OF STRING 85 M			

BIT RECORD	
BIT NO.	2
SIZE	7 7/8
MFG.	H.W.
TYPE	X.1G.
NOZZLE NO.	1 N
NOZZLE SIZE	11 12
SER. NO.	24687
DEPTH OUT	2340
DEPTH IN	1812
TOTAL FTG.	528
TOTAL HR. RUN	22 1/4
COND. OF BIT	6/1
REAMER NO.	
REAMER TYPE	

MUD RECORD			
TIME	8 A.M.	12:00	2:00
WEIGHT	8.7	8.8	8.8
VISC.–SEC			
W.L.–C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT.

DRILLER: Ed Bergum

FOOTAGE 100

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000 #	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
2240	2340				85	10M	1000	5 1/2	58			
						18M						

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	2246	2°		2309'	1 1/2				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8 A.M.	8:15	1/4	RIG SER + CHECK B.O.P.S
8:15	10:15	2 1/4	DRILL 7 7/8 HOLE
10:15	11:00	1/4	SURVEY @
11:00	3:45	4 3/4	DRILL 7 7/8 HOLE
3:45	4:00	1/4	SURVEY

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR	NO.		FT.
STANDS D.P.	20		
SINGLES D.P.	2	1945.50	
D.C. 6 1/4 I.D. O.D.	15	443.34	
D.C. I.D. O.D.			
STB. BODY O.D.			
STB. BODY O.D.			
RMR. BODY O.D.			
SUB 3/0 O.D.	2	2.68	
BIT OR C.B.		.65	
KELLY DOWN		28.00	
TOTAL		2420.	
WT. OF STRING 88,000 LBS.			

BIT RECORD	
BIT NO.	3
SIZE	7 7/8
MFG.	H.W.
TYPE	X.1G.
NOZZLE NO.	1 N
NOZZLE SIZE	11 12
SER. NO.	28729
DEPTH OUT	
DEPTH IN	2340
TOTAL FTG.	80
TOTAL HR. RUN	4 3/4
COND. OF BIT	0/B
REAMER NO.	
REAMER TYPE	

MUD RECORD			
TIME		9:00	11:00
WEIGHT		8.9	8.9
VISC.–SEC			
W.L.–C.C.			
FLTR. CK			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT.

DRILLER: Dave Fryfogel

FOOTAGE 80

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000 #	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
2340	2420				90	10M	1000	5 1/2	58			
					90	11M	1000					

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	2371	2°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	1/4	R.C SER.
4:15	6:45	2 1/2	TRIP FOR BIT
6:45	7:00	1/4	BREAK CIRC. CLEAN 30' FILL
7:00	11:00	4	DRILL 7 7/8 HOLE
11:00	11:15	1/4	SURVEY @ 237
11:15	12:00	3/4	DRILL 7 7/8" Hole.

APPROVED APPROVED

A.A.O.D.C.–A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 7 DATE FEB. 12, 1971

OPERATOR: CANADIAN DELHI

LEASE: CANDEL ETAL EAST MACKAY ~~CANADIAN~~ B-45

WELL NO. B-45 FIELD OR DIST. EAST MACKAY COUNTY FORT NORMAN STATE N.W.T.

CONTRACTOR: Jennings International Drilling
A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2 SIZE 4½ TOOL JOINT 6¼ O.D. TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Ludwickson

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	Emsco	DA 500	16"
2.	Emsco	DA 500	16"
3.			

LAST CASING TUBING OR LINER

SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
7⅝						625	

MORNING TOUR

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	7¼	3	7¼
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS		3¼	
LUBRICATE RIG	¼	¼	¼
DEVIATION SURVEY	½	¼	½
TEST B.O.P.			
CUT OFF DRILLING LINE			
~~CLEAN TANKS~~ REPAIR RIG		¾	
~~CORING~~ CLEAN BOTTOM		¼	
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK	
HRS. W/DP	
HRS. WO/DP	
HRS. STANDBY	
TOTAL DAY WORK	

WIRE LINE RECORD

REEL NO.	
NO. OF LINES	8 SIZE 1⅛
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	7
CUMULATIVE ROTATING HRS.	

DRILLING ASSEMBLY AT END OF TOUR

NO.			
13	STANDS D.P.	1224.34	FT.
2	SINGLES D.P.	62.66	FT.
	D.C. I.D. O.D.		FT.
15	D.C. I.D. O.D.	443.34	FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C/O O.D.	2.68	FT.
	BIT ~~OR C.B.~~	.65	FT.
			FT.
	KELLY DOWN	21.33	FT.
	TOTAL	1755.00	FT.
WT. OF STRING	74,000	LBS.	

BIT RECORD

BIT NO.	1	2	
SIZE	7⅞		
MFG.	H.W		
TYPE	X1G		
NOZZLE NO.	1	2	
NOZZLE SIZE	11	12	
SER. NO.	24673		
DEPTH OUT			
DEPTH IN	627		
TOTAL FTG.	1029		
TOTAL HR. RUN	29¼		
COND. OF BIT	O/B		
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME	12:00	4:00	6:00
WEIGHT	8.7	8.7	8.8
VISC.-SEC			
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER Dave Fryfas

FOOTAGE 215

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
1540	1755	D			110	10M	1000	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	1523	1½°		1620	1¼°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12⁰⁰	12¹⁵	¼	RIG SERVICE
12¹⁵	12³⁰	¼	DRILL 7⅞" HOLE
12³⁰	12⁴⁵	¼	SURVEY @ 1523
12⁴⁵	4⁰⁰	3¼	DRILL 7⅞" HOLE
4⁰⁰	4¹⁵	¼	SURVEY @ 1620
4¹⁵	8⁰⁰	3¾	DRILL 7⅞" HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
14	STANDS D.P.		FT.
1	SINGLES D.P.	1350.41	FT.
15	D.C. 6¼ I.D. O.D.	443.34	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C.O. O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	33.57	FT.
	TOTAL	1830.00	FT.
WT. OF STRING	78M	LBS.	

