HB CAMERON HILLS F-51

Drilling Authority No. 364
Date Issued March 7, 1969

WELL NAME HB Cameron Hills F-51
FIELD Area:
LOCATION: Unit F Section 51 Grid 60-10-117-15
Latitude 60-00-15.43 Longitude 117-25-31.61
From Established Reference Marker

U.W.I.R. 60.00429 — 117.42544
U.W.I. 300F516010117150

Rig Release Date: 2/4/69
Status
Information Release Date

CHANGE OF NAME:

DATE RECEIVED	INDEX
March 7, 1969	Application for a Drilling Authority.
	Well Completion Data.
	Well History Report.
	Application to Amend a Drilling Authority.
	Application to change a Well Name.
8/4/69	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.K. — Oil — Calculations.
	New Oil Well Report.
	New Gas Well Report.
	Well Inspection Report.
	Rig Inspection Report.
	Battery Inspection Report.
	Equipment Report.
	Well Card.
	New Service Well Report.
	Monthly Water Flood Operations Report
	Monthly Water Receipts and Disposal of Fluids Report
	Logs. Large scale Small scale

NANR 52-90 (7-65)

Drilling Authority No. 364

Date Issued 7th March 1969

DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES
RESOURCE MANAGEMENT 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 HB Camaron Hills F-51

Permit No. 3215 Lease No. -

Hudson's Bay Oil and Gas Co. Ltd. (Permittee, Licensee, Lessee) Exploratory Licence No. 1096 & 1768

Hudson's Bay Oil and Gas Co. Ltd. (Operator) Exploratory Licence No. 1096 & 1768

Location: Unit F Section 51 Grid 60° 10' 117° 15'

Latitude 60° 00' 15.43" Longitude 117° 25' 31.61"

From Established Reference Marker Shot Point 112

Universal Well Location Reference 60.00429° N.Lat. 117.42544° W.Long.

	DATE	DEPTH
Spudded	Mar.9/69	
Suspended		
Resumed		
Finished Drilling	Mar.29/69	5062'
Deepened		
Completed (gas/oil)		
Abandoned	Apr.2/69	
Rig released	Apr.2/69	

Pool (s)

Interval(s) open to production

DEPT. OF INDIAN AFFAIRS & NORTHERN DEVELOPMENT RESOURCE MANAGEMENT OFFICER JUN 26 1969 CALGARY, ALBERTA Conservation Engineer

Elevation: Gr. 2398.5 feet

K.B. 2410.5 feet

Drilling Contractor & Rig No. Brinkerhoff Bros.Ltd. Rig 39H

Contractor's Business Licence No. A 11157

CASING RECORD

Casing Size (inches)	Grade	Weight	Amount	Set at—	Sacks of Cement and Additives
1. 10 3/4	H-40	32.75#	32 Jts.	1028'	700 sacks Construction Cement plus 2% $CaCl_2$
2.					
3.					
4.					
5.					
6.					

GEOLOGICAL TOPS	ELEVATION Depths	ELEVATION Sub-Sea
	feet KB	
Wabamun	1714	+ 696
Tathlina	2167	+ 243
Twin Falls	2531	- 121
Hay River	2990	- 580
Slave Point	4200	-1790
Fort Vermilion	4304	-1894
Watt Mountain	4362	-1952
Bistcho(Sulfur Pt.)	4378	-1968
Muskeg Anhydrite	4474	-2064
Key River	4786	-2376
Pre Devonian	5000	-2590
Total Depth	5062	-2652

CORE RECORD

From	To	Rec.	From	To	Rec.
4903	4963	59			

LOG RECORD

Run No.	Type of Log	From	To
1	Dual Induction-Laterolog	5058	1026
1	Borehole Compensated Sonic Log	5059	1026
1	Formation Density Log	5061	4100
1	Sidewall Neutron Porosity	5061	4100
1	Continuous Dipmeter	5059	3900
1	Directional Log	5059	1010
1	Lithology	5061	4100

NANR 83-90(2) (7-65)

CEMENTING RECORD (Plug, Squeeze, etc.)

Date	From	To	Remarks
Apr.1/69	5062	4736	170 sacks
Apr.2/69	4350	4100	125 sacks. Felt @ 4010 feet.
Apr.2/69	1075	975	85 sacks plus 2% CaCl2. Felt @ 955 feet.
Apr.2/69			Surface casing cut-off 3 feet below ground level, 5 sack cement plug placed at the surface and a steel plate was welded across casing stub.

PERFORATING RECORD (Bullet, Jet)

Date	From	To	Remarks

SERVICING RECORD (Acidizing, Fracing, etc.)

Date	From	To	Remarks

DRILL STEM TESTS - Pressure Recorder Readings

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	Mar19/69	Sl.Pt.	4213	4280	75	15	30	1590	1578	566	640	2146	2147	Strong blow. GTS almost immed. Rec. 290' clean salt water.
2	Mar21/69	Bistcho	4400	4465	90	30	30	1368	1264	190	215	2143	2108	Good blow. GTS in 3 mins. Rec. 240' gassy mud & 170' muddy salt water.
3	Mar25/69	Keg R.	4790	4875	60	30	60	476	738	80	124	2396	2410	Weak air blow during pre-flow, Strong air blow grad. decreasing during SO period. Rec. 50' sulp. gas cut mud, 110' oil cut mud, 60' mud cut oil, 60' mud cut mud slightly salty.
4	Mar27/69	Keg R.	4873	4963	15	60	0	1571	-	78	85	2441	2441	Weak air blow, dead in 1 min. Rec. 120' mud.
5	Mar31/69	Muskeg	4586	4716	30	60	-	656	-	27	27	2324	2333	Weak initial blow, dead in 1 min. Rec. 30' mud.
6	Apr 1/69	Sl.Pt.	4235	4254	150	15	30	1332	1585	112	317	2135	2130	Strong initial blow. GTS in 7 mins. Rec. 670' salt water.

ANALYSIS

Lab. No.	Sample	From	To	Source	Remarks
CBH-1-1457	Gas	4213	4280	Slave Point	Sampled from DST#1
CBH-1-1458	Gas	4400	4465	Bistcho	Sampled from DST#2
CBH-1-1459	Gas	4235	4254	Slave Point	Sampled from DST #6
CBH-2-4556-1	Water	4213	4280	Slave Point	Sampled from DST#1
CBH-2-4557-1	Water	4400	4465	Bistcho	Sampled from DST #2
CBH-2-4558-1	Water	4790	4875	Keg River	Sampled from DST #3
CBH-2-4559-2	Water	4873	4963	Keg River	Sampled from DST #4
CBH-2-4560-1	Water	4235	4254	Slave Point	Sampled from DST#6
CBH-2-4598-1	Oil	4790	4875	Keg River	Sampled from DST#3
CNP-1-9600	Core	4903	4963	Rec. 59'	

PRESENT STATUS OF WELL

Oil ..... (Interval)

Gas ..... (Interval)

Dry and abandoned

Susp. .....

Company Hudson's Bay Oil and Gas Company Limited

Signed by J.C.Koch J. C. KOCH

Title District Superintendent

Date June 25, 1969

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

File No.
Drilling Authority No. 364

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
OIL AND MINERAL [redacted] Division

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

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

Name and number of well HB Cameron Hills F-51
Location: Unit F Section 51 Co-ords 60° 10' 117° 15'
Latitude 60° 00' 15.43" Longitude 117° 25' 31.61"
From Established Reference Marker Shot Point 112
Universal Well Location Reference 60.00429° N. Lat. 117.42544° W Long.
Permit No. 3215 Lease No.

Hudson's Bay Oil and Gas Company Limited
(Permittee, Licensee, Lessee)

Date of commencement of proposed program April 1, 1969

OIL, GAS, AND WATER ENCOUNTERED
(Depths)

Oil at 4790-4875'.
Gas at 4213-4280'; 4235-4250'; 4460-4465'
Water at
Total Depth 5062' Date of last operations 30th March 1969
Present condition of well waiting on orders.

CASING RECORD

Casing Size O.D. Inches	Weight	Amount	Set At—	Sacks of Cement and Additives	Amount Pulled
1. 10 3/4"	32.75#	32 jts.	1028'	700 sacks Construction cement + 2% $CaCl_2$	
2.					
3.					
4.					
5.					

PROPOSED ABANDONMENT PROGRAM

Plug No.	Plug Position	Geological Formation	Number of Sacks of Cement	Remarks
1	5062-4736	Keg River	160	No feet
2	4150-4350	Slave Point	100	Feet
3	1075-975	Base of Surface Casing	85	Feet

Cut off casing 3 feet below ground level, place a 5 sack plug and weld on steel plate.

The following logs have been run Density Log, SNP, DIL, Sonic Log & Synergetic Log.
Other operations proposed Abandonment

Operations to be carried out by Hudson's Bay Oil & Gas Company Limited Contractor Licence No. Reinhardt Bros. Ltd. A 11157
Address 11630-Kingsway Ave., Edmonton, Alta. Address
Responsible Agent in field N. Dease
Dated at Edmonton, this 1 Day of April 19 69
Signed by J.C.Koch Company Hudson's Bay Oil and Gas Co. Ltd.
Title District Superintendent Operator's Exploratory Licence No. 1096 & 1268

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

(For RESOURCE MANAGEMENT DIVISION use only)

APPROVAL

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

Confirming oral approval given by Mr. B.H.J. Thomas on the 1st April 1969.

Dated 8th April, 19 69

Oil Conservation Engineer

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

IAND 52-90 (5) (3-67)

Department of Indian Affairs and Northern Development

~~Northern~~ Northern Economic Development ~~Services~~ Branch

Ministère des Affaires indiennes et du Nord canadien

Bureau des ressources et du développement économique

Calgary 44, 10th March 1969

CHIEF, OIL AND MINERAL DIVISION

HB Cameron Hills P-51

Attached is a copy of the plan of survey for the above named well.

B.H.J. Thoms
Oil Conservation Engineer

Encl. 1

Department of Indian Affairs and Northern Development

Northern Economic Development Branch

Ministère des Affaires indiennes et du Nord canadien

Bureau des ressources et du développement économique

3303 - 33rd Street N.W.,
Calgary 44, Alberta,

10th March 1969

CHIEF, OIL AND MINERAL DIVISION

HB Cameron Hills F-51 - D.A. 364

Drilling Authority No. 364 shows that the Drilling Contractor for this well is Brinkerhoff Bros., Rig No. 19, whereas the correct rig number is 39E.

Would you please alter your records accoringly.

R.H.J. Thoms
Oil Conservation Engineer

File No.

Drilling Authority No. 364

INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES
Oil & Mineral Resources Division

Application for a Drilling Authority

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

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

Name and number of well HB Cameron Hills K-51

Location: Unit K Section 51 Grid 60° 10' 117° 15'

Latitude 60° 00' 15.43" Longitude 117° 25' 31.61"

From Established Reference Marker To be surveyed from the Alberta - North West Territories Boundary

Elevation: Ground To be determined K.B. To follow feet above sea-level.

Well is expected to produce from Slave Point, Bistcho or Keg River formation at a depth of about 2700', 2900', 3000' feet. respectively.

Area assigned to well

(for Oil Conservation Engineer's use only)

Permit No. 3215 Lease No. - Acreage 63854

Permittee, licensee, or lessee Hudson's Bay Oil and Gas Company Limited

Exploratory Licence No. 1096 & 1268

Surface owned by Crown

(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	Brand	New or Used	Estimated Depth	Sacks of Cement
1. 10 3/4	32.75	H-40	Seamless	New	800'	Suff. cement
2.						to return to
3.						surface.
4.						
5.						

Expected water, gas, and oil horizons and type of control equipment

Slave Point, Bistcho, Keg River

Double gate blow-out preventor and Hydrill plus adequate mud system.

Well will be drilled with (Rotary) Rig No. - 19 by Brinkerhoff Bros.
(Cable)
(Drilling Contractor or company)

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

At well N. Dease At registered office N. Dease

Address 11630 Kingsway Ave. Address 11630 Kingsway Ave., Edmonton, Alta.

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

Dated at Edmonton, this 28th day of February 1969

Signed by U. C. KOCH Company Hudson's Bay Oil and Gas Co. Ltd.

Title District Superintendent Licence No. 1096 & 1268

(For Resources Division use only)

APPROVED

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

1. The Company will submit to this office, on Tuesday of each week, the latest reports received by radio on the progress of the well.
2. Should production casing be required, details of the proposed string are to be

Dated 7th March 1969

(over)

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

NANR 52-9001 (1-71)

submitted in advance of it being set.

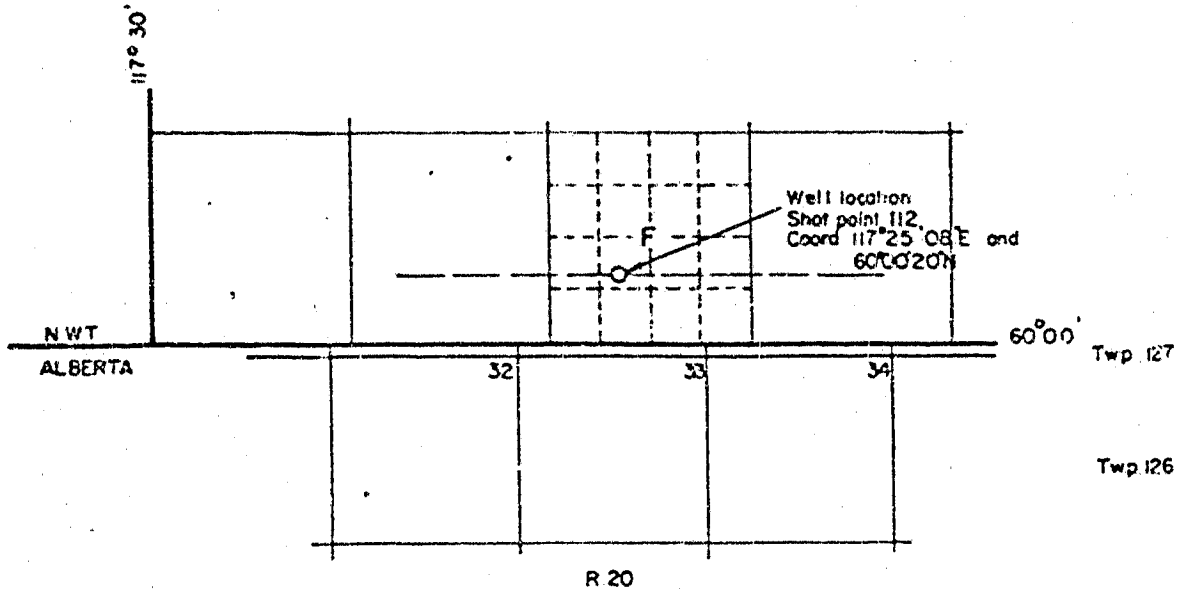
3. During well drilling and testing operations, every effort shall be made to ensure that drilling fluids, chemicals and wastes shall be disposed of or contained in a manner that will prevent the contamination of adjacent vegetation and surface or sub-surface waters.

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

UTM Coal Well Location: 60.00429° N. Latitude; 117.42544° W. Longitude.

Well Identification: 300B516010117150

B.J.J. Thomas
Oil Conservation Engineer



HUDSON'S BAY OIL AND GAS COMPANY LIMITED

PRODUCTION ENGINEER

DISTRICT ANALYST

Hudson's Bay Oil and Gas Company Limited
Production Dept. Edmonton District

SKETCH

PLAN SHOWING LOCATION OF WELLSITE

H.B. CAMERON HILLS F-51

RE. 60°10' 117°15'

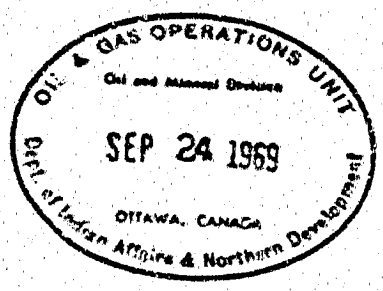
Scale	1" = 1mile	Drawn	JCS	Drawing no.
Date	FEB. 27/69	Ch'kd.		

HUDSON'S BAY OIL AND GAS CO. LTD.

WELL HISTORY REPORT

HB CAMERON HILLS F-51

HUDSON'S BAY OIL AND GAS COMPANY LIMITED



WELL HISTORY REPORT

IIB CAMERON HILLS F-51

Signed John Koch
District Superintendent

Date: July 8/69

I N D E X

HB Cameron Hills F-51
Well History Report

SECTION I - SUMMARY OF WELL DATA

a) Well Name and Number: HB Cameron Hills F-51

b) Permittee, Licencee or Lessee: Hudson's Bay Oil and Gas Company Limited

c) Name of Operator: Hudson's Bay Oil and Gas Company Limited
11630 - Kingsway Avenue
Edmonton 25, Alberta

d) Location: Unit F, Section 51, Grid Area: 60° 10' 117° 15'
Latitude: 60° 00' 15.43"
Longitude: 117° 25' 31.61"

e) Co-ordinates: 37 feet North and 654.8 feet West of the S.E. Corner of Unit F, Section 51, Shot Point 112.
Universal Well Location Reference:
60.00429° N. Lat. 117.42544° W. Long.
Unique Well Identifier - 300F516011017150

f) Permit No.: 3215

g) Drilling Contractor: Brinkerhoff Bros. Ltd.
Rig No. 39H

h) Drilling Authority: No. 364 issued 7th March 1969

i) Classification: Exploratory

j) Elevations: Ground: 2398.5 feet
KB: 2410.5 feet

k) Spudded: March 9, 1969

l) Completed drilling: March 29, 1969

m) Total Depth: 5062 feet KB
Plug Back Depth: To surface

n) Well Status: Abandoned

o) Rig Released: April 2, 1969

p) Hole Size: Surface - 13 3/4 inches 0 to 1028 feet KB
Final - 8 3/4 inches 1028 to 5062 feet KB

q) Casing: Surface - 10 3/4 inch OD, H-40, 32.75 lb.
Set at 1028 feet KB. with 700 sacks cement + 2% $CaCl_2$

SECTION II - GEOLOGICAL SUMMARY

a) Formation Tops:

Marker	Log Depth Feet KB	Log Depth Subsea	Sample Depth Feet KB	Sample Depth Subsea
Wabamun	1714	+ 696	1710	+ 692
Tathlina	2167	+ 243	2300	+ 110
Twin Falls	2531	- 121	-	-
Hay River	2990	- 580	3060	- 650
Slave Point	4200	-1790	4200	-1790
Fort Vermillion	4304	-1894	4292	-1882
Watt Mountain	4362	-1952	4362	-1952
Bistcho	4378	-1968	4380	-1970
Muskeg Anhydrite	4474	-2064	4470	-2060
Keg River	4786	-2376	4794	-2384
Pre Devonian	5000	-2590	5005	-2595
Total Depth	5062	-2652	5062	-2652

b) Cored Intervals: Core No. 1 - 4903 to 4963 feet KB
Recovery - 59 feet
Formation - Keg River

CORE DESCRIPTION

Core #1 Recovered 60 feet.
4903-4963

4905	90% Dolomite:	brown to dark brown, microcrystalline to med. crystalline, very anhydritic, trace argillaceous, poor oil staining, poor porosity (vugs fill with anhydrite).
	10% Anhydrite:	white coarsely crystalline.
4910	90% Dolomite:	as above, finger corals (amphipora?).
	10% Anhydrite:	as above, vug filler, porosity and fossil replacement.
4915	90% Dolomite:	as above
	10% Anhydrite:	"
4920	80% Dolomite:	"
	20% Anhydrite:	" 2 inch stringer of white microcrystalline anhydrite.
4925	80% Dolomite:	as above
	20% Anhydrite:	"
4930	80% Dolomite:	"
	20% Anhydrite:	" 10 inch stringer.
4935	90% Dolomite:	"
	10% Anhydrite:	"
4940	80% Dolomite:	"
	20% Anhydrite:	" 2 inch stringer.
4945	90% Dolomite:	"
	10% Anhydrite:	"
4950	90% Dolomite:	" crinoids, amphipora?, horncorals.
	10% Anhydrite:	"
4955	80% Dolomite:	"
	20% Anhydrite:	" 2 inch stringer
4960	85% Dolomite:	" crinoids, amphipora, mollusks.
	15% Anhydrite:	"
4963	85% Dolomite:	"
	15% Dolomite:	"

SAMPLE DESCRIPTION

H.B. Cameron Hills F-51

60° 10' N. 117° 15' W.

