Merland et al Whitebear Creek STH #1

57° 23'N 92° 28'W

(#1)

P. M. Alley
Sept 21/70

Merland et al Whitebear Creek STH #1

TABLE OF CONTENTS

WELL DATA SUMMARY

WELL NAME:	MERLAND ET AL WHITEBEAR CRK STH #1
LOCATION:	HUDSON BAY LOW LANDS, MANITOBA.
OPERATOR:	MERLAND EXPLORATIONS LTD.
DRILLING LICENCE NO.	#2454
ELEVATION:	K.B. 20' EST. GROUND 17'
CO-ORDINATES:	92^0 28' W LONG : 57^0 23' N LAT.
TOTAL DEPTH:	1401
STATUS:	DRY AND ABANDONED
SPUD DATE:	26 JUNE, 1970
DRILLING COMPLETED:	12 JULY, 1970
HOLE SIZE:	NX TO 283 FT; NQ TO 1004 FT; BS TO 1401 FT.
SURFACE CASING:	RAN 90 FEET OF HX CSG. LANDED AT 90 FT K.B. RAN NX CSG TO 283 FT K.B. CEMENTED TOGETHER WITH 15 SX CONST. CEMENT.
DRILLING CONTRACTOR:	MIDWEST DRILLING CO. RIG NO. 1142
TOOLPUSHER:	JIM DAGG
WELLSITE GEOLOGIST:	J. FRANK BLUE, P. GEOL.
CORE DISPOSAL:	SENT TO MANITOBA DEPARTMENT OF MINES ROOM 900 NORQUAY BLDG. WINNIPEG 1, MANITOBA.

DRILLING PROGRAM

OPERATOR'S NAME: Merland Explorations Limited			
WELL NAME Merland et al Whitebear Creek STH #1		PROJECT	
LOCATION 57°22'N, 92°27'W approx.	PROVINCE Manitoba	ELEVATIONS: GROUND	
CONTRACT DEPTH 3500	FOOTAGE Daywork TURNKEY	K.B. ESTIMATED 30	ACTUAL
CLASSIFICATIONS: EXPLORATORY X	DEVELOPMENT TIGHT	CONFIDENTIAL X	OPEN

DIRECTIONS TO LEASE:

GEOLOGICAL MARKERS

FORMATION	DEPTH K.B.	ELEVATION	FORMATION	DEPTH K.B.	ELEVATION
Drift	0	+ 30	Precambrian	3100	-3070
Devonian	100	- 70			
Silurian					
Upper Kenogami	500	- 470			
Lower Kenogami			*Expected porous zones		
Attawapiskat*	1200	- 1170			
Ekwan*					
Severn River	2000	- 1970			
Port Nelson					
Ordovician					
Churchill River Group*	2300	- 2270			
Bad Cache Rapids Grp.*	2800	- 2770			

TESTING AND CORING

Well will be cored from Bedrock to Total Depth. Tests will be run if potential zones are penetrated, as determined from core examination by wellsite geologist.

PREL. COPIES OF CORE ANALYSIS ____ FLUID ANALYSES 20 WELL REPORTS 20 COPIES.
FINAL COPIES OF CORE ANALYSIS 20 DST REPORTS 20 MAIL TO: ____

LOGGING

TYPE LOG	RUN NO.	SCALE	INTERVAL FROM	INTERVAL TO
Electronic	1		300	TD

FIELD COPIES: 3 FINAL COPIES: 20

SAMPLES AND DRILLING TIME CONTROL

COMPANY	FEET PER SAMPLE	INTERVAL FROM	INTERVAL TO	DRILLING CONTROL

SEND GOVERNMENT SAMPLES TO ____
SEND ONE COPY OF RECORDS TO ____
MARK DEPTH ON GEOLOGRAPH EACH CONNECTION

SPECIAL GEOLOGICAL INSTRUCTIONS

Record 10' drilling time.
NB: Reports are to be radioed to Midwest Air at Gillam, daily, and will be relayed by telephone to Merland's Calgary Office. Copies of the daily report forms as provided are to be mailed to Calgary weekly. Detailed core description and tops are to be included in report.

FORM 7-P1

DRILLING PROGRAM - Page 2 WELL Merland et al Whitebear Creek STH #1

CASING AND CEMENTING PROGRAM

HOLE SIZE DIAMETER	HOLE SIZE DEPTH	TYPE STRING	SIZE O.D. INCH	WEIGHT LB./FT.	GRADE	T. & C.	LENGTH	SETTING DEPTH	CEMENT, ADDITIVES, REMARKS
4-5/8	To Bedrock	H	4½	9.25				100'	Est. to Bedrock
3-25/32	300	N	3½	8.00				300'	Cement to surface with good returns.
2-23/64	As Req'd	B	2-7/8	6.20				Approx. 1000'	To be set with rubber gaskets when change from NQ to BQ core.

CASING EQUIPMENT

SURFACE CASING GUIDE SHOE - FLOAT SHOE - FLOAT COLLAR - OTHER -

SCRATCHERS: - SLACK OFF IN 6 HRS. DRILL OUT IN. 12 HRS. -

CENTRALIZERS:

REMARKS:

PRODUCTION CASING GUIDE SHOE FLOAT SHOE FLOAT COLLAR OTHER

SCRATCHERS:

CENTRALIZERS:

REMARKS:

MUD PROGRAM

INTERVAL FROM	INTERVAL TO	WEIGHT LB./GAL.	VISCOSITY SECONDS	WATER LOSS CC	PH	REMARKS
0	Bedrock					Mix sufficient gel to hold the wall of the hole until H casing is run
Bedrock	TD					Water

DEVIATION SURVEYS

DEPTHS FROM	DEPTHS TO	MAXIMUM DEVIATION	SURVEY INTERVALS
0	300	1°	100'
300	TD	5°	200'

DRILLING HAZARDS

Lost circulation zones in Silurian and Ordovician.

SPECIAL ENGINEERING INSTRUCTIONS

See attached.

FORM 7-P2

DRILLING PROGRAM - Page 3 WELL Merland et al Whitebear Creek STH#1

SUPERVISION AND SERVICES			
SERVICE	INDIVIDUAL OR COMPANY	LOCATION	TELEPHONE NO.
WELLSITE GEOLOGIST	Frank Blue	Calgary	269-2859
WELLSITE ENGINEER			
DRILLING CONTRACTOR	Midwest Drilling RIG # ———	Winnipeg AC 204	786-1431
MUD	Baroid	Calgary	263-8740
CEMENTING	Midwest Drilling	Winnipeg AC 204	786-1431
CORING	do.		
DRILL STEM TESTS	do.		
ELECTRIC LOGGING	Electronic Logging & Velocity	Calgary	277-7521
NUCLEAR LOGGING-PERFORATE			
FRACTURING			
ACIDIZING			
FLUID ANALYSIS	Core Lab	Calgary	253-3391
CORE ANALYSIS	do.		
CONSTRUCTION - CLEANUP	Midwest Drilling	Winnipeg	
TOOLPUSH			
CASING - TUBULAR	do.		
MATERIALS & GOODS	do.		

DAILY REPORTS			
1. DAILY REPORTS TO BE TELEPHONED TO: Merland Explorations Limited (BEFORE 9:30 A.M.)			
1380 Guinness House, Calgary 2, Alta. AC 403 269-6852			
2. AFTER HOURS OR HOLIDAYS CALL: #500, 360 Bay Street, Toronto 105 AC 416 363-5815			
NAME	COMPANY & POSITION		RESIDENCE PHONE
Peter Oley	Merland Explorations	AC 403	227-2454)
		AC 403	243-1319)
John Cameron	Merland Explorations	AC 416	924-2767
(Bill Perchaluk	Midwest Drilling	AC 204	786-1431
(Stan Swanson			
(Martin Menard			
Manitoba Mines Branch: Jack Roper; Stan Gamey			

INVOICES: 3 COPIES OF ALL INVOICES TO:
Merland Explorations Limited
1380 Guinness House
727 - 7 Avenue, S.W.
Calgary 2, Alberta
ALL SERVICE TICKETS MUST BE SIGNED BY A REPRESENTATIVE.

