Canada Oil and Gas Lands Administration | Administration du pétrole et du gaz des terres du Canada

D.A. 1411

Nova Scotia	☐	West Coast	☐	Exploratory	☒
Newfoundland	☐	Northern	☒	Development	☐
Gulf of St. Lawrence	☐	Hudson Bay	☐	Delineation	☐
				Service	☐

AUTHORITY TO DRILL A WELL

APPLICATION

This application is submitted with Section 82 of the Canada Oil and Gas Drilling Regulations. When approved under Section 83 of the Regulations, it is the requisite authority for the commencement of drilling operations.

Well Name in Full: Chevron East Hume River N-10

Operator: CHEVRON CANADA RESOURCES — Drilling Program No.: EL 322

Contractor: Shehtah Drilling — Permit or Lease No.: (LAND USE) N89A 120

Drilling Rig or Unit: One (1) — Estimated Well Cost: $1.85 MM

Location-Unit: N — Section: 10 — Grid Area: 66° 00', 129° 15'

Coordinates: Lat.: 65° 59' 27.30" N — Long.: 129° 16' 5.23" W

Area: NORTHERN (N.W.T.) — Field/Pool: EXPLORATORY - WILDCAT

Elevation-~~RT~~/KB: 79.0 m (ASL) — Ground: 74.4 m (ASL)

Approx. Spud Date: 1990-02-15 — Estimated Days on Location: 21

Anticipated Total Depth: 960 m — Target Horizon(s) Gilmore Lake Sandstone

UWI: 300N106600129150

EVALUATION PROGRAM

Ten-metre sample intervals: BELOW 339.7 mm SURFACE CASING

Five-metre sample intervals: BELOW 339.7 mm SURFACE CASING

Canned sample intervals: N/A

Conventional cores at: AS PER ADW SUBMISSION

Logs and Tests: AS PER ADW SUBMISSION

CASING AND CEMENTING PROGRAM

O.D	Weight:	Grade:	Setting Depth Below Seafloor:	Cementing Program (Volumes):
508.0 mm	139.9 kg/m	X-56	40 m	*Alaskan Permafrost
339.7 mm	101.2 kg/m	K-55	240 m	*Alaskan Permafrost
177.8 mm	34.2 kg/m	K-55	960 m	**Class "G" + 0.5% CFR-3

*Cement to surface

**Caliper + 25% excess

B.O.P. Equipment: 346.1 mm, 21 000 kPa WP

1 - Hydril 'GK' Annular

1 - Shafco 'NRS' (double) Ram

Other Information: 1 - Shafco 'NRS' (single) Ram

1 - Troy Series 600 Single Drum Drawworks

2 - Continental Emsco Model DB-550 7" x 16" Duplex Mud Pump

Signed: [signature] W. H. GARMAN — Title: MANAGER DRILLING DIVISION

Date: 1989-11-15 — Company: CHEVRON CANADA RESOURCES

APPROVAL

An approved copy of this notice is to be posted at each wellsite

Signed: [signature] Engineering Branch

Date: 90-02-14

File: 9211-C4-1-3

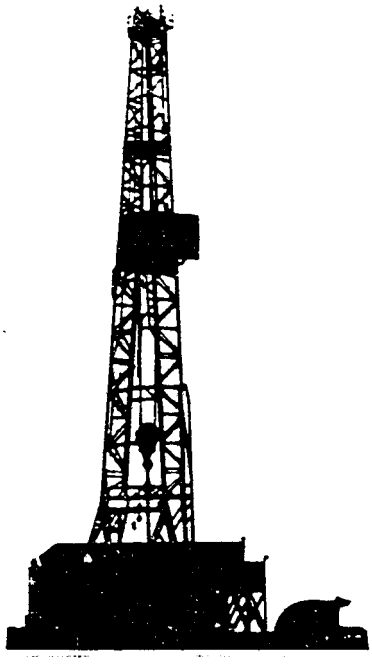
Department of Energy, Mines and Resources / Ministère de l'Énergie des Mines et des Ressources

Department of Indian Affairs and Northern Development / Ministère des Affaires indiennes et du Nord canadien

Canada

Chevron Canada Resources

Final Well Report



Chevron East Hume River N-10

65° 59' 57.30" N

129° 16' 5.23" W

FORT GOOD HOPE

9211-C4-1-3

FINAL WELL REPORT

CHEVRON EAST HUME RIVER N-10

65° 59' 57.30" N

129° 16' 5.23" W

Grid Area 66° 00', 129° 15'

1990-04-23

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FINAL WELL REPORT

INTRODUCTION

i) Summary

The Chevron East Hume River N-10 well location is situated in the northeastern part of the landblock, with the primary objective being porous sands of the Lower Cretaceous Gilmore Lake Member. A secondary objective is potentially porous Kee Scarp debris beds derived from the Kee Scarp reef complex to the east.

The Gilmore Lake Member consists predominantly of well sorted, medium grained, clear quartzose sand deposited in a fluvial environment. Porosity in this unit is intergranular, and is expected to average 25%. The trap is stratigraphic with the Imperial shale forming the lateral seal, and the shale and coal of the Upper Gilmore Lake Member creating the vertical seal. The source rock is believed to be the upper shale of the Gilmore Lake.

The Kee Scarp debris consists of abundant allocthonous stromatoporoid-rich beds. Porosity is both inter and intrafossil in nature, and is expected to average 5 to 7%. The trap is stratigraphic, the Kee Scarp reef forming the updip seal. The Canol Formation forms the lateral and vertical seal and also acts as the source rock.

ii) Operator, Contractor, and Drilling Unit Used

See General Data

iii) Wellsite Operations

(Refer to Appendix 1)

iv) Formations Penetrated

(Refer to Appendices 2, 3 and 4)

v) Testing Results

(Refer to Appendix 5)

vi) Locality Map

(Refer to Appendix 6)

GENERAL DATA

i) Well Name: Chevron East Hume River N-10
Exploration Agreement Number: EL322
Federal Designation: N 65° 59' 57.30"/W 129° 16' 5.23"
Unit N, Section 10
Grid Area 66° 00', 129° 15'

ii) Well Location:

Wellsite Location

The field location of the well was determined by locating shot point 3618X, on line 60X. The staked lease size is 200 metres square, oriented to take advantage of the existing terrain. Please refer to the wellsite plat for details.

Legal Survey Requirements

All surveys for exploratory wells must be done in accordance with the "Canada Oil and Gas Land Regulations". Basically the regulations require that a survey be performed to establish the location of the well relative to a grid area, defined by geographic coordinates. In this particular case the survey was completed in two stages: a control survey by GPS techniques to locate legal CLS77 posts near the wellsite, and a conventional survey between these two monuments to locate the well centre and lease boundary.

GPS Survey

The GPS control survey was done using four Trimble 4000ST GPS receivers over a period of two days (November 29 and 30, 1989). Please refer to the wellsite plan for the traverse details. Three existing control monuments were located (stations 74T100, 74T101, and 699029), and two new intervisible monuments were placed approximately 200 metres apart on seismic line 62X, on either side of the well centre.

The data collected at station 74T101 has not been used in the wellsite computations; we feel that because of the cold temperatures encountered during the survey (-40°C), the data was of poorer quality than that gathered at the remaining stations.

All of the baseline processing was done using Trimvec-Plus suite of software provided by Trimble Navigation.

Conventional Survey

The layout of the wellsite boundary and well centre between the iron posts was accomplished by conventional means.

Computations

For the GPS data, only non-trivial baselines have been included in the network adjustment; each loop contains vectors from a minimum of two independent sessions. The 3-D least squares adjustment and coordinate transformations were done using Geolab; stations 74T100 and 699020 were held fixed in all three dimensions. The resulting height misclosure between these two stations was within acceptable limits; however, the horizontal ties show a misclosure in the 2 metre range over the 40 kilometre baseline. Although this exceeds acceptable limits for second and first order control stations, this result has been repeated on a previous survey, and is therefore an overstimation of the accuracy of the control station, as opposed to a blunder in our survey.

All of the geoid-ellipsoid conversions shown on the wellsite plan were computed using the geoid prediction program from the University of New Brunswick, based on Rapp 78 data.

All of the geographic and UTM coordinates shown on the various tables of the wellsite plan are referred to the Clarke 1866 ellipsoid, and are based on the NAD27 adjustment.

iii) Unique Well Identifier

Drilling Program No.: EL322
Land Use Permit No.: N89A120

iv) Operator and Drilling Contractor

(OPERATOR)

Chevron Canada Resources
500 5 Avenue S.W.
CALGARY, Alberta
T2P 0L7
Phone 234-5000

(CONTRACTOR)

Shehtah Drilling Limited
P.O. Box 1467
YELLOWKNIFE, N.W.T.
X1A 2P1

General Manager: Mr. R. F. (Dick) Gajek
Telephone: (403) 873-4225

v) Drilling Unit

Name:	Shehtah 1E
Type:	2 800 m capacity, Troy Series 600 (600 hp)
Registry:	N/A
Year Built:	1982
Shipyard:	N/A

vi) Position Keeping - N/A

vii) Aircraft Support

a) Company

The Chevron Aircraft which supported the drilling operations consisted of a Hawker Siddeley HS-748, a Cessna Citation C-2 and a Twin Otter.

The Hawker Siddeley and Citation were based in Calgary while the Twin Otter remained at Norman Wells.

b) Charter

Charter Aircraft consisted of North-Wright's Twin Otter and Okanagan's Bell 206B Helicopter. These services supplemented our Company aircraft and were contracted as required.

c) Commercial

Canadian Airlines had daily flights from Calgary to Norman Wells return, which were used periodically to transport supplies, groceries, and equipment.

viii) Drilling Unit Performance - N/A

ix) Difficulties and Delays

While logging main hole, the logging company had a computer failure and could not run a velocity check shot survey. A replacement computer had to be flown in.

Time to log main hole	= 83 3/4 hours*
*Estimated Delay Time	= 25 hours

SUMMARY OF DRILLING OPERATIONS

i) Elevations

Ground:	74.40 m
Fill:	0.20 m
KB to Ground:	5.46 m
KB Elevation:	80.06 m

ii) Total Depth

Drilled:	445 m
Logged:	445 m
Plugged Back:	123 m

iii) Date Spudded

1990-02-16-02:00 hours.
Notified COGLA Yellowknife of spud.

iv) Date Drilling Completed

Drilling was completed 1990-02-28

v) Date of Rig Release

Shehtah Rig 1E was released at 12:00 hrs 1990-03-04

vi) Well Status

Abandoned.

vii) Hole Size and Depth

Hole	Size	Depth
a) Conductor	660.4 mm (26")	70 m (230 ft)
b) Surface	444.5 mm (17 1/2")	240 m (787 ft)
c) Main	215.9 mm (8 1/2")	445 m (1470 ft)

viii) Casing and Cementing Record

HOLE	SIZE	WEIGHT	GRADE	MAKE	NO. OF JTS.	THREAD TYPE	DATE SET	DEPTH SET (m)	CEMENT TYPE & VOLUME
Conductor	508.0 mm	139.9 kg/m	X-56		7	Vetco RL-4S	90-02-17	69.4	2m3 SAPP Water pre-flush followed by 36.5m3 (45.0t) Alaskan Class "G" Permafrost cement c/w 0.15% permafrost retarder mixed to 1760 kg/m3 slurry density
Surface	339.7 mm	101.2 kg/m	K-55	US Steel	21	ST&C	90-02-20	243.45	3m3 SAPP water pre-flush followed by 24.8m3 (30.6t) Alaskan Class "G" Permafrost cement c/w 0.15% permafrost retarder mixed to 1760kg/m3 slurry density

ix) Side Tracked Hole - N/A

x) Drilling Fluid
(Refer to Appendix 7)

HOLE	SIZE mm (in)	TYPE	PROPERTIES									
			Density	Viscosity	W.L.	pH	PV	YP	Gel in/10min	Solids	Oil	Cl
Conductor	660.4 (26)	Gel-Chemical	1310	70	10.4	9	37	10	2/10	20%	Nil	150
Surface	444.5 (17 1/2)	Gel-Chemical	1110	86	8.4	10	34	16	6/12	7%	Nil	250
Main	215.9 (8 1/2)	Gel-Chemical	1075	56	8.04	9	20	13	4.5/13	5%	Nil	250

xi) Fishing Operations

Lost both test packers, tail pipe and 21 x 171mm DC when pick-up sub pulled loose. Fished with 3 1/2 IF pin and drill string.

xii) Well Kicks - N/A

xiii) Formation Leak-Off Tests (FLOT)

CASING SIZE mm (in)	SHOE DEPTH	FLUID DENSITY (kg/m3)	MAXIMUM SURFACE PRESSURE (kPa)	EQUIVALENT GRADIENT (kPa/m)	EQUIVALENT MUD DENSITY (kg/m3)	DATE FLOT CONDUCTED
508.0 (20)	69.4 m				N/A	N/A
339.7 (13 3/8)	239.0 m	1110	6 600	38.5	3925	90-02-23

xiv) Time Distribution

	HOURS	DAYS
DRILLING OPERATIONS		
1. Drilling	49 1/2	2.1
2. Tripping	2 1/4	0.1
3. Coring	14 1/2	0.6
4. Deviation Surveys	2 3/4	0.1
5. Rig Service and Tests	7 1/2	0.3
DEAD TIME		
1. Drillstem Testing	32 1/4	1.4
2. Logging	94	3.9
3. Circulating Samples	14 1/4	0.6
4. Casing, Cementing and WOC	159	6.6
5. Hole Conditioning	2 1/2	0.1
6. Rig Move, Up, Down	122	5.1
7. Completing	-	-
LOST TIME		
1. Fishing	3	0.1
2. Lost Circulation	-	-
3. Repairs	9	0.4
4. Waiting	3 1/2	0.1
5. Miscellaneous	-	-
TOTAL:	516	21.5

xv) Deviation Surveys
(Refer to Appendix 8)

xvi) Abandonment Plugs

PLUG NUMBER	INTERVAL	LENGTH (m)	FLUID BETWEEN PLUGS	FORMATION ISOLATED
1	445m - 224m	221 m		Bottom hole, 15m into 339.7mm surface casing
EZSV	153m			
2	153m - 123m	30 m	Gel-Chemical	In 339.7mm surf. csg
3	17m - 7m	10 m	Gel-Chemical	In 339.7mm surf. csg
	WELD ON CAP ON 339.7 mm SURFACE CASING 1m BELOW GROUND			

xvii) Composite Well Record

(Refer to Appendix 2)

SUMMARY REPORT

WELL NAME:	Chevron East Hume River N-10
LOCATION:	Unit N, Sec. 10
COORDINATES:	N 65° 59' 57.30", W 129° 16' 5.23" (longitude)
GROUND ELEVATION:	74.4 m Fill 0.2 m
KB TO GROUND LEVEL:	5.46 m
KB ELEVATION:	80.06 m
TOTAL DEPTH:	445 m
STATUS:	Dry and Abandoned
SPUDDED:	1990-02-16-02:00
RIG RELEASED:	1990-03-04-12:00
GEOLOGIST:	Dave Hendry
ENGINEERS:	Bill Marsh, Rod Uchytil, Bill Meyer, Kevin Anderson
CONTRACTOR:	Shehtah #1
MUD LOGGER:	Datalog
HOLE SIZE:	660 mm Surface to 70 m 444.5 mm 70 m to 240 m 215.9 mm 240 m to 445 m
CONDUCTOR CASING:	Ran 7 jts of 508 mm, 139.9 kg/m, X-56, Vetco RL-4S. Landed at 69.4 m. Total string 69.65 m. Cemented with 45 tonnes of class "G" permafrost cement. C.I.P. 1990-02-17-09:00.
SURFACE CASING:	Ran 21 joints 339.7 mm, 101.2 kg/m, K-55, 8rnd, ST&C casing. Landed at 239 m. Total string 243.45m. Cemented with 30.6 tonnes of permafrost cement. CIP 1990-02-20-21:45.