BIT RECORD

BIT NO.	1	2	
SIZE	7⅞	7⅞	
MFG.	H.W.	H.W.	
TYPE	X1G	X1G	
NOZZLE NO.	1 2	1 2	
NOZZLE SIZE	11 12	11 12	
SER. NO.	24673	24687	
DEPTH OUT	1812		
DEPTH IN	627	1812	
TOTAL FTG.	1086	18	
TOTAL HR. RUN	31¼	1	
COND. OF BIT	5/8	O/B	
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME	8:00	4:00	
WEIGHT	8.8	8.4	
VISC.-SEC	29	28	
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER Ted Bergum

FOOTAGE 35

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
1755	1812				110	10M	1000	5½	58			
1812	1830				75	10M	1100	5½				

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	1805	2°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8⁰⁰	8¹⁵	¼	RIG SER + CHECK B.O.P.
8¹⁵	10¹⁵	2	DRILL 7⅞ HOLE
10¹⁵	10³⁰	¼	SURVEY
10³⁰	12³⁰	2	HOIST BIT #1 REMOVE RUBBERS.
12³⁰	1¹⁵	¾	CLEAN TANKS
1¹⁵	2³⁰	1¼	RUN IN HOLE WITH BIT #2
2³⁰	3⁰⁰	½	BREAK CIRC CLEAN 50' FILL (DISPLACE HOLE)
3⁰⁰	4⁰⁰	1	DRILL 7⅞ HOLE

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
14	STANDS D.P.	1507.58	FT.
	SINGLES D.P.		FT.
15	D.C. 6¼ I.D. O.D.	443.34	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C.O. O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	34.80	FT.
	TOTAL	2020.	FT.
WT. OF STRING	80,000	LBS.	

BIT RECORD

BIT NO.	2		
SIZE	7⅞		
MFG.	H.W.		
TYPE	X1G		
NOZZLE NO.	1 2		
NOZZLE SIZE	11 12		
SER. NO.	24687		
DEPTH OUT			
DEPTH IN	1812		
TOTAL FTG.	208		
TOTAL HR. RUN	8¼		
COND. OF BIT	O/B		
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME	6:00	8⁰⁰	11⁰⁰
WEIGHT	8.4	8.5	8.5
VISC.-SEC			
W.L.-C.C.			
FLTR. CK			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER Dave Fryfas

FOOTAGE 190

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
1830	2020	D			75	10M	1000	5½	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	1868	1°		1962	1¼°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4⁰⁰	4¹⁵	¼	RIG SER.
4¹⁵	7⁰⁰	2¾	DRILL 7⅞ HOLE
7⁰⁰	7¹⁵	¼	SURVEY @ 1868
7¹⁵	9⁰⁰	1¾	DRILL 7⅞ HOLE
9⁰⁰	9⁴⁵	¼	SURVEY @ 1962
9⁴⁵	12⁰⁰	2¼	DRILL 7⅞ HOLE

CHANGED HEAD RUBBERS
#1 PUMP FLY WHEEL SIDE

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 6 DATE FEB 11, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL ETAL EAST MACKAY B-45	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling, A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4 1/2

TOOL JOINT 6 1/4 O.D. TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindbergh

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	Emsco	DA 500	16
2.	Emsco	DA 500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS
	9 5/8						625'	

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	7 1/2	7	7 1/2
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG		1/4	1/4
DEVIATION SURVEY		3/4	1/2
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK

HRS. W/DP

HRS. W/O DP

HRS. STANDBY

TOTAL DAY WORK

WIRE LINE RECORD

REEL NO.

NO. OF LINES 8 SIZE 1/8

FEET SLIPPED

FEET CUT OFF

PRESENT LENGTH

TON MI. OR TRIPS SINCE LAST CUT

CUMULATIVE TON MI. OR TRIPS

NO. OF DAYS FROM SPUD 46

CUMULATIVE ROTATING HRS.

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
	STANDS D.P.	564.85	FT.
	SINGLES D.P.	30.90	FT.
	D.C. I.D. O.D.		FT.
15	D.C. 6 1/4 I.D. O.D.	443.34	FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C.O. O.D.	2.68	FT.
	BIT ~~OR C.B.~~	.65	FT.
			FT.
	KELLY DOWN	41.00	FT.
	TOTAL	1083.	FT.
WT. OF STRING	67,000		LBS.

BIT RECORD

BIT NO.	1		
SIZE	7 7/8		
MFG.	H.W		
TYPE	X1G		
NOZZLE NO.	1 2		
NOZZLE SIZE	11 12		
SER. NO.	24673		
DEPTH OUT			
DEPTH IN	627		
TOTAL FTG.	457		
TOTAL HR. RUN	~~1000~~ 7 3/4		
COND. OF BIT	0/8		
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME	12:00		
WEIGHT	8.4		
VISC.-SEC			
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
WATER			

DRILLER Dave Frykas

FOOTAGE 408

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
675	1083	D			70	18-20	1000	5 1/2	60			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	833	0°							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	1/4	RIG SERVICE
12:15	4:00	3 3/4	DRILL 7 7/8" HOLE
4:00	4:15	1/4	SURVEY @ 833 – 0°
4:15	6:00	1 3/4	DRILL 7 7/8" HOLE
6:00	7:00	1	TRIP TO RETRIEVE RUBBERS
7:00	8:00	1	DRILL 7 7/8" HOLE

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
9	STANDS D.P.		FT.
1	SINGLES D.P.	31.38	FT.
5	D.C. 6 1/4 I.D. O.D.	443.34	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C.O. O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	25.60	FT.
	TOTAL	1355.00	FT.
WT. OF STRING	68 m		LBS.

BIT RECORD

BIT NO.	1		
SIZE	7 7/8		
MFG.	H.W.		
TYPE	X1G		
NOZZLE NO.	1 2		
NOZZLE SIZE	11 12		
SER. NO.	24673		
DEPTH OUT			
DEPTH IN	627		
TOTAL FTG.	729		
TOTAL HR. RUN	17 3/4		
COND. OF BIT	0/8		
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME	8:00	12:00	4:00
WEIGHT	8.5	8.5	8.5
VISC.-SEC	28	28	28
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER Ed Bergum

FOOTAGE 272'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
1083	1355	D			70	18-20	1000	5 1/2	58			
					75	10m	1000	5 1/2	58			
					110	8m	1000	5 1/2	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	1052'	3/4°		1239'	1°		1302'	2°	

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8 AM	8:12	1/4	RIG SER CHECK B.O.P.
8:12	8:35	1/4	SURVEY @ 1052'
8:35	12:45	4 1/4	DRILL 7 7/8" HOLE
12:45	1:00	1/4	SURVEY @ 1239'
1:00	3:15	2 1/4	DRILL 7 7/8" HOLE
3:15	3:30	1/4	SURVEY @ 1302'
3:30	4:00	1/2	DRILL 7 7/8" HOLE

CHECKED MOTOR SHUT OFFS (OKAY)

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
11	STANDS D.P.	1036.06	FT.
1	SINGLES D.P.	31.31	FT.
15	D.C. 6 1/4 I.D. O.D.	443.34	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS C.O. O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	26.60	FT.
	TOTAL	1540.	FT.
WT. OF STRING	72,000		LBS.