OPERATOR: Merland Explorations Limited, #500, 360 Bay Street, Toronto
PARTNERS OR PARTICIPANTS:
Adera Mining Limited, 602 - 789 West Pender Street, Vancouver
Pathfinder Uranium & Nickel Mines Ltd., 789 West Pender St., Vancouver
Oro Mines Limited, 850 West Hastings Street, Vancouver
Pipawa Explorations, c/o Ron Johnson, Royalite Bldg., Calgary
Yukon Antimony, 365 Bay Street, Toronto, Ontario
SPECIAL INSTRUCTIONS ATTACHED YES NO PREPARED: June 8th 1970 INITIAL PMO

FORM 7-P3

DRILLING PROGNOSIS

Merland et al Whitebear Creek STH #1

Location: $57^{o}22'N$ $92^{o}27'W$ (approximately)

Elevation: 30' (approximately)

Objective: To core the sedimentary section from the top of Bedrock to the top of the Precambrian.

Surface Hole:

(a) Drill HX 4-5/8" hole to bedrock

(b) Run H Casing to bottom

(c) Core HQ 3-25/32 hole to 300 feet

(d) Run N casing to bottom and pull H casing

(e) Cement N casing to surface with good returns. Wait on cement 12 hours.

(f) Install BOP equipment using low pressure 3" full opening valve as per diagram. Pressure test equipment to 500 psi for 10 minutes.

Main Hole:

(a) Core ahead with NQ 2-63/64" hole to 1400 feet. (1-7/8" core)

(b) Run B casing to bottom and pack off with rubber gaskets. Install high pressure valve above blow out preventor.

(c) Core ahead to total depth with BQ 2-23/64" hole (1-7/16" core).

While Coring Main Hole:

1. Keep 10', drilling time
2. Run deviation survey every 200 feet.
3. Check BOP equipment daily and make sure it is in serviceable condition.
4. Ship out core weekly if possible.
5. At total depth run electronic log from surface casing shoe to TD after pulling B casing.
6. Obtain abandonment program from Manitoba Department of Mines.

MNR.m-61

PROVINCE OF MANITOBA

MINES BRANCH

License No. 2454

11/6/70

APPLICATION FOR LICENSE TO DRILL NEW WELL

This application in quadruplicate, accompanied by the required license fee and four copies of plan of certified survey must be submitted and approved before commencing operations.

Manitoba, May 5 19 70

In compliance with Drilling and Production Regulations being Part IV of the Oil and Natural Gas Regulations under "The Mines Act", R.S.M. 1954, Cap. 166, application is hereby made for a license to drill:

Merland et al Whitebear Creek STH #1
(Name and Number of Well)

By Merland Explorations Limited
(Insert name of applicant company, firm or individual)

Surface location: L.S. ..... Section ....., Township 23, Range ....., West of ..... Meridian. Approximately 57° 22' N 92° 28' W - near the mouth of Whitebear Creek

..... feet (North of South) (South of North) boundary of .....

..... feet (East of West) (West of East) boundary of .....

Area assigned to Well .....

Lease comprises ..... being 389,407 acres. ~~Lease~~ Numbers 59 - 65 and 67 (To be assigned by Director of Mines) Permit 63 (If Crown Land)

Leased, subleased or assigned from Northwest Oils Ltd.

Oil and natural gas rights owned by Crown

The elevation of the ~~derrick floor~~ (ground surface) is estimated 20 feet above sea level.

Well is expected to produce from Ordovician formation at a depth of about 3000 feet.

to be abandoned with cement plug from T.D. to surface
cut off casing 5ft. below surface level and clean up site

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

Casing Size Inches	Weight Lbs./Ft.	Grade	Brand	New or Used	Estimated Depth	Sacks of Cement
1. 3-1/2	86	NX		New	800	AS PER 3 ORDER 2C
2.						
3.						
4. LOGGING REQUIREMENTS -			Electric Log to bottom			

Expected Water, Gas and Oil Horizons and Method of Control: Possible horizons in Silurian and Ordovician to be controlled by BOP and drilling fluid. Install non-return valve between water swivel and hose to control possible blow-back of water

Well will be drilled with ~~cable~~ (rotary) tools by Midwest Drilling (Drilling contractor or company)

Responsible agent of applicant:

At Well: Mr. Frank Blue 208 - 718 Eighth Avenue S.W. Address: Calgary 2, Alberta

At registered Manitoba Office Mr. Ted Charne (Registered) Address: 460 Main Street - Winnipeg

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

Dated at Winnipeg this 5th day of May 19 70

Signed by P.M. Oley
(To be signed by duly authorized officer or agent of the applicant or by applicant personally)

Approved — Chief Mining Recorder

Approved — Chief Mining Engineer

Kindly read the Excerpts from Drilling and Production Regulations Part IV of Manitoba Regulation 14/47 on reverse side before completing this form.

The attached conditions become an integral part of this license.

MNR-m-72

Cash No. 7504

PROVINCE OF MANITOBA

DEPARTMENT OF MINES AND NATURAL RESOURCES

MINES BRANCH

No 2454

DRILLING LICENSE

IN CONSIDERATION of the sum of $25.00, the receipt of which is hereby acknowledged, a License to drill Well, known as:

Maclond et al Whitebear Creek Prov. 5TH 1

located on Approximate 51° 22' N - 92° 27' W 51 23 92 28

is hereby granted to Maclond Exploration Limited

C/o J. Kilburn 4 60 Main St. Winnipeg 2.

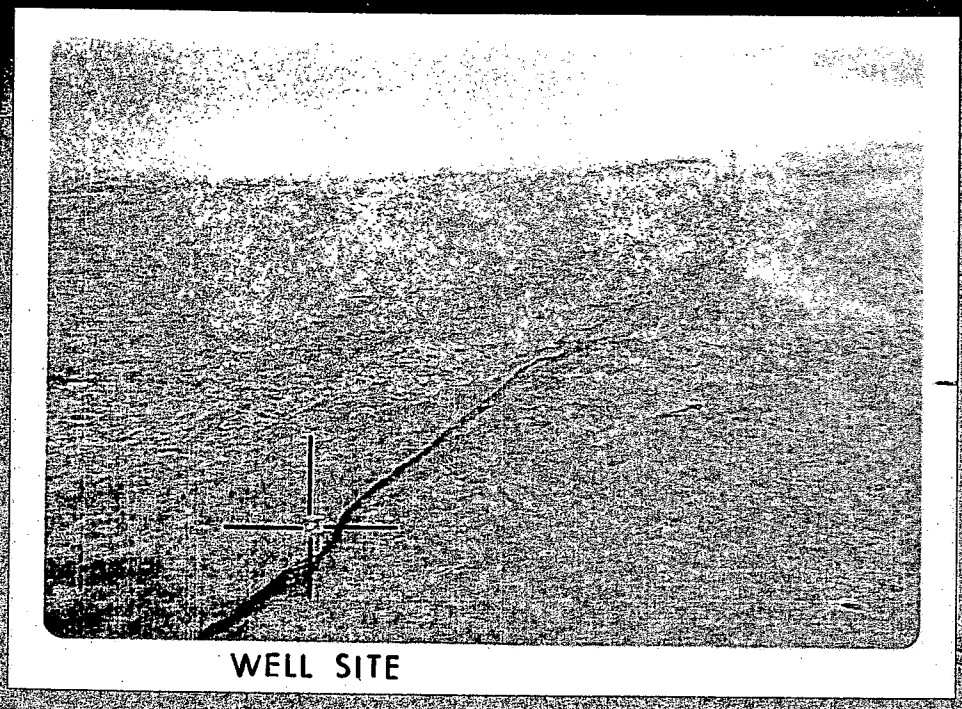
subject to the commencement of drilling operations with satisfactory equipment and personnel within ninety days from date of issue and subject further to terms and conditions as set out in Part IV of the Oil and Natural Gas Regulations under "The Mines Act", R.S.M. 1954, Cap. 166, and filed March 28, 1947, as Manitoba Regulation 14/47. The license is issued on the express condition that the licensee before making entry on the surface of the location, shall comply fully with the said regulations.

Date of Issue 11 June 70

Director of Mines

NOTE:– This license is issued on the understanding that the applicant has legally acquired the drilling and producing rights from the owner of the area described in the application, and does not convey any such rights.

118. (1) Where the director is satisfied that a licensee has committed a breach of any of these regulations, he may cancel or suspend the license for a definite time or indefinitely and he may issue a new license in place of the license so cancelled or suspended.



WELL SITE

MERLAND ET AL WHITEBEAR CREEK

PROV. STH. NO. 1 57° 23' N. 92° 28' W.