4050	100% Shale:	light green to brown calcareous shale
4060	"	light green to brown calcareous shale
4070	"	as above
4080	"	"
4090	"	"
4100	"	"
4110	"	"
4120	"	as above, trace limestone
4130	90% Shale:	brown sub-platy calcareous shale
	10% Limestone:	white to light brown, trace silty, limemud with scattered brachiopod fragments, tight and pyritic in part
4140	90% Shale:	as above
	10% Limestone:	"
4150	90% Shale:	"
	10% Limestone:	"
4160	90% Shale:	"
	10% Limestone:	"
4170	90% Shale:	"
	10% Limestone:	"
4180	90% Shale:	"
	10% Limestone:	"
4190	90% Shale:	"
	10% Limestone:	"
4200	90% Shale:	"
	10% Limestone:	"
4200	Top of Slave Point	
4210	100% Limestone:	white to light brown, trace argillaceous, limemud with scattered brachiopod fragments, pyritic in part, tight
4220	"	as above
4230	"	" with poor to fair vuggy porosity
4240	100% Limestone:	light to dark brown, trace argillaceous, partly recrystalized pelletal limestone, mud with a trace of oil staining in fair to good vuggy porosity, trace brachiopod fragments
4250	100% Limestone:	as above

4260	100% Limestone:	light to dark brown, trace argillaceous, partly recrystallized pelletal limestone mud with poor oil staining in poor to fair vuggy porosity, trace brachiopod fragments.
4270	100% Limestone:	as above with bituminous staining
4280	100% Limestone:	light to dark brown, trace argillaceous, partly recrystallized pelletal limestone mud trace bituminous staining in poor porosity, trace brachiopod fragments.
4290	"	light brown, trace argillaceous, partly recrystallized pelletal limestone mud, trace bituminous staining, trace brachiopod fragments, pyritic in part, tight.
4300	"	light brown, trace argillaceous, partly recrystallized pelletal limestone mud, trace brachiopod fragments, pyritic in part, tight.
4292	Top of Fort Vermilion	
4310	70% Limestone:	light brown, trace argillaceous, partly recrystallized pelletal limestone, tight mud, trace brachiopod fragments.
	30% Anhydrite:	slightly gypsiferous cryptocrystalline white anhydrite.
4320	70% Limestone:	as above
	30% Anhydrite:	as above
4330	40% Limestone:	"
	60% Anhydrite	" trace dolomite
4340	40% Limestone:	light brown, trace argillaceous, limestone mud, pelletoid in part, tight.
	60% Anhydrite:	slightly gypsiferous cryptocrystalline white anhydrite.
4350	60% Limestone:	as above
	40% Anhydrite:	"
4360	60% Limestone:	" trace dolomite
	40% Anhydrite:	"
4362	Top of Watt Mountain	
4370	60% Limestone:	light brown to grey, trace argillaceous, slightly pelletoid limestone mud, tight.
	10% Dolomite:	light brown to grey, very fine crystalline dolomite.
	30% Anhydrite:	as above
4380	45% Limestone:	"
	25% Dolomite:	"
	20% Anhydrite:	"
	10% Shale:	turquoise green calcareous shale.

4390	50% Limestone:	light to dark brown, trace argillaceous, partly recrystallized pelletoid limestone mud, tight.
	30% Dolomite:	light to dark brown micro-crystalline to very fine crystalline dolomite.
	10% Anhydrite:	as above
	10% Shale:	"
4380	Top of the Bistcho	
4400	80% Limestone:	white to medium brown, partly pelletal-recrystalized pelletal limestone, tight.
	20% Dolomite:	micro-crystalline to very fine grain dolomite (white to medium brown).
4410	90% Limestone:	as above, medium brown in colour.
	10% Dolomite:	as above, medium brown in colour.
4420	90% Limestone:	as above
	10% Dolomite:	"
4430	90%+Limestone:	"
	Trace Dolomite:	"
4440	100% Dolomite:	medium brown, trace argillaceous micro to finely crystalline, tight.
4450	90% Dolomite:	as above, fair vuggy porosity in part. Fair oil staining, crypto. to finely crystalline.
	10% Limestone:	medium brown, trace argillaceous, pelletal and partly recrystallized pelletal limestone.mud.
4460	100% Dolomite:	as above
4470	100% Dolomite:	as above, trip sample, very poor staining, poor porosity.
4470	Muskeg Evaporite	
4480	85% Dolomite:	as above
	15% Anhydrite:	white, amorphous
4490	50% Dolomite:	light to medium brown cryptocrystalline to finely crystalline, bituminous staining, tight.
	50% Anhydrite:	as above
4500	50% Dolomite:	"
	50% Anhydrite:	"
4510	30% Dolomite	"
	70% Anhydrite:	"
4520	30% Dolomite:	"
	70% Anhydrite:	"
4530	30% Dolomite:	"
	70% Anhydrite:	"

4540	50% Dolomite:	as above
	50% Anhydrite:	as above
4550	40% Dolomite:	medium to dark brown cryptocrystalline to finely crystalline, tight.
	60% Anhydrite:	as above
4560	40% Dolomite:	light to medium brown, cryptocrystalline to finely crystalline, tight.
	60% Anhydrite:	as above
4570	50% Dolomite:	" light to medium brown.
	50% Anhydrite:	"
4580	50% Dolomite:	" light to dark brown.
	50% Anhydrite:	"
4590	40% Dolomite:	" bituminous stain.
	60% Anhydrite:	"
4600	40% Dolomite:	medium brown, cryptocrystalline to micro crystalline, bituminous stain.
	60% Anhydrite:	as above
4610	30% Dolomite:	" bituminous stain.
	70% Anhydrite:	"
4620	30% Dolomite:	"
	70% Anhydrite:	"
4630	40% Dolomite:	medium brown, cryptocrystalline to finely crystalline, anhydritic in part, bituminous stain, tight.
	60% Anhydrite:	as above
4640	40% Dolomite:	"
	60% Anhydrite:	"
4650	30% Dolomite:	"
	70% Anhydrite:	" light to dark brown.
4660	30% Dolomite:	"
	70% Anhydrite:	"
4670	25% Dolomite:	"
	75% Anhydrite:	"
4680	25% Dolomite:	"
	75% Anhydrite:	"
4690	25% Dolomite:	"
	75% Anhydrite:	" white to grey
4700	25% Dolomite:	" very anhydritic
	75% Anhydrite:	"

4710	30% Dolomite:	as above
	70% Anhydrite:	"
4720	30% Dolomite:	"
	70% Anhydrite:	"
4730	30% Dolomite:	" trace argillaceous
	70% Anhydrite:	"
4740	30% Dolomite:	white to brown, trace argillaceous, cryptocrystalline to finely crystalline, slightly anhydritic, tight.
	70% Anhydrite:	as above
4750	30% Dolomite:	" light to dark brown.
	70% Anhydrite:	" (poor sample)
4760	30% Dolomite:	" no argillaceous content.
	70% Anhydrite:	" (poor sample)
4770	40% Dolomite:	"
	60% Anhydrite:	" (poor sample)
4780	30% Dolomite:	" bituminous stain.
	70% Anhydrite:	" (poor sample)
4790	70% Dolomite:	" slightly argillaceous.
	30% Anhydrite:	"
4794	Top of Keg River	
4800	30% Dolomite:	as above
	70% Anhydrite:	" (poor sample)
4810	90% Dolomite:	" no argillaceous content
	10% Anhydrite:	"
4820	90% Dolomite:	"
	10% Anhydrite:	"
4830	90% Dolomite:	"
	10% Anhydrite:	"
4840	95% + Dolomite:	light to brown, cryptocrystalline to finely crystalline, bituminous stain, vuggy by evidence of numerous anhydrite lathes.
4850	100% Dolomite:	as above, slightly argillaceous, vy poor porosity. anhydrite lathes.
4860	100% Dolomite:	as above, poor vuggy porosity.
4870	"	" very poor vuggy porosity.
4880	"	"
4890	"	" some live oil stain.
4900	"	" bituminous stain.

4910	90% Dolomite:	as above, some live oil stain, poor porosity.
	10% Anhydrite:	medium crystalline anhydrite in vug fillings.
4920	90% Dolomite:	light to dark brown, cryptocrystalline to med. crystalline, slightly anhydritic, slightly argillaceous, bituminous stain, tight.
	10% Anhydrite:	transparent medium grain, crystals in filling vugs.
4930	90% Dolomite:	as above
	10% Anhydrite:	"
4940	95 + % Dolomite:	" trace anhydrite
4950	95 + % Dolomite:	"
4960	100% Dolomite:	" trace anhydrite.
4970	"	" trace medium grain anhydrite xls.
4980	"	" trace quartzite.
4990	"	"
5000	"	" slightly sandy (quartzite pebbles)
5010	"	"
5005	Top of PreDevonian Basement	
5020	100% Quartzite:	fine grain quartzite, rounded grains, linear fabric, pyritic in part.
5030	"	as above
5040	"	"
5050	"	"
5062	"	"

.....

Hudson's Bay Oil and Gas Company Limited

SAMPLE DESCRIPTIONS

WELL: H.B. Cameron River East **LOCATION:** 60°10'N 117°13'W [illegible] **PAGE:** 1

GEOLOGIST: D. Moslie **DATE:** March 27/69. **INTERVAL:** [illegible] - 63

c) Core Descriptions:

DEPTH	ST	POR	GRAPHIC LITHOLOGY	CARBONATE Color	% Dol	Other (Pred Fossils)	SANDSTONE LITH	SILTSTONE %	SILTSTONE LITH	SHALE %	SHALE LITH	OTHER %	OTHER LITH	REMARKS
4900														
05					[illegible]								[illegible]	[illegible]
10				[illegible]	[illegible]	[illegible]							[illegible]	
15				"	10	a.a.							[illegible]	[illegible]
20				"	[illegible]	a.a.							"	"
25				"	[illegible]	a.a.							[illegible]	
30				"	[illegible]	a.a.								
35				"	10	a.a.							[illegible]	
40				"	[illegible]	a.a.								
45				"	[illegible]	[illegible]								
4950				"	[illegible]	[illegible]							[illegible]	
55				"	[illegible]	[illegible]								
60				"	[illegible]	[illegible]								
63														

Core #1 4903 - [illegible]

Rec [illegible]

Hudson's Bay Oil and Gas Company Limited

SAMPLE DESCRIPTIONS

WELL: HB Cameron Hills [illegible] 51 LOCATION:

GEOLOGIST: Jackson DATE: March 18 INTERVAL: 10' C

PAGE: 1

DEPTH	CARBONATE % Ls	CARBONATE Other (Pred Fossils)	SANDSTONE / SILTSTONE LITH	SHALE %	SHALE LITH	OTHER LITH	REMARKS
				1[illegible]	[illegible]		50% [illegible]
4050				10	[illegible] calc sh		[illegible]
4060				10	Same		20% [illegible]
4070				10	Same		Same
4080				100	Same		Same
4090				100	Same		Same
4100				100	Same		% Same pyrite
4110				100	Same		Same pyrite
4120				100	[illegible]		50 % [illegible]
4130	Tr	Pyrite			[illegible]		
4140	100	Brach frag.			[illegible]		
4150	100	Pyrite Brach frag		10	Same		
4160	100	Pyrite Brach frag		4	Same		
4170	100	Pyritic Brach frag			Same		
4180	100	Pyritic Brach frag			Same		Blk specks in shales
4190	Same		Top of Slave Pt.		Same		
4200	Same		DST #1				
4210	100	Pyrite [illegible]	4213-4280				
4220	100	Pyritic Brach frag	GTS [illegible] 210 Mcf/d				[illegible]
4230	100	Pyritic [illegible]	MXW SPRO[illegible]		[illegible]		O.A.R.
4240	100	Brach frag	15 - [illegible]				O.A.R.
4250	100	Brach [illegible]	IHP - [illegible]				O.A.R.
4260	100	[illegible]	SIP - 100 [illegible]				O.A.R.
4270	100	Brach frag [illegible]	FP - [illegible]				O.A.R.
4280	100	[illegible] staining	4292' Top of Ft. Vermilion				O.A.R.
4290	[illegible]	[illegible] staining					[illegible] - Bl sh
4300	100	Brach frag				[illegible]	
4310	70	Brach frag [illegible]				[illegible]	
4320	[illegible]		4362 Top of Watt Mt.			[illegible]	
4330	Tr 100	Pelleted				[illegible]	
4340	[illegible]					[illegible]	
4350	20	Pelleted				[illegible]	
4360	Tr 100	[illegible]				[illegible]	[illegible]
4370	20	[illegible]				[illegible]	
4380	15 45	[illegible]	4380 Top of [illegible]	10	[illegible]	[illegible]	
4390	30 50	[illegible]		13	[illegible]	[illegible]	

Hudson's Bay Oil and Gas Company Limited

SAMPLE DESCRIPTIONS

WELL:
GEOLOGIST:
LOCATION:
DATE:

INTERVAL:

DEPTH	Carbonate % Ds	Carbonate % Ls	Carbonate Other (Pred Fossils)	Sandstone / Siltstone / Shale	Other %	Other Lith	Remarks
4400	20	80	[illegible]				Ls. and [illegible] Dolomite [illegible] Dolomite [illegible]
4410	30	70	[illegible]	DST # [illegible] 4400 - 4420			
4420	10	90	[illegible]	ETS 3' [illegible]			
4430	[illegible]	[illegible]	[illegible]	Rec 300' [illegible] M [illegible]			
4440	30		[illegible] D.S.	30 - 15 - 30			[illegible]
4450	70	10	Same as above	HP 31[illegible] - 21[illegible]			[illegible] D.S.
4460	[illegible]		Same as above	SIP 14[illegible] - 1[illegible]			[illegible]
4470	[illegible]		Same as above	KP 33[illegible] - [illegible]			
4480	25				[illegible]	[illegible]	
4490	50		Oil staining in D.S.	(Muskeg [illegible])	[illegible]	[illegible]	
4500	50		Oil staining in D.S.		[illegible]	[illegible]	
4510	30		Oil staining in D.S.		[illegible]	[illegible]	
4520	30		Same as above		[illegible]	Same	
4530	[illegible]		Same as above		[illegible]	Same	Trace of [illegible]
4540	50		Same as above		[illegible]	Same	
4550	[illegible]		Same as above		[illegible]	Same	
4560	10				10	Same	Tr clear xln Anhy
4570	50				50	Same	Tr clear xln Anhy
4580	[illegible]				[illegible]	Same	
4590	10		Oil staining		[illegible]	Same	Tr clear xln Anhy
4600	40				[illegible]	Same	
4610	30		Oil staining		[illegible]	Same	
4620	30		B. t. staining		[illegible]	Same	
4630	10		Anhy [illegible] Bit staining		[illegible]	Same	
4640	[illegible]		Anhy [illegible] Bit stain		[illegible]	Same	
4650	30		[illegible]		[illegible]	Same	
4660	20		[illegible]		[illegible]	Same	[illegible]
4670	20		[illegible]		[illegible]	Same	[illegible]
4680	25		[illegible]		[illegible]	Same	
4690	25		[illegible]		[illegible]	[illegible]	
4700	[illegible]		V. Anhy. Bit stain		[illegible]	[illegible]	
4710	[illegible]		V. Anhy.		[illegible]	Same	[illegible]
4720	[illegible]		V. Anhy.		[illegible]	Same	[illegible]
4730	[illegible]				[illegible]	Same	[illegible]
[illegible]	[illegible]				[illegible]	Same	

Hudson's Bay Oil and Gas Company Limited

SAMPLE DESCRIPTIONS

WELL: H.B. Cameron R. F-51 LOCATION: 60°[illegible]'N 117°[illegible]'W PAGE: [illegible]

GEOLOGIST: L. Jackson [illegible] DATE: March [illegible] INTERVAL: [illegible]

DEPTH	CARBONATE %	SANDSTONE LITH	SILTSTONE LITH	SHALE LITH	OTHER	REMARKS
4750	30				[illegible]	Poor sample
60					Same	Poor sample
70					Same	Poor sample
80					Same	Poor sample
90	70	DST #3 · 4770 -		4875	Same	
4800	30	Rec 220'	Fluid		Same	Poor sample
10		50' SGCM	110' OCM, 60' OCM		Same	
20		60' OCXM			Same	
30		30 -	(X) - 60		Same	[illegible]
40		HP 2432 -	2408		Same	[illegible] Anhy [illegible]
50		FP 128 -	172			[illegible]
60		SI 512 -	768		[illegible]	[illegible]
70						
75					[illegible]	[illegible]
80						[illegible]
90					[illegible]	[illegible]
4900						[illegible]
4903		Core #1			[illegible]	[illegible]
10		4903-4963			[illegible]	[illegible]
20		DST #4	4873 -	4963	[illegible]	[illegible]
30		60-15-	0		[illegible]	[illegible]
40		Rec 120'	M			
50		HP 24	16 2[illegible]2		[illegible]	[illegible]
60		SIP 1	00			[illegible]
70		FP 12	12			[illegible]
80					[illegible]	
90					[illegible]	
5000		5005' Top	Pre Dev		[illegible]	
10		Base	ment		[illegible]	
20					[illegible]	[illegible]
30					Same	Same [illegible]
40					Same	Same
50					Same	Same
62					[illegible]	Same

COMPLETE IN DUPLICATE

SECTION III - ENGINEERING SUMMARY

c) Report of Drill Stem Tests:

3 copies of each DST #1, 2 and 3 were sent April 21, 1969.
3 copies of each DST #4, 5 and 6 were sent April 28, 1969.

Chronological Summary of Drill Stem Tests
(Pressure Recorder Readings)

	(March 19/69) DST NO. 1	(March 21/69) DST NO. 2	(March 25/69) DST NO. 3
Formation	Slave Point	Bistcho	Keg River
Interval (feet-KB)	4213-4280	4400-4465	4790-4875
Initial Flow Time (mins)	3	3	3
Initial Shut-in Time(mins)	15	30	30
Final Flow Time(mins)	75	90	60
Final Shut-in Time (mins)	30	30	60
Initial Hydrostatic Press.(Psi.)	2146	2143	2396
Initial Shut-in Press.(Psi.)	1590	1368	476
Initial Flow Press. (Psi.)	566	190	80
Final Flow Press. (Psi.)	640	215	134
FinalShut-in Press. (Psi.)	1578	1264	738
Final Hydrostatic Press. (Psi.)	2147	2108	2410

	(March 27/69) DST NO. 4	(March 31/69) DST NO. 5	(April 1/69) DST NO. 6
Formation	Keg River	Muskeg	Slave Point
Interval (feet-KB)	4873-4963	4586-4716	4235-4254
Initial Flow Time(mins.)	3	3	3
Initial Shut-in Time (mins.)	60	60	15
Final Flow Time (mins.)	15	30	150
Final Shut-in Time (mins.)	0	-	30
Initial Hydrostatic Press.(Psi.)	2441	2324	2135
Initial Shut-in Press.(Psi.)	1571	656	1332
Initial Flow Press. (Psi.)	78	27	112
Final Flow Press. (Psi.)	85	27	317
Final Shut-in Press. (Psi.)	-	-	1585
Final Hydrostatic Press.(Psi.)	2441	2333	2130

Flow Rate and Remarks:

DST #1 - Strong blow during pre-flow and valve open period. Gas to surface almost immediately. Mud and water to surface in 30 minutes.

Flow Rate and Remarks Cont'd.:

DST #2 - Good blow during pre-flow and valve open period. Gas to surface in 3 minutes.

DST #3 - Weak air blow during pre-flow. Strong air blow gradually decreasing during valve open period.

DST #4 - Weak initial air blow, dead in one minute. Weak air blow on valve open period, dead in one minute.

DST #5 - Weak initial blow, dead in one minute. Very weak air blow on valve open period, dead almost immediately.

DST #6 - Strong initial blow gas to surface in 7 minutes. Strong gas blow on valve open period. Mud to surface in 90 minutes, salt water in 100 minutes.

Pipe Recovery and Remarks:

DST #1 - 290' clean salt water.

DST #2 - 240' gassy mud, 170' muddy salt water.

DST #3 - 50' sulphurous gas cut mud, 110' oil cut mud, 60' mud cut oil, 60' oil cut mud slightly salty.

DST #4 - 120' mud

DST #5 - 30' mud

DST #6 - 670' salt water

b) Casing Record:

Casing Size (inches)	Grade	Weight (lb/ft)	Amount (feet)	Set at (feet KB)	Cement and Additives
10 3/4	H-40	32.75	1016	1028	700 Sacks Construction Cement plus 2% $CaCl_2$.

c) Bit Record:

No.	Serial Number	Type	Size (Inches)	Hours Run	Depth In	Depth Out	Footage	Make
1A	Retip	OSC	13 3/4	6 1/4	0	103	103	Hughes
2A	Retip	OSC3	13 3/4	4 1/2	103	197	94	Hughes
3A	Retip	OSC3	13 3/4	9 1/2	197	360	163	Hughes
4A	558696	YT3AJ	13 3/4	16 3/4	360	851	491	Reed
5A	9621	OSC3	13 3/4	5 1/4	851	1028	177	Hughes
1	10219	X1G	8 3/4	37 1/4	1028	2378	1350	Hughes
2	10239	X1G	8 3/4	46 3/4	2378	3665	1287	Hughes
3	4576	X1G	8 3/4	25 1/2	3665	4280	615	Hughes
4	551813	SCM	8 3/4	71 1/4	4280	4745	465	Reed
5	9737	X55R	8 3/4	27 1/2	4745	4903	158	Hughes
	52-68	Diamond	6 3/16	8	4903	4963	60	
5	9737	X55R	8 3/4	31 1/4	4903	5062	159	Hughes

d) Mud Report:

The mud system contained the following:

Gel:	- 51,100	pounds
Caustic Soda:	- 3,500	pounds
Q Broxin:	- 3,250	pounds
Dextrid:	- 1,450	pounds
Cellex:	- 850	pounds
SAPP:	- 184	pounds
Lime:	- 75	pounds

e) Deviation Record:

Depth (feet - KB)	Deviation (Degrees)
103	3/4
188	3/4
303	1/4
400	1/2
504	1/2
650	1/2
780	1/4
936	3/4
1518	2
2044	1 1/2
2537	0
3031	3/4
3665	3/4
4204	1 1/2
4760	4
4900	3 3/4

f) Abandonment Plugs:

Plug No.	Date	Interval (feet-KB)	Amount of Cement Used	Depth at which Plug Felt
1	April 1/69	5062-4736	170 sacks	Not Felt
2	April 2/69	4350-4100	125 sacks	4010
3	April 2/69	1075-975	85 sacks	955

On April 2, 1969, the surface casing was cut-off 3 feet below ground level. A five sack cement plug was placed at the surface and a steel plate was welded across the casing stub.

g) Lost Circulation Zones: None

h) Report of Blowouts: None

SECTION IV - LOGS

Two copies of each of the below mentioned logs were sent by Calgary Geological Headquarters, May 8, 1969.