ABANDONMENT PLUGS

Plug #1	445 m	-	224 m
Plug #2	153 m	-	123 m
Plug #3	17 m	-	7 m

DITCH SAMPLES

5 m intervals

One set of vialed samples for Chevron Canada Resources and one set of bagged samples, one set of vialed samples, and one set of canned samples for the COGLA. Samples stored at ISPG.

SAMPLE DESCRIPTION

70 m - 445 m (Refer to Appendix 3)

WELL SITE ROCK LOG DESCRIPTION

70 m - 445 m (Refer to Appendix 9)

CORED INTERVALS

(Refer to Appendix 4)

Core #1 308 m - 335 m Cut 27 m Recovered 22 m

LITHOLOGY

(Refer to Appendix 10)

LOST CIRCULATION

No losses occurred.

FORMATION TESTS

DST #1 217.9 m to 335 m Arctic Red/Gilmore Lake
Dual Bottom Hole Conventional - Baker Oil Tools
Closed Chamber - The Evaluators

Times: 8, 64, 60, 117, 8

Preflow: 0 to 39 kPa. Average liquid rate 36 m^3/day. No measurable gas production.

Valve Open: 0 to 8.4 kPa. Average liquid rate 0.7 m^3/day. Average gas rate 0.5 scm/day.

Final Flow: Weak air blow, dead in 5 minutes. No gas to surface.

Recovery: 61 m drilling fluid.

Pressures: (In Kpa)	IHP	2 323	1st IFP	509	1st FFP	1 172
	ISIP	1 562	2nd IFP	1 194	2nd FFP	1 577
	FSIP	1 915	FHP	2 258		

Recorder at 219 m BHT 20°C

DST #2 284 m to 315.9 m Arctic Red/Gilmore Lake
Inflate Staddle - Baker Oil Tools
Closed Chamber - The Evaluators

Times: 8, 59, 40, 152, 103

Preflow: 0 to 31 kPa. Average liquid rate 16 m^3/day. Average gas rate 40 scm/day.

Valve Open: 30 to 263 kPa. Average liquid rate 4.3 m^3/day. Average gas rate 69 scm/day.

Recovery: 50 m drilling fluid.

Pressures:	IHP	3 096	1st IFP	284	1st FFP	272
(In Kpa)	ISIP	2 218	2nd IFP	425	2nd FFP	543
	2nd SIP	2 384	3rd IFP	427	3rd FFP	716
	FHP	3 064				

Recorder at 286 m BHT 21°C

BIOSTRATIGRAPHIC DATA N/A

GEOLOGICAL MARKERS
Chevron East Hume River N-10
KB Elevation 80 m (Actual KB 80.06 m)

Formation		Samples Depth - m	Log Depth - m	Log Elevation- m
1.	Arctic Red Sandstone	283	281	-201
2.	Gilmore Lake Sandstone	290	288	-208
3.	Gilmore Lake Shale	297	292	-212
4.	Gilmore Lake Coal	302	298	-218
5.	Imperial	317.5	315	-235
6.	Canol	375	375	-295
7.	Kee Scarp Debris	381	379	-299
8.	Kee Scarp		(Absent)	
9.	Carcajou Marker	413	411	-321
10.	Hare Indian Ramp	417	413	-323
11.	Hare Indian Shale	—	426	-336
	TOTAL DEPTH	445	443	-353

(i) LOGGING — By Computalog (Refer to Appendix 12)

	Run 1 1990-02-20	Run 2 1990-02-25	Run 3 1990-02-28
LSS-GR-CAL	239 m - 0 m		
DIL-GR		333 m - 239 m	445 m - 239 m
SLD-CNS-SGR-CAL		333 m - 239 m	445 m - 290 m
BCS-GR-CAL		333 m - 239 m	445 m - 290 m
SSL-GR-CAL		333 m - 239 m	
MEL-GR		333 m - 239 m	
RSCT-GR		301. m	
		297.5 m	
		295.0 m	
		290.75 m	
		290.8 m	
SSL-GR-CAL			445 m - 290 m

(ii) FORMATION STIMULATION — N/A

iii) FORMATION & PRODUCTION TEST RESULTS — N/A

Environmental Well Report: N/A

APPENDIX 1

WELLSITE OPERATIONS SUMMARY

DATE: 17-02-90 DAY: 01 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: Prepare to spud. SPUD 1990-02-16 at 02:00 hours. Drill 660mm hole with surveys to 58 m, dummy trip, drill to 70 m, circ at TD, POOH. Rig out rotary table, install false floor.
MIDNIGHT DEPTH: 70 m OPERATION: Rig false floor PROGRESS:70 m

DATE: 18-02-90 DAY: 02 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: Finish installing false floor, rig up and run 508mm casing, pick up DP and run inside casing, tag into adaptor, circ and work casing, cement casing through DP, CIP: 09:00, WOC, tear out landing joint, install diverter.
MIDNIGHT DEPTH: 70 m OPERATION: Nipple up PROGRESS: 0 m

DATE: 19-02-90 DAY: 03 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: Nipple up diverter, RIH, circ out cmt, pressure test diverter, drill 444.5mm hole, circ clobbered mud, drill, survey, drill.
MIDNIGHT DEPTH: 158 m OPERATION: Drilling PROGRESS: 88 m

DATE: 20-02-90 DAY: 04 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: Drill to 232 m with surveys, POOH, tight coming off bottom, lay down 228mm collars, pick up 171mm monel & collars, RIH, ream from 170m-190m, RIH, drill to 240 m, circ, dummy trip, take directional surveys, circulate.
MIDNIGHT DEPTH: 240 m OPERATION: Circ prior to logging PROGRESS: 82 m

DATE: 21-02-90 DAY: 05 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: POOH to log, rig up loggers, log with Computalog, RIH, circ, POOH, rig up to run csg, run 339.7mm casing, circ, cement casing with 30.6t of Permafrost cement with 0.15% permafrost retarder. Rig out cementers. WOC. CIP at 21:45, 20-02-90.
MIDNIGHT DEPTH: 240 m OPERATION: WOC PROGRESS: 0.0 m

DATE: 22-02-90 DAY: 06 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: WOC, tear out and lay down landing joint and diverter, screw on casing bowl, install and nipple up BOP's.
MIDNIGHT DEPTH: 240 m OPERATION: Nipple up PROGRESS: 0.0 m

DATE: 23-02-90 DAY: 07 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: Nipple up BOP's, pressure test, service blind rams, pick up BHA, RIH, pressure test, POOH, repair blind rams, pressure test, RIH, drill cement.
MIDNIGHT DEPTH: 240 m OPERATION: Drill cmt. PROGRESS: 0.0 m

CHEVRON EAST HUME RIVER N-10

DATE: 24-02-90 DAY: 08 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: Drill cement with water, switch to mud, drill to 244 m, run formation leak off test, POOH, pick up 216mm bit, RIH, control drill to 308 m, circ samples at 250m, 255m, 260m, 265m, 270m, 275m, 278m, 280m, 283m, 286m, 290m, 293m, 296m, 298m, 301m, 305m and 308m.
MIDNIGHT DEPTH: 308 m OPERATION: Control Drlg PROGRESS: 68 m

DATE: 25-02-90 DAY: 09 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: Circ bottom hole sample, core point, POOH, make up and RIH with core bbl, ream from 268m-308m, cut core #1, 27m in 4.75 hours, POOH, recover core, service barrel, wait on orders, make up and RIH with test tools, head up tools and install manifold, run DST #1.
MIDNIGHT DEPTH: 335 m OPERATION: Testing PROGRESS: 27 m

DATE: 26-02-90 DAY: 10 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: POOH with DST #1, recover recorders, packers and tail pipe dropped, RIH and screw into fish, POOH, with fish, lay down packers, make up BHA and RIH, circ, POOH to log, rig up and log with Computalog, rig down loggers, wait on orders, RIH, circ, POOH to run DST #2. MIDNIGHT DEPTH: 335 m
MIDNIGHT DEPTH: 335 m OPERATION: POOH PROGRESS: 0.0 m

DATE: 27-02-90 DAY: 11 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: Finish out of hole, make up test tool, 284m - 315m interval, RIH with test tools, run DST #2, closed chamber DST, 10:60:50:160 min, then continued testing, closed chamber for 30 min, opened to atmosphere thru 1/8" choke for 40 min, (press bled down from 123kPa to 2.0kPa in 30 min and maintained 2.0kPa, closed chamber for 30 min, POOH with test, lay down test tools, RIH for clean out trip, POOH, rig up loggers, log with Computalog.
MIDNIGHT DEPTH: 335 m OPERATION: Logging PROGRESS: 0.0 m

DATE: 28-02-90 DAY: 12 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: Continue logging, rig down loggers, RIH inspecting collars, lay down damaged collars, pick up new collars, drill ahead, circ sample at top of Kee Scarp, drill ahead to 415 m.
MIDNIGHT DEPTH: 335 m OPERATION: Drilling PROGRESS: 80 m

DATE: 01-03-90 DAY: 13 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: Drill to T.D. at 445 m, circ bottom hole sample, dummy trip, circ, survey, POOH to log, rig up loggers, log with Computalog, computer for velocity check shot survey failed, wait on new computer, rig down loggers, RIH with BHA.
MIDNIGHT DEPTH: 445 m OPERATION: RIH PROGRESS: 40 m

DATE: 02-03-90 DAY: 14 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: RIH with BHA, circ and wait on computer parts, POOH to log, parts delayed due to severe weather, RIH and circulate.
MIDNIGHT DEPTH: 445 m OPERATION: Circ PROGRESS: 0.0 m

CHEVRON EAST HUME RIVER N-10

DATE: 03-03-90 DAY: 15 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: POOH to log, rig up and log with Computalog, rig down loggers, lay down DC's and HWDP. RIH with open ended DP, set DP at 445m and run abandonment plug #1. Set DP at 153m and displace hole to water, POOH, run and set EZSV bridge plug at 153 m on wireline. RIH and tag bridge plug, pressure test plug to 9000kPa, set DP at 153m and and run abandonment plug #2, lay down DP, cement mousehole and rig out cementers. Clean mud tanks and break out flare lines.
MIDNIGHT DEPTH: 445 m OPERATION: Tear out BOP's PROGRESS: 0.0 m

DATE: 04-03-90 DAY: 16 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: Tear out BOP stack, continue tearing out floor, prefabs and mud tanks, change liners and service pumps, tear out Halliburton tent. Cut off 339.7mm casing 1m below surface and fill casing with 10m of cement from surface, weld cap on 339.7mm casing, wait on welder.
MIDNIGHT DEPTH: 445 m OPERATION: Waiting PROGRESS: 0.0 m

DATE: 05-03-90 DAY: 17 RIG: SHEHTAH 1E
K.B.: 80.06 m GRD: 74.40 m
OPERATIONS SUMMARY: Wait on welder, weld sign and post on top of casing cap. Lay down derrick at 11:30 hours. Rig released at 12:00 hours, 1990-03-04.
MIDNIGHT DEPTH: 445 m OPERATION: Tear out PROGRESS: 0.0 m

APPENDIX 2

COMPOSITE WELL RECORD

APPENDIX 3

SAMPLE DESCRIPTION

70-80 VERY POOR SAMPLE
Mostly cement, loose, coarse and very coarse rounded grains of quartz, feldspar, minor dolomite, trace chert and mica, all cavings.
SANDSTONE: 10-15%, brown stained, very fine to fine grained, quartz, minor dark shale grains, trace mica, slight silt, very clean, very poorly cemented, very friable, poorly sorted, subangular, minor rounded quartz, fair to possibly good porosity, totally oil stained, very good streaming light yellow cut, sticky brown oil residue released in solvent.
SHALE: medium grey, slightly silty.

80-90 SHALE: medium grey, silty, non-calcareous, trace micromicaceous, subblocky, firm. Trace oil stained sandstone as above, all cavings.

90-100 SHALE: medium grey, silty beds, locally disseminated and small blebs of pyrite, trace micromicaceous, trace carbonaceous specks.

100-110 SHALE: slightly silty, decrease silty beds, trace micromicaceous and carbonaceous specks, trace bentonitic, subblocky. Trace brown dolomite concretions or nodules.

110-120 SHALE: slightly silty, few silty beds, locally pyritic, trace dolomite concretions, trace fossil tubes (oval, 1mm x-section).

120-130 SHALE: lighter grey, non-trace silty, trace pyrite, slightly bentonitic, softer, subblocky.

130-140 SHALE: disseminated pyrite, trace carbonaceous specks.

140-150 SHALE: medium grey, slightly bentonitic, slight disseminated pyrite, trace silt, trace pyritic fossil tubes, trace dolomite concretions.