WHITEBEAR CREEK

A14360-57

KODAK SAFETY FILM KODAK SAFETY FILM KODAK SAFETY FILM KODAK SAFETY FILM SAFETY FILM

1 AIR PHOTO DIVISION ENERGY - MINES & RESOURCES - CANADIAN GOVT. CO

Merland et al Whitebear Creek STH #1

(Daily Progress Reports)

April 10-24, 1970

Moved in equipment by cat train and unloaded on south bank of Whitebear Creek, 2-1/4 miles from Hudson Bay shoreline. Cat train returned to Lawledge.

June 13-18, 1970

Midwest sent 3 man crew into location and started building camp. Located air-strip near beach 2-1/4 miles from camp.

June 19, 1970

Moved in additional 5 man crew to complete camp and set up drilling rig. Also moved in Coot swamp buggy to haul personnel and equipment to and from airstrip.

June 20 - 25, 1970

Rigging up camp and drilling rig. One day delay waiting to fly in additional timbers for drilling rig support.

June 26, 1970

Spudded at 4:00 P.M., June 26, 1970.

June 27, 1970

Drilled to base of drift at 85 feet. Ran "H" casing and cored to 200 feet, by NQ. Top of core at 100 feet.

June 28, 1970

Cored to 303 feet, started reaming down "N" casing.

June 29, 1970

Reaming down "N" casing.

June 30, 1970

Reaming down "N" casing. Lost circulation - mudding up.

.....2

July 1, 1970

"N" casing stuck at 283 feet, could run no deeper. Cemented casing with 10 sacks of cement. Cementing completed at 4:00 A.M.

July 2, 1970

Waited on cement, cement slow setting due to perma frost.

July 3, 1970

Waited on cement - cemented "H" and "N" casing from top of hole. Started drilling out plug at 8:00 A.M. Finished drilling out plug.

July 4, 1970

Cored NQ 303 to 477 feet. Mud is water.

July 5, 1970

Cored NQ 477 to 729 feet. Mud is water. Frank Blue, well-site geologist arrived on lease on supply flight.

July 6, 1970

Cored NQ 729 - 1004 feet. Mud is water.

July 7, 1970

Pulled "N" rods, ran "BW" casing to bottom, cemented in top of casing with 1 sack of cement. Had to fly in casing seal with grocery order, rigged up B.O.P., equipment.

July 8, 1970

Waited on cement to 6:00 A.M., ran BQ rods, and cored BQ 1004 to 1154 feet. Mud is water.

July 9, 1970

Cored BQ 1154 - 1327 feet. Mud is water.

July 10, 1970

Waiting on orders. Precambrian top at 1298 feet. Prepared to core ahead.

July 11, 1970

Ran in BQ rods, cored BQ, 1327 - 1383 feet. Tripped in for bit.

July 12, 1970

Ran BQ rods, cored BQ, 1383 - 1401 feet. Pulled out, and rigged out B.O.P's. Waited on loggers.

July 13, 1970

Waited on logging equipment until 4:30 P.M., Ran E-log and completed at 11:00 P.M.

July 14, 1970

Cemented hole from T.D. to surface in six stages with 60 sacks of cement plus 8% gel. Cut off casing 4' below ground level and spotted 5 sack plug in top. Completed by 3:30 P.M. Flew out loggers and crew to Winnipeg.

July 24 - 29 1970

Shipped Foremost tracked vehicle from Calgary to Gillam, via CNR.

July 30 - August 4, 1970

Unloaded Foremost at Lawledge and attempted to cross muskeg country to Whitebear. After 5 miles penetration it was decied this route would be too slow and Foremost was loaded back on flat car and returned to Gillam

August 5 - August 9, 1970

Shipped Foremost to Churcill via CNR. CNR broke main spring in Foremost while switching and caused 3 day delay while waiting for parts and repairing vehicle.

August 9 - August 12, 1970

Travelled from Churcill launch site to Whitebear. Required air lift of fuel en route.

August 13 - August 14, 1970

Tearing out camp and loaded Foremost.

August 15 - August 16, 1970

Foremost hauled 18 tons, drill rod and other material to Owl River landing strip. (2 trips) Foremost broke axle bolts on last trip.

August 17 - August 20, 1970

Waiting on repairs and repairing Foremost.

August 21, 1970

Finished repairing Foremost, travelled to Whitebear, very difficult trip due to high tides.

August 22 - August 23, 1970

Hauled 4 tons of bulky equipment to Whitebear landing strip, and cleaned up lease.

August 24, 1970

Finished cleaning up lease and hauled balance of equipment including rig, cat and Coot to Broad River. Hauled two loads of equipment from Owl River to Churchill with Twin Otter.

August 25 - August 28, 1970

Foremost travelled to Churchill. Flew balance of equipment out of Owl River and Broad River. Four tons remaining at Whitebear Creek unable to fly out due to air craft not available. This equipment to be moved to Winnipeg at first opportunity.

August 29 - September 2, 1970

Loaded Foremost on flat car with Coot bound for Calgary. Loaded Midwest drilling equipment in box car bound for Winnipeg.

DEVIATION SURVEYS RECORD

DEPTH	DEVIATION	HOLE SIZE
100	1°	TRICONE
200	1°	"
300	1°	"
500	1°	NQ
700	1°	NQ
900	1°	NQ
1100	1°	BQ
1300	1°	BQ

BIT NO.	FROM	TO	SIZE	MAKE AND TYPE	FOOTAGE	HOURS RUN	REMARKS
1A	0	100	3 7/8	TRICONE	100		
1	100	170	NQ	DIAMOND	70		REAMED WITH TRICONE
2	170	303	NQ	"	233		
3	303	408	NQ	"	105		
4	408	587	NQ	"	179		
5	587	1004	NQ	"	417		
6	1004	1004	BQ	DIAMOND	-		BURNT DUE TO BAD ROD
7	1004	1307	BQ	"	303		
8	1307	1327	BQ	"	20		
9	1327	1366	BQ	"	39		
10	1366	1382	BQ	"	16		
11	1382	1401	BQ	"	19		

J. FRANK BLUE, P.GEOL.

CORE RECORD
NQ SIZE

BOX NO.	INTERVAL	CUT	REC.	BOX NO.	INTERVAL	CUT	REC.
1	100 —115	15	15	32	559 - 574	15	15
2	115 - 120	15	15	33	574 - 594	20	15
3	130 - 145	15	15	34	594 - 609	15	15
4	145 - 160	15	15	35	609 - 624	15	15
5	160 - 175	15	15	36	624 - 639	15	15
6	175 - 190	15	15	37	639 - 654	15	15
7	190 - 204	14	14	38	654 - 669	15	15
8	204 - 219	15	15	39	669 - 683	14	14
9	219 - 234	15	15	40	683 - 698	15	15
10	234 - 249	15	15	41	698 - 713	15	15
11	249 - 263	14	14	42	713 - 728	15	15
12	263 - 279	16	15	43	728 - 743	15	15
13	279 - 294	15	15	44	743 - 758	15	15
14	294 - 309	15	14	45	758 —773	15	15
15	309 - 324	15	15	46	773 - 788	15	15
16	324 - 338	14	14	47	788 - 803	15	15
17	338 - 354	16	15	48	803 - 817	14	14
18	354 - 368	14	14	49	817 - 832	15	15
19	368 - 382	14	14	50	832 - 846	14	14
20	382 - 397	15	15	51	846 - 860	14	14
21	397 - 412	15	15	52	860 - 875	15	15
22	412 - 427	15	15	53	875 - 889	14	14
23	427 - 442	15	15	54	889 - 904	15	15
24	442 - 457	15	15	55	904 - 919	15	15
25	457 - 472	15	15	56	919 - 933	15	15
26	472 - 487	15	15	57	933 - 948	15	15
27	487 - 502	15	15	58	948 - 963	15	15
28	502 - 517	15	15	59	963 —977	14	14
29	517 - 531	14	14	60	977 - 992	15	15
30	531 - 545	14	14	61	992 —1004	12	12
31	545 - 559	14	14				

61 TOTAL NQ CORE BXS.

CORE RECORD

BQ SIZE

BOX NO.	INTERVAL	CUT	REC.	BOX NO.	INTERVAL	CUT	REC.
1	1004 - 1014	10	10	21	1204 - 1214	10	10
2	1014 - 1024	10	10	22	1214 - 1214	10	10
3	1024 - 1034	10	10	23	1224 - 1234	10	10
4	1034 - 1044	10	10	24	1234 - 1244	10	10
5	1044 - 1054	10	10	25	1244 - 1255	10	10
6	1054 - 1064	10	10	26	1255 - 1266	10	10
7	1064 - 1074	10	10	27	1256 - 1277	10	10
8	1074 - 1084	10	10	28	1277 - 1287	10	10
9	1084 - 1094	10	10	29	1287 - 1297	10	10
10	1094 - 1104	10	10	30	1297 - 1317	10	10
11	1104 - 1114	10	10	31	1307 - 1317	10	9
12	1114 - 1124	10	10	32	1317 - 1334	10	1
13	1124 - 1134	10	10	33	1334 --1344	10	10
14	1134 - 1144	10	10	34	1334 - 1354	10	10
15	1144 - 1154	10	10	35	1354 - 1364	10	10
16	1154 - 1164	10	10	36	1364 - 1373	9	9
17	1164 - 1174	10	10	37	1373 - 1383	10	10
18	1174 - 1184	10	10	38	1383 - 1392	9	9
19	1184 - 1194	10	10	39	1392 - 1401	9	8½
20	1194 - 1204	10	10				

F.T.D.