Date	Run No.	Interval (ft.-KB)	Type	Scale
March 29/69	1	5058-1026	Dual Induction - Laterolog	2"
March 29/69	1	5058-4100	Dual Induction - Laterolog	5"
March 29/69	1	5059-1026	Borehole Compensated Sonic Log	2"
March 29/69	1	5059-4100	Borehole Compensated Sonic Log	5"
March 29/69	1	5061-4100	Formation Density Log	2"
March 29/69	1	5061-4100	Formation Density Log	5"
March 29/69	1	5061-4100	Sidewall Neutron Porosity Log	2"
March 29/69	1	5061-4100	Sidewall Neutron Porosity Log	5"
March 29/69	1	5059-3900	Continuous Dipmeter	5"
March 29/69	1	5059-1010	Directional Log	-
March 29/69	1	5061-4100	Lithology	5"

NOTE: All of the above logs were run by Schlumberger

SECTION V - ANALYSIS

a) Core Analysis: #1 4903-4963 feet KB - CNT-1-9600
2 copies of Core Analysis sent April 11, 1969.

b) Water Analysis:

3 copies of each Water Analysis for DST #1, 2, 3, 4 and 6 were sent April 14, 1969.

DST #1 - Lab. No. CBH-2-4556-1
DST #2 - Lab. No. CBH-2-4557-1
DST #3 - Lab. No. CBH-2-4558-1
DST #4 - Lab. No. CBH-2-4559-2
DST #6 - Lab. No. CBH-2-4560-1

c) Gas Analysis:

3 copies of each Gas Analysis for DST #1, 2 and 6 were sent April 14, 1969.

DST #1 - Lab. No. CBH-1-1457
DST #2 - Lab. No. CBH-1-1458
DST #6 - Lab. No. CBH-1-1459

d) Oil Analysis:

3 copies of Oil Analysis for DST #3 were sent April 14, 1969.

DST #3 - Lab. No. CBH-2-4598-1

SECTION VI - CONPLETION SUMMARY

a) Tubing Record: None

b) Perforation Record: None

c) Cementation Record:

Plug No.	Date	Interval (Feet-KB)	Amount of Cement Used	Depth at which Plug Felt
1	April 1, 1969	5062-4736	170 sacks	Not Felt
2	April 2, 1969	4350-4100	125 sacks	4010
3	April 2, 1969	1075-975	85 sacks	955

On April 2, 1969 the surface casing was cut-off 3 feet below ground level. A five sack cement plug was placed at the surface and a steel plate was welded across the casing stub.

d) Acidization and Fracturing Record: None

e) Back Pressure and Production Tests: None

T.G. EASTLAND — testers ltd.

R.R. No. 6, NORTH EDMONTON, ALBERTA

Test No. _____ Date March 19, 1967 Ticket No. 1122

SERVICE REPORT

OPERATOR Hudson's Bay Oil & Gas Co. Ltd.

CONTRACTOR & RIG No. Brinkerhoff Drlg. Rig # 39B

L.L. NAME HB Cameron River F-51

AREA Cameron River L.S.D. F-51

TOOL PUSH D. Syndmiller WELL REPRESENTATIVE Wm/ Walker.

Date & time requested _____

Call _____ Arr. _____

Start in 1:10pm On Bott. 3:20pm

Pull Loose 5:30pm Out Hole _____

TESTING DATA

Zone Tested Slave Point

Interval 4213' to 4280' T.D. 4280'

Int. Casing: Size 13⅜" wgt. 4280' grade 1028'

Feet of Main Hole _____ Diam 8¼"

Feet of Rat Hole _____ Diam. _____

Type of Test Bottom Hole

Rubbers: No. Two O.D. 7¼"

Type of Packers Conv.

Drill Pipe: Size - Thread 4½FH

Drill Collars: I.D. 2 7/8" O.D. 6"

No. Fr Collars 230 D.P. 3980'

Ft. & Type Cushion none

Was Tool Chased no No. Ft. _____

Weight Set on Packers 25,000

Fluid Drop no No. Ft. _____

Describe _____

Preset 5 min. Tool opened 3:27 XX m./p.m.

Preflow 3 min. Init. Shut-in 15 min.

Flowed 75 min. Final Shut-in 30 min.

Pull Loose 80,000 lbs. Swabbing? no

Drilling Fluid Type gel chem

Visc. 60 Wgt. 9.2 W.L. 4.3 F.C. 2/32

DESCRIPTION OF BLOW DURING TEST

Strong blow during pre-flow and valve open period. Gas to surface almost immediately. Mud and water to surface in 30 min. (s.w.)

Blow Measured with: Pitot Tube ☐ _____

Fluid Used: Water ☐ Mercury ☐ Side Static ☐

Flow Prover ☐ Gauge ☐ Size _____ lbs.

Time	Choke	Reading	MCF/Day
4:00pm	¾"	6 lb.	3.3
4:30pm	¾"	8 lb.	3.8

FLUID RECOVERY

Pipe 60' Collars 230' Total 290'

Mud _____ Oil _____ Water 290'

Describe Fluids: 290' clean salt water.

Sampler Drained: On Location ☐ Laboratory ☐

Sampler Press. _____ lbs.

Bottom Hole Temp. 118 °F

Salinity of Recovery _____ P.P.M.

Salinity of Mud Filtrate _____ P.P.M.

TOOL SEQUENCE & EQUIP. USED

Tools	Length	O.D.
Floor Manifold		
Meter Run		
Safety Head		
Pump Out Sub	.95	
Tight Hole Tool		
Test Assembly	10.95	
Sampler		
Jars	7.30	
Safety Joint	2.00	
Straddle By-pass		
Packer	5.70	
Packer	5.70	
TOTAL	32.60	
Dble pin c/o	5.75	
4½FH c/o	1.90	
4½H90 c/o	1.70	
B.C.	0.30	
B.C.	0.45	
Perf.	9.85	
Bulnose	1.75	
TOTAL	61.30	

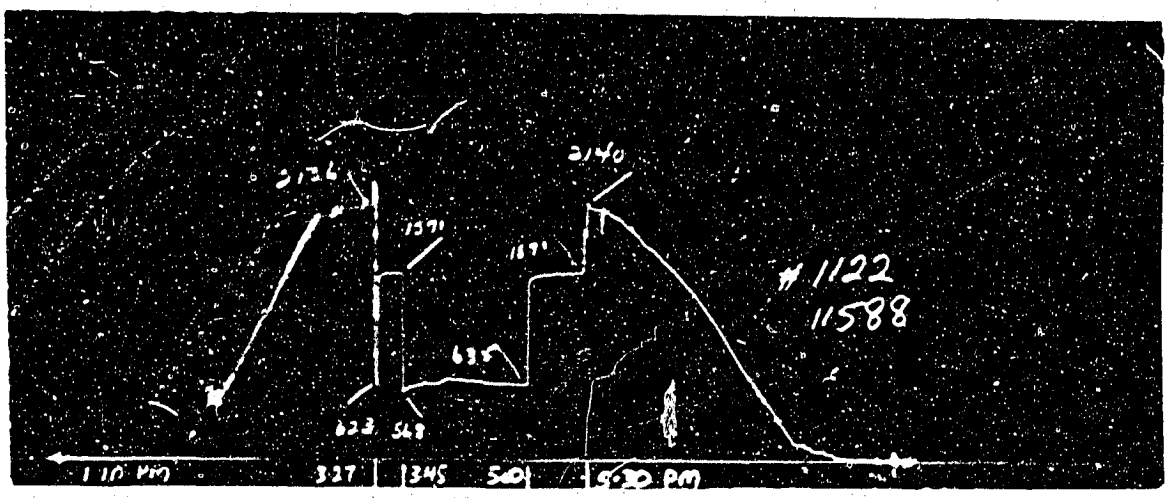
	FIELD	CORRECTED READINGS		
Pressure Element No.	11588	11588	14095	
Element Capacity (psig)	4000	4000	3000	
Clock Speed (Hrs.)	12	12	12	
Depth of Bellows	4219'	4219'	4225'	
Position (Inside - Outside)	Inside			
Initial Hydrostatic	2176	2136	2146	
Preflow Pressure	640	623	623	
Initial Shut-In	1600	1571	1590	
First Flow—Choke Size ½"	576	568	566	
Second Shut-In				
Second Flow—Choke Size ½"	640	635	640	
Final Shut-In	1600	1571	1578	
Final Hydrostatic	2112	2140	2147	

1. Cross-over sub to bottom of top rubbers	24.95
2. Bottom of top rubbers to top of lower	
3. Top of lower to bottom of lower rubbers	
4. Bottom of lower rubbers to Total Depth	67.35
5. Bottom of top rubbers to Total Depth	92.30
Total overall length of test assembly	
(Delete measurement No. 5 if Straddle)	
(Delete No. 2 - 3 - 4 if Std. bottom hole)	
Total amount of customer's anchor	31.00
Damaged Rubbers and Sizes	
No. Samplers Retained _____ No. of Reports Required _____	

REMARKS: Caught 1 gas sample at surface. Tight hole.

APPROVED BY W. Walker TEST: Successful X Mis-Run OUR OPERATOR Albert Arndt.

T.G. EASTLAND testers ltd.



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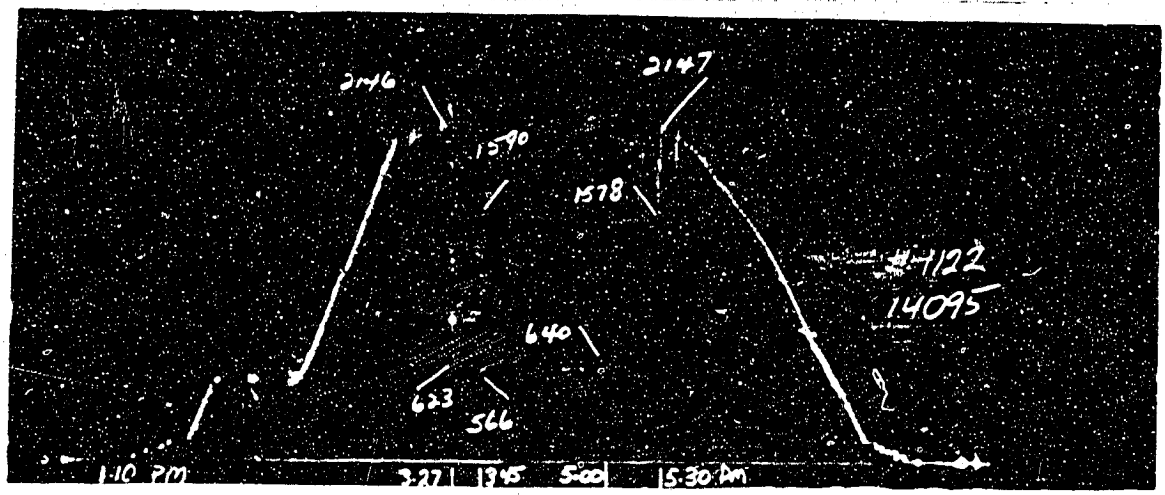


TIME

T.G. EASTLAND — testers ltd.

R.R. No. 6, NORTH EDMONTON, ALBERTA

TEST No. One
Date March 19, 1969
Ticket No. 1122

DRILL STEM TEST PRESSURE REPORT

WELL NAME HB CAMERON RIVER F-51 L.S.D. F-51

INTERVAL 4213' - 4280' FORMATION B.H. TEMP. °F 118

GAUGE No. 14095 DEPTH OF ELEMENT 4225' CALIBRATION EQUATION Pc 1552.06 - 0.83

	Time	T Mins.	Pressure psig
Initial Hydrostatic			2146
Initial Shut-in	3:36pm	0	1585
	3:42	6	1590
	3:45	9	1590
Flow Pressure		F1	566
		F2	640
Final Shut-in	5:06pm	0	1559
	5:12	6	1568
	5:18	12	1573
	5:24	18	1576
	5:30	24	1578
Final Hydrostatic			2147

T.G. EASTLAND — testers ltd.

R.R. No. 6, NORTH EDMONTON, ALBERTA

Test No. [illegible]
Date March 21, 1969
Ticket No. 1123

SERVICE REPORT

OPERATOR Hudson's Bay Oil & Gas Co. Ltd.

WELL NAME HB Cameron River F-51 CONTRACTOR & RIG No. Brinkerhoff Rig #32

AREA Cameron River LSD F-51

TOOL PUSH D. Syndmiller WELL REPRESENTATIVE Wm. Walker

Date & time requested ____
Call ____ Arr. ____
Start in 3:00pm On Bott. 7:27pm
Pull Loose 10:55pm Out Hole 12:40am

TESTING DATA

Zone Tested Bluesky
Interval 4400' to 4465' T.D. 4465'
Int. Casing: Size 13⅜" wgt. ____ grade J-55
Feet of Main Hole 4465' Diam 8¾"
Feet of Rat Hole ____ Diam. ____
Type of Test Bottom Hole
Rubbers: No. Two O.D. 7¼"
Type of Packers Conv.
Drill Pipe: Size - Thread 4½ FH
Drill Collars: I.D. 2 7/8" O.D. 6"
No. Ft. Collars 230 D.P. 4166'
Ft. & Type Cushion None
Was Tool Chased No No. Ft. ____
Weight Set on Packers 35,000
Fluid Drop No No. Ft. ____
Describe ____

Preset 3 min. Tool opened 7:32 A.M./P.M.
Preflow 3 min. Init. Shut-in 30 min.
Flowed 30 min. Final Shut-in 30 min.
Pull Loose 85,000 lbs. Swabbing? no
Drilling Fluid Type Gel Chem
Visc. 48 Wgt. 9.3 W.L. 6.8 F.C. 2/32

DESCRIPTION OF BLOW DURING TEST

Good blow during pre-flow and valve open period. Gas to surface in 3 min.

Blow Measured with: Pitot Tube ☒ ____
Fluid Used. Water ☐ Mercury ☐ Side Static ☐
Flow Prover ☐ Gauge ☐ Size ____ lbs.

Time	Choke	Reading	MCF/Day
8:35	¼"	2.8in	857

FLUID RECOVERY

Pipe 180' Collars 230' Total 410'
Mud 240' Oil ____ Water 170'
Describe Fluids: 240' gassy mud.
170' muddy salt water.

Sampler Drained: On Location ☐ Laboratory ☐
Sampler Press. ____ lbs.
Bottom Hole Temp. 116 °F
Salinity of Recovery ____ P.P.M.
Salinity of Mud Filtrate ____ P.P.M.

TOOL SEQUENCE & EQUIP. USED

Tools	Length	O.D.
Flow Manifold		
Meter Run		
Safety Head		
Pump Out Sub	.95	
Tight Hole Tool		
Test Assembly	10.95	
Sampler		
Jars	7.30	
Safety Joint	2.00	
Straddle By-pass		
Packer	5.70	
Packer	5.70	
TOTAL	32.60	
Dble pin c/o	.75	
4½FH c/o	1.90	
4½H90 c/o	1.70	
B.C.	6.30	
B.C.	6.45	
Perfs.	14.85	
Bullnose	1.75	
TOTAL	66.30	

	FIELD	CORRECTED READINGS		
Pressure Element No.	11588	11588	14095	
Element Capacity (psig)	4000	4000	3000	
Clock Speed (Hrs.)	12	12	12	
Depth of Bellows	4410'	4410'	4416'	
Position (Inside - Outside)	Inside			
Initial Hydrostatic	2176	2128	2143	
Preflow Pressure	256	213	220	
Initial Shut-In	1408	1346	1368	
First Flow—Choke Size ½"	232	183	190	
Second Shut-In				
Second Flow—Choke Size ½"	256	205	215	
Final Shut-In	1280	1240	1264	
Final Hydrostatic	2112	2087	2108	

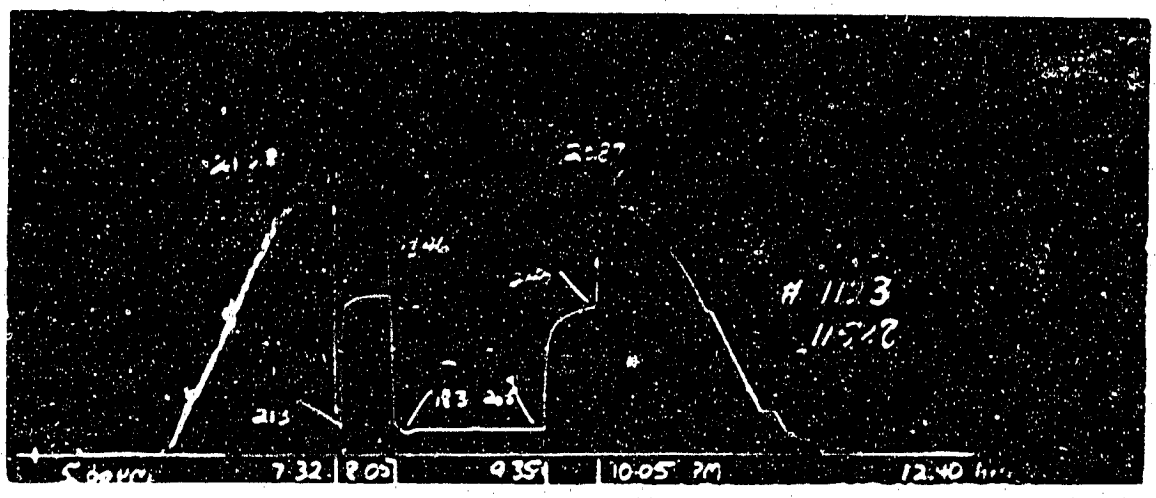
1. Cross-over sub to bottom of top rubbers 29.45
2. Bottom of top rubbers to top of lower ____
3. Top of lower to bottom of lower rubbers ____
4. Bottom of lower rubbers to Total Depth 64.65
5. Bottom of top rubbers to Total Depth 94.10

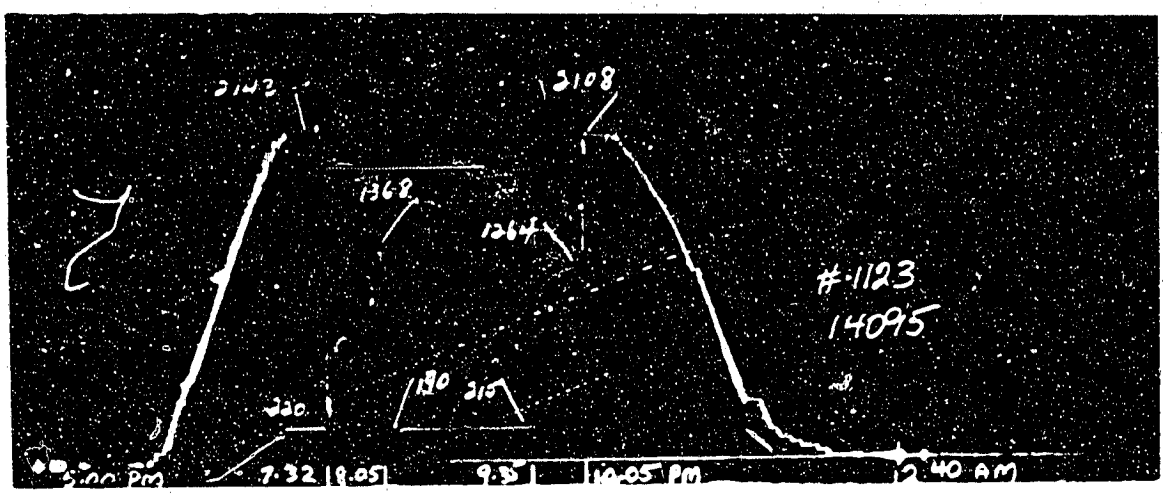
Total overall length of test assembly ____
(Delete measurement No. 5 if Straddle)
(Delete No. 2 - 3 - 4 if Std. bottom hole)
Total amount of customer's anchor 31.10
Damaged Rubbers and Sizes ____
No. Samplers Retained ____ No. of Reports Requi d 5

REMARKS: ~~Caught 1 gas sample at surface. Tight hole.~~

APPROVED BY W. Walker TEST: Successful ☒ Mis-Run OUR OPERATOR Albert Arndt.

T.G. EASTLAND testers ltd.





T.G. EASTLAND — testers ltd.

R.R. No. 6, NORTH EDMONTON, ALBERTA

TEST No. Two
Date March 21, 1969
Ticket No. 1187

DRILL STEM TEST PRESSURE REPORT

WELL NAME HR CAMERON RIVER E-51 L.S.D. E-51

INTERVAL 4500' - 4665' FORMATION B.H. TEMP. °F 118

GAUGE No. 16095 DEPTH OF ELEMENT 4516' CALIBRATION EQUATION Pc 1652.06 - 0.03

	Time	T Mins.	Pressure psig
Initial Hydrostatic			2143
Initial Shut-in	7:41pm	0	1303
	7:47	6	1349
	7:53	12	1362
	7:59	18	1367
	8:05	24	1368
Flow Pressure		F1	190
		F2	215
Final Shut-in	9:41pm	0	1093
	9:47	6	1182
	9:53	12	1219
	9:59	18	1245
	10:05pm	24	1264
Final Hydrostatic			2108

T.G. EASTLAND — testers ltd.