150-160 SHALE: subblocky, locally disseminated pyrite, only trace silty. Increase sideritic dolomite concretions to 5%, slightly argillaceous, hard, tight.

160-170 SHALE: as above, slight disseminated pyrite, slightly bentonitic, trace carbonaceous specks, part very slightly silty, few small, brown, sideritic dolomite concretions.

170-180 SHALE: increasing disseminated pyrite, small pyrite blebs, trace carbonaceous specks, very slightly silty.

180-190 SHALE: locally slightly pyritic, trace micromicaceous, trace silt, carbonaceous specks.

190-200 SHALE: becoming silty, trace sandy with glauconite specks, slight micromicaceous and carbonaceous specks, slightly bentonitic, slightly pyritic, trace brown dolomite concretions.

200-210 SHALE: silty beds throughout, trace sandy, trace glauconite, micromicaceous, carbonaceous specks. Trace brownish, calcareous, sandy siltstone, argillaceous, trace glauconitic, tight.

210-220 SHALE: medium grey, increasing silty, very silty laminae and thin beds, minor grading to argillaceous siltstone, slight carbonaceous specks, locally pyrite blebs, slightly micromicaceous. Trace very silty sandstone, with glauconite grains, very fine grained, very argillaceous, tight, no stain or cut.

220-230 SHALE: silty to very silty beds, minor grading to argillaceous siltstone, rare sandy beds, trace pyrite, trace carbonaceous specks, micromicaceous, only trace glauconite, subblocky.

230-232 SHALE: as above, silty to very silty beds, trace sandy.

232-240 SHALE: medium grey, slightly bentonitic, carbonaceous specks, locally pyrite blebs, decreasing silt, slightly silty with silty beds, trace brown dolomite concretions.

T.D. for INTERMEDIATE CASING 240m

240-244 SHALE: medium grey, trace pyritic, trace carbonaceous specks, subplaty.
DOLOMITE: 20%, brown, cryptocrystalline and microcrystalline, trace with pelletoidal texture, argillaceous, part calcareous, tight, no stain or cut, probably concretions and thin beds.

244-250 SHALE: medium grey, part pyritic, carbonaceous specks in part, subplaty to subblocky, firm. 5% brown, very argillaceous, dolomite concretions.

250-255 SHALE: medium grey, becoming silty, increasing pyrite, subblocky. Trace very silty and sandy, locally glauconitic, grading to sandstone.
SANDSTONE: trace amounts, light brown, very fine grained, very silty, part sandy siltstone, very dolomitic, light coloured clays, subangular, moderate sorting, tight, no stain or cut. Part grading to silty and sandy dolomite.

255-260 SHALE: increasing silt, part very silty, increasing glauconite, part very glauconitic, disseminated pyrite and blebs, part becoming sandy, trace floating medium to coarse quartz grains. Trace sandstone laminae, grey, glauconitic, quartz, pyrite, argillaceous, silty, very fine grained, minor fine grains, subangular, poor sorting, tight, no stain or cut.

260-265 SHALE: grey, brownish grey, silty to very silty, slightly sandy, grading to sandy siltstone, floating fine to medium quartz grains, glauconitic, commonly pyritic, brown dolomitic concretions.
SANDSTONE: trace amounts, very thin laminae, grey, very fine to fine grained, very argillaceous, quartz, mica, glauconite, tight.

265-270 SHALE: brownish grey, very silty, increasingly grading to siltstone, sandy in part, disseminated pyrite, slightly glauconitic locally.
SILTSTONE: 30%, argillaceous, micaceous, sandy, locally glauconitic, disseminated pyrite and blebs. Trace cleaner siltstone.
SANDSTONE: silty, very fine grained, micaceous, siliceous, argillaceous, tight. Trace cleaner sandstone, siliceous, very fine grained, tight, trace bitumen specks, no cut or fluorescence.

270-275 SHALE: becoming very silty and very sandy, 5-10% loose floating quartz grains in sample from shale, locally glauconitic and pyritic.
SILTSTONE: grey, argillaceous, very sandy. With 5% brown, cleaner dolomitic siltstone, sandy, only slightly argillaceous, trace pyritic, tight, no stain or cut.
SANDSTONE: 10%, very fine to fine grained, floating medium grains, micaceous, argillaceous, silty, tight to possibly poor porosity, no stain or cut.

275-278 SHALE: decreasing abundance, silty and sandy, pyritic.
SANDSTONE: 40%, brown, very fine grained and very fine to fine grained, very argillaceous, silty, grading to sandy siltstone, micaceous, locally pyritic and glauconitic, tight, trace cut.
SILTSTONE: 5%, brown, slightly argillaceous, tight.

278-280 SHALE: very silty, sandy, locally glauconitic and pyritic, floating fine to medium quartz throughout, grading to sandy siltstone.
SANDSTONE: 30%, very silty, grading to sandy siltstone, very argillaceous, micaceous, pyrite, locally glauconite rich, tight, no stain or cut.

280-283 SHALE: silty, slightly sandy, decreasing sand grains, decreasing glauconite, disseminated pyrite, trace grey, calcareous concretions.
SANDSTONE: thin beds, 5%, very fine grained, some fine grains, very silty, slightly siliceous, slightly argillaceous, trace bitumen specks, tight.

ARCTIC RED SANDSTONE 283m (-203m)

283-286 SANDSTONE: light grey, white, brownish, very fine grained and locally very fine to fine grained, floating medium grains, silty, slightly argillaceous, slightly pyritic, dolomitic, slightly siliceous, trace black bitumen specks, trace mica and glauconite, tight, no stain or cut. Also darker, argillaceous, very fine grained, silty, glauconitic, pyritic, grading to sandy shale. Minor sandy siltstone.
SHALE: thin beds, sandy, silty.

286-290 SANDSTONE: light grey, light brownish, very fine to fine grained, floating medium grains, part poorly sorted very fine to medium grained, silty, clean to occasional argillaceous streaks, dolomitic, slightly siliceous, slightly micaceous, trace glauconite, trace bitumen specks, tight, no stain or cut, black partings of carbonaceous, argillaceous and pyritic material. Also part argillaceous, grey, very fine to fine grained sandstone.
SHALE: very thin bed, sandy, silty.

GILMORE LAKE SANDSTONE 290m (-210m)

290-293 SANDSTONE: brownish grey, fine grained, some fine to medium grained, floating coarse and very coarse grains, quartz, variably clean to trace argillaceous, few very argillaceous streaks, trace silt, glauconitic, siliceous, trace dolomitic, subangular, moderate to poorly sorted, tight to very poor porosity, trace bitumen specks, trace cut. Thin streaks of clean, coarse to very coarse sandstone, poor siliceous cement, poor porosity.
Few sandy shale partings.

293-296 SANDSTONE: light brownish, fine grained, with medium grains and some coarse grains, quartz, becoming cleaner, minor glauconite, trace dark chert grains, slightly argillaceous, siliceous, slightly dolomitic, slight disseminated pyrite, subangular to rounded, poor sorting, tight to poor porosity, slight spotty stain and spotty weak cut. With 10% clear, white, very clean, quartz sandstone, medium to coarse grained, siliceous, poor porosity at best, no stain or cut.
CONGLOMERATE: chert pebble conglomerate, thin bed, light grey chert, glauconite grains, coarse grained, clear, quartz sand matrix.
SHALE: brown, dolomitic, silty.

296-298 CONGLOMERATE: light grey chert pebbles, trace with hollow geode like centers, with sandstone matrix, white, fine-medium-coarse grained, quartz, minor light and dark grey chert grains in matrix, trace glauconite, very poor sorting, subangular to well rounded, trace pyrite, very clean, siliceous, trace dolomitic, tight to patchy poor porosity, 2-4% at best, spotty stain with weak cut.
SHALE: increase to 50%, brownish, dolomitic, silty, very slightly sandy, carbonaceous specked, with microcrystalline dolomite concretions or interbeds.

GILMORE LAKE SHALE 297m (-217m)

298-301 SHALE: brownish, silty, slightly dolomitic, disseminated pyrite, few pyrite blebs, slight carbonaceous specks. Lighter brown, very dolomitic concretions or interbeds.

GILMORE LAKE COAL 302m (-222m)

301-305 SHALE: dark brownish grey, silty, slightly dolomitic, disseminated pyrite, slight carbonaceous specks, part very silty, carbonaceous and slightly sandy.
COAL: 15-20%, black, brittle.
SANDSTONE: 10%, brownish, medium to coarse grained, clear quartz, with carbonaceous, argillaceous and dead stained boundaries, trace black chert grains, coal fragments locally, subangular, moderate sorting, siliceous, weak cut, spotty streaming, poor porosity.

305-308 SANDSTONE: brownish stained, fine to medium to coarse with some very coarse grains, quartz, small carbonaceous/argillaceous patches, dead stained boundaries, trace pyrite, poor siliceous cement, common loose grains, 4-6% porosity, spotty cut with pin point streaming. Also dark brown sandstone, very fine and very fine to fine grained, very carbonaceous, coal fragments, argillaceous, grading to sandy, carbonaceous shale, silty, slightly pyritic, siliceous, slightly dolomitic, tight, slight cut associated with coal fragments, very tight.
SHALE: silty, sandy, carbonaceous.
COAL: 10-15%.

308-335m SEE CORE DESCRIPTION #1

IMPERIAL SHALE 317.5m (-237.5m)

335-340 SHALE: medium grey, slightly silty to silty, carbonaceous specks, trace pyrite, few siltstone laminae.

340-345 SHALE: medium grey, trace dolomitic, slightly silty, trace silty beds, trace pyrite.

345-350 SHALE: trace dolomitic, only slightly silty, pyrite blebs.

350-355 SHALE: as above, slightly silty, slight carbonaceous specks, slight increase pyrite, disseminated and small blebs of pyrite. Few small nodules of brown, microcrystalline, sideritic dolomite.

355-360 SHALE: becoming darker, increasing silty, 35% very silty beds, grading to siltstone, increasing disseminated pyrite, slightly dolomitic, trace carbonaceous specks.

360-365 SHALE: as above, dark brownish grey, silty to very silty, grading to siltstone, trace dolomitic, disseminated pyrite, trace carbonaceous specks.
SILTSTONE: very argillaceous, pyritic, micromicaceous.

365-370 SHALE: medium brownish grey, silty to very silty, decreasing siltstone to minor thin beds.

370-375 SHALE: silty to very silty, argillaceous siltstone interbeds, slight carbonaceous specks, slight disseminated pyrite.

CANOL SHALE 375m (-295m)

375-380 SHALE: begin black, dark brown, bituminous, disseminated pyrite throughout, trace silty, very weak cut.

KEE SCARP 381m (-301m)

380-385 SHALE: as above, black, very dark brown, bituminous, part becoming calcareous, fossil fragments, disseminated pyrite, very weak cut.
LIMESTONE: light brown, very finely crystalline, slightly argillaceous, slightly silty, fine packstone, brachiopods, rare crinoids, slight bitumen specks tight, no stain or cut. With darker, bituminous, argillaceous beds and partings, pyritic, fine fossil fragments, tight, barely visible cut.

385-390 LIMESTONE: light to medium brown, very fine to finely crystalline, packstone, fine fossil debris, brachiopods, Amphipora, stromatoporoid, clean to very slightly argillaceous, trace silty, occasional pyritic patches, rare bitumen specks, few small isolated vugs, hard, blocky, tight, no stain or cut. With darker, dead organic/bituminous rich streaks, argillaceous.

390-395 LIMESTONE: light to medium brown, floatstone, packstone, stromatoporoid, possible corals, brachiopods, pellets, trace argillaceous, very fine bitumen specks, patchy dark bitumen coatings from stylolites, trace argillaceous, trace chert replacing fossils, few isolated vugs, no intercrystalline porosity, no stain or cut.

395-400 LIMESTONE: light to medium brown, increasing medium brown, hard, blocky, very slightly argillaceous, trace silty, increasing dead organic residue, bitumen specks and bitumen coated stylolites, packstone, floatstone, Amphipora, coral, stromatoporoid, brachiopods, tight, barely visible cut.

400-405 LIMESTONE: packstone, part with brown argillaceous matrix, increasing dark dead organic residue and bitumen, tight, isolated fossil vugs, no stain or cut.

405-410 LIMESTONE: lighter brown, very light to medium brown, very fine to medium crystalline, decreasing argillaceous, dead organic and bitumen, trace stylolites, stromatoporoid, possibly corals, brachiopods, very fine fossil debris, tight, barely visible cut.

CARCAJOU MARKER 413m (-333m)

410-415 LIMESTONE: packstone as above, coral, Amphipora, stromatoporoid, brachiopods, tight, barely visible slow cut.
SHALE: 30%, black, dark brown, very bituminous, very weak cut.

HARE INDIAN 417m (-337m)

415-420 SHALE: black, bituminous, disseminated pyrite, increasing cut.
LIMESTONE: light to medium brown, packstone, fine to medium crystalline, strongly recrystallized, tight, no stain or cut. With darker streaks, argillaceous, bituminous.

420-425 LIMESTONE: off white, light to medium brown, very fine to finely crystalline, clean, fine to coarse fossil fragments, brachiopods, bryozoan, darker argillaceous and bituminous bands, trace pyrite, tight, no stain or cut.

425-430 SHALE: medium grey, disseminated pyrite, slightly silty, platy.
LIMESTONE: light to medium brown, fossil packstone, decreasing abundance, may be cavings, tight, no stain or cut.
SILTSTONE: trace amounts, light grey, argillaceous, slightly pyritic, trace calcareous.

430-435 LIMESTONE: very fine to finely crystalline, part white soft, clean, part light brown, harder, slightly argillaceous and silty, tight, no stain or cut.
SHALE: medium grey, platy, soft, slightly silty, disseminated pyrite.
SILTSTONE: trace amounts, grey, argillaceous, trace calcareous.

435-440 LIMESTONE: pelletoidal grainstone, very clean, very fine to finely crystalline sparry cement, trace pyrite, trace bitumen, part silty, tight, no stain or cut. Minor argillaceous streaks.
SHALE: thin bed, grey shale as above.

440-445 LIMESTONE: pelletoidal packstone, white, light to medium brownish, sparry cement, clean, increasing silty, thin beds of calcareous, argillaceous siltstone, trace pyrite, tight, no stain or cut.