39 TOTAL BQ CORE BXS.

J. FRANK BLUE, P.GEOL.

ABANDONMENT PROGRAM

RAN CONTINUOUS PLUG FROM 1401' TO SURFACE IN 6 STAGES WITH 60-65 # SACKS CEMENT PLUS 8% GEL. SPOTTED 5 SACK NEAT CEMENT SURFACE PLUG. BACKED OFF CASING 4 FT. BELOW GROUND LEVEL. AFTER CEMENTING, CEMENT LEVEL IN HOLE DID NOT DROP.

5-69-5M

JUL 2 2 1970

Field Other Areas

Original Drilling License No. 2454

PROVINCE OF MANITOBA

MINES BRANCH

APPLICATION TO { SUSPEND DRILLING / RESUME DRILLING / RECONDITION / PLUG BACK / SUSPEND PRODUCTION / ABANDON } A WELL

(Stroke Out Operations Which Do Not Apply)

Approval is hereby applied for as required by the Regulations under "The Mines Act" R.S.M. 1954, Cap. 166, of the following operations to be commenced on or about

the 14th day of July 1970, on the well known as

MERLAND et al WHITEBEAR CREEK PROV. STH #1

located on Lsd. at approx. 57° 23' N - 92° 28' W

being Permit # 63 standing in the name of North West Oil

CASING RECORD

	Size O.D.	Weight	Amount	Set	Sacks Cement	Method
1st String	H Casing			85'		
2nd String	3½" (N Casing)			283'	8.5	
3rd String						

CONDITION OF WELL (Depths)

Total Depth of Well 1401

Perforations: From ____ TO ____

Open Hole: 283 TO 1401

Name of Producing Zone ____

Date of last production ____

Date of last production test ____ G.O.R. ____

W.O.R. ____ Daily Production ____

Reason for Operations Proposed Dry - no shows

Verbal approval for Abandonment

OUTLINE OF OPERATIONS PROPOSED: (Showing proposed plugs, and whether or not casing is to be pulled; if Plug Back show new interval to be perforated).

Cement plug T.D. to surface. With 60 sacks plus 8% gel in six stages. Spotted 5 sacks neat cement in top of casing. Cut off casing 4 feet below ground level.

Operations to be carried out by: Midwest Drilling Address 866 King Edward Street, Winnipeg 21

Responsible agent in field Mr. Frank Blue Address Penthouse, 733 - 14th Avenue S.W. Calgary

Responsible agent, Co. office Mr. P.M. Oley Address 1380 Guinness House, Calgary

Signed by Mr. P.M. Oley P.M. Oley Title Manager

Company Merland Exploration Limited at Calgary this 17th day of July 1970

APPROVAL

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

1. ~~Please advise our Virden office before proposed operations are commenced.~~
2. THE DRILLING BOND WILL NOT BE RELEASED UNTIL THE ABANDONMENT OF THE SITE HAS BEEN INSPECTED AND APPROVED BY THE DEPARTMENT.

Approved: [signature] Director of Mines

Date JUL 2 0 1970 19

[signature] Petroleum Engineering Division

FORMS TO BE PREPARED IN QUADRUPLICATE AND FORWARDED TO THE DIRECTOR OF MINES

TABLE OF FORMATIONS

K.B. (Est.) + 20

	CORE	E-LOG	SUBSEA
DRIFT	Surf		+ 20
SILURIAN			
MIDDLE			
EKWAN RIVER FM.			
Upper Member	90		- 70
Lower Member	318	312	- 298
SEVERN RIVER FRM.	455	450	- 430
PORT NELSON FRM.	718	720	- 700
ORDOVICIAN			
Upper			
CHURCHILL RIVER GROUP	885	887	- 867
BAD CACHE RAPIDS GROUP	1078	1078	-1058
PRECAMBRIAN	1298	1301	-1281
TOTAL DEPTH	1401	1401	-1381

CORE DESCRIPTIONS

K.B. = 20' Est.

WELL SPUDDED IN UPPER EKWAN RIVER FM.

100 - 134	LIMESTONE	- CALCILUTITE - CREAM TO LIGHT BUFF - IN PART FOSSILIFEROUS AND IN PART COARSE FRAGMENTAL - TO CRYPTO CRYSTALLINE DENSE AND LITHOFIED - NARROW BANDS OF CHERT - BLUE GREY - MILKY - SOME BRECCIATION AND STRATIFICATION - INCLINED AND DISTORTED BEDDING - THE CRYPTO CRYSTALLINE PHASE BECOMES CHALKY - AND IS DENSELY FOSSILIFEROUS AND BIOCLASTIC - BLUE GREY MASSIVE CHERT BANDS UP TO 3" THICK INTERBEDDED
134 - 142	LIMESTONE	- BIOSTROMAL - HIGHLY FOSSILIFEROUS AND BIOCLASTIC LIGHT BUFF - CALCILUTITIC MATTRIX - IN PART FRAGMENTAL - VUGGY TO PIN POINT AND VESICULAR POROSITY - LIGHT BUFF - REEFOID - NUMEROUS LARGE CORAL INCLUSIONS - AND REMMANTS - LATTICE RELICS - SOME GOOD POROSITY BUT LOW PERMEABILITY - BRECCIATED IN PART -
142 - 148	LIMESTONE	- AS ABOVE FORMERLY - LIGHT BUFF, FOSSILIFEROUS CALCILITITE - CHERT INCLUSIONS -
148 - 150		- REEFOID AND BIOSTROMAL - WITH LARGE FOSSIL INCLUSIONS - CALCILUTITIC MATTRIX -
150 - 153	LIMESTONE	- AS ABOVE FORMERLY - CHERTY - INCLUSIONS FOSSILIFEROUS LIGHT BUFF LIMESTONE - CALCILUTITIC MATTRIX BIOSTROMAL STRANDS --
153 - 156	DOLOMITE	- FINELY CRYSTALLINE TO CRYPTO CRYSTALLINE LIGHT BUFF WITH YELLOWISH TINGE - DENSE- STRATIFIED -
156 - 160	LIMESTONE	- CALCILUTATE - LIGHT BUFF FISSIL RICH - BRECCIATED AND FRAGMENTAL --LITHOGRAPHIC DISTORTED AND SUTURED -
160 - 167		- INTERBEDDED DOLOMITE BANDS AS ABOVE - NUMEROUS DARK BROWN CHERT INCLUSIONS - LITHOFIED DISTORTED BEDDING -
167 - 175	CALCILUTUTE	- VARICOLORED LIGHT TO MEDIUM BUFF TO BROWN - ANASTOMISIC BEDDED - CHERT INCLUSIONS AND DOLITIC FOSSIL (?) RELICS SUTURED AND FRACTURED - GENERALLY DENSE AND LITHOFIED - WITH ONE GYPSUM LINED VUG -