BIT RECORD

BIT NO.	1		
SIZE	7 7/8		
MFG.	HW		
TYPE	X1G		
NOZZLE NO.	1 2		
NOZZLE SIZE	11 12		
SER. NO.	24673		
DEPTH OUT			
DEPTH IN	627		
TOTAL FTG.	914		
TOTAL HR. RUN	22		
COND. OF BIT	0/8		
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME		8:00	10:00
WEIGHT		8.7	8.7
VISC.-SEC			
W.L.-C.C.			
FLTR. CK			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER Dave Frykas

FOOTAGE 185'

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
1355	1540	D			110	8m	1000	5 1/2	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	1365'	2°		1428	2°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	1/4	RIG SER.
4:15	5:45	1 1/2	DRILL 7 7/8" HOLE
5:45	6:00	1/4	SURVEY @ 1365'
6:00	8:30	2 1/2	DRILL 7 7/8" HOLE
8:30	8:45	1/4	SURVEY @ 1428'
8:45	12:00	3 1/4	DRILL 7 7/8" HOLE

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT

REPORT NO. 5 DATE FEB 10, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL ETAL EAST MACKAY B-45	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR	RIG NO.	DRILL PIPE STRING NO.	SIZE	TOOL JOINT	TYPE THD.
Jennings International Drilling, A Division of Western Electronics & Engineering Ltd.	9	1	4½	6 1/4 O.D.	XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lachukin

PUMPS NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16"
2.	EMSCO	DA 500	16"
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS

TIME DISTRIBUTION—HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL			4
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG			
DEVIATION SURVEY			
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG	¼	1½	
NIPPLE UP CORING		6	
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
PRESSURE TEST BOP		1½	
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS		8	

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK

HRS. W/DP

HRS. WO/DP

HRS. STANDBY

TOTAL DAY WORK

WIRE LINE RECORD

REEL NO.

NO. OF LINES 8 SIZE 1/8

FEET SLIPPED

FEET CUT OFF

PRESENT LENGTH

TON MILES OR TRIPS SINCE LAST CUT

CUMULATIVE TON MILES OR TRIPS

NO. OF DAYS FROM SPUD 5

CUMULATIVE ROTATING HRS.

MORNING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
	SUBS O.D.		FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
	WT. OF STRING		LBS.

BIT RECORD		
BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD		
TIME		
WEIGHT		
VISC.-SEC		
W.L.-C.C.		
FL.TR. CK.		
PH		
SD. CONT. %		
PRESSURE GRADIENT		

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER Dave Frykas

FOOTAGE FROM	TO	DR.D RM.R CORE.C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
								5½				

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12⁰⁰	2³⁰	2½	WOC
2³⁰	5³⁰	3	WELD ON CASING BOWL
			PRESSURE TEST 1200 PSI
5³⁰	8⁰⁰	2½	NIPPLE UP B.O.P.S

DAY TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
	SUBS O.D.		FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
	WT. OF STRING		LBS.

BIT RECORD		
BIT NO.		
SIZE		
MFG.		
TYPE		
NOZZLE NO.		
NOZZLE SIZE		
SER. NO.		
DEPTH OUT		
DEPTH IN		
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD		
TIME		
WEIGHT		
VISC.-SEC		
W.L.-C.C.		
FL.TR. CK.		
PH		
SD. CONT. %		
PRESSURE GRADIENT		

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.

DRILLER [illegible]

FOOTAGE FROM	TO	DR.D RM.R CORE.C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8 A.M.	2 P.M.	6	NIPPLE UP B.O.P.S
2 P.M.	2¹⁵	¼	PRESSURE UP BLIND RAMS (1500 LBS. OKAY)
2¹⁵	2³⁰	¼	PRESSURE UP MANIFOLD (1500 LBS. OKAY)
2³⁰	4⁰⁰	1½	WORK WITH MECHANIC

EVENING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.	187.58	FT.
	SINGLES D.P.		FT.
15	D.C. 6¼ I.D. O.D.	443.34	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
1	SUBS O.D.	2.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	41.00	FT.
	TOTAL	675.	FT.
	WT. OF STRING	62,000	LBS.

BIT RECORD		
BIT NO.	1	
SIZE	7⅞	
MFG.	HW	
TYPE	M16	
NOZZLE NO.	1 2	
NOZZLE SIZE	12 12	
SER. NO.	24673	
DEPTH OUT		
DEPTH IN	627	
TOTAL FTG.	48	
TOTAL HR. RUN	4½	
COND. OF BIT	0/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD		
TIME		
WEIGHT		
VISC.-SEC		
W.L.-C.C.		
FL.TR. CK		
PH		
SD. CONT. %		
PRESSURE GRADIENT		

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
BICARB	100#		

DRILLER Dave Frykas

FOOTAGE 48 FROM	TO	DR.D RM.R CORE.C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
625	673	D										

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4⁰⁰	5⁰⁰	1	WORK WITH MECHANIC
5⁰⁰	5³⁰	1½	PICK UP 3 D.C.
5³⁰	6³⁰	1	RUN IN WITH BIT #1
6³⁰	6⁴⁵	¼	PRESSURE 4" PIPE RAMS. (1000 LBS. OKAY)
6⁴⁵	7⁰⁰	¼	PRESSURE HYDRIL (1000 LBS. OKAY)
7⁰⁰	7¹⁵	¼	CHECK MOTOR KILLS.
7¹⁵	8⁰⁰	¾	BLOW ALL LINES.
8⁰⁰	12 noon	4	DRILL OUT FLOAT EQUIPMENT
11⁴⁵	12⁰⁰	¼	DRILL 7 1/8

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 4 — DATE FEB. 9/71

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL ETAL EAST MACKAY - B-45	B-45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. — SIZE 4 1/2 — TYPE THD. XH

TOOL JOINT 6 1/4 O.D.