DRILLER'S T.D. 445m (-365m)

APPENDIX 4

CORE ANALYSIS

AGAT Laboratories
Core Services Division

CORE ANALYSIS REPORT

CHEVRON EAST HUME RIVER N-10
65-59 / 129-16

CORE 1: 308.00 - 335.00 m

Prepared for:

CHEVRON CANADA RESOURCES LIMITED

RC2707
March 1990

3801-21st Street NE
Calgary, Alberta
T2E 6T5
Tel. 291-2428

4954-89th Street
Edmonton, Alberta
T6E 5K1
Tel. 465-0265

9625-115th Street
Grande Prairie
T0J 0J0
Tel. 362-5422

AGAT LABORATORIES CORE SERVICES

TABLE OF CONTENTS

CORE ANALYSIS DATA
CHEVRON EAST HUME RIVER N-10

65-59 / 129-16

COMPANY: CHEVRON CANADA RESOURCES
WELL: CHEVRON EAST HUME RIVER N-10
LOCATION: 65-59/129-16
FORMATION: GILMORE LK
DRILLING FLUID:

AGAT LABORATORIES

W/O No: RC2707
Date: 20-03-90

FINAL CORE ANALYSIS DATA

Sample	Interval (m) Top	Base	Rep Thick (m)	Sample Length (m)	Gas Permeability Kmax (mD)	K90 (mD)	Vertical (mD)	Porosity	Density (kg/m3) Bulk	Grain	Residual Saturation Oil	Water	Remarks
SP001	290.75	-	-	-	6.32	-	-	.051	2470	2600	-	-	cgl;sidewall core #4
SP002	290.80	-	-	-	.38	-	-	.085	2410	2630	-	-	ss;sidewall core #5
SP003	301.00	-	-	-	16.7	-	-	.077	2410	2610	-	-	ss'sidewall core #1
			CORE NO. 1		308.00 - 335.00		(RECEIVED/CUT = 22.35/27.00m TOTAL BOXES = 20)						
001P	308.00	308.43	.43	.10	.05	.03	<.01	.037	2510	2610	-	-	ss;vf-fgr;arg;carb
002P	308.43	309.11	.68	.06	19.8 *	12.9 *	.40	.071	2370	2560	-	-	ss;f-cgr;hicarb;lam;frac
003	309.11	309.50	.39	.10	.04	.02	.01	.049	2490	2620	-	-	ss;vf-fgr;arg;carg;lam
004	309.50	310.17	.67	.09	.04	.04	<.01	.047	2490	2620	-	-	ss;vf-fgr;arg;carg;lam
005P	310.17	310.95	.78	.10	.06	.05	<.01	.052	2470	2610	-	-	ss;vf-fgr;arg;carg;lam
NA	310.95	312.90	1.95	-	-	-	-	-	-	-	-	-	coal/mudstone
006	312.90	313.92	1.02	.11	.03	.01	.01	.043	2540	2660	-	-	ss;vf-fgr;arg;slcarb
007	313.92	314.41	.49	.09	.02	.01	<.01	.051	2510	2650	-	-	ss;vf-fgr;arg;slcarb
008P	314.41	314.95	.54	.10	.08	.05	.02	.036	2530	2630	-	-	ss;vf-fgr;arg;slcarb
009	314.95	315.64	.69	.07	1.95	1.01	.05	.071	2430	2620	-	-	ss;f-mgr;lam;carb ptg
SP10	315.64	315.88	.24	-	.09	-	-	.044	2490	2610	-	-	ss;vf-fgr;lam;carb
011	315.88	316.14	.26	.09	22.4 *	1.41	.13	.061	2460	2620	-	-	ss;f-cgr;lam;carbptg;frac
SP12P	316.14	316.23	.09	-	.07	-	-	.030	2550	2630	-	-	ss;vf-mgr;arg;slcarb
013	316.23	316.83	.60	.11	4.54	3.66	.32	.093	2400	2640	-	-	ss;f-cgr;lam;carbptg;pbly
014P	316.83	317.03	.20	.11	1.75	1.43	.27	-	2440	2610	-	-	ss;f-cgr;pbly;lam;carbptg
015	317.03	317.32	.29	.10	2.19	1.98	.20	.071	2420	2610	-	-	ss;f-cgr;carbptg
NA	317.32	330.35	13.03	-	-	-	-	-	-	-	-	-	sh/mudstone
LC	330.35	335.00	4.65	-	-	-	-	-	-	-	-	-	lost core

* - Affected by fracture or crack as mentioned in remarks

CORE ANALYSIS - QUALITY CONTROL REPORT DATE: 3-21-1990

WORK ORDER: RC2707
COMPANY: CHEVRON CANADA RESOURCES
WELL: CHEVRON EAST HUME RIVER N-10
LOCATION: 65-59/129-16

CORE NO.1 308.00 - 335.00 REC:22.35

001P	308.00	308.43				
002P	308.43	309.11				
-GRAIN DENSITY (2556) OUT OF LIMIT FOR LITHOLOGY SPECIFIED (ss					[2580-2690])	Highly carbonaceous; results verified
-KMAX (19.77) IS OUTSIDE FOUR STANDARD DEVIATION (			.16 -	5.75)	Non penetrative, horizontal fracture along	
-K90 (12.88) IS OUTSIDE FOUR STANDARD DEVIATION (			.15 -	5.35)	carbonaceous lamina; resul	verified
003	309.11	309.50				
004	309.50	310.17				
005P	310.17	310.95				
NA	310.95	312.90				
006	312.90	313.92				
007	313.92	314.41				
008P	314.41	314.95				
009	314.95	315.64				
SP10	315.64	315.88				
011	315.88	316.14				
-KMAX (22.36) IS OUTSIDE FOUR STANDARD DEVIATION (			.06 -	2.03)	Non penetrative, horizontal fracture; carbonaceous	
SP12P	316.14	316.23			partings; results verified	
013	316.23	316.83				
014P	316.83	317.03				
015	317.03	317.32				
NA	317.32	330.35				
LC	330.35	335.00				

APPROVED: _____
QUALITY CONTROL SUPERVISOR

March 21, 1990
DATE

COMPANY: CHEVRON CANADA RESOURCES
WELL: CHEVRON EAST HUME RIVER N-10
LOCATION: 65-59/129-16

AGAT LABORATORIES

W/O No: RC2707
Date: 20-03-90

CALCULATED DATA REPORT

Sample	Interval (m) Top	Base	Rep. Thick. m	Cuml.	Porosity * Rep. Thick. Por-m	Cuml.	Wt. Avg. Porosity (Arith.)	Kmax * Rep. Thick. mD-m	Cuml.	Wt. Avg. Kmax (Arith.)
		CORE NO. 1	308.00 -	335.00	(RECEIVED/CUT = 22.35/27.00m		TOTAL BOXES = 20)			
001P	308.00	308.43	.43	.43	.016	.016	.037	.021	.021	.050
002P	308.43	309.11	.68	1.11	.048	.064	.058	-	-	-
003	309.11	309.50	.39	1.50	.019	.083	.056	.016	.037	.025
004	309.50	310.17	.67	2.17	.031	.115	.053	.027	.064	.029
005P	310.17	310.95	.78	2.95	.041	.155	.053	.047	.111	.038
NA	310.95	312.90	1.95	-	-	-	-	-	-	-
006	312.90	313.92	1.02	3.97	.044	.199	.050	.031	.141	.036
007	313.92	314.41	.49	4.46	.025	.224	.050	.010	.151	.034
008P	314.41	314.95	.54	5.00	.019	.244	.049	.043	.194	.039
009	314.95	315.64	.69	5.69	.049	.293	.051	1.346	1.540	.271
SP10	315.64	315.88	.24	5.93	.011	.303	.051	.022	1.561	.263
011	315.88	316.14	.26	6.19	.016	.319	.052	-	-	-
SP12P	316.14	316.23	.09	6.28	.003	.322	.051	.006	1.568	.250
013	316.23	316.83	.60	6.88	.056	.378	.055	2.724	4.292	.624
014P	316.83	317.03	.20	-	-	-	-	-	-	-
015	317.03	317.32	.29	7.17	.021	.398	.056	.635	4.927	.687
NA	317.32	330.35	13.03	-	-	-	-	-	-	-
LC	330.35	335.00	4.65	-	-	-	-	-	-	-

COMPANY: CHEVRON CANADA RESOURCES
WELL: CHEVRON EAST HUME RIVER N-10
LOCATION: 65-59/129-16

AGAT LABORATORIES

W/O No: RC2707
Date: 20-03-90

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

GROUPING BY POROSITY RANGES

Porosity Range	Samples		Metres		Wt. Avg. Porosity (Arith)	Wt. Avg. Kmax		Frequency %	
	In Rng	Cuml.	In Rng	Cuml.		Arith	Geom	In Rng	Cuml.
0.000-0.0199	0	0	.00	.00	.000	.000	.000	.00	.00
0.020-0.0399	3	3	1.06	1.06	.036	.067	.065	17.01	17.01
0.040-0.0599	6	9	3.59	4.65	.048	.042	.039	57.62	74.64
0.060-0.0799	2	11	.98	5.63	.071	2.021	2.018	15.73	90.37
0.080-0.0999	1	12	.60	6.23	.093	4.540	4.540	9.63	100.00

COMPANY: CHEVRON CANADA RESOURCES
WELL: CHEVRON EAST HUME RIVER N-10
LOCATION: 65-59/129-16

AGAT LABORATORIES

W/O No: RC2707
Date: 20-03-90

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

GROUPING BY PERMEABILITY RANGES

Permeability Range	Samples		Metres		Wt. Avg.	Wt. Avg. Kmax		Frequency %	
	In Rng	Cuml.	In Rng	Cuml.	Porosity (Arith)	Arith	Geom	In Rng	Cuml.
0.000-0.009	0	0	.00	.00	.000	.000	.000	.00	.00
0.010-0.019	0	0	.00	.00	.000	.000	.000	.00	.00
0.020-0.039	2	2	1.51	1.51	.046	.027	.026	24.24	24.24
0.040-0.079	5	7	2.36	3.87	.047	.050	.049	37.88	62.12
0.080-0.159	2	9	.78	4.65	.038	.083	.083	12.52	74.64
0.160-0.319	0	9	.00	4.65	.000	.000	.000	.00	74.64
0.320-0.639	0	9	.00	4.65	.000	.000	.000	.00	74.64
0.640-1.249	0	9	.00	4.65	.000	.000	.000	.00	74.64
1.250-2.499	2	11	.98	5.63	.071	2.021	2.018	15.73	90.37
2.500-4.999	1	12	.60	6.23	.093	4.540	4.540	9.63	100.00

COMPANY: CHEVRON CANADA RESOURCES
WELL: CHEVRON EAST HUME RIVER N-10
LOCATION: 65-59/129-16

AGAT LABORATORIES

W/O No: RC2707
Date: 20-03-90

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

POROSITY-METRES OF STORAGE CAPACITY LOST FOR SELECTED POROSITY CUT OFF

Porosity Cut Off	Metres		Capacity Lost		Capacity Remaining		Wt. Avg. Arith	
	Lost	Remaining	Por-Metres	%	Por-Metres	%	Mean	Median
0.000	.00	7.17	.000	.00	.398	100.00	.056	.054
0.020	.00	7.17	.000	.00	.398	100.00	.056	.054
0.040	1.06	6.11	.038	9.56	.360	90.44	.059	
0.060	4.65	2.52	.209	52.40	.190	47.60	.075	
0.080	6.57	.60	.342	85.99	.056	14.01	.093	
0.100	7.17	.00	.398	100.00	.000	.00	.000	

Total Storage Capacity in Porosity-Metres = .398

COMPANY: CHEVRON CANADA RESOURCES
WELL: CHEVRON EAST HUME RIVER N-10
LOCATION: 65-59/129-16

AGAT LABORATORIES

W/O No: RC2707
Date: 20-03-90

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

MILLIDARCY-METRES OF FLOW CAPACITY LOST FOR SELECTED PERMEABILITY CUT OFF

Permeability Cut Off	Metres		Capacity Lost		Capacity Remaining		Wt. Avg. Geom.	
	Lost	Remaining	mD-Metres	%	mD-Metres	%	Mean	Median
0.000	.00	6.43	.000	.00	5.277	100.00	.135	.065
0.010	.00	6.43	.000	.00	5.277	100.00	.135	.065
0.020	.49	5.94	.010	.19	5.267	99.81	.135	.065
0.040	2.57	3.86	.083	1.57	5.194	98.43	.224	.087
0.080	4.41	2.02	.201	3.80	5.076	96.20	.913	1.676
0.160	4.65	1.78	.222	4.21	5.055	95.79	2.610	2.108
0.320	4.65	1.78	.222	4.21	5.055	95.79	2.610	2.108
0.640	4.65	1.78	.222	4.21	5.055	95.79	2.610	2.108
1.250	4.65	1.78	.222	4.21	5.055	95.79	2.610	
2.500	5.83	.60	2.553	48.38	2.724	51.62	4.540	
5.000	6.43	.00	5.277	100.00	.000	.00	.000	