175 - 180	DOLOMITIC LIMESTONE	- BRECCIATED DOLOMITIZED RELIC REEFOID REMMANT POROUS - CRYOTP- CRYSTALLINE TO CALCILUTITIC - DOLITIC INFILLING - HIGHLY DISTORTED - FRACTURED AND BRECCIATED - ORGANIC POROSITY - YELLOWISH BUFF - WITH DARK BROWN LIME- STONEBRECCEA - VESICULAR POROSITY -
180 - 185	LIMESTONE	- NODULAR AND DISTORTED, WAVY BEDDING - VARICOLORED BUFF TO BROWN LIMESTONE WITH DOLITIC PHASES - CALCILUTITIC -- LIMY MUDSTONE - GENERALLY DENSE AND TIGHT -
185 - 190		- REEFAL AND BIOSTROMAL(?) - POROUS - DISTORTED BRECCIATED AND RE CRYSTALLIZED VUGS AND ORGANIC VESICULAR POROSITY - CALCITE INFILLING YELLOWISH BUFF TO LIGHT BUFF - NODULAR WAVY BANDING -
190 - 195		- CALCILUTITIC - NODULAR AND BRECCIATED - SOME MINOR VUG POROSITY WITH LITTLE PERMEABILITY - ANASTOMISIC WAVY BEDDING - FOSSILIFEROUS LIGHT BUFF LIME MUDSTONE - MOTTLED -
095 - 207		- BECOMING DENSE - MOTTLED - NODULAR - BRECCIATED ANASTOMISIC BEDDING -
207 - 217		- BECOMING STRATIFIED - LIGHTER BUFF TO CREAM COLORED - DENSE LIME MUDSTONE - LITHOFIED - FRACTURED - LAMINATED IN PART --
217 - 219	DOLOMITE	- VUGGY - LIGHT GREENISH BUFF - TRACES OF ALGAEL REMNANTS - SOME PIN POINT - CHERT INCLUDIONS - CRYPTO CRYSTALLINE-
219 - 229	LIMESTONE	- CALCILUTITE - CREAM TO LIGHT BUFF - STRATIFIED - LITHOFIED - DENSE - SPORATIC VUGS - CRYPTO CRYSTALLINE - A LIME MUDSTONE -
229 - 237		- BECOMING SHALY --THINLY LAMINATED - LIGHT GREENISH GREY MOTTLING - WAVY BEDDED IN PATCHES - DISTORTED -
237 - 257		- BECOMING LIGHT BUFF TO CREAM IN PART CHALKY - LAMINATED -- SLIGHTLY DOLOMITIC GENERALLY DENSE - LITHOFIED AND COMPACT MASSIVE - SPORATIC LARGE VUG AND FRACTURE CAVITY INFILLED WITH SYPRUM CRYPTO CRYSTALLINE -
257 - 265	DOLOMITE	- CREAM TO LIGHT BUFF - MASSIVE - CRYPTO CRYSTALLINE - MARLY - FOSSILIFEROUS - PALE GREEN TINGE AT BASE -

265 - 272	LIMESTONE	- AS ABOVE FORMERLY -
272 - 276	DOLOMITE	- MASSIVE GREENISH BUFF - CRYPTO - CIOSTROMAL STRINGER AS BASE --
276 - 282	LIMESTONE	- CRYPTO CRYSTALLINE - CROSS BEDDED - DISTORTED - THINLY LAMINATED AND SHALY TAN TO GREY GREEN -
282 - 287	DOLOMITIC SHALE	- OR SHALY DOLOMITE - VERY THINLY LAMINATED GREY GREEN -
287 - 296	LIMESTONE	- LIGHT BUFF TO CREAM - CRYPTO - BRECCIATED - CHERTY INCLUSIONS LIME MUDSTONE OR CALCILUTITIC - FRACTURED AND SUTURED - DENSE --
296 - 305	DOLOMITE	- LIGHT BUFF TO CREAM - ONE FOOT OF RE CRYSTALLIZED BIOSTROMAL REMNANT WITH VESICULAR POROSITY AT TOP - REMAINS LITHOFIED SHALY -
305 - 318	LIMESTONE	- CRYPTO - CREAM TO BUFF - MASSIVE AND STRATIFIED BECOMING BIOSTROMAL - WARPLED AND NODULAR DISTORTED BEDDING - BROWN CHALEDDONY TO CHERT INCLUSIONS GYPSUM FILLED VUGS - MINOR ORGANIC LEACHED PIN POINT CAVITIES - FRAGMENTAL IN PART -
318 - 352		LOWER MEMBER - EKWAN RIVER 318/-298
318 - 352		- MOTTLED - BUFF TO TAN - HIGHLY FOSSILIFEROUS - AMPHIPORA AND ALGAEL RELICS NUMEROUS - DENSE AND TIGHT - BRECCIATED - WAVY BEDDED - ANASTOMISIC BEDDING - NODULAR IN PART - LARGE BRECCIATED FRAGMENTARY INCLUSIONS - REEFOID DEBRIS -
352 - 376	DOLOMITE-DOLOMITE LIMESTONE	- PALE BLUE TO GREY TO LIGHT BUFF - LITHOFIED - CRYPTO CRYSTALLINE - THINLY LAMINATED AND SHALY IN PART - VUGGY WITH BIOSTROMAL STRANDS HIGHLY DISTORTED AND BRECCIATED IN PART LARGE SOLUTION CAVITIES - CALCITE LINED RECRYSTALLIZATION - SPORATIC - GENERALLY DENSE -
376 - 388	DOLOMITE LIMESTONE	- BECOMING MOTTLED AND WAVY BANDED - NOBBLY BEDDING - NODULAR - SHALY AND THINLY LAMINATED IN PART - DISTORTED LIGHT BLUE GREY TO LIGHT BUFF - CRYPTO CRYSTALLINE - DENSE -

388 - 455	DOLOMITE-LIMESTONE	- BECOMING STRATIFIED - SHALY AND THINLY LAMINATED - AN ALTERNATING CYCLIC SERIES OF INTERBEDDED DOLOMITES AND LIMESTONE TO DOLOTIC LIMESTONE - WITH A FEW FINELY VARVED SHALE PARTINGS A FEW SCATTERED GYPSUM FILLED VUGS AND LEACHED SOLUTION CAVITIES - FROM LIGHT GREEN TO TAN TO CREAMY BUFF -
455 - 459	SEVERN RIVER 455 /-435	
455 - 459	DOLOMITE-LIMESTONE	- GENERALLY BARREN, EVAPORITIC - BECOMING BIOCLASTIC AND FRAGMENTAL FOR 5' - BECOMING MASSIVE AND THICKLY BEDDED - CREAMY BUFF - MUDSTONE - EVAPORITIC -
459 - 461		- COLOR BECOMING GREY GREEN - SHALY - DISTORTED -
480 - 491	DOLOMITE	- LIGHT GREY GREEN TO TAN TO BUFF SOLUTION VUGS AND FRACTURE CAVITIES HIGHLY DISTORTED - BIOSTROMAL RE CRYSTALLIZATION - CRYPTO - LEACHED ORGANIC POROSITY - FRACTURED AND SUTURED WITH NUMEROUS FRACTURE CAVITIES PERMEABILITY NIL - INTERBEDDED SHALY PHASES - BECOMING MOTTLED AT BASE -
491 - 527	DOLOMITE	- MASSIVE - LITHOFIED - CREAMY TO BUFF - FINELY TO CRYPTO CRYSTALLINE - FLAT TO DISTORTED -STRATIFIED - VUGGY - IN PART SHALY - WITH INTERPLANERY LINEAR CAVITIES BARREN AND DENSE -
527 - 546	LIMESTONE DOLOMITE	- TAN - CHALKY - CALCILUTITIC - BARREN - DENSE - INTERBEDDED WITH CREAMY BUFF EVAPORITIC - DENSE --CRYPTO CRYATALLINE BARREN AND LITHOFIED - DOLOMITIC MUDSTONE - BECOMING GREY GREEN -
546 - 548	SHALE	- DOLOMITIC - BRECCIATED - GREY GREEN - THINLY LAMINATED DISTORTED -
548 - 570	DOLOMITE LIMESTONE	- LIGHT BUFF - INTERBEDDED - CONTINUTED SERIES OF ALTERNATE BEDS OF LIMESTONE AND DOLOMITE - TAN TO BUFF MOTTLED IN PART - HIGHLY DISTORTED - FRACTURED AND BRECCIATED - ONE STROMATAPORA HEAD WITH VESICULAR POROSITY AND ALGAE REMNANTS -- MINOR SHALE PARTINGS AND THINLY LAMINATED BRACKS - FRACTURE POROSITY - WITH SOME SCATTERED VUGS - REEFOID BRECCIA -
570 - 574		- BECOMING MASSIVE AND COMPACT - STRATIFIED AND LITHOFIED - CRYPTO CRYSTALLINE -