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: Dave Lindskog

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16"
2.	EMSCO	DA 500	16"
3.			

LAST CASING TUBING OR LINER

SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL			
REAMING	1/4		
CONDITIONING MUD & CIRCULATING	1	1	
TRIPS	4		
LUBRICATE RIG	1/4		
DEVIATION SURVEY			
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING		5 1/2	
WAITING ON CEMENT		11/2	
DRILL STEM TEST			
OTHER	1 1/2		
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8		

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/DP; HRS. WO/DP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD: REEL NO.; NO. OF LINES 78 SIZE 1/8; FEET SLIPPED; FEET CUT OFF; PRESENT LENGTH; TON MI. OR TRIPS SINCE LAST CUT; CUMULATIVE TON MI. OR TRIPS; NO. OF DAYS FROM SPUD 7; CUMULATIVE ROTATING HRS.

MORNING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
2	STANDS D.P.		FT.
2	SINGLES D.P.		250.38 FT.
12	D.C. 6 1/4 I.D. O.D.		354.53 FT.
	REAMER I.D. O.D.		1.60 FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
2	SUBS O.D.		5.68 FT.
	BIT ~~O.R.C.B.~~		65 FT.
			FT.
	KELLY DOWN		12.16 FT.
	TOTAL		625.00 FT.

WT. OF STRING 52,000 LBS.

BIT RECORD

BIT NO.			2A
SIZE			12 1/4
MFG.			REED
TYPE			H.O
NOZZLE	NO.		
	SIZE		CONV
SER. NO.			
DEPTH OUT			625
DEPTH IN			113
TOTAL FTG.			512
TOTAL HR. RUN			14 1/2
COND. OF BIT			
REAMER NO.			
REAMER TYPE			

MUD RECORD

TIME	12 00	4 00	5 00
WEIGHT	9.5	9.5	
VISC.-SEC	50	87	
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	2000		

DRILLER Dave Frykas

FOOTAGE 35

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL.-P COM'D.-C
590	625	R			140	10M	600	4	60			

DEVIATION RECORD: DEPTH — DEV. — DIRECTION — DEPTH — DEV. — DIRECTION — DEPTH — DEV. — DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12 00	12 15	1/4	RIG SERVICE
12 15	12 30	1/4	REAM HOLE TO 12 1/4"
12 30	1 00	1/2	CIRC
1 00	3 00	2	DUMMY TRIP, STRAP OUT
3 00	3 30	1/2	CIRC. CONDITION HOLE
3 30	4 30	1	DUMMY TRIP
4 30	5 30	1	TRIP OUT TO RUN CASING
5 30	7 00	1 1/2	RIG UP TO RUN CASING

STRAP - 626.61
TALLY - 625.00
DIF 1.61

7 00 - 8 00 - RUN CASING

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
	SUBS O.D.		FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.

WT. OF STRING LBS.

BIT RECORD: BIT NO.; SIZE; MFG.; TYPE; NOZZLE NO.; NOZZLE SIZE; SER. NO.; DEPTH OUT; DEPTH IN; TOTAL FTG.; TOTAL HR. RUN; COND. OF BIT; REAMER NO.; REAMER TYPE

MUD RECORD: TIME; WEIGHT; VISC.-SEC; W.L.-C.C.; FLTR. CK.; PH; SD. CONT. %; PRESSURE GRADIENT

MUD & CHEMICALS ADDED: TYPE — AMT. — TYPE — AMT.

DRILLER Red Bergum

FOOTAGE

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL.-P COM'D.-C
625												

DEVIATION RECORD: DEPTH — DEV. — DIRECTION — DEPTH — DEV. — DIRECTION — DEPTH — DEV. — DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8 AM	12 00	4	RUN CASING.
12 00	1 00	1	CIRC HOLE CLEAN
1 00	2 00	1	RUN CEMENT
2 00	2 30	1/2	PUMP PLUG DOWN
2 30	4 00	1 1/2	W.O.C

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR

NO.			
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
	SUBS O.D.		FT.
	BIT OR C.B.		FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.

WT. OF STRING LBS.

BIT RECORD: BIT NO.; SIZE; MFG.; TYPE; NOZZLE NO.; NOZZLE SIZE; SER. NO.; DEPTH OUT; DEPTH IN; TOTAL FTG.; TOTAL HR. RUN; COND. OF BIT; REAMER NO.; REAMER TYPE

MUD RECORD: TIME; WEIGHT; VISC.-SEC; W.L.-C.C.; FLTR. CK; PH; SD. CONT. %; PRESSURE GRADIENT

MUD & CHEMICALS ADDED: TYPE — AMT. — TYPE — AMT.

DRILLER David Frykas

FOOTAGE

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL.-P COM'D.-C

DEVIATION RECORD: DEPTH — DEV. — DIRECTION — DEPTH — DEV. — DIRECTION — DEPTH — DEV. — DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4 00	12 00	8	W.O.C. & Surface Csg
			Ran 16 jts - 627.16' 8 5/8, 24# J-55,
			Nonsensory Casing. Set @ 627.16 w/
			40 sks Neat Cement. Plug down
			3:30 PM Feb 9

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 3 — DATE FEB 8, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	CANDEL ETAL EAST MACKAY B-45	B-45	EAST MACKAY	FORT NORMAN	NWT

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd. — RIG NO. 9

DRILL PIPE STRING: NO. — SIZE 4½ — TYPE THD. XH — TOOL JOINT 6¼ O.D.

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: George Lindskier

PUMPS NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA500	16
2.	EMSCO	DA500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS

MORNING TOUR

TIME DISTRIBUTION–HOURS	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	4		
REAMING	1	6½	6¼
CONDITIONING MUD & CIRCULATING			
TRIPS	2¼	3/4	1/4
LUBRICATE RIG	¼	1/4	1/4
DEVIATION SURVEY	½	1/2	1/4
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8		8

DRILLING ASSEMBLY AT END OF TOUR	NO.		FT.
STANDS D.P.	2		
SINGLES D.P.	2	249.38	FT.
D.C. 6¼ I.D. O.D.	12	354.53	FT.
D.C. I.D. O.D.			FT.
STB. BODY O.D.			FT.
STB. BODY O.D.			FT.
RMR. BODY O.D.			FT.
SUBS O.D.	2	5.68	FT.
BIT OR C.B.	1	.65	FT.
			FT.
KELLY DOWN		17.00	FT.
TOTAL		627	FT.
WT. OF STRING	48,000 +		LBS.