R.R. No. 6, NORTH EDMONTON, ALBERTA

Test No. 1
Date March 25, 1969
Ticket No. 1124

SERVICE REPORT

OPERATOR Hudson's Bay Oil & Gas Co. Ltd.

WELL NAME Cameron River F-51
CONTRACTOR & RIG No. Brinkerhoff Rig #39-51

AREA Cameron River LSD F-51

TOOL PUSH D. Svadmiller
WELL REPRESENTATIVE Wm. Walker.

Date & time requested
Call Arr.
Start. to 3:00pm On Bott. 5:04pm
Pull Loose 7:40pm Out Hole 10:10pm

TESTING DATA

Zone Tested Keg River
Interval 4790' to 4875' T.D. 4875'
Int. Casing: Size 13⅜" wgt. grade 1028'
Feet of Main Hole 4875' Diam 8¾"
Feet of Rat Hole Diam.
Type of Test Bottom Hole
Rubbers: No. Two O.D. 7⅜"
Type of Packers Conv.
Drill Pipe: Size - Thread 4½FH
Drill Collars: I.D. 2 7/8" O.D. 6"
No. Ft. Collars 230' D.P. 4540'
Ft. & Type Cushion none
Was Tool Chased no No. Ft.
Weight Set on Packers 25,000
Did Fluid Drop no No. Ft.
Describe

Preset 3 min. Tool opened 5:07 A.M./P.M.
Preflow 3 min. Init. Shut-in 30 min.
Flowed 60 min. Final Shut-in 60 min.
Pull Loose 70,000 lbs. Swabbing? no
Drilling Fluid Type gel chem
Visc. 40 Wgt. 9.3 W.L. 9. F.C. 2/32

DESCRIPTION OF BLOW DURING TEST

Weak air blow during pre-flow
strong air blow gradually
decreasing during valve open
period.

Blow Measured with: Pitot Tube ☐
Fluid Used: Water ☐ Mercury ☐ Side Static ☐
Flow Prover ☐ Gauge ☐ Size lbs.

Time	Choke	Reading	MCF/Day

FLUID RECOVERY

Pipe 50' Collars 230' Total 280'
Mud 220' Oil 60' Water
Describe Fluids: 50' sulphurous gas cut mud, 110' oil cut mud, 60' mud cut oil, 60' oil cut mud slightly salty.

Sampler Drained: On Location ☐ Laboratory ☐
Sampler Press. lbs.
Bottom Hole Temp. 225 °F
Salinity of Recovery P.P.M.
Salinity of Mud Filtrate P.P.M.

TOOL SEQUENCE & EQUIP. USED

Tools	Length	O.D.
Floor Manifold		
Meter Run		
Safety Head		
Pump Out Sub	.95	
Tight Hole Tool		
Test Assembly	10.95	
Sampler		
Jars	7.30	
Safety Joint	2.00	
Straddle By-pass		
Packer	5.70	
Packer	5.70	
TOTAL	32.60	
Dble pin c/o	.75	
4½FH c/o	1.90	
4½H90 c/o	1.70	
B.C.	6.30	
B.C.	6.45	
Perf.	35/00	
Bulnose	1.75	
TOTAL	86.45	

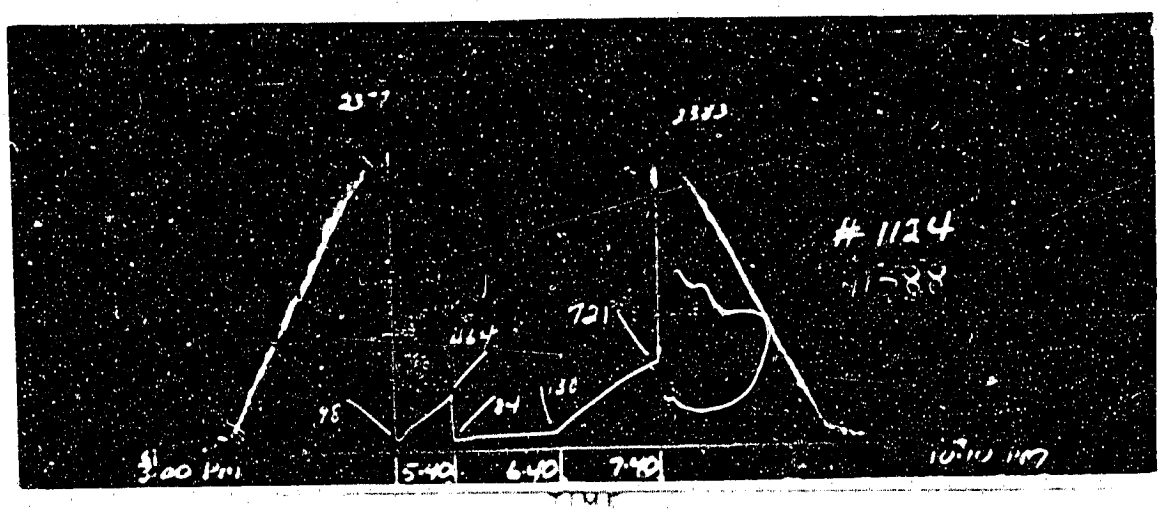
	FIELD	CORRECTED READINGS		
Pressure Element No.	11588	11588	14095	
Element Capacity (psig)	4000	4000	3000	
Clock Speed (Hrs.)	12	12	12	
Depth of Bellows	4800'	4800'	4806'	
Position (Inside - Outside)	Inside			
Initial Hydrostatic	2432	2377	2396	
Preflow Pressure	104	98	92	
Initial Shut-In	512	464	476	
First Flow—Choke Size ¼"	128	84	80	
Second Shut-In				
Second Flow—Choke Size ½"	192	130	134	
Final Shut-In	768	721	738	
Final Hydrostatic	2406	2383	2410	

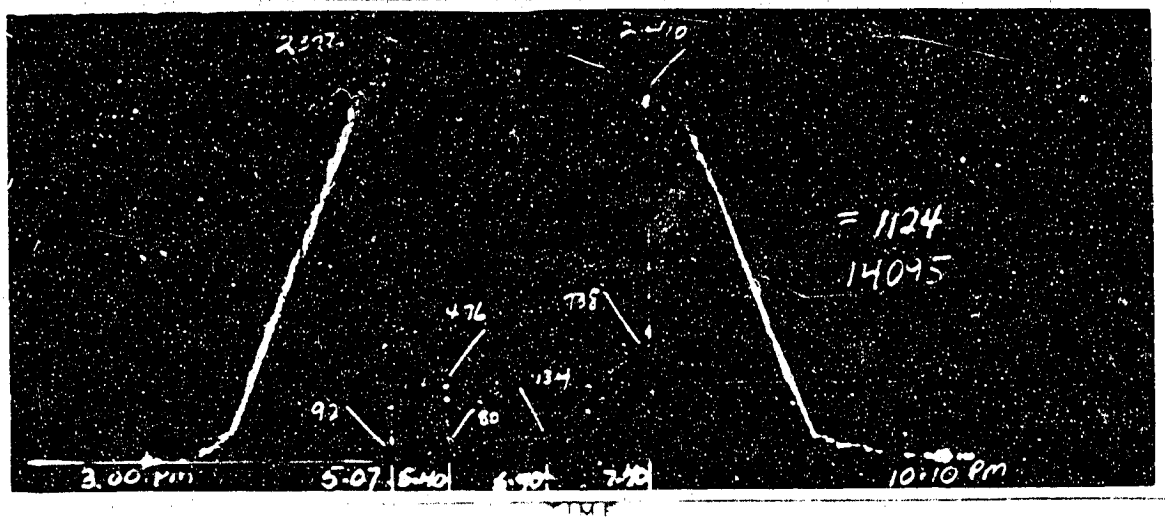
1. Cross-over sub to bottom of top rubbers	29.45
2. Bottom of top rubbers to top of lower	
3. Top of lower to bottom of lower rubbers	
4. Bottom of lower rubbers to Total Depth	35.10
5. Bottom of top rubbers to Total Depth	114.55
Total overall length of test assembly	
(Delete measurement No. 5 if Straddle)	
(Delete No. 2 - 3 - 4 if Std. bottom hole)	
Total amount of customer's anchor	31.40
Damaged Rubbers and Sizes	
No. Samplers Retained No. of Reports Required	5

REMARKS: Tight Hole.

APPROVED BY W. Walker. TEST: Successful X Mis-Run OUR OPERATOR Albert Arndt.

T.G. EASTLAND testers ltd.





TIME

T.G. EASTLAND — testers ltd.

R.R. No. 6, NORTH EDMONTON, ALBERTA

TEST No. Three
Date March 25, 1969
Ticket No. 1124

DRILL STEM TEST PRESSURE REPORT

WELL NAME HB CAMERON RIVER F-51 LSD. F-51

INTERVAL 4790' - 4875' FORMATION B.H. TEMP. °F 225

GAUGE No. 14095 DEPTH OF ELEMENT 4806' CALIBRATION EQUATION Pc 1552.06 - 0.83

	Time	T Mins.	Pressure psig
Initial Hydrostatic			2396
Initial Shut-in	5:16	0	195
	5:22	6	265
	5:28	12	328
	5:34	18	395
	5:40	24	476
Flow Pressure		F1	80
		F2	134
Final Shut-in	6:46	0	220
	6:52	6	302
	6:58	12	370
	7:04	18	431
	7:10	24	494
	7:16	30	549
	7:22	36	601
	7:28	42	649
	7:34	48	693
	7:40	54	738
Final Hydrostatic			2410

T.G. EASTLAND — testers ltd.

R.R. No. 6, NORTH EDMONTON, ALBERTA

Test No. ____ Date March 27, 1969 Ticket No. 1125

SERVICE REPORT

OPERATOR Hudson's Bay Oil & Gas Co. Ltd.

CONTRACTOR & RIG No. Brinkerhoff Rig #39-H

WELL NAME HB Cameron River F-51

AREA Cameron River L.S.D. F-51

TOOL PUSH D. Syndmiller WELL REPRESENTATIVE W. Walker

Date & time requested ____

Call ____ Arr. ____

Start in 8:45am On Bott. 10:23am

Full Loose 11:45am Out Hole 2:15pm

TESTING DATA

Zone Tested Keg River

Interval 4873' to 4963' T.D. 4963'

Int. Casing: Size 10¾" wgt. ____ grade 1026

Feet of Main Hole 4903' Diam 8¾"

Feet of Rat Hole 60' Diam 6 3/16"

Type of Test Bottom Hole

Rubbers: No. Two O.D. 7¾"

Type of Packers Conv.

Drill Pipe: Size - Thread 4½FH

Drill Collars: I.D. 2 7/8" O.D. 6"

No. Ft. Collars 230' D.P. ____

Ft. & Type Cushion none

Was Tool Chased no No. Ft. ____

Weight Set on Packers 25,000

Down Fluid Drop no No. Ft. ____

Describe ____

Preset ½ min. Tool opened 10:27 a.m./p.m.

Preflow 3 min. Init. Shut-in 60 min.

Flowed 15 min. Final Shut-in 0 min.

Pull Loose 66,000 lbs. Swabbing? no

Drilling Fluid Type gel chem

Visc. 60 Wgt. 9.3 W.L. 7.0 F.C. 2/32

DESCRIPTION OF BLOW DURING TEST

Weak initial blow (air) dead in one minute. Weak air blow on valve open period, dead in one minute.

Blow Measured with: Pitot Tube ☐ ____

Fluid Used: Water ☐ Mercury ☐ Side Static ☐

Flow Prover ☐ Gauge ☐ Size ____ lbs.

Time	Choke	Reading	MCF/Day

FLUID RECOVERY

Pipe ____ Collars 120' Total 120'

Mud 120' Oil ____ Water ____

Describe Fluids: 120' mud.

Sampler Drained: On Location ☐ Laboratory ☐

Sampler Press. ____ lbs.

Bottom Hole Temp. 124 °F

Salinity of Recovery ____ P.P.M.

Salinity of Mud Filtrate ____ P.P.M.

TOOL SEQUENCE & EQUIP. USED

Tools	Length	O.D.
Floor Manifold		
Meter Run		
Safety Head		
Pump Out Sub	.95	
Tight Hole Tool		
Test Assembly	10.95	
Sampler		
Jars	7.30	
Safety Joint	2.00	
Straddle By-pass		
Packer	5.70	
Packer	5.70	
TOTAL	32.60	
Dblspin c/o	.75	
4½FH c/o	1.50	
4½H90 c/o	1.70	
B.C.	6.30	
B.C.	6.45	
Perf.	10.00	
Bulnose	1.75	
TOTAL	61.45	

	FIELD	CORRECTED READINGS	
Pressure Element No.	11588	11588	14093
Element Capacity (psig)	4000	4000	3000
Clock Speed (Hrs.)	12	12	12
Depth of Bellows	4890'	4890'	4896
Position (Inside - Outside)	Inside		
Initial Hydrostatic	2496	2425	2441
Preflow Pressure	102	64	66
Initial Shut-In	1600	1549	1571
First Flow—Choke Size ¼"	128	78	78
Second Shut-In			
Second Flow—Choke Size ¼"	128	82	85
Final Shut-In			
Final Hydrostatic	2432	2415	2441

1. Cross-over sub to bottom of top rubbers	24.95
2. Bottom of top rubbers to top of lower	
3. Top of lower to bottom of lower rubbers	
4. Bottom of lower rubbers to Total Depth	90.18
½. Bottom of top rubbers to Total Depth	115.13
Total overall length of test assembly	

(Delete measurement No. 5 if Straddle)

(Delete No. 2 - 3 - 4 if Std. bottom hole)

Total amount of customer's anchor 61.48

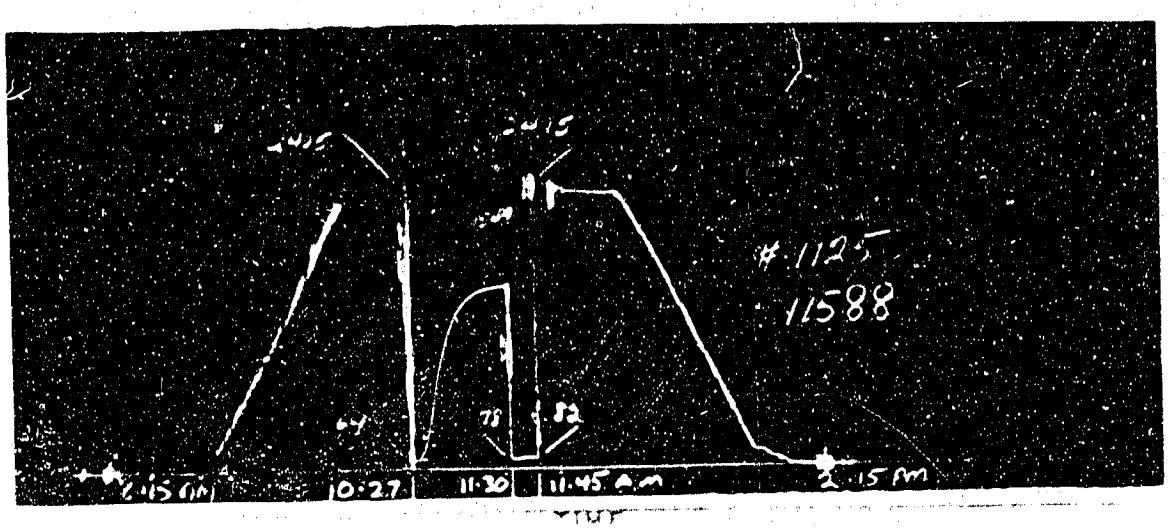
Damaged Rubbers and Sizes none

No. Samplers Retained ____ No. of Reports Required 5

REMARKS: Tight Hole.

APPROVED BY W. Walker TEST: Successful X Mis-Run OUR OPERATOR Albert Arndt.

T.G. EASTLAND testers ltd.



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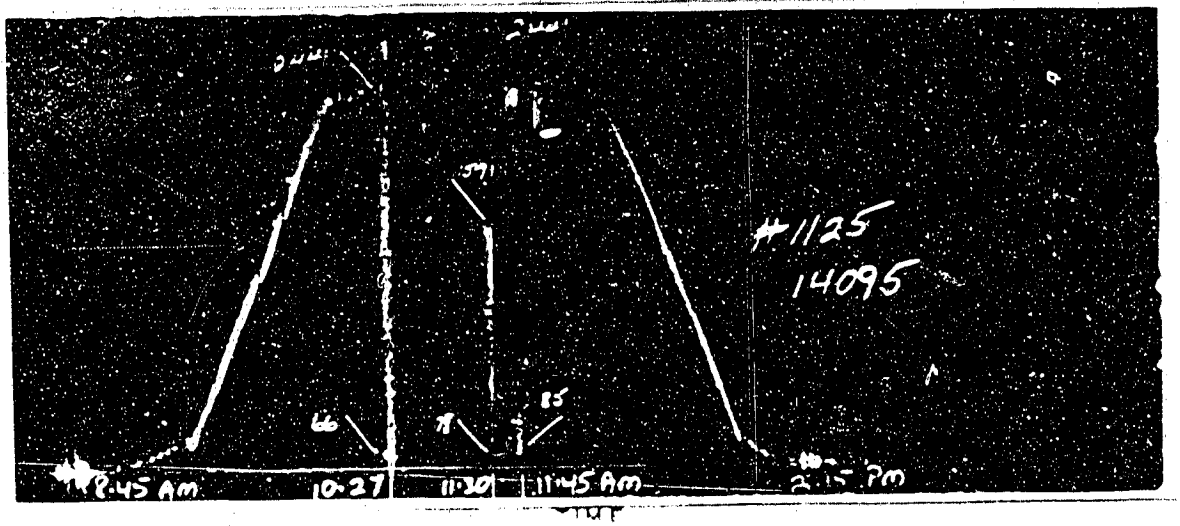


TIME

TIME

T.G. EASTLAND — testers ltd.

R.R. No. 6, NORTH EDMONTON, ALBERTA

TEST No. Four
Date March 27, 1969
Ticket No. 1125

DRILL STEM TEST PRESSURE REPORT

WELL NAME HB CAMERON RIVER F-51 L.S.D. F-51

INTERVAL 4873' - 4963' FORMATION B.H. TEMP. °F 124

GAUGE No. 14095 DEPTH OF ELEMENT 4896' CALIBRATION EQUATION Pc 1552.06 - 0.83

	Time	T Mins.	Pressure psig
Initial Hydrostatic			2441
Initial Shut-in	10:36 am	0	272
	10:42	6	640
	10:48	12	1006
	10:54	18	1256
	11:00	24	1385
	11:06	30	1469
	11:12	36	1519
	11:18	42	1545
	11:24	48	1561
	11:30am	54	1571
Flow Pressure		F1	78
		F2	85
Final Shut-in			---
Final Hydrostatic			2441

T.G. EASTLAND — testers ltd.

R.R. No. 6, NORTH EDMONTON, ALBERTA

Test No. [illegible]
Date March 31, 19[illegible]
Ticket No. 1401

SERVICE REPORT

OPERATOR Hudson's Bay Oil & Gas Co. Ltd.
CONTRACTOR & RIG No. Brinkerhoff Rig #39-B
WELL NAME & NO. NE Cameron River F-51
AREA Wild Cat LSD F-51
TOOL PUSH D. Syncmiller
WELL REPRESENTATIVE W. Walker

Date & time requested
Call Arr.
Start. in 12:15pm On Bott. 2:15pm
Pull Loose 3:51pm Out Hole 6:10pm

TESTING DATA

Zone Tested Muskeg
Interval 4560' to 4716' T.D. 5062'
Int. Casing: Size 13⅜" wgt. grade 1028'
Feet of Main Hole 3062' Diam 8⅝"
Feet of Rat Hole none Diam.
Type of Test Dual Straddle by-pass
Rubbers: No. Four O.D. 7¾"
Type of Packers Conv.
Drill Pipe: Size - Thread 4½FH
Drill Collars: I.D. 2 7/8" O.D. 6"
No. Ft Collars 60 D.P. 4515'
Ft. & Type Cushion none
Was Tool Chased no No. Ft.
Weight Set on Packers 35,000
Did Fluid Drop no No. Ft.
Describe

Preset 3 min. Tool opened 2:18 a.m./p.m.
Preflow 3 min. Init. Shut-in 60 min.
Flowed 30 min. Final Shut-in - min.
Pull Loose 80,000 lbs. Swabbing? no
Drilling Fluid Type gel chem
Visc. 80 Wgt. 9.6 W.L. 7.5 F.C. 2/32

DESCRIPTION OF BLOW DURING TEST

Weak initial blow, dead in one minute. Very weak air blow on valve open period dead almost immediately.

Blow Measured with: Pitot Tube ☐
Fluid Used: Water ☐ Mercury ☐ Side Static ☐
Flow Prover ☐ Gauge ☐ Size lbs.

Time	Choke	Reading	MCF/Day

FLUID RECOVERY

Pipe Collars 30' Total 30'
Mud 30' Oil Water
Describe Fluids: 30' mud.

Sampler Dr. ...d: On Location ☐ Laboratory ☐
Sampler Press. lbs.
Bottom Hole Temp. °F
Salinity of Recovery P.P.M
Salinity of Mud Filtrate P.P.M.