574 - 587 DOLOMITE - LIGHT BROWN TO BUFF - TURGID, DISTORTED AND DISTURBED BEDDING - FINE LAMINAE - VUGS AND PIN POINT POROSITY - INCIPIENT REEFAL REMNANTS - ORGANIC AND VESICULAR POROSITY - VERY FOSSILIFEROUS - BECOMING FINELY SUCROSIC TO FINELY GRANULAR IN BANDS -

587 - 611 DOLOMITE - BECOMING DENSE, BLUE GREY TO TAN AND LIGHT BUFF - SHALY BREAKS AND PARTINGS IN PATCHES -- SPORATIC SOLUTION VUGS -

611 - 616 - AGAIN BECOMING BRECCIATED - BIOCLASTIC VUGLAR - A DOLOMITIZED INCIPIENT REEFOID LATTICE - DISTORTED AND FRACTURED - RUBBLIZED - OPEN FRACTURE POROSITY -

616 - 623 - MASSIVE STRATIFIED THICKLY BEDDED COMPETENT GREY TO BUFFCRYPTO CRYSTALLINE DOLOMITE -

623 - 696 DOLOMITE - CREAMY BUFF - MASSIVE - CRYPTO CRYSTALLINE - DENSE CHALKY - STRATIFIED EVAPORITIC - STRINGERS UP TO $\frac{1}{2}$ FT BIOCLASTIC - FRAGMENTAL AND GRANULAR - PETTETOID - HIGHLY BRECCIATED AND FRACTURED - RE CEMENTED - FRACTURE -- SOLUTION VUGS AND INTER GRANULAR POROSITY ORGANIC LEACHED POROSITY IN PATCHES - INCIPIENT BIOSTROMAL STRINGERS - LOW PERMEABILITY - CRINOIDS - CORRALS BROWN CHERT INCLUSIONS SPORATIC - BECOMING OOLITIC IN PART - TO COARSE FRAGMENTAL -

696 - 702 - BECOMING MOTTLED AND BANDED AND BRECCIATED LIGHT BLUE GREY COLOR BLENDING BACK TO BUFF -

702 - 718 DOLOMITIC LIMESTONE - MOTTLED, SPECKLED AND BANDED - DISTORTED BEDDING LAMINAE - BRECCIATED DENSE - BLUE GREY TO LIGHT BUFF INTERBEDS -

PORT NELSON FM. 718 /-698

718 - 727 DOLOMITE --CRYPTO CRYSTALLINE - BUFF TO TAN TO GREY BLUE - SHALY - DENSE - SOME BRECCIATION AND FRAGMENTATION - DISTORTION -

727 - 732 - CREAM TO BUFF - MASSIVE - BROKEN AND RUBBLIZED AT BASE - CRYPTO TO FINELY CRYSTALLINE -

732 - 750		- DARKER BROWN TO TAN - FINE TO MEDIUM GRANULAR - GOOD INTERSTITIAL AND INTRA-GRANULAR POROSITY - CLEAN - ORGANIC - LEACHEDAND SOLUTION VUGS AND POINT POINT POROSITY - INCIPIENT REEFOID STRINGERS - BD STROMAL - RELIC CORALINE LATTICES INFILLED - DOLOMITIZED -
750 - 755	SHALE	- DOLOMITIC - DARK BLUE GREY - CRUMBLED - DISTORTED PLASTIC - GOUGE - BRECCIATED AND INTERBEDDED BUFF DOLOMITE PARTINGG AT BASE -
755 - 780	DOLOMITE	- BUFF TO TAN - FRAGMENTAL STRINGER AT TOP - BECOMING CRYPTO CRYSTALLINE - DENSE - TO CHALKY - DOLITIC MUDSTONE - HIGHLY FRACTURED WITH OPEN FRACTURE - VERTICAL - CHALCEDONY INFILL AND INCLUSIONS - ZONES OF INTENSE FRACTURING AND CRUMBLING - REDOLOMITIZED -- COARSE RECRYSTALLIZED BRECCIA - FRIABLE AND CRUMPLED -
780 - 786	DOLOMITE	- BLUE GREY - SHALY HABIT WITH DARK BLUE GREY SHALE PARTINGS -
784 - 814		- TAN TO BUFF - CRYPTO CRYSTALLINE MATTRIX INTERBBED WITH REPEATING NARROW ZONES OF HIGHLY BIOCLASTIC BRECCIA - FOSSIL RICH VUGGY AND PIN POINT POROSITY - INDIVIDUAL CORALINE FORMS AND REMNANT REEFAL LATTICE RELICS WITH GOOD VESICULAR AND ORGANIC LEACH POROSITY -
814 - 820	DOLOMITE - SHALE	- BLUE GREY TO MEDIUM GREY - INDURATED THINLY LAMINATED - BRECCIATED AT BASE --
820 - 843	DOLOMITE	- LIGHT BUFF - CRYPTO CRYSTALLINE - TO FINELY SUCROSIC IN PATCHES BECOMING CREAMY BUFF TO TAN -WITH INCIPIENT REEFAL ZONES AND NARROW STRINGERS - MINUTE PIN POINT POROSITY - MICRO POROUS - SOME BRECCIATION AND DISTORTED BEDDINGS -
843 - 852		- BECOMING CRYPTO CRYSTALLINE - INDURATED AND SHALY - LIGHT BLUISH GREY -
852 - 860	LIMESTONE	- CREAM TO LIGHT BUFF - GENERALLY FINE CRYSTALLINE TO CHALKY - SCORACEOUS IN PART - AND GRANULAR TO COARSE FRAGMENTAL ZONES AND PATCHES OF EXTENSIVE BRECCI-- ATION - LARGE OPEN FRACTURE CAVITIES AND PATCHES OF GOOD ORGANIC LEACHED AND VESICULAR POROSITY - INTERBEDDED DOLOMITE STRINGERS.-

860 - 885	DOLOMITE	- CREAM - FINE CRYSTALLINE TO MICRO CRYSTALLINE - SPORATIC ORGANIC LEACHED SOLUTION CAVITIES - IN PART BRECCIATED AND RE DOLOMITIZED - FINELY CRYSTALLINE FRAGMENTAL WITH NUMEROUS MINUTE FRACTURE OPENINGS - POROUS - BECOMING TAN AT BASE -

CHURCHILL RIVER GROUP 885 /-865

885 - 929	DOLOMITE	- BROWN - DAPPLED WAVY BEDDED - BRECCIATED - FOSSILIFEROUS - FINELY CRYSTALLINE TO CRYPTO CRYSTALLINE - LIMESTONE INCLUSIONS - NOBBLY ANASTAMOSIC BEDDING - SCATTERED LARGE SOLUTION - CAVITIES AND OPEN VUGS - INTENSIVE DAPPLING AND BRECCIATION -
929 - 1004	LIMESTONE	- BECOMING LIMESTONE - FINE TO CRYPTO CRYSTALLINE - A LIMY PHASE OF ABOVE DAPPLED AND WAVY AS ABOVE IN PART BRECCIATED, FRAGMENTAL - TO FINELY SUCROSIC - HIGHLY FISSILIFEROUS - NOBBLY MOTTLING AND IRREGULAR BANDING - DENSE AND MASSIVE --LIMITED POROSITY - MICRO POROSITY IN PART
1004 - 1078	LIMESTONE	SAME AS ABOVE - MASSIVE - COMPACT - NOBBLY AND EAVY - MOTTLED FOSSILE - WITH NUMEROUS BROWN CHERT INCLUSIONS AND FOSSIL RECRYSTALLIZATIONS - BECOMING VUGULR AT BASE WITH NUMEROUS LARGE IRREGULAR VUG OPENINGS - GYPSUM CRYSTALLINE LINED -

BAD CACHE RAPIDS GROUP 1078/-1058

1078-1114	DOLOMITE	- TAN TO BROWN TO DARK GREY - MICRO TO CRYSTALLINE - BRECCIATED AND NOBBLY IN STREAKS - STRATIFIED INSHALY BANDS - DENSE - COMPETENT AND INTERBEDDED LIMY PHASES - COMPACTED - STREAKS OF MOTTLING AND BLEBS OF TAN TO BLUE GREY SPECKLING-
1114 - 1174	LIMESTONE	- LIGHT BROWN TO TAN - CRYPTO CRYSTALLINE MATTRIX - NODULAR - IRREGULAR WAVY BEDDING - FOSSILE - STREAKS OF BRECCIATION AND ZONES OF PATCHES OF GOOD ORGANIC LEACHED VESICULAR AND VUGULAR POROSITY - CHERT INCLUSIONS AND AS VUG INFILL - A CYCLIC RYTHMATIC SERIES OF LIMESTONE - WITH LARGE VUGS SPORATICALLY THROUGHOUT -AND DOLOMITE AS INTERBEDS AND BLEBS - SOME BRECCIATION IN NARROW ZONES - MEDIUM CRYSTALLINE TO FINELY CRYSTALLINE - BROWN - TAN TO DARK BUFF -