BIT RECORD		
BIT NO.	2 A	2 A
SIZE	7⅞	12½
MFG.	HW	REED
TYPE	X1G	H.O.
NOZZLE NO.	OPEN	C.O.
NOZZLE SIZE		
SER. NO.	22877	
DEPTH OUT	627	150
DEPTH IN	113	113
TOTAL FTG.	514	37
TOTAL HR. RUN	30¼	1
COND. OF BIT	611	0B
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME	12:00	4:00	6:00
WEIGHT	9.0	9.0	9.1
VISC.-SEC	42	40	41
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE / AMT. / TYPE / AMT.

DRILLER: Brian Sadowy

FOOTAGE 70

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
557	627	D	7⅞	FUEL 4.5 FEET	140	6M	700	7	60			
113	150	R	12¼		140	6M	400	7	60			
REAMED	(37)											

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	547	¼°		610	½°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS				
12:00	12:15	¼	RIG SERVICE				
12:15	1:45	1½	DRILL 7⅞" HOLE				
1:45	2:00	¼	SURVEY @ 547 - ¼°	7:00	8:00	1	REAM HOLE TO 12¼
2:00	4:00	2	DRILL 7⅞" HOLE				
4:00	4:15	¼	SURVEY @ 610.				
4:15	4:45	½	DRILL 7⅞" HOLE.				
4:45			HOIST OUT OF HOLE. LAY DOWN D.P. DOUBLE STRAP OUT.				
	7⁰⁰	2¼	CHANGE BITS ON REAMER & RUN IN				

STRAP 611.31 — TALLY 610.58 — .73 NO CORR.

DAY TOUR

DRILLING ASSEMBLY AT END OF TOUR	NO.		FT.
STANDS D.P.			FT.
SINGLES D.P.	2	63.11	FT.
D.C. 6¼ I.D. O.D.	3	266.16	FT.
D.C. I.D. O.D.			FT.
REAMER BODY O.D.		1.60	FT.
STB. BODY O.D.			FT.
RMR. BODY O.D.			FT.
SUBS O.D.	2	5.68	FT.
BIT OR C.B.		.65	FT.
			FT.
KELLY DOWN		23.95	FT.
TOTAL		360.	FT.
WT. OF STRING	44,000		LBS.

BIT RECORD		
BIT NO.	REAMER	2 A
SIZE	12½	
MFG.	REED	
TYPE	H.O.	
NOZZLE NO.		
NOZZLE SIZE	CONV	
SER. NO.		
DEPTH OUT		
DEPTH IN	113	
TOTAL FTG.	247	
TOTAL HR. RUN	7½	
COND. OF BIT	0B	
REAMER NO.	1	0/B
REAMER TYPE		

MUD RECORD			
TIME	8:00	10:00	2:00
WEIGHT	9.1	9.0	9.1
VISC.-SEC	40	41	42
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE — AMT. — TYPE — AMT.; GEL — 600

DRILLER: Dave Trykas

FOOTAGE 210

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
150	360	RM			140	8M	400	7	60			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	199	¾°		314	¾°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8⁰⁰	8¹⁵	¼	RIG SERVICE
8¹⁵	9⁴⁵	1½	REAM HOLE TO 12¼"
9⁴⁵	10⁰⁰	¼	LAY DOWN DRILL PIPE PICK UP STAND OF DRILL COLLAR
10⁰⁰	10¹⁵	¼	SURVEY @ 199 ¾°
10¹⁵	1¹⁵	3	REAM HOLE TO 12¼ 3⁰⁰-4⁰⁰ REAM HOLE TO 12¼
1¹⁵	1⁴⁵	½	PICK UP STAND OF DRILL COLLAR
1⁴⁵	3¹⁵	1½	REAM HOLE TO 12¼
3¹⁵	3³⁰	¼	SURVEY @ 314 — ¾°

EVENING TOUR

DRILLING ASSEMBLY AT END OF TOUR	NO.		FT.
STANDS D.P.	2	181.50	FT.
SINGLES D.P.			FT.
D.C. 6¼" I.D. O.D.	12	358.53	FT.
D.C. REAMER I.D. O.D.	1	1.60	FT.
STB. BODY O.D.	1	3.06	FT.
STB. BODY O.D.	1	2.68	FT.
RMR. BODY O.D.			FT.
SUBS O.D.			FT.
BIT OR C.B.		.65	FT.
			FT.
KELLY DOWN		41.00	FT.
TOTAL		590.'	FT.
WT. OF STRING	52 m		LBS.

BIT RECORD		
BIT NO.	REAMER	2 A
SIZE	12½	
MFG.	REED	
TYPE	H.O.	
NOZZLE NO.		
NOZZLE SIZE	CONV	
SER. NO.		
DEPTH OUT		
DEPTH IN	113	
TOTAL FTG.	477	
TOTAL HR. RUN	17¼	
COND. OF BIT	0/B	
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME			10⁰⁰
WEIGHT			9.4
VISC.-SEC	45	46	45.
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED: TYPE — AMT. — TYPE — AMT.

DRILLER: Jed Bryson

FOOTAGE 230

FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
360	590	R			140	10M	700	7	60			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	402'	¾°		495'	1¼°				

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4⁰⁰	4¹⁵	¼	RIG SER.
4¹⁵	4⁴⁵	1¼	REAM HOLE TO 12¼
4⁴⁵	6¹⁵	1¼	LAY DOWN DRILL PIPE. PICK UP STAND OF D.C's.
6¹⁵	7³⁰	2¼	REAM HOLE TO 12¼"
7³⁰	7⁴⁵	¼	SURVEY @ 402'
7⁴⁵	10¹⁵	2¼	REAM HOLE TO 12¼"
10¹⁵	10³⁰	¼	SURVEY @ 495'
10³⁰	12⁰⁰	1¼	REAM HOLE TO 12¼"

WIRE LINE RECORD	
REEL NO.	
NO. OF LINES	8 — SIZE 1⅛
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	3
CUMULATIVE ROTATING HRS.	