Total Flow Capacity in Millidarcy-Metres (Arithmetic) = 5.277

COMPANY: CHEVRON CANADA RESOURCES
WELL: CHEVRON EAST HUME RIVER N-10
LOCATION: 65-59/129-16

AGAT LABORATORIES

W/O No: RC2707
Date: 20-03-90

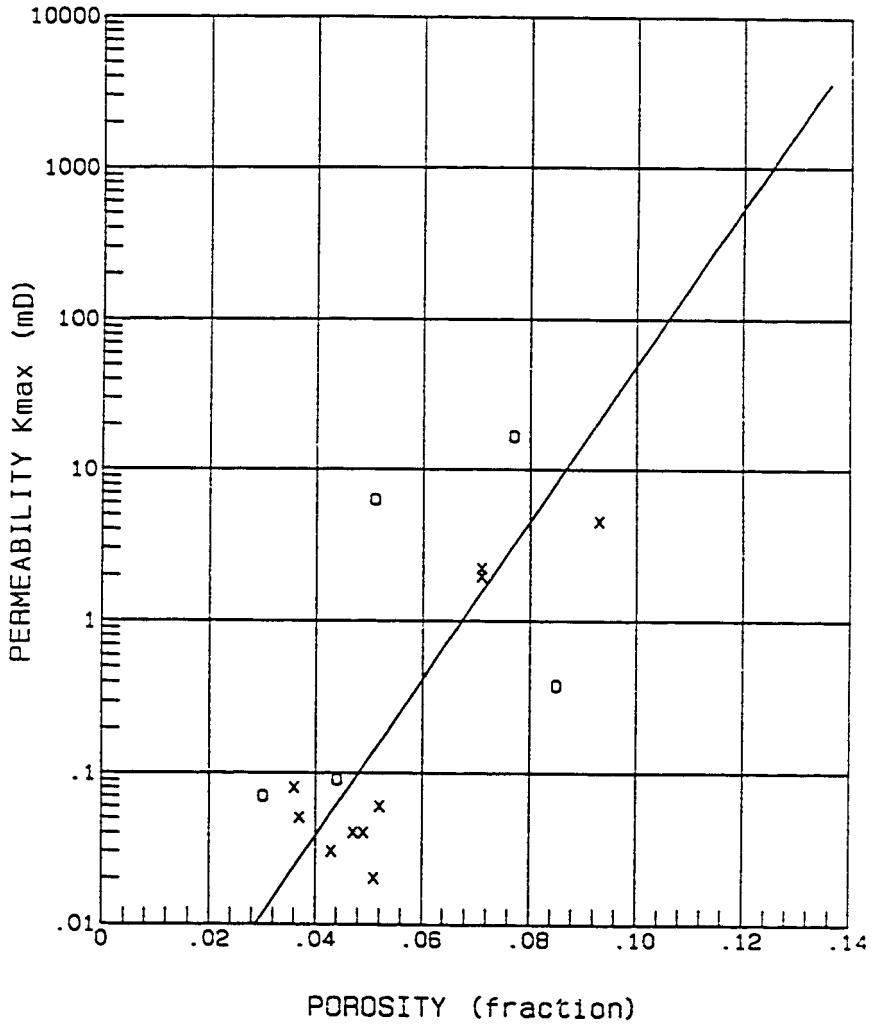
SUMMARY OF CORE DATA REPORT

	Total	PERMEABILITY RANGES, MILLIDARCY						
		100.00 +	10.00 - 99.99	1.00 - 9.99	0.50 - 0.99	0.10 - 0.49	0.01 - 0.09	< 0.01
Thickness (m)	6.23	.00	.00	1.58	.00	.00	4.65	.00
Fraction of analyzed core		.000	.000	.254	.000	.000	.746	.00
Porosity thickness (por-m)	.334	.000	.000	.125	.000	.000	.209	.00
Permeability thickness (mD-m)	4.93	.00	.00	4.70	.00	.00	.22	-
Wt. average Porosity	.054	.000	.000	.079	.000	.000	.045	.00
Wt. average Permeability	.79	.00	.00	2.98	.00	.00	.05	-
Wt. average Residual Oil	.000	.000	.000	.000	.000	.000	.000	.00
Wt. average Residual Water	.000	.000	.000	.000	.000	.000	.000	.00

Wt. average (geom.) Kmax., mD for All Samples = .12
Wt. average (harm.) Kmax., mD for All Samples = .05

COMPANY: CHEVRON CANADA RESOURCES	FIGURE: 1
LOCATION: 65-59/129-16	W/O NO: RC2707
INTERVAL: 308.00 - 335.00 m	DATE: 20-03-90
FORMATION: GILMORE LK	

POROSITY - PERMEABILITY (Kmax) CORRELATION



x - FULL DIAMETER o - SMALL PLUG

NOTE: Samples are not weighted

Equation: Log (Kmax) = -3.49 + 51.79 * Porosity

Correlation Coefficient: r = .713

AGAT

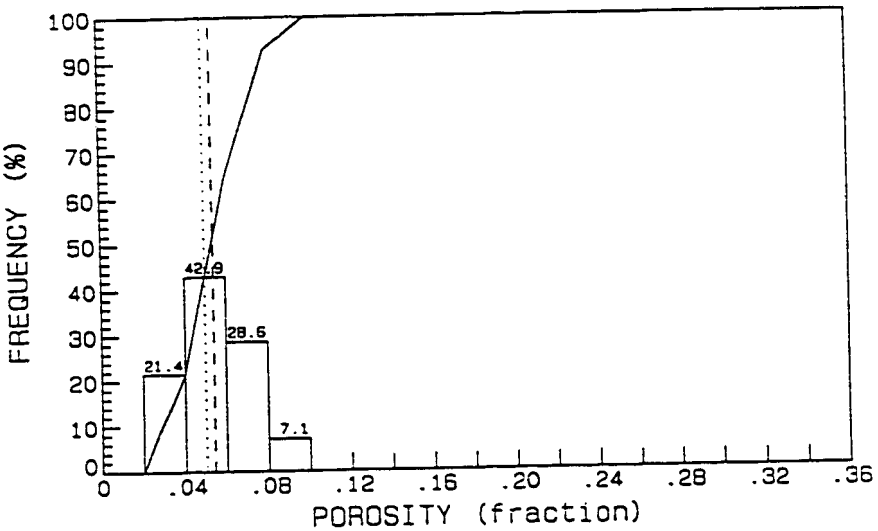
COMPANY: CHEVRON CANADA RESOURCES FIGURE: 2

LOCATION: 65-59/129-16 W/O NO: RC2707

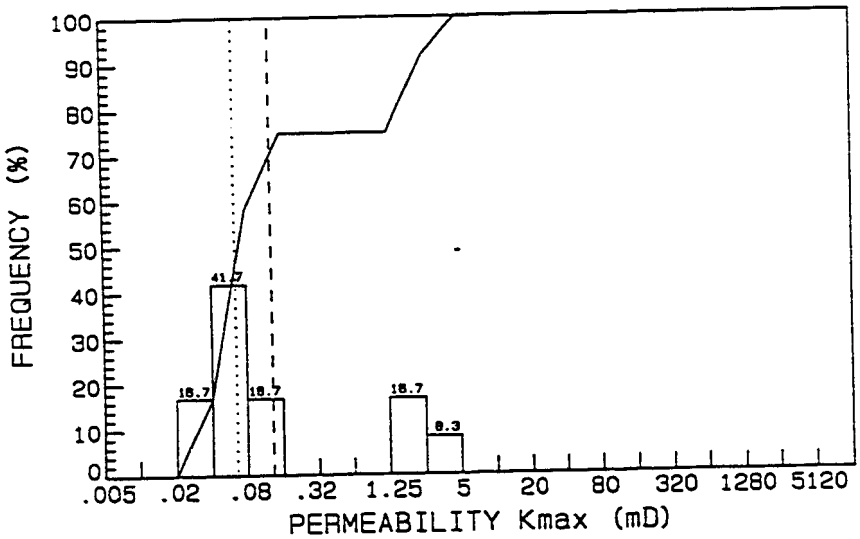
INTERVAL: 308.00 - 335.00 m DATE: 20-03-90

FORMATION: GILMORE LK

POROSITY FREQUENCY DISTRIBUTION



PERMEABILITY Kmax FREQUENCY DISTRIBUTION



Arith. Mean Porosity	- - - - POROSITY	- Arith. Mean:	.054
Geom. Mean Permeability	- - - -	Median:	.050
Cumulative Frequency %	——— PERMEABILITY	- Geom. Mean:	.13
Median	.....	Median:	.07

AGAT

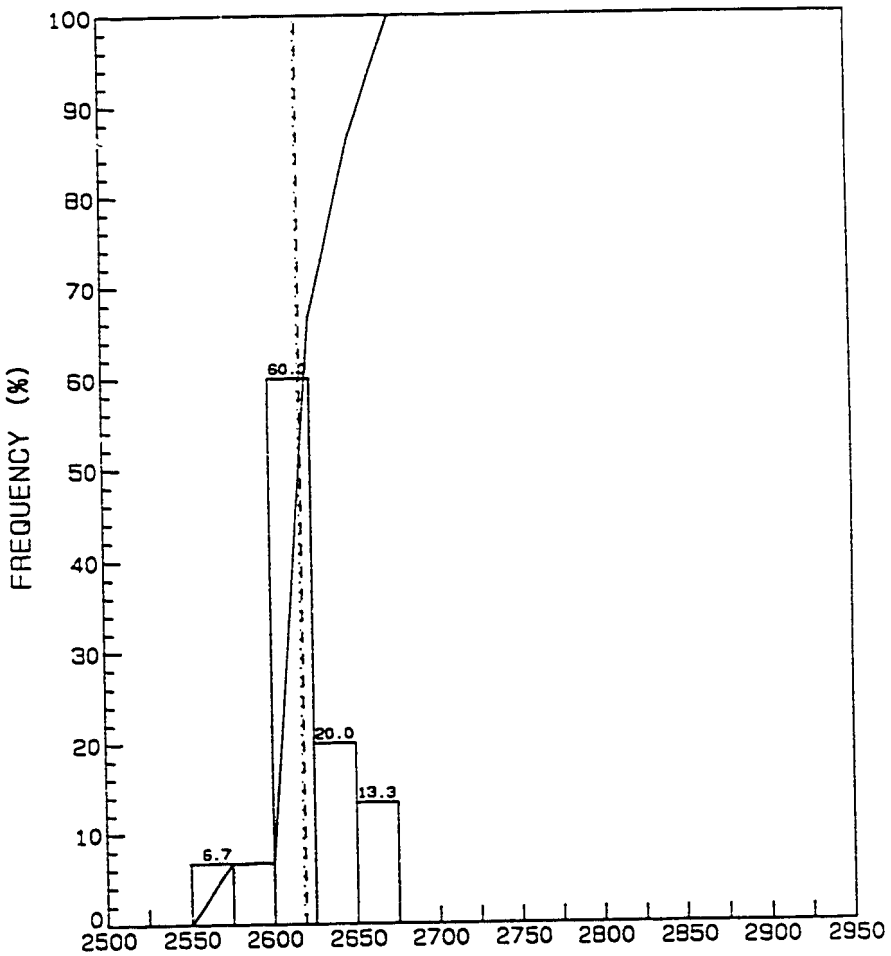
COMPANY: CHEVRON CANADA RESOURCES FIGURE: 3

LOCATION: 65-59/129-16 W/O NO: RC2707

INTERVAL: 308.00 - 335.00 m DATE: 20-03-90

FORMATION: GILMORE LK

GRAIN DENSITY FREQUENCY DISTRIBUTION



Arithmetic Mean - - - - Wt. Avg. Arith. Mean: 2619

Median .....

Cumulative Frequency % ——— Grain Density Median: 2618

AGAT

GENERAL LITHOLOGICAL DESCRIPTIONS

GENERAL LITHOLOGICAL DESCRIPTIONS

Well: CHEVRON HUME RIVER N-10
Location: 65-59/129-16
Job No: RC2707

Formation: GILMORE LK
Cored Interval: 308.00 - 335.00 m

Recovery: 22.35 m

CORE	DEPTH INTERVAL	CORE ANALYSIS	LITHOLOGY	REMARKS
1	308.00-308.46	001	Sandstone	Grey to dark grey, very fine to fine grained, moderately sorted; framework composed of subangular to subrounded quartz grains; scattered black carbonaceous material abundant; minor coaly partings common; slightly argillaceous. Poor to fair intergranular porosity; no fluorescence.
1	308.46-309.11	002	Sandstone	White to dark grey, medium to coarse grained; moderately well sorted; subrounded to rounded quartz grains; silica cement; highly carbonaceous towards the base; coal lenses and plant remains common. Fair to good intergranular porosity; no fluorescence.
1	309.11-310.94	003-005	Sandstone	Grey to dark grey, very fine to fine grained, moderately sorted; framework composed of subangular to subrounded quartz grains; coal lenses and partings common; scattered black, carbonaceous material abundant. Poor to fair intergranular porosity; no fluorescence.
1	310.94-312.45	N/A	Coal	Black, sub-bituminous to bituminous; slightly shiny.
1	312.45-314.78	006-008	Sandstone	Grey to dark grey, very fine to fine grained, moderately well sorted; framework composed of subangular to subrounded quartz grains; scattered black material with increasing intensity towards the base; coal laminae present; burrowing organism relic present. Poor to fair intergranular porosity; no fluorescence.

GENERAL LITHOLOGICAL DESCRIPTIONS

Well: CHEVRON HUME RIVER N-10
Location: 65-59/129-16
Job No: RC2707

Formation: GILMORE LK
Cored Interval: 308.00 - 335.00 m

Recovery: 22.35 m

CORE	DEPTH INTERVAL	CORE ANALYSIS	LITHOLOGY	REMARKS
1	314.78-317.33		Sandstone	White to dark grey, medium to coarse grained, carbonaceous sandstone; framework composed of angular to subrounded quartz grains; silica cement; carbonaceous and coaly laminae common; disrupted, subhorizontal shale laminae and rip-up clasts abundant from 316.55 m to the base. Poor to fair intergranular porosity; no fluorescence.
1	317.33-330.35	N/A	Shale	Grey to black, hard, subfissile to fissile; occasionally interbedded with light grey silty mudstone.
1	330.35-335.00	N/A	LC	Lost core.