TOOL SEQUENCE & EQUIP. USED

Tools	Length	O.D.
Floor Manifold		
Meter Run		
Safety Head		
Pump Out Sub		
Tight Hole Tool		
Test Assembly	10.95	
Sampler	7.30	
Jars	2.00	
Safety Joint	3.00	
Straddle By-pass	5.70	
Packer	5.70	
Packer	55.05	
TOTAL		
Dole pir. c/o	.75	
4½FH C/O	1.90	
4½H90 C/O	1.70	
B.C.	3.30	
B.C.	3.45	
Perf.	45.60	
Bulnose	1.75	
	98.10	

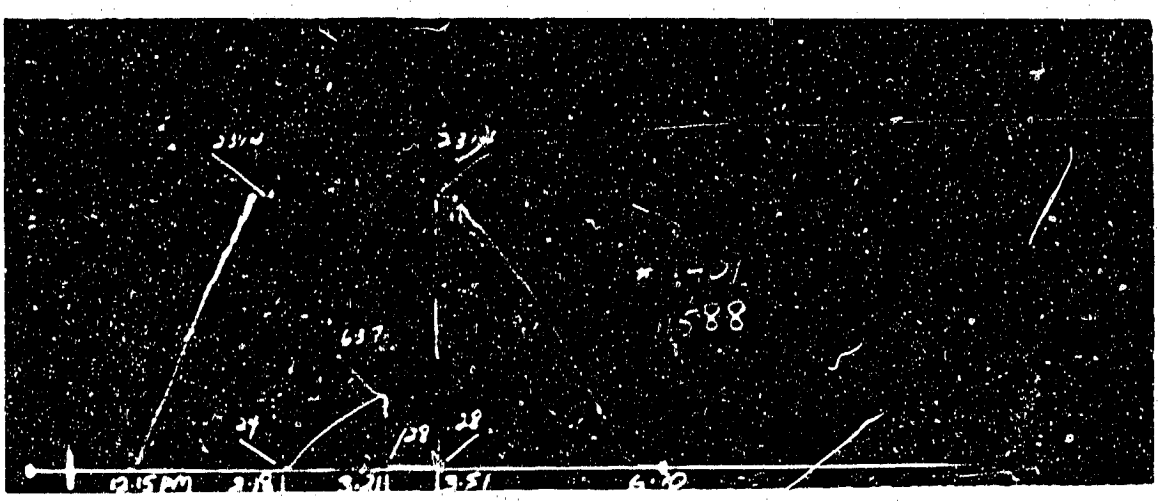
FIELD	CORRECTED READINGS		
Pressure Element No.	11588	11588	14076
Element Capacity (psig)	4000	4000	3000
Clock Speed (Hrs.)	12	12	12
Depth of Bellows	4564'	4564'	4570'
Position (Inside - Outside)	Inside		
Initial Hydrostatic	2368	2314	2324
Preflow Pressure	25	24	26
Initial Shut-In	600	637	656
First Flow—Choke Size 1/2"	25	28	27
Second Shut-In			
Second Flow—Choke Size 1/2"	25	28	27
Final Shut-In	---	---	---
Final Hydrostatic	2304	2314	2333

TOTAL	98.10
1. Cross-over sub to bottom of top rubbers	38.70
2. Bottom of top rubbers to top of lower	130.38
3. Top of lower to bottom of lower rubbers	6.60
4. Bottom of lower rubbers to Total Depth	339.37
5. Bottom of top rubbers to Total Depth	515.05
Total overall length of test assembly	
(Delete measurement No. 5 if Straddle)	
(Delete No. 2 - 3 - 4 if Std. bottom hole)	
Total amount of customer's anchor	420.60
Damaged Rubbers and Sizes	none
No. Samplers Retained	No. of Reports Required 5

REMARKS:

APPROVED BY W. Walker TEST: Successful ☒ Mis-Run OUR OPERATOR Albert Arndt.

T.G. EASTLAND testers ltd.



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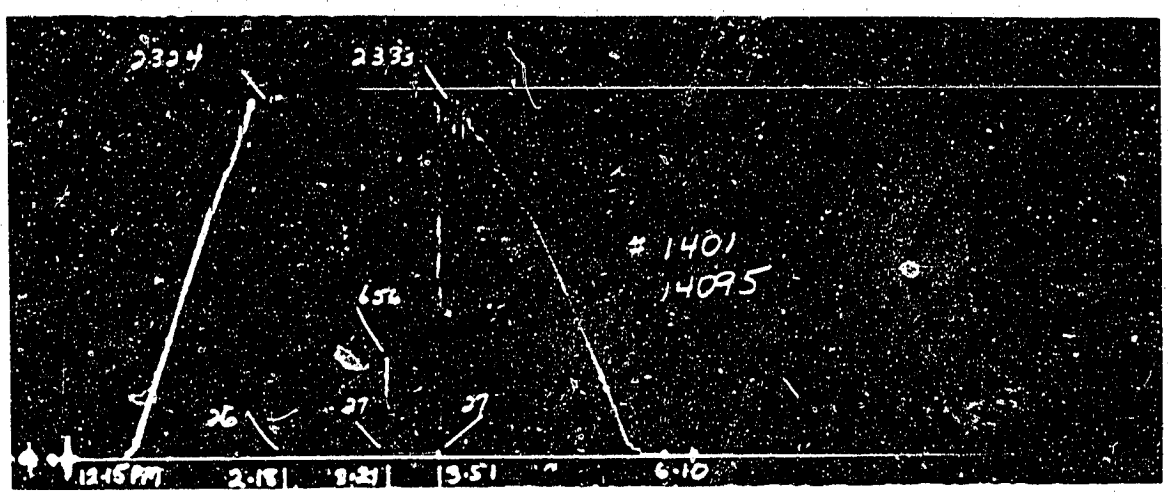


TIME

T.G. EASTLAND — testers ltd.

R.R. No. 6, NORTH EDMONTON, ALBERTA

TEST No. 1/tvc
Date March 31, 1969
Ticket No. 1481

DRILL STEM TEST PRESSURE REPORT

WELL NAME HB CAMERON RIVER F-51 L.S.D. F-51

INTERVAL 4586' - 4716' FORMATION B.H. TEMP. °F

GAUGE No. 14095 DEPTH OF ELEMENT 4570' CALIBRATION EQUATION Pc 1552.06 - 0.83

	Time	T Mins.	Pressure psig
Initial Hydrostatic			2324
Initial Shut-in	2:27	0	119
	2:33	6	210
	2:39	12	294
	2:45	18	358
	2:51	24	417
	2:57	30	477
	3:03	36	524
	3:09	42	572
	3:15	48	611
	3:21	54	656
Flow Pressure		F1	27
		F2	27
Final Shut-in			---
Final Hydrostatic			2333

T.G. EASTLAND — testers ltd.

R.R. No. 6, NORTH EDMONTON, ALBERTA

Test No. [illegible]
Date April 1, 1965
Ticket No. 1402

SERVICE REPORT

OPERATOR Hudson's Bay Oil & Gas Co. Ltd.
CONTRACTOR & RIG No. Brinkerhoff Rig #39-H
WELL NAME HB Cameron River F-51
AREA Wildcat L.S.D. F-51
TOOL PUSH D. Syndmiller
WELL REPRESENTATIVE W. Walker

Date & time requested
Call Arr.
Start in 11:10pm On Bott. 12:43am
Pull Loose 4:05am Out Hole 6:15

TESTING DATA

Zone Tested Slave Point
Interval 4235' to 4254' T.D. 5062'
Int. Casing: Size 13⅜" wgt. Grade 1028'
Feet of Main Hole 5062' Diam 8¾"
Feet of Rat Hole None Diam
Type of Test Dual Straddle
Rubbers: No. Four O.D. 7¼"
Type of Packers Conv.
Drill Pipe: Size - Thread 4½FH
Drill Collars: I.D. 2 7/8" O.D. 6"
No. Ft. Collars 6060 D.P. 4200
Ft. & Type Cushion none
Was Tool Chased no No. Ft.
Weight Set on Packers 35,000
Did Fluid Drop no No. Ft.
Describe

Preset 3 min. Tool opened 12:47 a.m./p.m.
Preflow 3 min. Init. Shut-in 15 min.
Flowed 150 min. Final Shut-in 30 min.
Pull Loose 70,000 lbs. Swabbing? no
Drilling Fluid Type gel chem
Visc. 80 Wgt. 9.6 W.L. 7.5 F.C. 2/32

DESCRIPTION OF BLOW DURING TEST

Strong initial blow, gas to surface in 7 min. Strong gas blow on valve open period. Mud to surface in 90 min. salt water in 100 min.

Blow Measured with: Pitot Tube ☐ .....
Fluid Used: Water ☐ Mercury ☐ Side Static ☐
Flow Prover ☐ Gauge ☐ Size ..... lbs.

Time	Choke	Reading	MCF/Day
15min	¼"	4.7	295
30min	¼"	6.1	340
45min	¼"	6.4	358
60min	¼"	6.8	362
75min	¼"	5.8	330
90min	¼"	5.8	330

FLUID RECOVERY

Pipe ..... Collars ..... Total 670'
Mud ..... Oil ..... Water 670'
Describe Fluids: 670' salt water.

Sampler Drained: On Location ☐ Laboratory ☐
Sampler Press. ..... lbs.
Bottom Hole Temp. ..... °F
Salinity of Recovery ..... P.P.M.
Salinity of Mud Filtrate ..... P.P.M.

TOOL SEQUENCE & EQUIP. USED

Tools	Length	O.D.
Floor Manifold		
Meter Run		
Safety Head		
Pump Out Sub	.95	
Tight Hole Tool		
Test Assembly	10.95	
Sampler	7.30	
Jars	2.00	
Safety Joint	2.00	
Straddle By-pass	5.70	
Packer	5.70	
Packer	34.60	
TOTAL	.75	
Dble pin c/o	1.90	
4½FH c/o	1.70	
4½H90 c/o	6.30	
B.C.	0.45	
B.C.	35.75	
Perf.	1.75	
Bulnose	3.50	
Travel subs		
TOTAL	72.70	

FIELD	CORRECTED READINGS	
Pressure Element No. 11586	11586	14093
Element Capacity (psig) 4000	4000	3000
Clock Speed (Hrs.) 12	12	12
Depth of Bellows 4238'	4238'	4244
Position (Inside - Outside) Inside		
Initial Hydrostatic 2176	2115	2135
Preflow Pressure 102	78	75
Initial Shut-In 1344	1316	1352
First Flow—Choke Size 128	114	112
Second Shut-In		
Second Flow—Choke Size 320	311	317
Final Shut-In 1600	1573	1585
Final Hydrostatic 2112	2111	2130

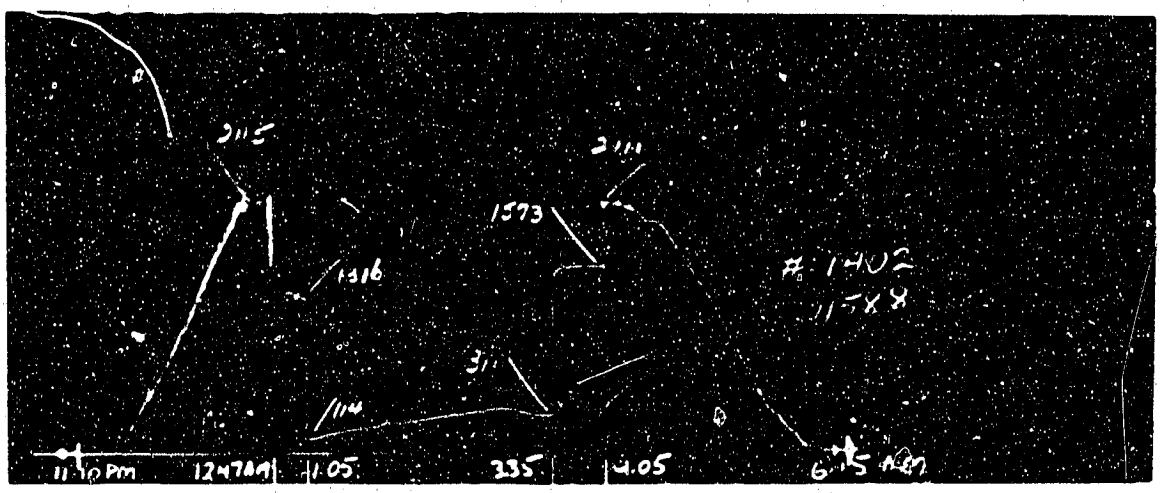
1. Cross-over sub to bottom of ⅛ rubbers	41.15
2. Bottom of top rubbers to top of lower	19.30
3. Top of lower to bottom of lower rubbers	6.60
4. Bottom of lower rubbers to Total Depth	801.32
5. Bottom of top rubbers to Total Depth	868.37
Total overall length of test assembly	

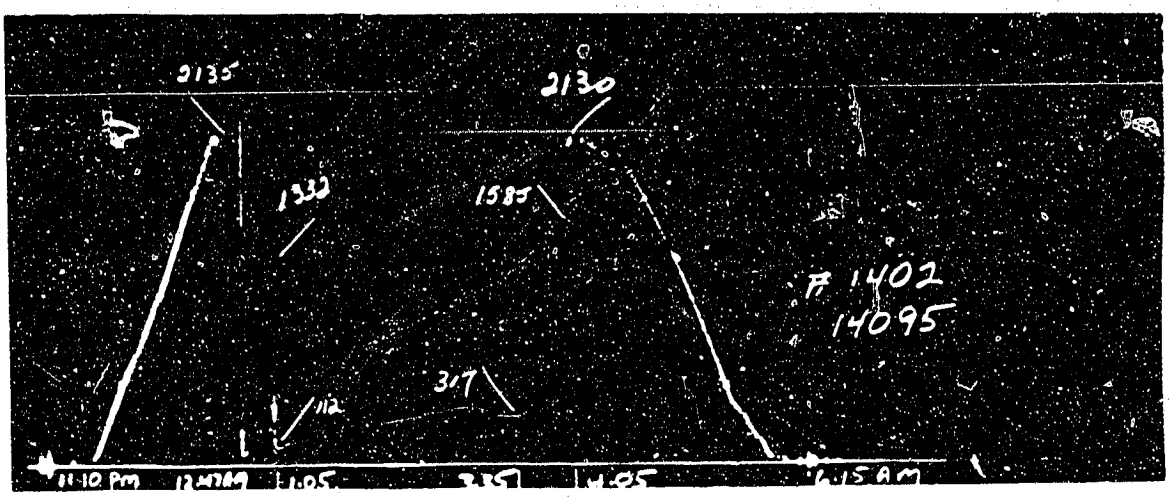
(Delete measurement No. 5 if Straddle)
(Delete No. 2 - 3 - 4 if Std. bottom hole)
Total amount of customer's anchor 770.22
Damaged Rubbers and Sizes none
No. Samplers Retained ..... No. of Reports Required 5

REMARKS:

APPROVED BY W. Walker TEST: Successful — Misrun OUR OPERATOR Albert Arndt.

T.G. EASTLAND testers ltd.





T.G. EASTLAND — testers ltd.

R.R. No. 4, NORTH EDMONTON, ALBERTA

TEST No. Six
Date April 1, 1969
Ticket No. 1402

DRILL STEM TEST PRESSURE REPORT

WELL NAME HB CAMERON RIVER F-51 L.S.D. F-51

INTERVAL 4235' - 4254' FORMATION _____ B.H. TEMP. °F _____

GAUGE No. 14095 DEPTH OF ELEMENT 4244' CALIBRATION EQUATION Pc 1552.06 - 0.83

	Time	T Mins.	Pressure psig
Initial Hydrostatic			2135
Initial Shut-in			1332
Flow Pressure		F1	112
		F2	3[illegible]7
Final Shut-in	3:41	0	1554
	3:47	6	1576
	3:53	12	1579
	3:59	18	1582
	4:05pm	24	1585
Final Hydrostatic			2130

CORE LABORATORIES – CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

GAS ANALYSIS

Company Hudson's Bay Oil and Gas Company Limited — Page 1 of 1

Well Mt. Cameron River F-51 — File [illegible]

Field Wildcat, Cameron River, N.W.T. — Analyst PS

Location 60° 10' 117° 15' — Elevation: K.B. 2410 Grd. ____

Formation Slave Point — Depth 4235' - 4254'

Sampled from DST # 6 Bottle LC56 Flare Line — by A. Arndt/Eastland Testers

Sampling pressure 50 psig — Sampling temp. ____ °F — Ambient temp. ____ °F

Date sampled April 1/69 — Date received April 3/69 — Date analyzed April 3/69

Container pressure 50 — Mud ____ — Water cushion ____

Recovery or flowrate: Gas 362 MCFD, 670' salt water

COMPONENT	MOLE %	IMP. GPM @ 14.65 psia and 60° F
Hydrogen	Trace	
Helium	0.06	
Nitrogen	2.03	
Carbon Dioxide	0.01	
Hydrogen Sulphide	Trace	
Methane	94.72	
Ethane	1.60	
Propane	0.79	0.180
Iso Butane	0.16	0.043
Normal Butane	0.25	0.065
Iso Pentane	0.10	0.030
Normal Pentane	0.08	0.024
Hexanes	0.08	0.027
Heptanes Plus	0.12	0.045
Total	100.00	0.414
Pentanes Plus		0.126

SPECIFIC GRAVITY

Calculated 0.592 Measured –

GROSS B.T.U. per SCF 1032.9

Calculated @ 14.65 psia, 60°F, moisture and acid - gas free.

VAPOR PRESSURE of PENTANES PLUS

(calculated) 10.3 psia @ 100°F

Critical Pressure 667.9 psia

Critical Temperature 351.1 °R

Remarks H_2S by Kitagawa 2.5 ppm

CORE LABORATORIES – CANADA LTD.
PETROLEUM RESERVOIR ENGINEERING

GAS ANALYSIS

Company Hudson's Bay Oil and Gas Company Limited — Page 1 of 1

Well HB Cameron River E-61 — File CCH-1-14'8

Field Wildcat, Cameron River, N.W.T. — Analyst PS

Location 60° 10' 117° 15' — Elevation: K.B. 2410' Grd.

Formation Bistcho — Depth 4490' - 4461'

Sampled from DST # 2 Bottle 'C48' — by A. Arndt/Eastland Testers

Sampling pressure 65 psig — Sampling temp. °F — Ambient temp. °F

Date sampled March 21/69 — Date received April 3/69 — Date analyzed April 3/69

Container pressure 65 — Mud — Water cushion

Recovery or flowrate: GTS 3 min; 857 MCF/d, FEC, 240' GM, 170' MCM

COMPONENT	MOLE %	IMP. GPM @ 14.65 psia and 60°F
Hydrogen	Trace	
Helium	0.03	
Nitrogen	1.44	
Carbon Dioxide	1.45	
Hydrogen Sulphide	Trace	
Methane	90.88	
Ethane	2.90	
Propane	1.40	0.319
Iso Butane	0.23	0.062
Normal Butane	0.46	0.120
Iso Pentane	0.13	0.039
Normal Pentane	0.14	0.042
Hexanes	0.12	0.041
Heptanes Plus	0.82	0.308
Total	100.00	0.931
Pentanes Plus		0.430

SPECIFIC GRAVITY

Calculated 0.644 Measured –

GROSS B.T.U. per SCF 1102.2

Calculated @ 14.65 psia, 60°F, moisture and acid - gas free.

VAPOR PRESSURE of PENTANES PLUS

(calculated) 5.6 psia @ 100°F

Critical Pressure 672.1 psia

Critical Temperature 366.0 °R

Remarks H_2S 1 ppm

Recovered 2 ccs of condensate from bottle Ic 48

CORE LABORATORIES — CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

GAS ANALYSIS

Company Hudson's Bay Oil and Gas Company Limited — Page 1 of 1

Well HB Cameron River E-51 — File CC-1-1457

Field Wildcat, N.W.T. — Analyst ES

Location 60° 10' 117° 15' — Elevation: K.B. 2410' Grd. ____

Formation Slave Pt. — Depth 4213.0' - 4280.0'

Sampled from DST # 1, Bottle LC3 — by A. Arndt / Eastland Testers

Sampling pressure 90 psig — Sampling temp. ____ °F — Ambient temp. ____ °F

Date sampled March 19/69 — Date received April 3/69 — Date analyzed April 3/69

Container pressure 90 — Mud ____ — Water cushion ____

Recovery or flowrate: G.T.S. 2 min. 2800-3710 MCF/D. MXW Spray 30 min. Rec. 290 X W

COMPONENT	MOLE %	IMP. GPM @ 14.65 psia and 60° F
Hydrogen	0.01	
Helium	0.05	
Nitrogen	1.91	
Carbon Dioxide	0.18	
Hydrogen Sulphide	Trace	
Methane	94.66	
Ethane	1.58	
Propane	0.77	0.175
Iso Butane	0.14	0.038
Normal Butane	0.25	0.065
Iso Pentane	0.10	0.030
Normal Pentane	0.08	0.024
Hexanes	0.12	0.041
Heptanes Plus	0.15	0.056
Total	100.00	0.429
Pentanes Plus		0.151

SPECIFIC GRAVITY

Calculated 0.590 Measured ____

GROSS B.T.U. per SCF 1036.1

Calculated @ 14.65 psia, 60°F, moisture and acid - gas free.

VAPOR PRESSURE of PENTANES PLUS

(calculated) 9.3 psia @ 100°F

Critical Pressure 668.5 psia

Critical Temperature 351.7 °R

Remarks ____

CORE LABORATORIES – CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

OIL ANALYSIS

Company Hudson's Bay Oil and Gas Company Limited — Page 1 of 1

Well HB Cameron River F-51 — File CPH-2-4598-1

Field Wildcat, Cameron River Area, Northwest Territories — Analysis PK

Location 60° 10', 117° 15' — Elevation: K.B. — Grd.