TIME SUMMARY (OFFICE USE ONLY)	
DAY WORK	
HRS. W/DP	
HRS. WO/DP	
HRS. STANDBY	
TOTAL DAY WORK	

APPROVED — APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 2 — DATE FEB 7, 1971

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI	64° 50' 125° 30' CANDEL ETAL EAST MACKAY B-45	B-45	EAST MACKAY	FORT NORMAN	NWT.

CONTRACTOR: Jennings International Drilling — A Division of Western Electronics & Engineering Ltd.

RIG NO. 9

DRILL PIPE STRING: NO. 2, SIZE 4½

TOOL JOINT 6¼ O.D. TYPE THD. XH

SIGNATURE OF OPERATOR'S REPRESENTATIVE

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: Joe Kuhasewich

PUMPS

NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16
2.	EMSCO	DA 500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS

TIME DISTRIBUTION–HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL	6¼	8¾	7
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			
LUBRICATE RIG	¼	¼	¼
DEVIATION SURVEY	1	1	¼
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK: A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS	8	8	8

TIME SUMMARY (OFFICE USE ONLY): DAY WORK; HRS. W/DP; HRS. WO/DP; HRS. STANDBY; TOTAL DAY WORK

WIRE LINE RECORD: REEL NO.; NO. OF LINES — SIZE; FEET SLIPPED; FEET CUT OFF; PRESENT LENGTH; TON MI. OR TRIPS SINCE LAST CUT; CUMULATIVE TON MI. OR TRIPS; NO. OF DAYS FROM SPUD; CUMULATIVE ROTATING HRS.

MORNING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
10	D.C. 6¼ I.D. O.D.	295.42	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
2	SUBS O.D.	5.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	38.00	FT.
	TOTAL	340	FT.
	WT. OF STRING	42,000	LBS.

BIT RECORD			
BIT NO.	2A		
SIZE	7⅞		
MFG.	HW		
TYPE	XIG		
NOZZLE NO.	OPEN		
NOZZLE SIZE			
SER. NO.	22877		
DEPTH OUT	340		
DEPTH IN	113		
TOTAL FTG.	227		
TOTAL HR. RUN	11½		
COND. OF BIT	OB		
REAMER NO.			
REAMER TYPE			

MUD RECORD			
TIME	2:00	4:00	6:00
WEIGHT	8.8	8.8	8.9
VISC.–SEC	40	40	40
W.L.–C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	1500		

DRILLER: Brian Sadowski

FOOTAGE 130

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
210	340	D	7⅞	FUEL 5' 6"	140	4M	500	7"	60			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	183	1¼°		210	1°		240	¾°	272 ¾°

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
12:00	12:15	¼	RIG SERVICE.
12:15	12:45	½	DRILL 7⅞" HOLE
12:45	1:00	¼	SURVEY at 183 - 1¼°
1:00	3:45	2¾	DRILL 7⅞" HOLE
3:45	4:00	¼	SURVEY 210 1° (CHANGED OIL IN TABLE)
4:00	5:30	1½	DRILL 7⅞" HOLE.
5:30	5:45	¼	SURVEY 240 ¾°
5:45	7:00	1¼	DRILL 7⅞" HOLE.
7:00	7:15	¼	SURVEY 272 ¾°
7:15	8:00	¾	DRILL 7⅞" HOLE.

DAY TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.		FT.
2	SINGLES D.P.	53.66	FT.
12	D.C. 6¼ I.D. O.D.	354.53	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
2	SUBS O.D.	5.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	39.00	FT.
	TOTAL		FT.
	WT. OF STRING	46,000	LBS.

BIT RECORD			
BIT NO.	2A		
SIZE	7⅞		
MFG.	HW		
TYPE	XIG		
NOZZLE NO.	OPEN		
NOZZLE SIZE			
SER. NO.	22877		
DEPTH OUT			
DEPTH IN	113		
TOTAL FTG.	327		
TOTAL HR. RUN	18¼		
COND. OF BIT	0/B		
REAMER NO.			
REAMER TYPE			

MUD RECORD			
TIME	8:00	10:00	1:00
WEIGHT	9.7	9.6	9.8
VISC.–SEC	35	35	40
W.L.–C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	1200		
CAUSTIC	50		

DRILLER: Dave Frykas

FOOTAGE 100

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
340	440	D	7⅞		140	4M	500	9"	58			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	302	1°		331	¾		392	1½°	

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	¼	RIG SERVICE
8:15	8:30	¼	SURVEY @ 302 - 1°
8:30	10:15	1¾	DRILL 7⅞" HOLE 3:45 – 4:00 DRILL 7⅞" HOLE
10:15	10:30	¼	SURVEY @ 331 - ¾°
10:30	12:30	2	DRILL 7⅞" HOLE
12:30	12:45	¼	SURVEY @ 361 - ¾°
12:45	3:30	2¾	DRILL 7⅞" HOLE
3:30	3:45	¼	SURVEY @ 392 - 1½°

EVENING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
1	STANDS D.P.	155.11	FT.
2	SINGLES D.P.		FT.
12	D.C. 6¼ I.D. O.D.	354.53	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
2	SUBS O.D.	5.68	FT.
	BIT OR C.B.	.65	FT.
			FT.
	KELLY DOWN	41.00	FT.
	TOTAL	557	FT.
	WT. OF STRING	46,000	LBS.

BIT RECORD			
BIT NO.	2A		
SIZE	7⅞		
MFG.	H.W		
TYPE	XIG		
NOZZLE NO.	OPEN		
NOZZLE SIZE			
SER. NO.	22877		
DEPTH OUT			
DEPTH IN	113		
TOTAL FTG.	444		
TOTAL HR. RUN	25¼		
COND. OF BIT	OB.		
REAMER NO.			
REAMER TYPE			

MUD RECORD			
TIME	3:00	5:00	7:00
WEIGHT	9.8	9.8	9.8
VISC.–SEC	45	45	45
W.L.–C.C.			
FLTR. CK			
PH			
SD. CONT. %			
PRESSURE GRADIENT			

MUD & CHEMICALS ADDED

TYPE	AMT.	TYPE	AMT.
GEL	1000		

DRILLER: Brian Sadowski

FOOTAGE 117

FROM	TO	DR.–D RM.–R CORE.–C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	PUMP NO. 1 S.P.M.	PUMP NO. LINER SIZE	PUMP NO. S.P.M.	METHOD RUN SGL.–S PAR'EL–P COM'D–C
440	557			CHANGE HEAD IN No I Pump	140	6M	600	7	60			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
				454	⅓°	485 - ½°	516	½	