SAMPLE HANDLING

AGAT LABORATORIES CORE SERVICES

SAMPLE HANDLING AND ANALYSIS INFORMATION

Company: CHEVRON CANADA RESOURCES LTD.
Well: CHEVRON EAST HUME RIVER N-10
Location: 65-59/129-16
Field:

Coring Equipment:
Coring Fluid:
Core Diameter: .10 m
Total Cored: 27.00 m
Total Recovered: 22.35 m

Job Number: RC2707
Date: March 21, 1990

HANDLING

Core Transported in:	Tubes
Cutting Solution:	Water
Cleaning Solvent:	Toluene
Extraction:	Vapor Phase
Cleaning Time:	72 Hours
Drying Equipment:	Convectional Oven
Drying Time:	48 Hours at 108°C

ANALYSIS

Grain volume measured by Boyle's Law using helium
Bulk volume measured by calipering on right-cylindrical samples
Bulk volume measured by archimedes principle using H_2O/Hg on non-cylindrical samples
Permeability measured on .10 full diameter drilled plugs
Permeability measured on 25 mm diameter drilled plugs
Full diameter core sandblasted before Kh measurements

REMARKS

Slabbed the core
Boxed the slabs
One floppy diskette

ABBREVIATIONS

COMMON ABBREVIATIONS

abnt	Abundant
abv	Above
Alg	Algae (al)
alt	Altered (ing)
amor	Amorphous
Amph	Amphipora
ang	Angular
anhy	Anhydrite (ic)
app	Appear
apr	Apparent
aprox	Approximate (ly)
arg	Argillaceous
ark	Arkose (ic)
asph	Asphalt (ic)
apha	Aphanitic
bcm	Become (ing)
bd	Bed
bdd	Bedded
bdg	Bedding
Belm	Belmnites
bent	Bentonite (ic)
bf	Buff
biocl	Bioclastic
bioturb	Bioturbated
bit	Bitumen (inous)
bl	Blue (ish)
blk	Black
blky	Blocky
bnd	Band (ed)
Brac	Brachiopod
brec	Breccia (ted)
bri	Bright
brit	Brittle
brn	Brown
Bry	Bryozoa
bulb	Bulbous
bur	Burrowed
c	Coarse (ly)
calc	Calcite (areous)
carb	Carbonaceous
cbl	Cobble (64-256 mm)
Ceph	Cephalopod
cgl	Conglomerate
chk	Chalk (y)
chlor	Chlorite
cht	Chert
chty	Cherty
cl	Clastic
cln	Clean
clr	Clear
cly	Clay (ey)
cmt	Cement (ed)
col	Color (ed)
com	Common
coq	Coquina
Cor	Coral
crbnt	Carbonate
Crin	Crinoid (al)
crm	Cream
crpxl	Cryptocrystalline
ctc	Contact
deb	Debris
decr	Decrease (ing)
desi	Desiccation
dism	Disseminated
dk	Dark (er)
dns	Dense (er)
dol	Dolomite (ic)
drsy	Druse (y)
dtrl	Detrital (us)
elg	Elongate
euhed	Euhedral
f	Fine (ly)
fau	Fauna
Fe	Iron-Ferruginous
Fe-mag	Fero-magnesian
fenst	Fenestral
fis	Fissile
fl	fill (ed)
fld	Feldspar (thic)
flk	Flake
flky	Flaky
flor	Fluorescence
flt	Fault (ed)
fltg	Floating
Foram	Foraminifera
fos	Fossil (iferous)
fr	Fair
frac	Fracture (ed)
frag	Fragment (al)
fri	Friable
frmwk	Framework
fros	Frosted
g	Good
Gast	Gastropod
gl	Glass (y)
glau	Glauconite (ic)
gn	Green
gr	Grain (ed)
gran	Granular
grd	Grade (ed)
grdg	Grading
grnl	Granule (2-4 mm)
gy	Gray
gyp	Gypsum (iferous)

COMMON ABBREVIATIONS (CONTINUED)

hd	Hard
hfrac	Horizontal Fracture
hi	High
hrtl	Horizontal
hvy	Heavy
hydc	Hydrocarbon
ig	Igneous
imbed	Imbedded
imp	Impression
incl	Included (sion)
incr	Increase (ing)
indst	Indistinct
intbd	Interbedded
intcl	Intraclast (s)
intfrag	Interfragmental
intgran	Intergranular
intlam	Interlaminated
intr	Intrusion (ive)
intv	Interval
intxl	Intercrystalline
ireg	Irregular
ird	Iridescent
intrsk	Intraskeletal
kao	Kaolin
lam	Laminated
lchd	Leached
len	Lentil (cular)
lith	Lithographic
lmy	Limy
lrg	Large (er)
ls	Limestone
lse	Loose
lstr	Lustre
lt	Light (er)
m	Medium
mar	Maroon
mas	Massive
mat	Material,matter
mica	Mica (ceous)
mic	Micro
mky	Milky
mnr	Minor
mnrl	Mineral (ized)
mnut	Minute
Mol	Mollusca
mot	Mottled
mrly	Marly
mtx	Matrix
n	No,none,non
nod	Nodule
num	Numerous
o	Oil
occ	Occasional
od	Odor
ool	Oolite (ic)
op	Opaque
org	Organic
orng	Orange
orth	Orthoclase
Ost	Ostracod
ovgth	Overgrowth
ox	Oxidized
P	Preliminary (as suffix)
pbl	Pebble (4-64 mm)
pel	Pellet
perm	Permeability
pet	Petroleum (iferous)
phos	Phosphate (ic)
pk	Pink
plag	Plagioclase
Plcy	Pelecypod
pl	Plant
plty	Platy
por	Porous (sity)
pos	Possible (ility)
p-p	Pin point
pred	Predominant (ly)
prim	Primary
prob	Probable (ly)
prom	Prominent (ly)
pt	Part (ly)
ptch	Patch (es)
ptg	Parting
purp	Purple
pyr	Pyrite (ic)(ized)
pyrbit	Pyrobitumen
qtz	Quartz
qtzc	Quartzitic
qtzs	Quartzose
rd	Round (ed)
repl	Replaced (ing)(ment)
rexl	Recrystallized
rmn	Remains (nant)
rr	Rare
rsns	Resinous
rthy	Earthy
s	Small
sa	Salt (y)
S	Sulphur
s&p	Salt & pepper

COMMON ABBREVIATIONS (CONTINUED)

sat	Saturated
sb	Sub
sc	Scales
scat	Scattered
sd	Sand (1/16 - 2 mm)
sdy	Sandy
sec	Secondary
sed	Sediment (ary)
sft	Soft
sh	Shale
shad	Shadow
shy	Shaly
sid	Siderite (ic)
sil	Silica (eous)
sks	Slickensided
sl	Slight (ly)
sln	Solution
slt	Silt
sltst	Siltstone
slty	Silty
sm	Smooth
SP	Small Plug (as prefix)
sp	Spot (ted)(ty)
spec	Speck (led)
spl	Sample
srt	Sort (ed)(ing)
strg	Stringer
Strom	Stromatoporoid
stromlt	Stromatolite
struc	Structure
styl	Stylolite (ic)
suc	Sucrosic
sug	Sugary
surf	Surface
sz	Size
sup	Supported
tab	Tabular
tex	Texture
Tham	Thamnopora
thk	Thick
thn	Thin
thru	Throughout
tr	Trace
trnsl	Translucent
trnsp	Transparent
tt	Tight
tub	Tubular
uncons	Unconsolidated
unident	Unidentifiable
up	Upper
v	Very
v frac	Very fractured
var	Variable
vcol	Varicolored
vfrac	Vertical Fracture
vgt	Varigated
vn	Vein
vrtl	Vertical
vug	Vug (gy)(ular)
/	With
w	Well
wh	White
wk	Weak
wthrd	Weathered
wtr	Water
wvy	Wavy
wxy	Waxy
xbd	Cross-bedded
xbdg	Cross-bedding
xl	Crystal (line)
xlam	Cross-laminated
yel	Yellow
zn	Zone
*	Broken core
>10000	Permeability over 10000 mD
<0.01	Permeabilty less than 0.01 mD
CC	Cracked Core
Dr	Drilled
LC	Lost Core
RU	Rubble
mD	milliDarcy

CORE LOG

CHEVRON EAST HUME RIVER N-10

CORE #1 GILMORE LAKE/IMPERIAL SHALE
INTERVAL: 308-335m
CUT: 27m
RECOVERED: 22m

CORING TIMES:
308m/5,4,6,5,7/4,5,5,4,3/4,2,3,3,10/3,3,0.5,0.5,0.5/1,1,1,3,0.5/0.5,0.5,0.5,1,2/314m
314m/2,1,2,1,1/1,1,1,1,1/2,1,3,2,1/1,1,0.5,1,0.5/.5,1,2,0.5,0.5/2,2,3,2,2/320m
320m/1,2,3,2,2/2,2,2,2,2/2,3,2,2,2/2,2,2,2,2/2,2,3,2,2/2,2,2,1,2/3,2,1,2,2/327m
327m/2,2,2,2,1/2,2,3,3,4/1,1,2,1,2/1,2,1,2,1/3,2,2,1,2/2,2,2,2,2/333m
333m/2,2,2,2,1/2,2,2,2,2/335m.

308.00-308.45 SANDSTONE: medium brownish grey, very fine to fine grained, silty, (0.45m) argillaceous, micaceous, very carbonaceous, coal fragments, carbonaceous partings, poorly sorted, subangular, tight, rare weak cut from carbonaceous parting.

308.45-309.05 SANDSTONE: with coal laminae throughout, 10-15% coal, broken laminae and coal rip up clasts common. Sandstone is white and light grey, very clean, quartz, medium to coarse grained and fine to medium grained, variably siliceous,minor patches of soft, white, microcrstalline clay, occasionally intergranular coal fragments, part tight, part with patchy 4-6% porosity and less siliceous cement, subangular, moderate sorting, no stain, trace cut from coal.

309.05-311.00 SANDSTONE: medium brownish grey, very fine grained, very fine to fine grained, laminated, silty, argillaceous, micaceous, carbonaceous flakes and partings, few coal laminae and rip up clasts increasing coal with depth, trace pyrite, tight, no stain or cut.

311.00-312.70 COAL: black, broken brittle pieces, no sand or shale interbeds. Gas can be heard breaking out of coal at surface pressures. (No H2S reading) This bed is liberally measured as it appears from the geolograph that some of the lost core may be from this coal bed.

312.70-313.10 SHALE: brownish grey, carbonaceous flakes throughout, coal interbeds at top, decreasing coal with depth, silty, firm.

313.10-315.00 SANDSTONE: brownish grey, argillaceous, silty, micromicaceous, massive bedded, very silty at top, grading to sandy siltstone in top 80cm, very fine grained in middle, grading to very fine to fine grained lower, tight, no stain or cut.

315.00-317.50 SANDSTONE: with coal laminae throughout, broken laminae, lenses, cross cutting laminae and scour channels, coal rip up clasts common, finely laminated grey shale rip up clasts very common in lower 1m, minor brown brown shale clasts. Sandstone is medium-coarse-very coarse grained, slightly coarser lower, quartz, very poorly sorted, variably siliceous, clean to part argillaceous, locally carbonaceous, tight, trace ineffective porosity, no permeability, trace dead stain, no cut. Sharp horizontal contact at base.

IMPERIAL SHALE 317.5m (-237.5m) *

317.50-328.00 SHALE: medium grey, trace dolomitic, trace silty, slight carbonaceous micro-specks throughout, dense, platy, fractures easily into "hockey pucks", with 1-10mm laminae of light grey siltstone in upper part, brown cryptocrystalline, dolomite bands and flattened nodules to several cm, sideritic, argillaceous, hard, tight.

* This contact may be lower if more of the 5m of lost core is from the coal and sand section above. It is here interpreted to be mostly lost in the shale below.

SIDEWALL CORES

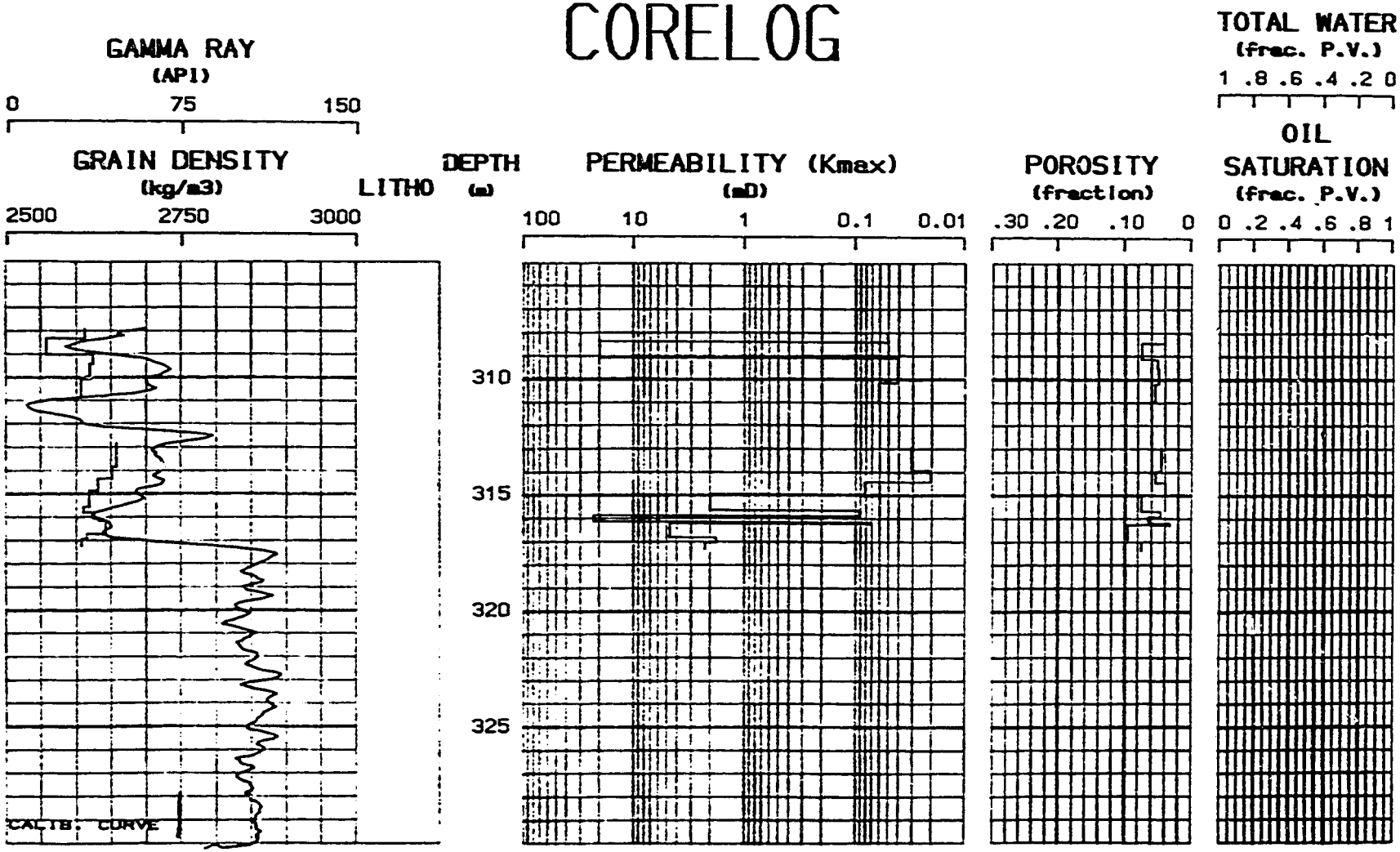
DEPTH	QUALITY/SIZE	LITHOLOGY
290.75	Only 2cm	CONGLOMERATE: grey chert, quartz, brown shale, well rounded pebbles to 1cm. Sandstone matrix, fine grained with medium grains, clean, clear quartz, glauconite, siliceous, minor soft, microcrystalline, white clay, subangular, poor sorting, very poor porosity along pebble boundaries, trace fluorescence, no cut. Soft brown shale is probably rip up clasts or shale forced up into conglomerate near its base.
290.8	GOOD 4cm	SANDSTONE: light brownish, fine grained, trace floating very coarse grains of light chert, slightly argillaceous, no silt, quartz, glauconite, minor dark chert and dark shale grains, trace pyrite, slightly siliceous, angular to subangular, moderate sorting, tight, no stain or cut. Dark streaks parallel with bedding, soft, brown, very argillaceous.
295.0	GOOD 4cm	SHALE: medium brownish grey, trace dolomitic, slightly silty, slightly micromicaceous, trace carbonaceous specks, small pyrite blebs, disseminated pyrite, firm, moderately soft.
297.5	GOOD 4cm	SHALE: medium brownish grey, trace dolomitic, micromicaceous, very slightly silty, trace carbonaceous specks.
301.0	GOOD 4cm	SANDSTONE: patchy grey and dark brown, medium to coarse grained, quartz, trace coarse and very coarse shale grains, variably siliceous, angular, moderate sorting, grain boundaries coated with brown argillaceous material, patches of soft brown argillaceous material and black carbonaceous material throughout, 4-6% porosity varies with siliceous cement, fair fluorescence and cut. Also contact with medium to coarse quartz sandstone, floating very coarse quartz, subrounded, only slight siliceous cement, intergranular material/cement? washed away, only small patches of very soft, light brown, microcrystalline clay left, porosity questionable but probably better than siliceous sandstone above, fluorescence with weak cut.