Formation Keg River — Depth 4790 – 4875'

Sampled from DST #3 — by A. Arndt

Date Sampled March 25, 1969 — Date Received April 3, 1969 — Date Analyzed April 8, 1969

DST Recovery 280'

API Gravity @ 60°F 27.4

Sp. Gravity @ 60°F 0.8907

Sulphur, weight % 1.83

Pour Point +40°F

Viscosity	S.U.S	cp
@ 70 °F	127.16	23.81
@ 90 °F	82.78	14.41
@ 110 °F	63.48	9.88

Salt content _____ lbs/1000 bbl oil

BS	&	W
0.1	%	64.0 % (of oil received)
	%	24.0 % (of oil analyzed)

ASTM DISTILLATION

% Recovery	Temperature °F @ 671 mmHg.	
Initial Boiling Point	140	
5	183	
10	198	
15	203	24.0% H_2O
20	205	recovered
25	206	
30	208	
35	210	
40	435	
45	480	
50	560	
55	604	
60	663	
Final Boiling Point	700	

64.0 % Recovery
35.0 % Residue
1.0 % Distillation loss

Remarks 24.0% water could not be de-emulsified from the oil.

Insufficient oil for a salt content.

CORE LABORATORIES – CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

WATER ANALYSIS

File CDH-2-4560-1

Company Hudson's Bay Oil and Gas Company Limited

Well HF Cameron River F-51 K.B. 2410' Grd. —

Location 60° 10', 117° 15' Field Wildcat, Cameron River Area Province Northwest Territories

Formation Slave Point Interval 4235' – 4254'

Sampled from DST #6 (240' Above Tool) by —

Date sampled April 1, 1969 Date analyzed April 7, 1969 Analyst J.C.

Recovery 670' Salt Water

— Mud type — Water cushion —

Resistivity 0.120 Ohm-meters @ 65 °F

Specific gravity 1.0471 @ 60°F

pH 7.1 H_2S Absent

Refractive Index 1.345 @ 65°F

Total Solids:

Calculated 64,664 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
18,775	4,113	1,247	Pres.	Abs.	-	-	38,355	634	1,540	-	-

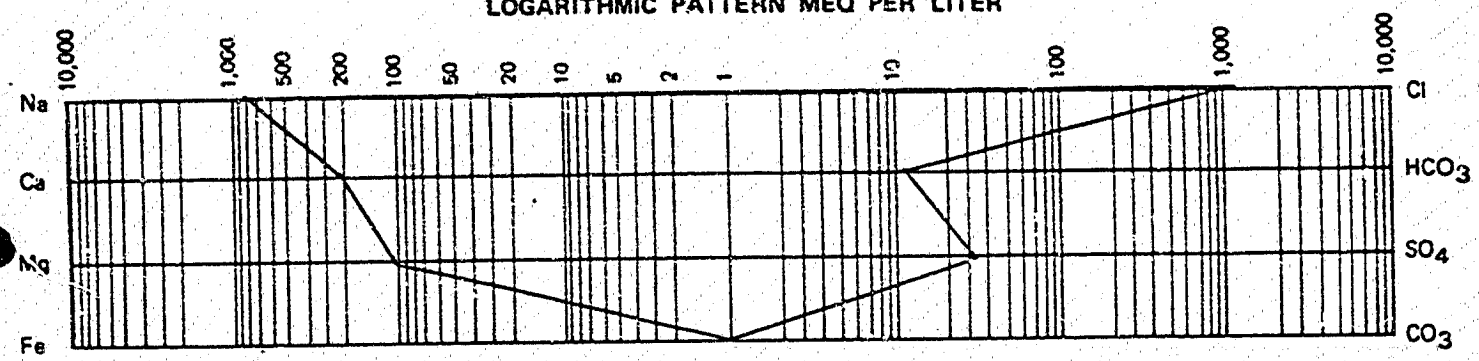
PER CENT CALCULATED SOLIDS

29.0	6.4	1.9	Pres.	Abs.	-	-	59.3	1.0	2.4	-	-

MEQ PER LITER

816.3	205.2	102.5	Pres.	Abs.	-	-	1081.6	10.4	.0	-	-

LOGARITHMIC PATTERN MEQ PER LITER



Total Iron – 42 mg/liter

CORE LABORATORIES-CANADA LTD.
CALGARY ALBERTA

ANALYSIS "Water"

Company Hudson's Bay Oil and Gas Company Limited Page 1 of 2

Well IOD Cameron River F-31 File CGL-2-4599-1/2

Field Wildcat, Cameron River Area, N.W.T. Date April 11, 1969

Location 60° 10', 117° 15' Analyst J.C.

SAMPLING CONDITIONS

Formation Keg River Depths 4873'-4963'

Sampled from DST #4 (60' Above Tool) By A. Arndt Of

Date Sampled Mar. 27/69 Date Received Apr. 3 Date Analyzed Apr. 7/69

Pressure psig. Temperature °F Atmospheric Temp. °F

DST Recovery or Flowrate 120' Fluid

Chloride - 104 mg/liter

Resistivity - 0.908 Ohm-meters @ 71°F

CORE LABORATORIES – CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

WATER ANALYSIS

File CDH-2-4559-2

Company Hudson's Bay Oil and Gas Company Limited

Well Ft. Cameron River F-51 K.B. 2410' Grd.

Location 60° 10', 117° 15' Field Wildcat, Cameron River Area Province N.W.T.

Formation Keg River Interval 4873'-4963'

Sampled from DST #4 (Above Tool) by A. Arndt

Date sampled Mar. 27/69 Date analyzed Apr. 7/69 Analyst J.C.

Recovery 120' Fluid

Mud type Water cushion

Resistivity 0.907 Ohm-meters @ 70 °F

Specific gravity 1.0100 @ 60°F

pH 11.15 H_2S Absent

Refractive Index 1.336 @ 70°F

Total Solids:

Calculated 13,189 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
3,878	416	5	Pres.	Abs.	-	-	87	83	8,360	360	-

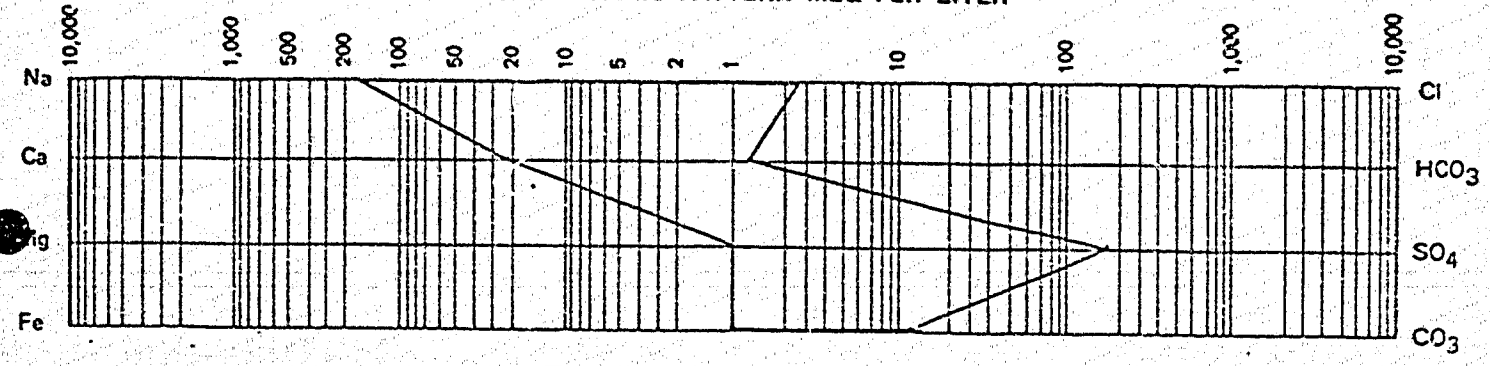
PER CENT CALCULATED SOLIDS

29.4	3.2	Trace	Pres.	Abs.	-	-	0.7	0.6	63.4	2.7	-

MEQ PER LITER

168.6	20.8	0.4	Pres.	Abs.	-	-	2.5	1.4	173.9	12.0	-

LOGARITHMIC PATTERN MEQ PER LITER



Total Iron – 184 mg/liter

CORE LABORATORIES – CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

WATER ANALYSIS

File CDH-2-4558-1

Company Hudson's Bay Oil and Gas Company Limited

Well HB Cameron River F-51 K.B. 2410' Grd.

Location 60° 10', 117° 15' Field Wildcat, Cameron River Area Province N.W.T.

Formation Keg River Interval 4790'-4875'

Sampled from DST #3 (230' Above Tool) by A. Arndt

Date sampled Mar. 25/69 Date analyzed Apr. 7/69 Analyst A.M.

Recovery 280' Fluid

Mud type Water cushion

Resistivity 0.699 Ohm-meters @ 70 °F

Specific gravity 1.0126 @ 60°F

pH 8.1 H_2S Absent

Refractive Index 1.338 @ 70°F

Total Solids:

Calculated 14,672 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
4,027	578	45	Pres.	Abs.	-	-	569	1,137	8,316	-	-

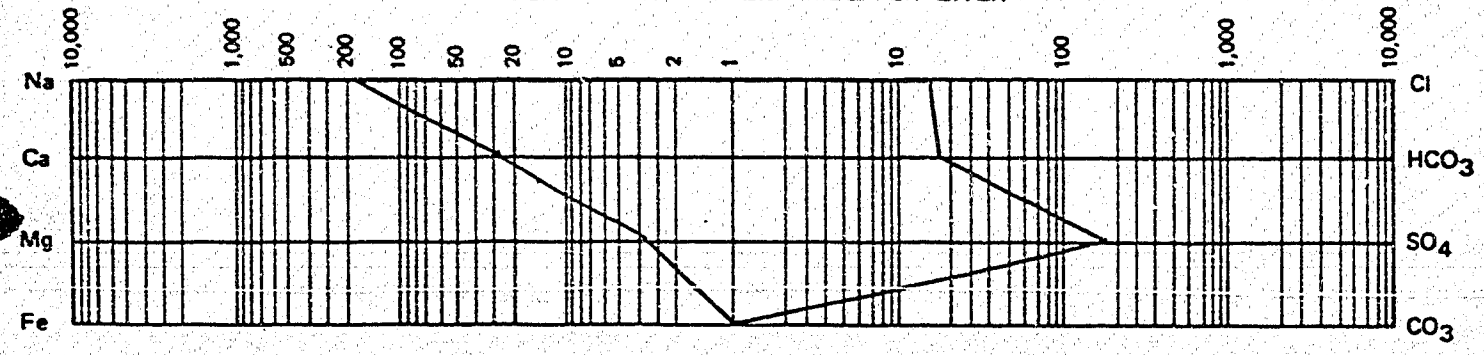
PER CENT CALCULATED SOLIDS

27.4	3.9	0.3	Pres.	Abs.	-	-	3.9	7.8	56.7	-	-

MEQ PER LITER

175.1	28.8	3.7	Pres.	Abs.	-	-	16.0	18.6	173.0	-	-

LOGARITHMIC PATTERN MEQ PER LITER



Total Iron - 28 mg/liter

CORE LABORATORIES – CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

WATER ANALYSIS

File CBH-2-4557-1

Company Hudson's Bay Oil and Gas Company Limited

Well NR Cameron River F-51 K.B. 2410' Grd. ____

Location 60° 10', 117° 15' Field Wildcat, Cameron River Area Province Northwest Territories

Formation Pistcho Interval 4400' – 4465'

Sampled from DST #2 (Above Tool) by ____

Date sampled March 21, 1969 Date analyzed April 7, 1969 Analyst J.C.

Recovery 240' Gas-Cut Mud, 170' Mud-Cut Salt Water

____ Mud type ____ Water cushion ____

Resistivity 0.196 Ohm-meters @ 69 °F

Specific gravity 1.0270 @ 80°F

pH 7.4 H_2S Absent

Refractive Index 1.340 @ 69°F

Total Solids:

Calculated 38,235 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
11,656	1,993	514	Pres.	Abs.	–	–	20,479	834	2,759	–	–

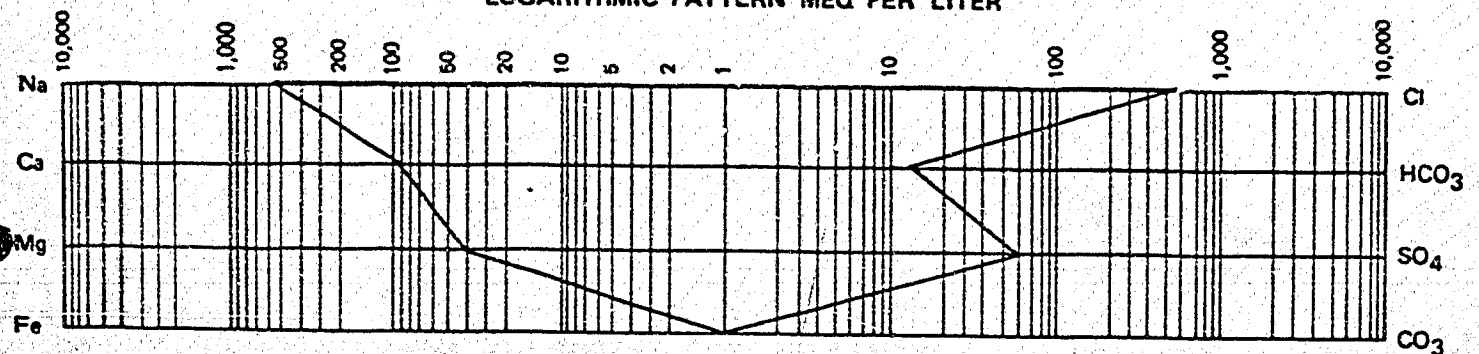
PER CENT CALCULATED SOLIDS

30.5	5.2	1.3	Pres.	Abs.	–	–	53.6	2.2	7.2	–	–

MEQ PER LITER

506.8	99.5	42.3	Pres.	Abs.	–	–	577.5	13.7	57.4	–	–

LOGARITHMIC PATTERN MEQ PER LITER



Total Iron – 347 mg/liter

CORE LABORATORIES – CANADA LTD.

PETROLEUM RESERVOIR ENGINEERING

WATER ANALYSIS

File CDH-2-4556-1

Company Hudson's Bay Oil and Gas Company Limited

Well HD Cameron River F-51 K.B. 2410' Grd. —

Location 60° 10', 117° 15' Field Wildcat, Cameron River Area Province N.W.T.

Formation Slave Point Interval 4213'-4280'

Sampled from DST #1 (75 minutes after valve) (opened at surface) by A. Arndt

Date sampled Mar. 19/69 Date analyzed Apr. 7/69 Analyst A.M.

Recovery Gas to surface in 2 mins. @ 2800 - 3710 Mcf/d. Muddy Salt Water Spray - 30 mins. Recovered 290' Salt Water.

Mud type — Water cushion —

Resistivity 0.120 Ohm-meters @ 65 °F

Specific gravity 1.0473 @ 60°F

pH 7.03 H_2S Absent

Refractive Index 1.345 @ 65°F

Total Solids:

Calculated 64,877 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
18,998	3,944	1,254	Pres.	Abs.	-	-	38,181	630	1,870	-	-

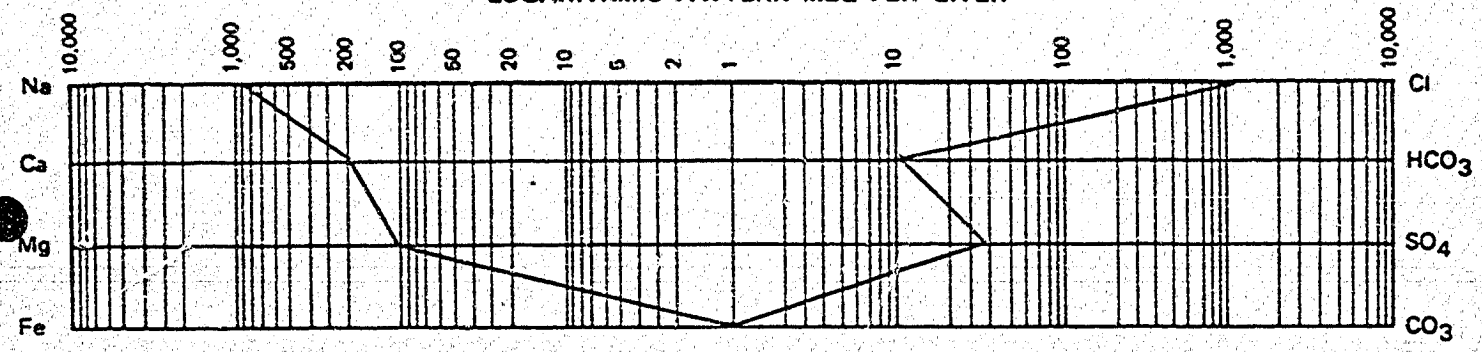
PER CENT CALCULATED SOLIDS

29.3	6.1	1.9	Pres.	Abs.	-	-	58.8	1.0	2.9	-	-

MEQ PER LITER

826.0	196.8	103.1	Pres.	Abs.	-	-	1076.7	10.3	38.9	-	-

LOGARITHMIC PATTERN MEQ PER LITER



Total Iron - 148 mg/liter

Dept of Energy

CORE ANALYSIS REPORT

HUDSON'S BAY OIL AND GAS COMPANY LIMITED

HB CAMERON HILLS F-51

CAMERON HILLS AREA

NORTHWEST TERRITORIES

CORE LABORATORIES · Canada Ltd.

Petroleum Reservoir Engineering

CALGARY · EDMONTON · REGINA

CODE KEY FOR LITHOLOGICAL DESCRIPTION AND MISCELLANEOUS DATA (cc 57 - 76)

COLUMN 57 - INTERVAL DESCRIPTION:

	CODE
MISSING CORED INTERVAL	1
BROKEN OR UNCONSOLIDATED	2
UNCORED OR DRILLED INTERVAL	3
NOT ANALYZED BUT NOT NECESSARILY DENSE	4
NOT ANALYZED	5
CHOKED	6

COLUMN 58 - PLUG TYPE:

	CODE
FULL DIAMETER	1
FULL DIAMETER - LESS THAN 2.5" DIAMETER	2
SMALL PLUGS - UNKNOWN OR MIXED ORIENTATIONS	3
CORES - ALL SIZES, NOT ORIENTED	4
HORIZONTAL TEST PLUGS	5
VERTICAL TEST PLUGS	6
UNCONSOLIDATED TECHNIQUE	7
COMBINED PLUGS - FULL DIAMETER PLUS CUBES, TEST PLUGS, ETC.	8
OR MEASUREMENTS ON SMALL HORIZONTAL PLUGS - ALL OTHER MEASUREMENTS ON FULL DIAMETER PLUGS	9
GLAZED SURFACE REMOVED - ALL MEASUREMENTS ON FULL DIAMETER PLUGS	0

COLUMN 59 - BASIC ROCK:

	CODE
SHALE	1
SANDSTONE	2
SILTSTONE	3
DOLOMITE	4
LIMESTONE	5
ANHYDRITE	6
GYPSUM	7
CONGLOMERATE	8
IRONSTONE	9

COLUMN 60 - MINERAL MODIFIER FOR BASIC ROCK TYPE:

	CODE
SHALY	1
SANDY	2
SILTY	3
DOLOMITIC	4
LIMEY	5
ANHYDRITIC	6
BENTONITIC	7
ARGILLACEOUS	8

COLUMN 61 - TEXTURE MODIFIER FOR BASIC ROCK TYPE:

	CODE
CHALKY	1
FOSSILIFEROUS	2
OOLITIC	3
EARTHY	4
SUGARY	5
CRYPTO-CRYSTALINE	6
DENSE	7

COLUMN 62, 63 AND 64 - ACCESSORY MINERAL:*

COLUMN 62 IS TO BE USED WHEN ONLY ONE ACCESSORY MINERAL IS PRESENT. COLUMNS 63 AND 64 MAY BE USED AS INDICATED IN THE FOOTNOTE.