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
4:00	4:15	¼	RIG SERVICE
4:15	7:00	2¾	DRILL 7⅞" HOLE
7:00	7:15	¼	SURVEY @ 454 — ⅓°
7:15	8:45	1½	DRILL 7⅞" HOLE
8:45	9:00	¼	SURVEY @ 485
9:00	11:30	2½	DRILL 7⅞" HOLE.
11:30	11:45	¼	SURVEY @ 516
11:45	12:00	¼	DRILLING 7⅞" HOLE

APPROVED APPROVED

A.A.O.D.C.–A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

DAILY DRILLING REPORT — REPORT NO. 1 — DATE FEB 6/71

OPERATOR	LEASE	WELL NO.	FIELD OR DIST.	COUNTY	STATE
CANADIAN DELHI CO.	CANDEL ET AL EAST MACKAY B-45 64°50' 125° 30'	B45	EAST MACKAY	FORT NORMAN	N.W.T.

CONTRACTOR: Jennings international Drilling — A Division of Western Electronics & Engineering Ltd. — RIG NO. 9

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S TOOL PUSHER: Joe [illegible]

DRILL PIPE STRING NO.	SIZE	TOOL JOINT O.D. / TYPE THD.

PUMPS NO.	MANUFACTURER	TYPE	STROKE LENGTH
1.	EMSCO	DA 500	16
2.	EMSCO	DA 500	16
3.			

LAST CASING TUBING OR LINER	SIZE	MAKE	WT. & GR.	NO. JOINTS	FEET	RKB. TO CSG. HD.	SET AT	REMARKS

TIME DISTRIBUTION—HOURS

	MORN	DAY	EVE
RIG UP & TEAR DOWN			
DRILLING ACTUAL			1 1/2
REAMING			
CONDITIONING MUD & CIRCULATING			
TRIPS			1/2
LUBRICATE RIG			1/4
DEVIATION SURVEY			3/4
TEST B.O.P.			
CUT OFF DRILLING LINE			
REPAIR RIG			
CORING			
WIRE LINE LOGGING			
RUNNING CASING & CEMENTING			
WAITING ON CEMENT			
DRILL STEM TEST			
OTHER			
FISHING			
COMPLETION WORK A. PERFORATING			
B. TUBING TRIPS			
C. SWABBING			
D. TESTING			
E. ADDITIONAL			
TOTALS			8

TIME SUMMARY (OFFICE USE ONLY)

DAY WORK			
HRS. W/DP			
HRS. WO/DP			
HRS. STANDBY			
TOTAL DAY WORK			

WIRE LINE RECORD

REEL NO.	
NO. OF LINES	SIZE
FEET SLIPPED	
FEET CUT OFF	
PRESENT LENGTH	
TON MI. OR TRIPS SINCE LAST CUT	
CUMULATIVE TON MI. OR TRIPS	
NO. OF DAYS FROM SPUD	
CUMULATIVE ROTATING HRS.	

MORNING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
2	SUBS O.D.	5.68	FT.
	BIT OR C.B.	1.00	FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
WT. OF STRING			LBS.

BIT RECORD		
BIT NO.	1A	
SIZE	12 1/4	
MFG.	SEC	
TYPE	S33J	
NOZZLE NO.	3	
NOZZLE SIZE	16/32	
SER. NO.	RT 96702	
DEPTH OUT		
DEPTH IN	0	
TOTAL FTG.		
TOTAL HR. RUN		
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME			
WEIGHT			
VISC.-SEC			
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			
MUD & CHEMICALS ADDED TYPE	AMT.	TYPE	AMT.
DRILLER			

FOOTAGE FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS

DAY TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
	D.C. I.D. O.D.		FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
2	SUBS O.D.	5.68	FT.
1	BIT OR C.B.	1.00	FT.
			FT.
	KELLY DOWN		FT.
	TOTAL		FT.
WT. OF STRING			LBS.

BIT RECORD		
BIT NO.	1A	
SIZE	12 1/4	
MFG.	Sec.	
TYPE	S33J	
NOZZLE NO.	3	
NOZZLE SIZE	16/32	
SER. NO.	RT 96702	
DEPTH OUT		
DEPTH IN	0	
TOTAL FTG.	76	
TOTAL HR. RUN	2 1/4	
COND. OF BIT		
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME			
WEIGHT			
VISC.-SEC	37		
W.L.-C.C.			
FLTR. CK.			
PH			
SD. CONT. %			
PRESSURE GRADIENT			
MUD & CHEMICALS ADDED TYPE	AMT.	TYPE	AMT.
GEL	3000		
CAUSTIC	100		
DRILLER Harold Fraser			

FOOTAGE FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
0	76	Dr			140	1M	900	7	60			

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	66	1 1/2							

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS
8:00	8:15	1/4	RIG SERVICE
8:15	10:00	1 3/4	RIG UP TO SPUD
10:00	1:30	3 1/2	THAW OUT TABLE
			SPUDDED IN @ 1:30 PM FEB 6/71
1:30	3:00	1 1/2	DRLG 12 1/4" HOLE
3:00	3:15	1/4	SURVEY @ 66'
3:15	4:00	3/4	DRLG

EVENING TOUR

NO.	DRILLING ASSEMBLY AT END OF TOUR		
	STANDS D.P.		FT.
	SINGLES D.P.		FT.
6	D.C. 6 1/4 I.D. O.D.	176.46	FT.
	D.C. I.D. O.D.		FT.
	STB. BODY O.D.		FT.
	STB. BODY O.D.		FT.
	RMR. BODY O.D.		FT.
2	SUBS X O O.D.	6.43	FT.
	BIT 02 C.B.	.65	FT.
			FT.
	KELLY DOWN	27.00	FT.
	TOTAL	210	FT.
WT. OF STRING		32 000	LBS.