COMPANY: CHEVRON CANADA RESOURCES
WELL: CHEVRON EAST HUME RIVER N-10
LOCATION: 65-59/129-16
FIELD:
FORMATION(S): GILMORE LK
W/O: RC2707

AGAT Labs

RECOVERY: 22.35 m
CORED INTERVAL: 308.00 - 335.00 m
DRLG. FLD.:
ELEVATION: KB:
GRD:

CORELOG



COMPANY: CHEVRON CANADA RESOURCES
WELL: CHEVRON EAST HUME RIVER N-10
LOCATION: 65-59/129-16
FIELD:
FORMATION(S): GILMORE LK
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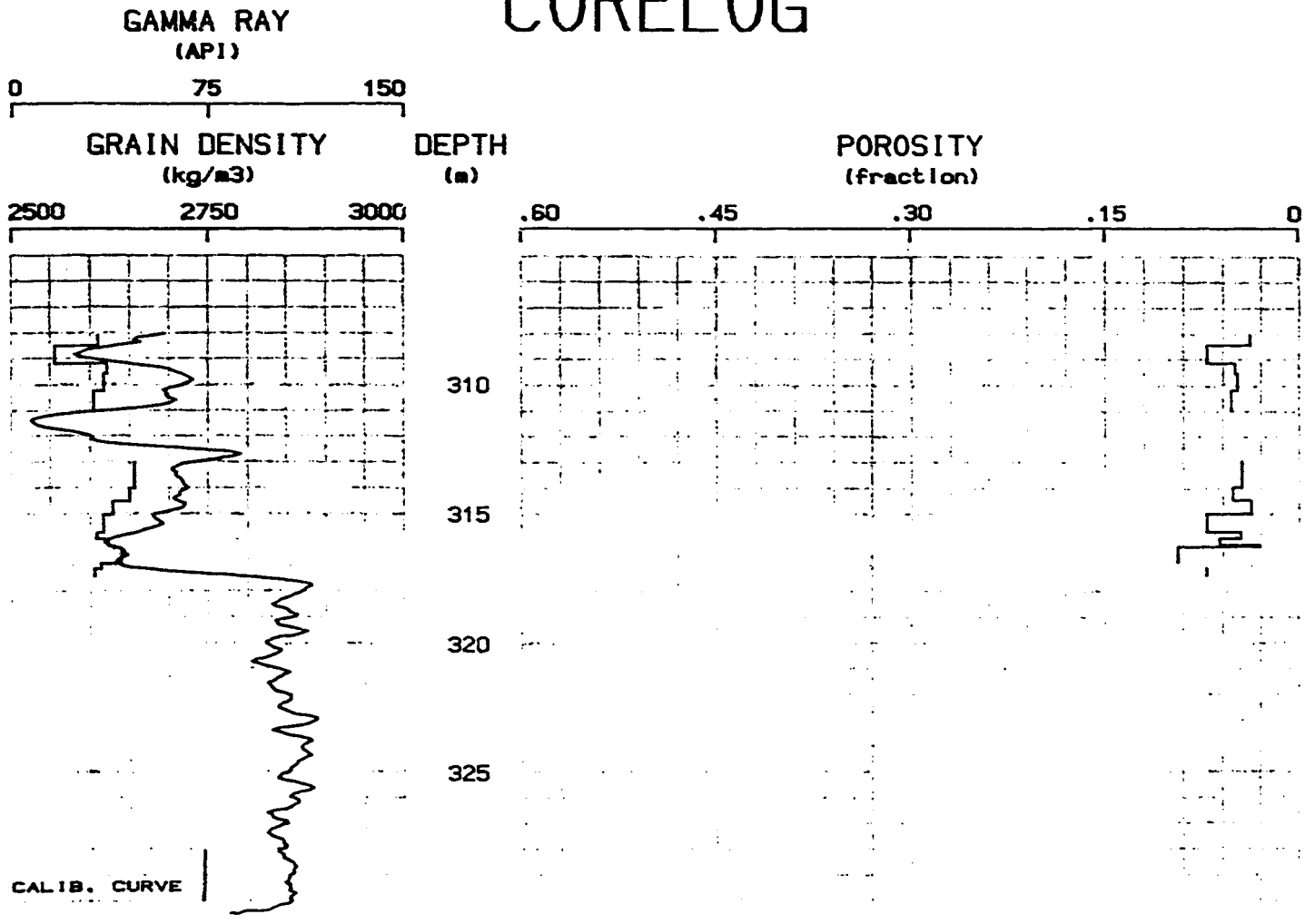
AGAT Labs

RECOVERY: 22.35 m
CORED INTERVAL: 308.00 - 335.00 m
DRLG. FLD.:
ELEVATION: KB:
GRD:

CORELOG



APPENDIX 5

TESTING RESULTS

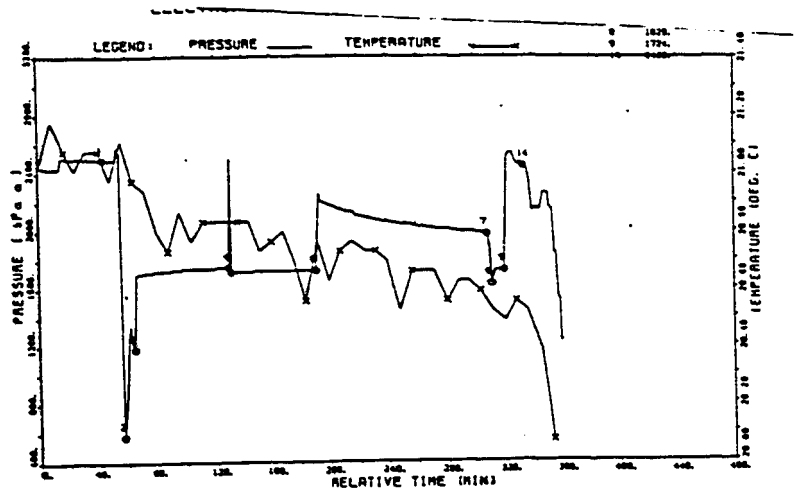
REF#:C-76-999-81178-66

TEST DATE: 90/02/24

CHEVRON E HUME RIVER N-10
400/ 69.111 / 129.160 /00
DST#01
217.90m to 335.00m
ARCTIC RED/GILMOOR

DEPTH: 219.00m

RECORDER # 001767



	PRESSURE kPa(a)
1) Initial Hydro :	2491.
2) 1st Flow Start:	577.
3) 1st Flow End :	1181.
4) END 1st Shutin:	1750.
5) 2nd Flow Start:	1715.
6) 2nd Flow End :	1724.
7) END 2nd Shutin:	1974.
8) 3rd Flow Start:	1629.
9) 3rd Flow End :	1724.
10) END 3rd Shutin:	0.
14) Final Hydro. :	2439.

TEST TIMES (MIN)	
1st FLOW :	8.0
SHUTIN:	64.0
2nd FLOW :	60.0
SHUTIN:	117.0
3rd FLOW :	8.0
SHUTIN:	.0

RECOVERY DATA

TOTAL FLUID RECOVERY CONSISTED OF 61.00 M OF DRILLING MUD. THIS TEST WAS RUN UNDER CLOSED CHAMBER CONDITIONS.

REMARKS AND TEST SUMMARY

Bottom hole pressures and the shape of the initial shut-in curve suggest RELATIVELY HIGH PERMEABILITY within the interval tested. The flow data suggests plugging during the second flow period. The final shut-in is false; packer seat failure. The preflow, initial shut-in, and final flow were successful.

TABLE OF CONTENTS

BAKER OIL TOOLS CANADA
DST#01 REPORT

Well name : CHEVRON E HUME RIVER N-10
Location : 400/ 69.111 / 129.160 /00
Interval : 217.90m to 335.00m
Test Date : 90/02/24
Test Type : DUAL CONVENTIONAL BOTTOM HOLE
Formation : ARCTIC RED/GILMOOR

K.B.Elevation : 80.06m
Grd.Elevation : 74.40m
TD @ test Date: 335.00m
Ticket Number : 81178
Unit Number :

Started in hole at : 1815 hrs
Tool opened at : 2035 hrs
Reverse circulated?: NO
Contractor & Rig No: SHEHTAH #1
Baker#1 : 1 of 1 on the same trip.

Operator: CHEVRON CANADA RESOURCES LIMITED
14TH FLOOR
500 - 5TH AVE. S.W.
CALGARY, ALBERTA
T2P0L7

Company Rep : MEYER B
Testers : ANDREWS R

5 REPORTS(S) TO: DOUG LEWIS
Company:

BLOW DESCRIPTION

Closed Chamber run with The Evaluators.

TOTAL LIQUID RECOVERY : 61.00m

For DST# 1 through DST# 1

2 Fluid Samples
Sent to: GEO TECH

Field Est. Salinity :200.0g/m3

Btm. Hole Sampler #: 53
Sent to: DRAINED

61.00m DRILLING MUD.

GAS MEASUREMENTS

No Gas Measurements

CHEVRON E HUME RIVER N-10
217.90m to 335.00m

TOOL SEQUENCE

SUB	LENGTH (m)
PUMP OUT SUB	.30
DOUBLE PIN SUB	.30
INSIDE RECORDER	1.38
SHUT-IN TOOL	2.58
BTM HOLE SAMPLER	1.03
HYDRAULIC TOOL	1.50
HYDRAULIC JARS	2.22
INSIDE RECORDER	1.38
SAFETY JOINT	.65
CROSS OVER SUB	.30
CONV. PACKER	2.28
CONV. PACKER	1.24
PACKER STICK DOWN	1.04
CROSS OVER SUB	.30
PERFORATIONS	1.50
OUTSIDE RECORDER	22.06
CROSS OVER SUB	.30
DRILL COLLARS	111.1
CROSS OVER SUB	.30
BULL NOSE	.50
******** TOOL TOTAL	152.26

DRILL COLLARS
ID= 73.0mm: 46.46
ID= :

DRILL PIPE
OD=114.3mm: 149.78
OD= :

COLLAR-PIPE TOTAL 196.24

STICK UP ABOVE TABLE : 3.50
TOOL ABOVE INTERVAL : 15.16
TOTAL INTERVAL : 117.1
BOTTOM CHOKE SIZE: 25.40 mm

RECORDER SUMMARY

1) NUMBER : 001767 ELECTRONIC GAUGE.
TYPE : DMRB
LOCATION: OUTSIDE
RANGE: 34500.00kPa(a)
DEPTH : 219.00m

2) NUMBER : 001785 ELECTRONIC GAUGE.
TYPE : DMRB
LOCATION: OUTSIDE
RANGE: 68900.00kPa(a)
DEPTH : 219.00m

3) NUMBER : 021150 ABOVE HYDRAULIC
TYPE : K-3 TOOL.
LOCATION: INSIDE
RANGE: 20500.00kPa
DEPTH : 203.00m

4) NUMBER : 021162 ABOVE INTERVAL.
TYPE : K-3
LOCATION: INSIDE
RANGE: 21900.00kPa
DEPTH : 207.00m

5) NUMBER : 021347
TYPE : K-3
LOCATION: OUTSIDE
RANGE: 22000.00kPa
DEPTH : 219.00m

MUD AND HOLE DATA

Calipered Hole Size @ Test Depth:
Hole Condition at Test Time : GOOD
Hole Conditioned Prior to Test? : YES
Mud Weight : 1090.0 kg/m3
Type : GEL CHEMICAL
Viscosity : 55.0s/l

Water Loss : 8.0cc/s
Filter Cake: 2.0 mm
Main Hole Size: 330.00mm
Temperature @219.00m =

DST=01
CHEVRON E HUME RIVER N-10
217.90 m to 335.00 m

Location: 400/ 69.111 / 129.160 /00
Test Type: DUAL CONVENTIONAL BOTTOM HOLE
Formation: ARCTIC RED/GILMOOR