1174 - 1284		- BECOMING BROADLY NODULAR BANDED - WAXY ANASTOMOSIC BANDED - CRYPTO CRYSTALLINE DENSE AND TIGHT - LIGHT BROWN TO TAN COLORED - UNIFORM CRYPTO CRYSTALLINE EVEN TEXTURED - BARREN GENERALLY -
1284 - 1293	LIMESTONE	- AS ABOVE BECOMING DARKER COLORED - DARK GREY - FINELY CRYSTALLINE FOSSILIFEROUS TO FRAGMENTAL AND CLASTIC - INTER-BEDDED DARK GREY LIMY SHALES -
1293 - 1297	SANDSTONE	- DARK GREY - DIRTY KAOLINITIC MATTRIX - COARSE CLEAR SUB ROUNDED TO ROUNDED WATER WORN QUARTOSE GRAINS - CONGLOMERATIC - INFILLED WITH CLAYSTONE AND KAOLINITE - FRIABLE - UNIQUIGRANULAR ABUNDANT PYRITE STRINGERS - 2" DARK GREY SHALE AT TOP - BASE IS
1297 - 1298		GRANITOID - GNEISSIC AND GRANITIC INCLUSIONS - COARSE SANDSTONE - PYROTITIC DISSEMENATIONS —

PRE CAMBRIAN 1298/-1278

1298 - 1299	GRANITE	- LEACHED - ERODED AND INTRAGRATED WITH SANDSTONE ABOVE - GNEISSIC - MONZONETIC
1299 - 1304		- FINELY CRYSTALLINE FELDSPATHIC GRANITE -
1304 - 1327	RED GRANITE	- REDDISH - ORTHOCLASE PREDOMINENT - FRACTURED AND SUTURED - FINELY CRYSTALLINE - BROKEN AND RUBBLIZED - LOST 10' NOT RECOVERED (MECHANICAL FAILURE) OF CORE BARREL -
1327 —1330	GRANITE	- CHLORITIZED IN PART - HIGHLY FRACTURED AND FAULTED - GNEISSIC IN PATCHES - SCHISTOSE IN ATTITUTE -
1330 - 1337		- LOST CORE - $7\frac{1}{2}$'
1337 - 1366		- PREDOMINENCE OF ORTHOCLASE - COARSE PHENOCRYSTS -
1366 - 1392	GRANITE	- OR QUARTZOSE MONZONITE - GNEISSIC TEXTURE
1392 - 1401	GRANITE	- PEGMATITIC -
1401		FINAL TOTAL DEPTH

HUDSON BAY

RUPERT CREEK

WHITE BEAR CREEK

93°00' 55' 50' 45' 40' 35' 92°30'

57°45' 40' 35' 30' 25' 20' 57°15'

MAGNETIC BASEMENT DEPTH ESTIMATES FT/100 SEA LEVEL DATUM

-72 FROM INTRABASEMENT ANOMALY — GOOD — FAIR — POOR

-72s FROM SUPRABASEMENT ANOMALY

D OUTLINES OF PLATE FROM SUPRABASEMENT ANOMALIES WITH MAXIMUM THICKNESS IN FEET ESTIMATED WITH 0.002 cgs MAGNETIZATION CONTRAST

SCALE IN MILES

0 1 2 3 4

MERLAND OIL COMPANY OF CANADA LIMITED

AEROMAGNETIC INTERPRETATION

RUPERT CREEK
HUDSON BAY MANITOBA

MAGNETIC BASEMENT

GAI-GMX CANADA LIMITED

Contour Interval: 500 FEET	Scale: 1 IN = 1 MI	Date: FEBRUARY 1970
	Datum: SEA LEVEL	Map No: 1

93°00'
57°30'

92°25'
57°30'

-9 -9 -16 -8 -13s 150' -16s -12s -10s 100' -11s -13s -12s -14s -13s -13s -14s -13s -13s -13s -13s -13s -14s 200' -14s D 50' -19 -19 -8 -11 -10 -7 -8 -9 -6 -8 -7 -6 -9 -10 -10 -11 -13 -14 -16 -11 -7 -13s -13s -15s -16s -8 -9 -10 -15 -23 300' -20s -20s -20s -19s -20s -20s -23 -23 -23 -17s -16s 200' -18s -19 -22s -20s -19s -18s -19 -18 50' -13s 100' -17s -8s -9s -17s D 100' -17s -17 -11s 100' -11s 100' D -17 -17 -17 -17s 200' -14s 100' D -13s 200' -9s -9s-9s -8s -13 -10 -10 -11 -17s 200' -17s -18s -21s D -12s -12s 150' 100' 50' 150' -21 -18s -18s D -18s 150' -18s -18s 150' -18s 100' D -19 -21 -13 100' -14 -12 -11 -13

57°15'
93°00'

MERLAND OIL COMPANY OF CANADA LTD

GAI-GMX CANADA LIMITED

20 JULY 1970

Revised Interpretation

57°15'
92°25'

HUDSON

BAY

MAGNETIC BASEMENT DEPTH ESTIMATES FT/100 SEA LEVEL DATUM
FROM ULTRABASEMENT ANOMALIES
1000 — 1500 — 2000
FROM SUPRABASEMENT ANOMALIES

OUTLINES OF PLATE FROM SUPRABASEMENT ANOMALIES WITH MAXIMUM THICKNESS IN FEET ESTIMATED WITH 0.002 cgs MAGNETIZATION CONTRAST

Drilling Location

SCALE IN MILES

MERLAND OIL COMPANY OF CANADA LIMITED

AEROMAGNETIC INTERPRETATION

RUPERT CREEK
HUDSON BAY MANITOBA
MAGNETIC BASEMENT

BAY OMS CANADA LIMITED

Taken from J.S.R. correspondence file Jan 14/11 - re letter
dated 29/April/10 to J.S.R

54F-92-28-57-23 K.B.20 T.D.1401

A REPRODUCTION CATALOGUE NO.: 158485 A
STATUS AT TIME LICENCE ISSUED: NFW

ELECTRONIC Logging Velocity Co. Ltd.

CALGARY, ALBERTA

STRUCTURE TEST HOLE SURVEY

Location

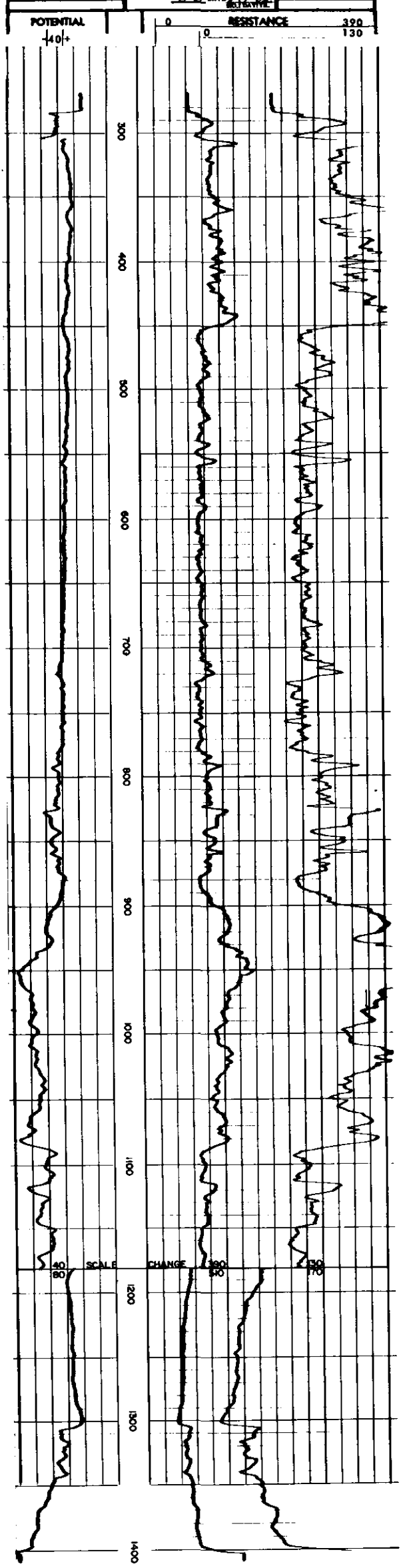
COMPANY MERLAND EXPLORATION LTD.
MERLAND ET AL WHITEBEAR CRK 54-F
WELL S.T.H. NO. 1 FILE
FIELD WILDCAT
PROVINCE MAN. LSD
Sec. Twp. Rge. W