BIT RECORD		
BIT NO.	1A	1
SIZE	12 1/4	7 7/8
MFG.	Sec	HW
TYPE	S33J	X16
NOZZLE NO.	3	OPEN
NOZZLE SIZE	16/32	
SER. NO.	RT 96702	228777
DEPTH OUT	113	210
DEPTH IN	0	113
TOTAL FTG.	113	97
TOTAL HR. RUN	4	4 3/4
COND. OF BIT		OB
REAMER NO.		
REAMER TYPE		

MUD RECORD			
TIME		8:00	10:00
WEIGHT		8.7	8.7
VISC.-SEC		35	40
W.L.-C.C.			
FLTR. CK			
PH			
SD. CONT. %			
PRESSURE GRADIENT			
MUD & CHEMICALS ADDED TYPE	AMT.	TYPE	AMT.
GEL	1000		
CAUSTIC	50		
DRILLER Brian Sadowy			

FOOTAGE FROM	TO	DR.-D RM.-R CORE.-C	CORE NO.	FORMATION (SHOW CORE RECOVERY)	ROTARY RPM	WT. ON BIT 1000#	PUMP PRESS	PUMP NO. 1 LINER SIZE	S.P.M.	PUMP NO. LINER SIZE	S.P.M.	METHOD RUN SGL.-S PAR'EL-P COM'D-C
76	113	Dr.		12 1/4"	140	4M	900	7	60			
113	~~130~~ 210			7 7/8								

DEVIATION RECORD	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION	DEPTH	DEV.	DIRECTION
	96	1 3/4		135	1°		155	1°	

TIME LOG FROM	TO	ELAPSED TIME	DETAILS OF OPERATIONS IN SEQUENCE AND REMARKS			
4:00	4:15	1/4	RIG SERVICE	11:00	11:15	1/4 SURVEY @ 155 - 1°
4:15	5:00	3/4	DRLG	11:15	12:00	3/4 DRILL 7 7/8" HOLE
5:00	5:15	1/4	SURVEY @ 96			
5:15	6:15	1	DRLG			
6:15	6:45	1/2	HOIST F/ 7 7/8" BIT			
6:45	9:30	2 3/4	DRLG 7 7/8 HOLE			
9:30	9:45	1/4	SURVEY 135 - 1°			
9:45	11:00	1 1/4	DRILL 7 7/8" HOLE			

APPROVED APPROVED

A.A.O.D.C.--A.P.I. OFFICIAL DAILY DRILLING REPORT FORM

Canada Oil and Gas Lands Administration | Administration du pétrole et du gaz des terres du Canada

				Well Status	
Nova Scotia	☐	West Coast	☐	Suspended	☒
Newfoundland	☐	Northern	☒	Completed	☐
Gulf of St. Lawrence	☐	Hudson Bay	☐	Abandoned	☐

APPLICATION TO ALTER CONDITION OF A WELL

This application form is to be submitted in triplicate to the District Conservation Engineer at least 45 days before commencement of operations.

DEC KMG

Well Name: Candel ~~Decking~~ et al East Mackay B-45 Area: Ft. Norman, N.W.T.

Coordinates: Lat: 64.73582 Long: 125.63833

Operator: Conoco Canada Limited Contractor: N/A

Drilling Rig or Unit: Jennings Rig #9 Depth: TD - 1611.2m

Date ATDW Issued: 71-01-28 Date of Last Operation 1971-3-8

TYPE OF OPERATION

Abandonment

SUMMARY OF PROPOSED OPERATIONS

This well was suspended in 1979 and was never completed. The 219mm surface casing is set at 187m. The 139.7mm, 20.8 kg/m, J55 production casing is set at 1611.2m and was cemented with 6 tonnes cement + 4% gel and 19.9 tonnes neat cement. The top of cement should be approximately 500m from surface.

Conoco proposes to set a 10m cement plug at surface, cut the casing off 1m below ground level, weld a steel plate across both casing strings, and replace the soil above the casing.

Signed: [illegible] Title: Sr. Production Engineer

Date: [illegible] Company: Conoco Canada Limited

APPROVAL

An approved copy of this notice should be posted at each wellsite.

Signed: [illegible]
Conservation Engineer

Date: February 16, 1988

ATDW No: 497 File:

Department of Energy, Mines and Resources | Ministère de l'Énergie, des Mines et des Ressources

Department of Indian Affairs and Northern Development | Ministère des Affaires indiennes et du Nord canadien

Canada

Canada Oil and Gas Lands Administration | Administration du pétrole et du gaz des terres du Canada

D.A. 497

				Well Status	
Nova Scotia	☐	West Coast	☐	Suspended	☐
Newfoundland	☐	Northern	☒	Completed	☐
Gulf of St. Lawrence	☐	Hudson Bay	☐	Abandoned	☒

WELL TERMINATION RECORD

This record is submitted in triplicate in compliance with Section 184 of the Canada Oil and Gas Drilling Regulations

WELL DATA

Well Name: Candel DEC KIG et al East Mackay B-45 Area: Fort Norman, N.W.T.

Grid Area: 64° 50' - 125° 30' Field/Pool: Wildcat

Permit or Lease No.: 5525 Final Coordinates. Lat.: 64° 44' 09" N Long: 125° 38' 18" W

Drilling Unit: Jennings #9 Elevations ~~RT~~/KB: 259.4 m SF/GL 255.1m

Spud Date: Feb. 6, 1971 Rig Released March 6, 1971 Total Depth 1611.2 mKB

CASING AND CEMENTING

O.D.:	Weight:	Grade:	Depth Set:	Cement and Additives:
219mm	24lb/ft	J55	191.1 m KB	400 sacks + 2% CaCl2
139.7mm	20.8kg/m	J55	1611.2 mKB	6 tonnes + 4% gel 19.9 tonnes neat

PLUGGING PROGRAM

Approval of the following program was obtained by (person) John Schneider from (person) Kem Singh of the Canada Oil and Gas Lands Administration by means of writing on Feb 10 1988

Type of Plug:	Interval:	Felt:	Cement and Additives:
Surface	10m at surface	no	Class G arctic cement

Lost Circulation/Overpressure Zones: None

Equipment left on Seafloor (Describe): None

Provision for Re-entry (Describe and attach sketch): None

Cores: Type: Intervals: 1604.5 to 1611.2 m

Other Downhole Completion/Suspension Equipment: None

CERTIFICATION

I certify on the basis of personal knowledge of operations undertaken at the above named well that the above information is accurate.

Signed J C Schneider ~~Eng~~ Title Senior Production Engineer

Name John Schneider Date November 7, 1988

Acknowledged by Kem Singh Engineering Branch

Date November 14, 1988

File

Department of Energy, Mines and Resources | Ministère de l'Energie des Mines et des Ressources

Department of Indian Affairs and Northern Development | Ministère des Affaires indiennes et du Nord canadien

Canada