	CODE
PYRITE	2
CHERT	3
PYROBITUMEN	4
BENTONITE	5
SAND, SILT OR CLAY	6
IRONSTONE	7
STYLOLITE	8
CALCITE	9
GLAUCONITE	10

COLUMN 65 - GRAIN SIZE:

	CODE
FINE - LESS THAN 0.25 MM DIA.	1
MEDIUM - 0.25 TO 0.50 MM DIA.	2
COARSE - 0.50 MM TO 1.0 MM DIA.	3
VERY COARSE - GREATER THAN 1.0 MM.	4

COLUMN 66 - CEMENTING AND HARDNESS:

	CODE
UNCONSOLIDATED	1
SOFT (EASILY CRUSHED)	2
MEDIUM	3
HARD	4
COMPLETE INFILLING	5

COLUMN 67 - SHALE CONTENT:

	CODE
SHALE - LESS THAN 5% SAND OR CARBONATE	1
CARBONATE OR SAND LENSES - APPROXIMATELY 5% TO 45% SAND OR CARBONATE	2
INTERBEDDED - APPROXIMATELY 50% SAND OR CARBONATE	3
SHALE LENSES - APPROXIMATELY 55% TO 95% SAND OR CARBONATE	4
SHALY PARTINGS OR BREAKS - OVER 95% SAND OR CARBONATE	5
MASSIVE SAND OR CARBONATE - NO VISIBLE SHALE	6

COLUMN 68 - COLOR:

	CODE
GREY	1
WHITE	2
BROWN	3
BLACK	4
SALT AND PEPPER	5
GREEN	6

COLUMN 69 - STAINING:

	CODE
NO STAINING	1
SPOTTY STAINING	2
LIGHT STAINING	3
MEDIUM STAINING	4
DARK STAINING	5
HEAVY STAINING	6
STAINED - DEGREE UNSPECIFIED	7

COLUMN 70 - POROSITY DESCRIPTION - VUGGY:

	CODE
NO VISIBLE VUGS	0
MICROSCOPIC TO PINPOINT VUGS	1
PINPOINT TO SMALL VUGS	2
SMALL TO MEDIUM (1/32" to 1/8") VUGS	3
MEDIUM TO LARGE (1/8" to 1/4") VUGS	4
MIXED SIZE VUGS - MICROSCOPIC TO SMALL	5
MIXED SIZE VUGS - PINPOINT TO MEDIUM	6
MIXED SIZE VUGS - SMALL TO LARGE	7
MIXED SIZE VUGS - PINPOINT TO LARGE	8
SCATTERED VUGS - ALL SIZES	9

COLUMN 71 - POROSITY DESCRIPTION - INTERGRANULAR:

	CODE
NO VISIBLE POROSITY	1
MICROSCOPIC TO PINPOINT PORES	2
PINPOINT TO SMALL PORES	3
SMALL TO LARGE PORES	4
MIXED SIZE PORES	5
VUGGY WITH SOME INTERGRANULAR POROSITY	6
MAINLY INTERGRANULAR POROSITY - PORE SIZE UNSPECIFIED	7

COLUMN 72 - FRACTURES:

	CODE
PREDOMINENTLY HORIZONTAL FRACTURES	1
PREDOMINENTLY VERTICAL FRACTURES	2
MIXED ORIENTATION FRACTURES	3

COLUMN 73 - STORING FLUID, CORING DATE TO ANALYSIS

	CODE
CORE EXPOSED TO AIR	1
CORE SEALED IN CANS IN CONTACT WITH DRILLING FLUID	2
CORE SEALED IN CANS IN CONTACT WITH CRUDE OIL	3
CORE SEALED IN CANS IN CONTACT WITH SPECIAL OIL OR PRESERVATION FLUID	4

COLUMN 74 - INTERPRETIVE VALUE POROSITY:

	CODE
NO MEASUREMENTS WERE TAKEN ON THIS PLUG BUT ASSUMED "THE SAME AS ANOTHER PLUG"	1
INTERPRITATIVE VALUE - FROM LOGS FOR POROSITY	2
INTERPRETATIVE VALUE - BY AVERAGING SIMILAR PLUGS	3
FIELD AVERAGE VALUE	4

COLUMN 75 - INTERPRETIVE VALUE - PERMEABILITY:

	CODE
NO MEASUREMENTS TAKEN ON THIS PLUG BUT ASSUMED AS BEING "THE SAME AS ANOTHER PLUG"	1
INTERPRETATED VALUE FOR PERMEABILITY - VALUE OBTAINED BY AVERAGING SIMILAR PLUGS	2
FIELD AVERAGE VALUE	3
PLUG ANALYZED BUT VALUE OF K_{MAX} LESS THAN VALUE SHOWN	4
PLUG ANALYZED BUT VALUE BETWEEN 0.001 and 0.01 MD AND VALUE SHOWN HAS BEEN ROUNDED TO VALUE SHOWN	5
PLUG ANALYZED BUT VALUE GREATER THAN VALUE SHOWN	6
FRACTURED, K_{90} USED FOR K_{MAX}	7

COLUMN 76 - INTERPRATIVE VALUES - OTHERS (INTERVAL, SATURATIONS, DENSITY):

	CODE
INTERPRETATED VALUE FOR INTERVAL (MBOC)	1
INTERPRETATED VALUE FOR OIL SATURATION	2
INTERPRETATED VALUE FOR WATER SATURATION	3
INTERPRETATED VALUE FOR OIL AND WATER SATUPATION	4
INTERPRETATED VALUE FOR OIL, WATER AND INTERVAL	5
INTERPRETATED VALUE FOR VALUES OTHER THAN POROSITY, PERMEABILITY, INTERVAL, OIL AND WATER SATURATION	6

* Each card column contains information unique to that column, with one exception. Columns 62, 63 and 64 describe accessory minerals present in the sample. The common accessory minerals are numbered 2 through 9. Up to 19 accessory minerals are possible within this system. In any one sample, one, two or three minerals in the range below 10 may be identified, or one mineral below 10 and one above 10 may be shown. If column 63 contains a one it will be assumed that this one belongs with column 64 to indicate a mineral in the range above 10.

CORE LABORATORIES-CANADA LTD.
EDMONTON ALBERTA

Company HUDSON'S BAY OIL AND GAS COMPANY LIMITED
Date Report APRIL 10, 1969
Field, Prov. CAMERON HILLS AREA, NORTHWEST TERRITORIES
Location 60.03' 15.43" 117 25' 31.61
Formation
Cores
Type of Anal.
Analysts
Remarks

Well Code (1 - 4)_ _ _ _
Catalogue No. (5) _
Depths (6 -10)_ _ _ _._
Well Name (11-46)HB CAMERON HILLS F-51
Survey System (47) _
Location Except (48-49)_ _
Location (50-61)_ _ _ _ _ _ _ _ _ _ _ _

Well Except (62) _
File No. (63) _
KB Elevation (64-68)_ _ _ _._
Deviated Hole DC (69-73)_ _ _ _._
Correlation DC (74-77)_ _ _._
Lab Code (78-79)_ _
Mud Code (80) _

Note: Do not punch decimals or special characters.
Bracketed figures refer to column numbers.

Plug	Interval Represented			Permeability (md)			Porosity	Density		Residual Saturations (%PV)		Plug Description	Formation Code
	Top	Base	Thick	Max	90°	Vertical	%	Bulk	Grain	Oil	Water		
No.	(5-10)	(11-16)	(17-19)	(20-26)	(27-33)	(34-40)	(41-43)	(44-46)	(47-49)	(50-52)	(53-55)	(56 - 76)	(77-80)
CORED INTERVAL 4903.0' - 4963.0'													
CORE No. 1 4903.0' - 4963.0' (Rec. 59.0') (13 BOXES)													
-	4903.0	4963.0	59.0	-	-	-	-	-	-			-,5,-,-,-,-,-,-,-,-,-,-,-,-,-,-,-,-,-,-,	
-	4963.0	4964.0	1.0	-	-	-	-	-	-			-,1,-,-,-,-,-,-,-,-,-,-,-,-,-,-,-,-,-,-,	

Hudson's Bay Oil and Gas Company Limited

DAILY DRILLERS REPORT

DATE March 16/69

WELL NAME	HBOC Cameron River		LDG. FLG. TO KB	CASING RECORD	DEPTH	SIZE	WEIGHT	GRADE	CEMENT	ACID	PLUG DOWN	COMPANY SUPERVISOR
CONTRACTOR	Brinkerhoff Bros	TYPE RIG T-20	K. B. ELEV.									
RIG NO.	39H	TOOL PUSHER D. Hayduk	GRD. ELEV.									

	12 P.M. TO 8 A.M.	8 A.M. TO 4 P.M.	4 P.M. TO 12 P.M.
DEPTH	START 2720 PROGRESS 188 END 2908	START 2908 PROGRESS 150 END 3058	START 3058 PROGRESS 277 END 3335

BIT RECORD

	NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN
12 P.M. TO 8 A.M.	9	10234	X16	8 3/4	2378.	2908	524	16½
8 A.M. TO 4 P.M.	2	10239	X16	8 3/4	2378	3058	679	26 3/4
4 P.M. TO 12 P.M.	2	10239	X16	8 3/4	2378	3335	956	34½.

DRILLING DATA

	LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT
12 P.M. TO 8 A.M.	5½.	700	80	25-30
8 A.M. TO 4 P.M.	5½	700	80	25
4 P.M. TO 12 P.M.	5½	750	80	25

DRILLING STRING

	SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.
12 P.M. TO 8 A.M.	4½.	2468.91		460.04	41.50	Sub 1.60
8 A.M. TO 4 P.M.	4½	2559.07		460.04	37.99	560 1.60
4 P.M. TO 12 P.M.	4½.	2838.77		460.04	34.54	Sub 1.60

MUD RECORD

	TYPE OF MUD	WEIGHT	VIS	WL	PH	FC
12 P.M. TO 8 A.M.						
ADDITIVES	Sapp. 30#					
8 A.M. TO 4 P.M.	10 AM	8.5	28			
	2 PM	8.5	28			
ADDITIVES						
4 P.M. TO 12 P.M.	5-00	8.5	28			
	11-00	8.5	28			
ADDITIVES						

CORING

	NO.	FROM	TO	RECOVERED	FORMATION
12 P.M. TO 8 A.M.					
8 A.M. TO 4 P.M.					
4 P.M. TO 12 P.M.					

SURVEY

	DEG. AT	FT.	DEG. AT	FT.	DEG. AT	FT.
12 P.M. TO 8 A.M.						
8 A.M. TO 4 P.M.	¾ DEG. AT 3031	FT.	DEG. AT	FT.	DEG. AT	FT.
4 P.M. TO 12 P.M.						

DRILL STEM TESTS

12 P.M. TO 8 A.M.	NO. INTERVAL FORMATION VALVE OPEN (MINS.) INITIAL SHUT-IN (MINS.) FINAL SHUT-IN (MINS.) GAS TO SURFACE MIN. @ MCF/D MAX. OIL TO SURFACE MIN. @ BBL/D MAX. RECOVERY: PRESSURES (PSI): HP FP ISIP FSIP
8 A.M. TO 4 P.M.	NO. INTERVAL FORMATION VALVE OPEN (MINS.) INITIAL SHUT-IN (MINS.) FINAL SHUT-IN (MINS.) GAS TO SURFACE MIN. @ MCF/D MAX. OIL TO SURFACE MIN. @ BBL/D MAX. RECOVERY: PRESSURES (PSI): HP FP ISIP FSIP
4 P.M. TO 12 P.M.	NO. INTERVAL FORMATION VALVE OPEN (MINS.) INITIAL SHUT-IN (MINS.) FINAL SHUT-IN (MINS.) GAS TO SURFACE MIN. @ MCF/D MAX. OIL TO SURFACE MIN. @ BBL/D MAX. RECOVERY: PRESSURES (PSI): HP FP ISIP FSIP

REMARKS INCLUDING: CEMENTING, LOGGING, PERFORATING, ACIDIZING, FRACTURING, PLUGS

	FROM	TO	DESCRIPTION OF WORK
12 P.M. TO 8 A.M.	12-00	12-15	Rig Serv. & U. BOP's
	12-15	8-00	Drlg. 8¾" Hole.
8 A.M. TO 4 P.M.	8-00	8-45	Rig Serv U B.O.P's
	8-45	2-45	Drlg 8¾ hole
	2-45	3-15	Survey
	3-15	4-00	Drlg 8¾ hole
4 P.M. TO 12 P.M.	4-00	4-15	Rig Serv. + UBOP's.
	4-15	12-00	Drlg. 8¾" Hole

12 P.M. TO 8 A.M.	DRILLER Dick A. Adkins NO. HELPERS 3
8 A.M. TO 4 P.M.	DRILLER Charles L. Fiorentelli NO. HELPERS 4
4 P.M. TO 12 P.M.	DRILLER Dale Woodley NO. HELPERS 3

S2-68AX4 REV. 5/61

Hudson's Bay Oil and Gas Company Limited — DAILY DRILLERS REPORT

DATE March 15/69

WELL NAME	HBOC. Cameron River	LDG. FLG. TO KB	
CONTRACTOR	Brinkerhoff Bros.	TYPE RIG T-20	K. B. ELEV.
RIG NO.	394.	TOOL PUSHER D. Sapplak	GRD. ELEV.

CASING RECORD

DEPTH	SIZE	WEIGHT	GRADE	CEMENT	ACID	PLUG DOWN

COMPANY SUPERVISOR (T&H)

	12 P.M. TO 8 A.M.	8 A.M. TO 4 P.M.	4 P.M. TO 12 P.M.
DEPTH	START 2160 PROGRESS 218. END 2378	START 2378 PROGRESS 15-3 END 2537	START 2537 PROGRESS 183 END 2720

BIT RECORD

	NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN
12 P.M. TO 8 A.M.	1	10219	X16	8 3/4	1028	2378	1350.	37 1/4
8 A.M. TO 4 P.M.	2	10239	X16	8 3/4	2378	2537	15-3	4
4 P.M. TO 12 P.M.	2	10239	X16	8 3/4	2378	2720	336	11 3/4

DRILLING DATA

	LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT
12 P.M. TO 8 A.M.	5 1/2	~~625~~	80	25-30
8 A.M. TO 4 P.M.	5 1/2	700	80	25-30
4 P.M. TO 12 P.M.	5 1/2	700	80	25-30.

DRILLING STRING

	SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.
12 P.M. TO 8 A.M.	4 1/2	1880.64		460.04	35.72.	Sub 1.60
8 A.M. TO 4 P.M.	4 1/2	2033.96		460.04	41.50	Sub 1.60
4 P.M. TO 12 P.M.	4 1/2			460.04		Sub 1.60

MUD RECORD

	TYPE OF MUD	WEIGHT	VIS	WL	PH	FC
12 P.M. TO 8 A.M.	1^00	8.4	28			
	6^30	8.4	28.			
8 A.M. TO 4 P.M.						
4 P.M. TO 12 P.M.	5^00	8.4	28			
	11^00	8.4	28.			

ADDITIVES: 12 P.M. TO 8 A.M. Sapp. 10#. | 8 A.M. TO 4 P.M. SAPP 8# | 4 P.M. TO 12 P.M. Sapp. 10#.

CORING

NO.	FROM	TO	RECOVERED	FORMATION

SURVEY

12 P.M. TO 8 A.M.	DEG. AT FT.	DEG. AT FT.	DEG. AT FT.
8 A.M. TO 4 P.M.	0 DEG. AT 2537 FT.	DEG. AT FT.	DEG. AT FT.
4 P.M. TO 12 P.M.	DEG. AT FT.	DEG. AT FT.	DEG. AT FT.

DRILL STEM TESTS

NO.	INTERVAL FORMATION
VALVE OPEN (MINS.)	INITIAL SHUT-IN (MINS.) FINAL SHUT-IN (MINS.)
GAS TO SURFACE	MIN. @ MCF/D MAX.
OIL TO SURFACE	MIN. @ BBL/D MAX.
RECOVERY:	
PRESSURES (PSI):	HP FP ISIP FSIP

REMARKS INCLUDING: CEMENTING, LOGGING, PERFORATING, ACIDIZING, FRACTURING, PLUGS

	FROM	TO	DESCRIPTION OF WORK
12 P.M. TO 8 A.M.	12^00	12^15	Rig Serv. & ∨ BOP's
	12^15	6^45	Drlg. 8 3/4" Hole.
	6^45	8^00.	Trip out For Bit.
8 A.M. TO 4 P.M.	8^00	8^15	Rig Serv ∨ B.O.P.'s
	8^15	11^45	Trip For Bit
	11^45	11^45	Clean 120' Fill
	11^45	3^45	Drlg 8 3/4 hole
	3^45	4^00	Survey
4 P.M. TO 12 P.M.	4^00	4^15	Rig Serv. & ∨ BOP's.
	4^15	12^00.	Drlg. 8 3/4" Hole.

DRILLER 12 M/T A Adams. NO. HELPERS 3. | DRILLER Charles L'Heureux NO. HELPERS 4 | DRILLER Dick Woolsey NO. HELPERS 3

52-88AX4
REV. 3/61 Δ

Hudson's Bay Oil and Gas Company Limited — DAILY DRILLERS REPORT

DATE March 14/69.

WELL NAME	H.B. Cameron River F-51	LDG. FLG. TO KB	
CONTRACTOR	Bricker Hoff Bros	K. B. ELEV.	
RIG NO.	34.	GRD. ELEV.	
		TYPE RIG	T-20
		TOOL PUSHER	D. Smyslouk

CASING RECORD

DEPTH	SIZE	WEIGHT	GRADE	CEMENT	ACID	PLUG DOWN	COMPANY SUPERVISOR
							K.E.W.

	12 P.M. TO 8 A.M.	8 A.M. TO 4 P.M.	4 P.M. TO 12 P.M.
DEPTH	START 1581 PROGRESS 319 END 1900	START 1900 PROGRESS 140 END 2040	START 2044 PROGRESS 116 END 2160

BIT RECORD

NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN
1	10219	X16	8 3/4	1028	1900	872	15½

NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN
1	10219	X16	8 3/4	1028	2040	1012	23¼

NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN
1	10219	X16	8 3/4	1028.	2160	1132	30¾

DRILLING DATA

LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT
5½	575	90	15M.

LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT
5½	575	80	25-30

LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT
4½	575	80	25-30

DRILLING STRING

SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.
4½	14 19.30		460.04	19.06	Sub 1.60

SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.
4½	13 41.63		460.04	36.71	Sub 1.60

SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.
4½	16 65.80		460.04	32.56	Sub 1.60

MUD RECORD

TYPE OF MUD	WEIGHT	VIS	WL	PH	FC

ADDITIVES Sapp 25#

TYPE OF MUD	WEIGHT	VIS	WL	PH	FC

ADDITIVES Sapp 10#

TYPE OF MUD	WEIGHT	VIS	WL	PH	FC
6⁰⁰	8.5	28			
11³⁰	8.4	28			

ADDITIVES Sapp. 15#

CORING

NO.	FROM	TO	RECOVERED	FORMATION

NO.	FROM	TO	RECOVERED	FORMATION

NO.	FROM	TO	RECOVERED	FORMATION

SURVEY

DEG. AT	FT.	DEG. AT	FT.	DEG. AT	FT.

DEG. AT	FT.	DEG. AT	FT.	DEG. AT	FT.

DEG. AT	FT.	DEG. AT	FT.	DEG. AT	FT.
½ DEG. AT 2044.					

DRILL STEM TESTS

NO.	INTERVAL	FORMATION
VALVE OPEN (MINS.)	INITIAL SHUT-IN (MINS.)	FINAL SHUT-IN (MINS.)
GAS TO SURFACE	MIN. @	MCF/D MAX.
OIL TO SURFACE	MIN. @	BBL/D MAX.
RECOVERY:		
PRESSURES (PSI):	HP FP ISIP FSIP	

NO.	INTERVAL	FORMATION
VALVE OPEN (MINS.)	INITIAL SHUT-IN (MINS.)	FINAL SHUT-IN (MINS.)
GAS TO SURFACE	MIN. @	MCF/D MAX.
OIL TO SURFACE	MIN. @	BBL/D MAX.
RECOVERY:		
PRESSURES (PSI):	HP FP ISIP FSIP	

NO.	INTERVAL	FORMATION
VALVE OPEN (MINS.)	INITIAL SHUT-IN (MINS.)	FINAL SHUT-IN (MINS.)
GAS TO SURFACE	MIN. @	MCF/D MAX.
OIL TO SURFACE	MIN. @	BBL/D MAX.
RECOVERY:		
PRESSURES (PSI):	HP FP ISIP FSIP	

REMARKS INCLUDING: CEMENTING, LOGGING, PERFOPATING, ACIDIZING, FRACTURING, PLUGS

FROM	TO	DESCRIPTION OF WORK
12⁰⁰	12¹⁵	Rig Serv. + ✓ BOP's.
12¹⁵	8⁰⁰	Drlg. 8¾" Hole

FROM	TO	DESCRIPTION OF WORK
8⁰⁰	8¹⁵	Rig Serv ✓ B.O.P's
8¹⁵	4⁰⁰	Drlg 8¾ hole

FROM	TO	DESCRIPTION OF WORK
4⁰⁰	4¹⁵	Rig Serv. + ✓ BOP's.
4¹⁵	4³⁰	Survey
4³⁰	12⁰⁰	Drlg 8¾" Hole.

DRILLER Neil A. Adams. NO. HELPERS 3

DRILLER Charles L. Hinchliffe NO. HELPERS 4

DRILLER Dale Woolley NO. HELPERS 3

52.8BAX4
REV. 5/61

Hudson's Bay Oil and Gas Company Limited

DAILY DRILLERS REPORT

WELL NAME H.B. Cameron River F-51
CONTRACTOR Brinkerhoff Bros TYPE RIG T.R.O.
RIG NO. 394 TOOL PUSHER D. Smyball

LDG. FLG. TO KB
K. B. ELEV.
GRD. ELEV.

DATE March 13 69

CASING RECORD	DEPTH	SIZE	WEIGHT	GRADE	CEMENT	ACID	PLUG DOWN	COMPANY SUPERVISOR
								T.E.W.

12 P.M. TO 8 A.M.

DEPTH START 1028 PROGRESS END

BIT RECORD

NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN

DRILLING DATA

LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT

DRILLING STRING

SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.

MUD RECORD

TYPE OF MUD	WEIGHT	VIS	WL	PH	FC

ADDITIVES

CORING

NO.	FROM	TO	RECOVERED	FORMATION

SURVEY DEG. AT FT. DEG. AT FT. DEG. AT FT.