Log Measured From K.B. Elevation 20

Run No.	ONE
Date	JULY 13, 1970
Footage Logged	
Total Depth, Logged	1401'
Total Depth, Driller	1401'
Csg Shoe, Logged	283'
Csg Shoe, Driller	283'
Csg Size	3 1/2" (NX)
Bit Size	NQ- 2 63/64 TO 1004'
	BQ-2 23/64 TO 1401
Mud Kind	FRESH WATER
Treatment	
Weight	
Viscosity	
Ph.	
Resist. Ohms m2m	@ °F @ °F
Loss ml/30 min	
Max Temp	
Recorded By	C. GUNHOLD
Witnessed By	F. BLUE

REMARKS OR OTHER DATA

SCALED BY D-1 DATE 27/12/72
FILMED BY B.G. DATE 27/12/72



54F-92-28-57-23 K.B.20 T.D.1401 FILE NO.158485

STRIP LOG

WELL NAME MERLAND et. al. WHITEBEAR CRK STH No 1 DATE 9 JULY 70

92° 28'W LONG 57°23'N LAT

LOGGED BY J. FRANK BLUE P. GEOL LOCATION: SEC. ____ TWP. ____ RGE. ____

COMPANY MERLAND EXPLORATIONS LTD. FARM ____ WELL NO. ____

T.D. 1401 B. H. FORM PRE ¢ COMM. ____

COMP. ____ PRODUCTION ____

ELEVATION 20+

GROUND (EST) +17'
GRD TO DF = 3
KB. 20 (EST)

CASING RECORD

HX Set at 90' cemented w
NX " " 283 " • 6 Sx
BX " " 1004 1 Sx

100

LMS - CALCILUTITE Crm/buff - tes - dense
inst Crs frag / cx lmo -
brecciated - distorted
infed blue gy chert.

LMS - biostromal - bioclastic - Reefal
breccia - Good ¢
lt buff / crm

Dolomite - Fx / - Cx - lt buff dns - strat
LMS -
Cherty nodular
- dolitic nodular
- Reefal - porous
lt buff vug ¢ -
- dns - nodular

200

Dol - lt grn gy - reefal debris
LMS - calcilutitic - Cx - limy mud st. dns.
- shaly - thin laminae
- lt buff / crm - Vugs & Fracture cavities.

DOLOMITE -
LMS -
DOLOMITE - biostromal Strgrs -
DOLITIC - SHALE - tan gy grn laminated
LMS -

300

Dol - lt buff / crm -
shaly
LMS - Cx - Crm / buff -
amphipora & algael -
biostromal strands - LOWER EKWAN 318 / - 298

Dol / LMS - highly distorted
shaly in Pt. biostromal strands

LMS. - dolomitic

Dol + - bcm stratified - shaly

400

LMS
intbd cyclic alternating series of dol / lms
Mx / Fx / Cx.

SEVERN RIVER 450 / - 430

DOLOMITE - lt gy grn - tan / buff - frac. distorted frac ¢
- biostromal strands leached organic ¢
- Crm / buff
- Fx ; Cx -
massive - Vuggy
lithified in pt shaly
dense - barren

500

LMS (Dol - tan - chalky barren & dns
calcilutic

SHALE - dolitic - brecciated - distorted - thin laminae gy grn

DOLOMITE / LMS - intbd - lt buff - mottled - high distortion
& brecciation - stromatoporoids -
reefoid breccia frac ¢
- massive - Cx -

DOLOMITE lt brn
incipient reefal remnant - Organic Vesicular ¢

Dolomite - dense - blue gy - tan
shaly minor lags

600

Dol - bioclastic open frac ¢

Dolomite - Massive. Cx - buff / gy

DOLOMITE - Crm / buff - Cx - dns - chalky
Stratified evaporite
minor Strgrs bioclastic
brecciated GRIN - CORALS
in pt frag & granular pelletoid
brn chert inclusions fracture & organic
incipient biostromal strgrs
bcm dolitic in pt / crs fragmental
bcm mottled - banded & brecciated
blue gy buff

700

Dolomitic LMS - distorted - blue gy / buff
speckled - mottled - banded brecciated

DOLOMITE - Cx - buff / tan / blue gy - shaly DNS
- massive - Cx / Fx
Dolomite - dk brown / tan - Good intergran ¢
F/M granular
reefoid interbeds & stringers relic Corals
Biostromal -
SHALE - dolitic - dk blue gy plastic
DOLOMITE buff / tan
Cx / chalky FOS
Crs breccia Intense fracturing
Friable
Shaly
Tan / buff - Cx Good Vesicular ¢
& organic leached Vugs
800

bioclastic & reefal relics Corals -

SHALE - dolitic indurated blue gy laminated
DOLOMITE - Cx indurated - shaly buff fine Suc -
incipient reefoid zones -
brecciated & distorted
DOLOMITE - Cx - indurated - shaly

LIMESTONE - Cream / buff Good organic ¢
DOL - MX - / Crm porous
Finely frag - CHURCHILL C GROUP 885 / - 865

DOLOMITE - Brn - dappled wavy bd - fos
Fx / Cx lms incl
nobbly - anastamosic bdng.

900

Solution vugs & open frac
cavities

LMS - Fine / Cx mottled & wavy bd. brecciated - massive - vugs - crinoids
Corals
nobbly irregular banding
fragmental - F Suc

1000

LMS - massive & cmpt - Fossiliferous
nobbly & wavy bd - nodular
mottled bro chert incl.
Sporatic vug Cavities - Gypsum infill
Anastomasic

DOLOMITE - Tan / brn / dk gy - MX / CX - brecciated
1100
nobbly shaly bands
mottled streaks & blebs of tan / blue gy speckling

Limestone - lt brn / tan - Cx matrix
nodular & irregular - wavy fos
breccia streaks
Chert inclusions Good organic leached &
vesicular porosity

BAD CACHE RAPIDS 1078 / - 1038

LMS - bcm bradly nodular & banded - wavy
Cx - MX Fxline
Anastomasic DNS.
1200
brn - tan dk buff

nodular banded - wavy - anastomasic
Cx -
lt brn - tan
uniform even textured
Gen barren

bcm dk gy - Fx - fos & frag - clastic
intbd dk gy shales

SANDSTONE - coarse clear - dirty dk gy - Kaolinitic infilled Friable
rounded water worn conglomeratic qtz grains
1300
GRANITE - leached & eroded at top - intergrated with ss above
bcm Fx Feldspathic granite - monzonite

PRE ¢ 1298 / - 1278

GRANITE GNEISS - qtz monzonite

GRANITE - pegmatitic
1400

MJ **ELECTRONIC** #2454

Logging & Velocity

STRUCTURE TEST HOLE SURVEY

Location

92° 28'W Long.

57°23'N Lat.

COMPANY MERLAND EXPLORATION LTD.

MERLAND et al WHITEBEAR CRK.

WELL S.T.H. NO.1, FILE

FIELD WILDCAT.

PROVINCE MAN. LSD

Sec. Twp. Rge. W

Log Measured From K.B. Elevation 20

Run No.	1
Date	JULY 13 1970
Footage Logged	
Total Depth, Logged	1401'
Total Depth, Driller	1401"
Csg Shoe, Logged	283'
Csg Sh	283'
Csg	3 1/2" (NX)
Bit Size	NQ - 2 63/64 TO 1004'
	BQ - 2 23/64 TO 1401'
Mud Kind	FRESH WATER
Treatment	
Weight	
Viscosity	
Ph.	
Resist. Ohms m	
Loss ml/30 min	
Max Temp	
Recorded By	C. GUNHOLD
Witnessed By	F. BLUE

REMARKS OR OTHER DATA

DEVIATION

POTENTIAL − 40 +

0 RESISTANCE 390

0 130

300 400 500 600 700 800 900 1000 1100 1200 1300 1400

40 SCALE CHANGE 390 130

80 510 170