DRILL STEM TESTS

NO. INTERVAL FORMATION
VALVE OPEN (MINS.) INITIAL SHUT-IN (MINS.) FINAL SHUT-IN (MINS.)
GAS TO SURFACE MIN. @ MCF/D MAX.
OIL TO SURFACE MIN. @ BBL/D MAX.
RECOVERY:
PRESSURES (PSI): HP FP ISIP FSIP

REMARKS INCLUDING: CEMENTING, LOGGING, PERFORATING, ACIDIZING, FRACTURING, PLUGS

FROM	TO	DESCRIPTION OF WORK
1200	800	Nipple up B.O.P.'s

DRILLER Dale Woolsey NO. HELPERS 3

8 A.M. TO 4 P.M.

START 1028. PROGRESS 43. END 1075.

BIT RECORD

NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN
1	10219	X16	8 3/4	1028	1075.	43.	1/2

DRILLING DATA

LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT
5 1/2	1000	110	15 M.

DRILLING STRING

SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.
4 1/2	[illegible]	5	86.63	460.04	2773	1.60

MUD RECORD

TYPE OF MUD	WEIGHT	VIS	WL	PH	FC

ADDITIVES Blinds 1400 PSI. O.K.
Rams 1200 PSI. O.K.
Hydril 1200 PSI. O.K.

CORING

NO.	FROM	TO	RECOVERED	FORMATION

DEG. AT FT. DEG. AT FT. DEG. AT FT.

NO. INTERVAL FORMATION
VALVE OPEN (MINS.) INITIAL SHUT-IN (MINS.) FINAL SHUT-IN (MINS.)
GAS TO SURFACE MIN. @ MCF/D MAX.
OIL TO SURFACE MIN. @ BBL/D MAX.
RECOVERY:
PRESSURES (PSI): HP FP ISIP FSIP

FROM	TO	DESCRIPTION OF WORK
8.00	9.30	Nipple up BOP's
9.30	10.00	Press up on Blind Rams OK.
10.00	12.30	Drill mouse Hole
12.30	1.45	Trip in.
1.45	2.30	Pressure up pipe Rams & Hydril
2.30	3.30	Drill out Float & Shoe.
3.30	4.00	Drlg. 8 3/4" Hole.

DRILLER David A. Adkins NO. HELPERS 4

4 P.M. TO 12 P.M.

START 1075 PROGRESS 506 END 1581

BIT RECORD

NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN
1	10219	X16	8 3/4	1028	1581	549	7 3/4

DRILLING DATA

LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT
5 1/2	1,050	110 - 120	15 - 20

DRILLING STRING

SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.
4 1/2	107	8.64	460.04	41.50	1.60

MUD RECORD

TYPE OF MUD	WEIGHT	VIS	WL	PH	FC
8 PM	8.4	28			
10 PM	8.4	29			

ADDITIVES SAPP 1 lbs.

CORING

NO.	FROM	TO	RECOVERED	FORMATION

2° DEG. AT 1518 FT. DEG. AT FT. DEG. AT FT.

NO. INTERVAL FORMATION
VALVE OPEN (MINS.) INITIAL SHUT-IN (MINS.) FINAL SHUT-IN (MINS.)
GAS TO SURFACE MIN. @ MCF/D MAX.
OIL TO SURFACE MIN. @ BBL/D MAX.
RECOVERY:
PRESSURES (PSI): HP FP ISIP FSIP

FROM	TO	DESCRIPTION OF WORK
4.00	4.45	Rig Serv. & B.O.P.'s
4.45	10.45	Drlg 8 3/4 hole
10.45	11.15	Survey
11.15	12.00	Drlg 8 3/4 hole

DRILLER Charles L. Blundell NO. HELPERS 3

52-8BAX4 REV. 5/61

Hudson's Bay Oil and Gas Company Limited

DAILY DRILLERS REPORT

DATE March 12 69

WELL NAME	H.B. Cameron River F 51	LDG. FLG. TO KB	
CONTRACTOR	Brinkerhoff Bros	TYPE RIG	TI-20
RIG NO.	39 H	TOOL PUSHER	D. [illegible]
K. B. ELEV.		GRD. ELEV.	

CASING RECORD	DEPTH	SIZE	WEIGHT	GRADE	CEMENT	ACID	PLUG DOWN	COMPANY SUPERVISOR
								[illegible]

	12 P.M. TO 8 A.M.	8 A.M. TO 4 P.M.	4 P.M. TO 12 P.M.
DEPTH	START / PROGRESS / END 1028	START / PROGRESS / END	START / PROGRESS / END
BIT RECORD (NO. / SERIAL NO. / TYPE / SIZE / FROM / TO / FOOTAGE / HRS. RUN)		Ran 32 jnts 10 3/4" 32.75# H40. 1031.49. Cemented at 1028 by BJ using 700 sacks construction A	
DRILLING DATA (LINER SIZE / PUMP PRESSURE / TABLE SPEED / WEIGHT ON BIT)		plus 2% CaCl2. plug in place	
DRILLING STRING (SIZE / STANDS / SINGLES / DRILL COL. / KELLY IN / CORE BBL.)		at 1 PM with 1000 psi. 1-0.	
MUD RECORD (TYPE OF MUD / WEIGHT / VIS / WL / PH / FC)		Good returns. 10.00 / 90	Pressure test weld 1200 psi. OK
ADDITIVES		ADDING Water	
CORING (NO. / FROM / TO / RECOVERED / FORMATION)			
SURVEY (DEG. AT / FT.)			
DRILL STEM TESTS (NO. / INTERVAL / FORMATION; VALVE OPEN (MINS.) / INITIAL SHUT-IN (MINS.) / FINAL SHUT-IN (MINS.); GAS TO SURFACE MIN. @ MCF/D MAX.; OIL TO SURFACE MIN. @ BBL/D MAX.; RECOVERY; PRESSURES (PSI): HP FP ISIP FSIP)			

REMARKS INCLUDING: CEMENTING, LOGGING, PERFORATING, ACIDIZING, FRACTURING, PLUGS

FROM	TO	DESCRIPTION OF WORK	FROM	TO	DESCRIPTION OF WORK	FROM	TO	DESCRIPTION OF WORK
12:00	12:30	Finish csg	8:00	12:00	Circ + work csg. wait on cement.	4:00	12:00	CUT CASING + Nippel up
12:30	8:00	Circ + work csg Wait on cement	12:00	1:00	Rig to cement + cement.			
			1:00	4:00	Clean mud tanks + wait on cement.			

DRILLER	NO. HELPERS	DRILLER	NO. HELPERS	DRILLER	NO. HELPERS
Dale McCoskey	3	Lloyd H. Adams	5	Charles L. Hirondelle	3

32-88AX-6
REV. 5/61

Hudson's Bay Oil and Gas Company Limited

149 38 177

DAILY DRILLERS REPORT

DATE Mar 17

WELL NAME	H.B. Cameron River F-37	LDG. FLG. TO KB	
CONTRACTOR	Brinkerhoff Drlg	TYPE RIG T-20	K. B. ELEV.
RIG NO.	39H	TOOL PUSHER D. Jaspar	GRD. ELEV.

CASING RECORD

DEPTH	SIZE	WEIGHT	GRADE	CEMENT	ACID	PLUG DOWN	COMPANY SUPERVISOR

	12 P.M. TO 8 A.M.	8 A.M. TO 4 P.M.	4 P.M. TO 12 P.M.
DEPTH	START 851 PROGRESS 177 END 1028	START PROGRESS END	START PROGRESS END

BIT RECORD

NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN
5A	9621	OSC	12¾	851	1028	177	5¼

DRILLING DATA

	LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT
12 P.M. TO 8 A.M.	5½	300	90	10-20
8 A.M. TO 4 P.M.	5½			
4 P.M. TO 12 P.M.				

DRILLING STRING

	SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.
12 P.M. TO 8 A.M.	4½	523.72		458.62	Down	
8 A.M. TO 4 P.M.	4½	523.72		458.62	Down	4.14
4 P.M. TO 12 P.M.						

MUD RECORD

	TYPE OF MUD	WEIGHT	VIS	WL	PH	FC
12 P.M. TO 8 A.M.		9.5	60			
8 A.M. TO 4 P.M.	TIAC - 8.30	11.4	70			
4 P.M. TO 12 P.M.						

ADDITIVES (12 P.M. TO 8 A.M.): Gel - 1500 lbs; Sapp - 12 lbs

CORING

NO.	FROM	TO	RECOVERED	FORMATION

SURVEY

	DEG. AT	FT.	DEG. AT	FT.	DEG. AT	FT.
12 P.M. TO 8 A.M.	¾	936			1744	8
8 A.M. TO 4 P.M.					8945	
4 P.M. TO 12 P.M.						

FORMATION

DRILL STEM TESTS

	NO.	INTERVAL	FORMATION
12 P.M. TO 8 A.M.			
8 A.M. TO 4 P.M.			
4 P.M. TO 12 P.M.			

VALVE OPEN (MINS.) / INITIAL SHUT-IN (MINS.) / FINAL SHUT-IN (MINS.)

GAS TO SURFACE ____ MIN. @ ____ MCF/D MAX.

OIL TO SURFACE ____ MIN. @ ____ BBL/D MAX.

RECOVERY: (12 P.M. TO 8 A.M.): Board Fouled with Belly Strap

PRESSURES (PSI): HP / FP / ISIP / FSIP

REMARKS INCLUDING: CEMENTING, LOGGING, PERFORATING, ACIDIZING, FRACTURING, PLUGS

	FROM	TO	DESCRIPTION OF WORK
12 P.M. TO 8 A.M.	12⁰⁰	12¹⁵	Rig Serv
	12¹⁵	2³⁰	Trip For bit Strap pipe
	2³⁰	5⁰⁰	Drill 12¾" hole
	5⁰⁰	5¹⁵	Survey
	5¹⁵	8⁰⁰	Drill
8 A.M. TO 4 P.M.	8⁰⁰	8¹⁵	Rig Serv.
	8¹⁵	8⁴⁵	Circ. To run casing
	8⁴⁵	10⁴⁵	Trip out. (Drop Survey).
	10⁴⁵	1⁰⁰	Lay down 9" collar. & Rig To Run casing
	1⁰⁰	4⁰⁰	Run casing.
4 P.M. TO 12 P.M.	4⁰⁰	12⁰⁰	Run Casing Had to circulate past Ledges from 730 feet to within 5 jts of bottom.

DRILLER Neil Mackey NO. HELPERS 2

DRILLER Lloyd A Williams NO. HELPERS 5

DRILLER Charles L Hiscandlle NO. HELPERS 3

2-88AX4 REV. 5/61

Hudson's Bay Oil and Gas Company Limited

DAILY DRILLERS REPORT

DATE May 12/69.

WELL NAME	Hudson's Bay Cameron River F-51	LDG. FLG. TO KB	
CONTRACTOR	Brinkerhoff Bros.	K. B. ELEV.	
RIG NO.	39 H	GRD. ELEV.	
TYPE RIG	T 29		
TOOL PUSHER	D. Boydstill		

CASING RECORD	DEPTH	SIZE	WEIGHT	GRADE	CEMENT	ACID	PLUG DOWN	COMPANY SUPERVISOR
								BW

	12 P.M. TO 8 A.M.	8 A.M. TO 4 P.M.	4 P.M. TO 12 P.M.
DEPTH	START 325 PROGRESS 121 END 446	START 446 PROGRESS 234 END 680	START 680 PROGRESS 171 END 851

BIT RECORD

	NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN
12 P.M. TO 8 A.M.	3A	RT	65C3A	13 3/4	197	360	63	9 1/2
	4A	558696	YT3A	13 3/4	360	446	86	2 1/2
8 A.M. TO 4 P.M.	4A	558696	YT3A	13 3/4	360	680	397	9 3/4
4 P.M. TO 12 P.M.	4A	558696	YT3A	13 3/4	360	851	~~491~~ 491	16 3/4

DRILLING DATA

	LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT
12 P.M. TO 8 A.M.	5 1/2	500	170	10 M
8 A.M. TO 4 P.M.	5 1/2	500.	150	10 M.
4 P.M. TO 12 P.M.	5 1/2	500	150	15-20

DRILLING STRING

	SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.
12 P.M. TO 8 A.M.				400	82 Down	Sub 4.14
8 A.M. TO 4 P.M.	4 1/2	184.	79	458.62	32.45.	Sub 4.14
4 P.M. TO 12 P.M.	4 1/2	325.	88	504.26	17.62	Sub 4.14

MUD RECORD

	TYPE OF MUD	WEIGHT	VIS	WL	PH	FC
12 P.M. TO 8 A.M.	Gel	9.3	65			
8 A.M. TO 4 P.M.	11 30	9.3	46			
	3 00	9.2	55.			
4 P.M. TO 12 P.M.	6 00	9.4	70			
	10 00	9.4	60			

ADDITIVES (12 P.M. TO 8 A.M.): Sapp 10# water.

ADDITIVES (8 A.M. TO 4 P.M.): Caustic - 100 #. Gel - 1500 #. Sapp. - 10#

ADDITIVES (4 P.M. TO 12 P.M.): Gel 1,000 Sapp 1#

CORING

	NO.	FROM	TO	RECOVERED	FORMATION
12 P.M. TO 8 A.M.					
8 A.M. TO 4 P.M.					
4 P.M. TO 12 P.M.					

SURVEY

12 P.M. TO 8 A.M.	1/2 DEG. AT 400 FT.	DEG. AT FT.	DEG. AT FT.
8 A.M. TO 4 P.M.	1/2 DEG. AT 504 FT.	1/2 DEG. AT 650 FT.	DEG. AT FT.
4 P.M. TO 12 P.M.	1/4 DEG. AT 780 FT.	DEG. AT FT.	DEG. AT FT.

DRILL STEM TESTS

12 P.M. TO 8 A.M.	NO.	INTERVAL	FORMATION.	
	VALVE OPEN (MINS.)	INITIAL SHUT-IN (MINS.)	FINAL SHUT-IN (MINS.)	
	GAS TO SURFACE	MIN. @	MCF/D MAX.	
	OIL TO SURFACE	MIN. @	BBL/D MAX.	
	RECOVERY:			
	PRESSURES (PSI):	HP	FP	ISIP FSIP
8 A.M. TO 4 P.M.	NO.	INTERVAL	FORMATION	
	VALVE OPEN (MINS.)	INITIAL SHUT-IN (MINS.)	FINAL SHUT-IN (MINS.)	
	GAS TO SURFACE	MIN. @	MCF/D MAX.	
	OIL TO SURFACE	MIN. @	BBL/D MAX.	
	RECOVERY:			
	PRESSURES (PSI):	HP	FP	ISIP FSIP
4 P.M. TO 12 P.M.	NO.	INTERVAL	FORMATION	
	VALVE OPEN (MINS.)	INITIAL SHUT-IN (MINS.)	FINAL SHUT-IN (MINS.)	
	GAS TO SURFACE	MIN. @	MCF/D MAX.	
	OIL TO SURFACE	MIN. @	BBL/D MAX.	
	RECOVERY:			
	PRESSURES (PSI):	HP	FP	ISIP FSIP

REMARKS INCLUDING: CEMENTING, LOGGING, PERFORATING, ACIDIZING, FRACTURING, PLUGS

FROM	TO	DESCRIPTION OF WORK
12 00	12 15	Rig Serv
12 15	3 30	Drill 13 3/4" hole
3 30	5 15	Trip For bit
5 15	6 00	Drill 13 3/4" hole
6 15	6 30	Survey 1/2 0
6 30	8 00	Drill
8 00	8 15	Rig Service
8 15	9 15	Drill 13 3/4" Hole.
9 15	9 30	Survey
9 30	2 45	Drill
2 45	3 00	Survey
3 00	4 00.	Drill.
4 00	4 15	Rig serv
4 15	7 30	Drlg 13 3/4 hole
7 30	7 45	Survey
7 45	11 30	Drlg 13 3/4 hole
11 30	12 00	Circ.

DRILLER (12 P.M. TO 8 A.M.) Dale Woodruff NO. HELPERS 3

DRILLER (8 A.M. TO 4 P.M.) Lloyd A Adams NO. HELPERS 5

DRILLER (4 P.M. TO 12 P.M.) Charles L Hinsdell NO. HELPERS 3

52.8BAX4
REV. 5/61 A

Hudson's Bay Oil and Gas Company Limited

DAILY DRILLERS REPORT

DATE Mar 9 1969

WELL NAME	Hudson Bay Cameron Hills	LDG. FLG. TO KB	
CONTRACTOR	Brinkerhoff Bros	TYPE RIG	T.J. 20
RIG NO.	39 H	TOOL PUSHER	J. Smyth
		GRD. ELEV.	

CASING RECORD	DEPTH	SIZE	WEIGHT	GRADE	CEMENT	ACID	PLUG DOWN	COMPANY SUPERVISOR

12 P.M. TO 8 A.M.

DEPTH: START 0 — PROGRESS 103 — END 103

BIT RECORD

NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN
1A	R. Tip	OSC	13 7/8	0	103	103	6 1/4
2A	R. Tip	OSCJA	13 7/8	103			

DRILLING DATA

LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT
5 1/2	500	170	ALL

DRILLING STRING

SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.
6"			900	1M	50 65 4 14

MUD RECORD

TYPE OF MUD	WEIGHT	VIS	WL	PH	FC
Gel 2AM	8.4	60			
6AM Gel	9.6	4,000 ~~60~~			

ADDITIVES: Soda Lime 4# 5 ~~=~~

CORING

NO.	FROM	TO	RECOVERED	FORMATION

SURVEY: 3/4 DEG. AT 103 FT. — DEG. AT FT. — DEG. AT FT.

DRILL STEM TESTS

NO. — INTERVAL — FORMATION

VALVE OPEN (MINS.) — INITIAL SHUT-IN (MINS.) — FINAL SHUT-IN (MINS.)

GAS TO SURFACE — MIN. @ — MCF/D MAX.

OIL TO SURFACE — MIN. @ — BBL/D MAX.

RECOVERY:

PRESSURES (PSI): HP — FP — ISIP — FSIP

REMARKS INCLUDING: CEMENTING, LOGGING, PERFORATING, ACIDIZING, FRACTURING, PLUGS

FROM	TO	DESCRIPTION OF WORK
12:00	12:45	Mix mud
12:45	7:00	Spud in Drill 12 3/4" hole
7:00	7:45	Trip For bit
7:45	8:00	Survey 103' 3/4

DRILLER Bob Hookey — NO. HELPERS 3

8 A.M. TO 4 P.M.

DEPTH: START 103 — PROGRESS 120 — END 223

BIT RECORD

NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN
2A	R.T.	OSC3	13 3/4	103	197	94	4 1/2
3A	R.T.	OSC3	13 3/4	197	223	26	2

DRILLING DATA

LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT
5 1/2	500	170	10M

DRILLING STRING

SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.
6"			199.74	1912	5=65 4.14

MUD RECORD

TYPE OF MUD	WEIGHT	VIS	WL	PH	FC
Lignosol	9.2	45			
Gel	9.4	50			

ADDITIVES: SAP - Caustic 150#

CORING

NO.	FROM	TO	RECOVERED	FORMATION

SURVEY: 3/4 DEG. AT 188 FT. — DEG. AT FT. — DEG. AT FT.

DRILL STEM TESTS

NO. — INTERVAL — FORMATION

VALVE OPEN (MINS.) — INITIAL SHUT-IN (MINS.) — FINAL SHUT-IN (MINS.)

GAS TO SURFACE — MIN. @ — MCF/D MAX.

OIL TO SURFACE — MIN. @ — BBL/D MAX.

RECOVERY:

PRESSURES (PSI): HP — FP — ISIP — FSIP

FROM	TO	DESCRIPTION OF WORK
8:00	8:15	Rig Serv.
8:15	11:15	Drlg 13 3/4" Hole
11:15	11:30	Survey
11:30	1:00	Drlg. 13 3/4" Hole
1:00	2:00	Trip For Bit.
2:00	4:00	Drlg 13 3/4" Hole

DRILLER David A Adams — NO. HELPERS 5

4 P.M. TO 12 P.M.

DEPTH: START 223 — PROGRESS 102 — END 325

BIT RECORD

NO.	SERIAL NO.	TYPE	SIZE	FROM	TO	FOOTAGE	HRS. RUN
3A	R.T.	OSC3	13 3/4	197	325	128	6 1/4

DRILLING DATA

LINER SIZE	PUMP PRESSURE	TABLE SPEED	WEIGHT ON BIT
5 1/2	500	170	18-20M

DRILLING STRING

SIZE	STANDS	SINGLES	DRILL COL.	KELLY IN	CORE BBL.
6"					

MUD RECORD

TYPE OF MUD	WEIGHT	VIS	WL	PH	FC
6:00	9.4	55			
10:00	9.4	58			

ADDITIVES:

CORING

NO.	FROM	TO	RECOVERED	FORMATION

SURVEY: 1/4 DEG. AT 303 FT. — DEG. AT FT. — DEG. AT FT.

DRILL STEM TESTS

NO. — INTERVAL — FORMATION

VALVE OPEN (MINS.) — INITIAL SHUT-IN (MINS.) — FINAL SHUT-IN (MINS.)

GAS TO SURFACE — MIN. @ — MCF/D MAX.

OIL TO SURFACE — MIN. @ — BBL/D MAX.

RECOVERY:

PRESSURES (PSI): HP — FP — ISIP — FSIP

FROM	TO	DESCRIPTION OF WORK
4:00	4:15	Rig Serv
4:15	5:00	Drlg 13 3/4 hole
5:00	8:15	Work Tight hole
8:15	11:15	Drlg 13 3/4 hole
11:15	11:30	Survey
11:30	12:00	Drlg. 13 3/4 hole

DRILLER Charles L Woodell — NO. HELPERS 3