Recorder Number: 021347
Recorder Depth: 219.00 m
Subsea Depth: -138.94 m

TIME-PRESSURE LISTING

CHART LABEL	COMMENTS	TIME MIN.	DELTA P kPa	PRESSURE kPa(a)	(T+dt)/dt ABSCISSA	PRESSURE SQUARED kPa(a)^2/10^6
1	INITIAL HYDROSTATIC			2491		
2	START OF 1st FLOW	0.0		577		
		1.0		681		
		2.0		810		
		3.0		974		
		4.0		1250		
		5.0		1344		
		6.0		1241		
3	END OF 1st FLOW	8.0		1181		
	1st SHUTIN PERIOD	0.0		1181		
		2.0	526	1706	5.0000	2.9120
		4.0	526	1706	3.0000	2.9120
		6.0	534	1715	2.3333	2.9415
		9.0	534	1715	1.8889	2.9415
		11.0	534	1715	1.7273	2.9415
		13.0	543	1724	1.6154*	2.9711
		16.0	543	1724	1.5000*	2.9711
		18.0	543	1724	1.4444*	2.9711
		20.0	543	1724	1.4000*	2.9711
		22.0	543	1724	1.3636*	2.9711
		25.0	552	1732	1.3200*	3.0009
		27.0	552	1732	1.2963*	3.0009
		29.0	552	1732	1.2759*	3.0009
		32.0	552	1732	1.2500*	3.0009
		34.0	560	1741	1.2353*	3.0308
		36.0	560	1741	1.2222*	3.0308
		38.0	560	1741	1.2105*	3.0308
		41.0	560	1741	1.1951*	3.0308
		43.0	560	1741	1.1860*	3.0308
		45.0	560	1741	1.1778*	3.0308
		48.0	560	1741	1.1667*	3.0308
		50.0	560	1741	1.1600*	3.0308

* VALUES USED FOR EXTRAPOLATIONS

DST=01
CHEVRON E HUME RIVER N-10
217.90 m to 335.00 m

Location: 400/ 69.111 / 129.160 /00
Test Type: DUAL CONVENTIONAL BOTTOM HOLE
Formation: ARCTIC RED/GILMOOR

Recorder Number: 021347
Recorder Depth: 219.00 m
Subsea Depth: -138.94 m

TIME-PRESSURE LISTING

CHART LABEL	COMMENTS	TIME MIN.	DELTA P kPa	PRESSURE kPa(a)	(T+dt)/dt ABSCISSA	PRESSURE SQUARED kPa(a)^2/10^6
		52.0	560	1741	1.1538*	3.0308
		54.0	560	1741	1.1481*	3.0308
		57.0	569	1750	1.1404*	3.0609
		59.0	569	1750	1.1356*	3.0609
		61.0	569	1750	1.1311*	3.0609
4	END OF 1st SHUTIN	64.0	569	1750	1.1250*	3.0609
5	START OF 2nd FLOW	0.0		1715		
		2.0		1715		
		4.0		1715		
		7.0		1715		
		9.0		1715		
		11.0		1715		
		14.0		1715		
		16.0		1715		
		18.0		1724		
		20.0		1724		
		23.0		1724		
		25.0		1724		
		27.0		1724		
		30.0		1724		
		32.0		1724		
		34.0		1724		
		36.0		1724		
		39.0		1724		
		41.0		1724		
		43.0		1724		
		46.0		1724		
		48.0		1724		
		50.0		1724		
		52.0		1724		
		55.0		1724		
		57.0		1724		
		59.0		1724		
6	END OF 2nd FLOW	60.0		1724		

* VALUES USED FOR EXTRAPOLATIONS

DST=01
CHEVRON E HUME RIVER N-10
217.90 m to 335.00 m

Location: 400/ 69.111 / 129.160 /00
Test Type: DUAL CONVENTIONAL BOTTOM HOLE
Formation: ARCTIC RED/GILMOOR

Recorder Number: 021347
Recorder Depth: 219.00 m
Subsea Depth: -138.94 m

TIME-PRESSURE LISTING

CHART LABEL	COMMENTS	TIME MIN.	DELTA P kPa	PRESSURE kPa(a)	(T+dt)/dt ABSCISSA	PRESSURE SQUARED kPa(a)^2/10^6
	2nd SHUTIN PERIOD	0.0		1724		
		4.0	474	2198	18.0000	4.8299
		7.0	465	2189	10.7143	4.7921
		11.0	448	2172	7.1818	4.7169
		14.0	431	2155	5.8571	4.6423
		18.0	422	2146	4.7778	4.6053
		21.0	405	2129	4.2381	4.5316
		24.0	405	2129	3.8333	4.5316
		28.0	379	2103	3.4286	4.4222
		31.0	371	2094	3.1935	4.3860
		35.0	362	2086	2.9429	4.3500
		38.0	353	2077	2.7895	4.3141
		42.0	345	2068	2.6190	4.2784
		45.0	336	2060	2.5111	4.2428
		48.0	336	2060	2.4167	4.2428
		52.0	328	2051	2.3077	4.2074
		55.0	328	2051	2.2364	4.2074
		59.0	319	2043	2.1525	4.1721
		62.0	319	2043	2.0968	4.1721
		66.0	310	2034	2.0303	4.1370
		69.0	302	2025	1.9855	4.1020
		72.0	302	2025	1.9444	4.1020
		76.0	293	2017	1.8947	4.0671
		79.0	293	2017	1.8608	4.0671
		83.0	284	2008	1.8193	4.0324
		86.0	284	2008	1.7907	4.0324
		90.0	284	2008	1.7556	4.0324
		93.0	276	1999	1.7312	3.9979
		96.0	276	1999	1.7083	3.9979
		100.0	267	1991	1.6800	3.9635
		103.0	267	1991	1.6602	3.9635
		107.0	267	1991	1.6355	3.9635
		110.0	259	1982	1.6182	3.9293
		114.0	259	1982	1.5965	3.9293
7	END OF 2nd SHUTIN	117.0	250	1974	1.5812	3.8952

* VALUES USED FOR EXTRAPOLATIONS

DST=01
CHEVRON E HUME RIVER N-10
217.90 m to 335.00 m

Location: 400/ 69.111 / 129.160 /00
Test Type: DUAL CONVENTIONAL BOTTOM HOLE
Formation: ARCTIC RED/GILMOOR

Recorder Number: 021347
Recorder Depth: 219.00 m
Subsea Depth: -138.94 m

TIME-PRESSURE LISTING

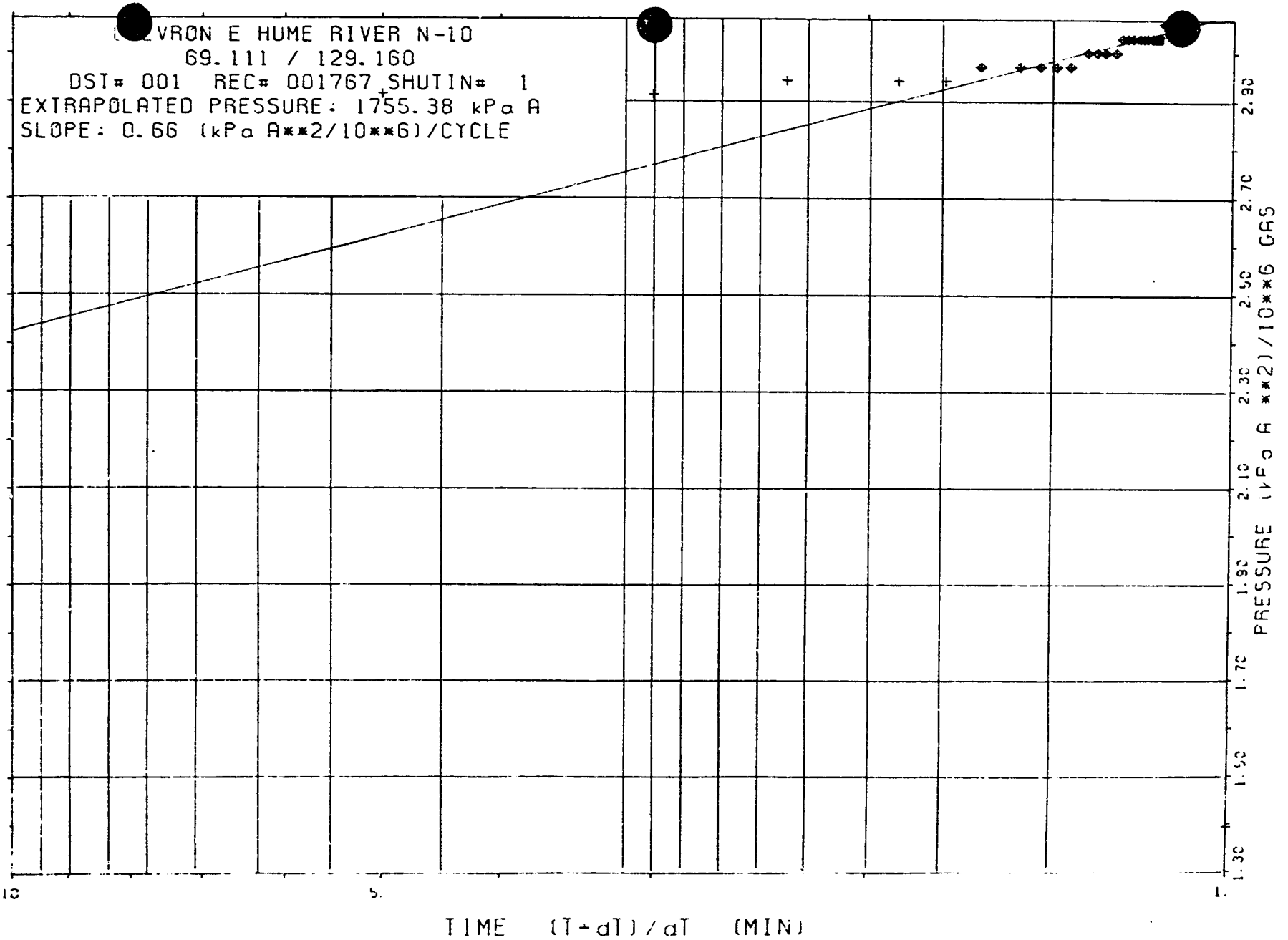
CHART LABEL	COMMENTS	TIME MIN.	DELTA P kPa	PRESSURE kPa(a)	(T+dt)/dt ABSCISSA	PRESSURE SQUARED kPa(a)^2/10^6
8	START OF 3rd FLOW	0.0		1629		
		2.0		1715		
		3.0		1724		
		4.0		1724		
		5.0		1724		
		6.0		1724		
		7.0		1724		
9	END OF 3rd FLOW	8.0		1724		
14	FINAL HYDROSTATIC			2439		

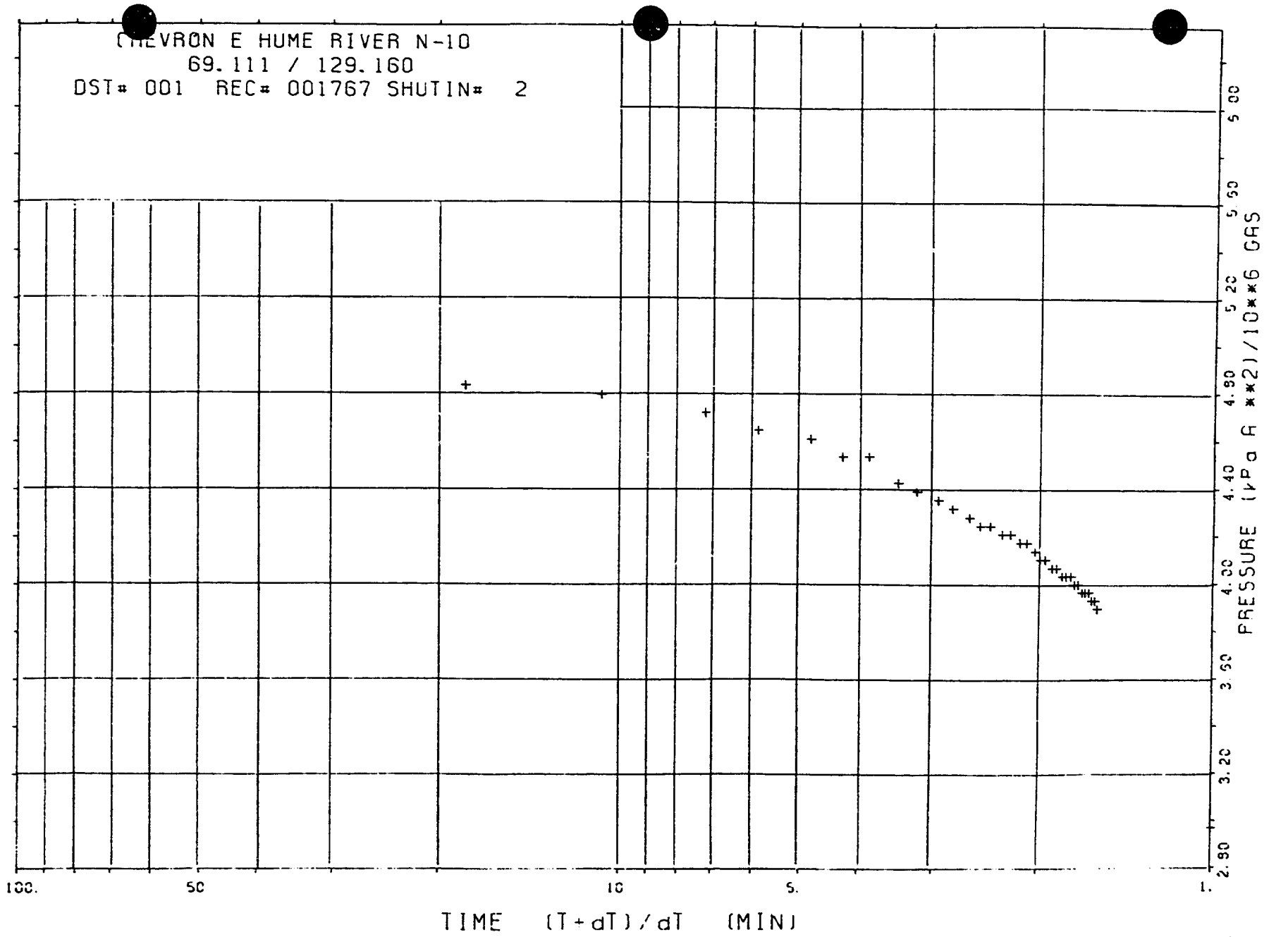
* VALUES USED FOR EXTRAPOLATIONS

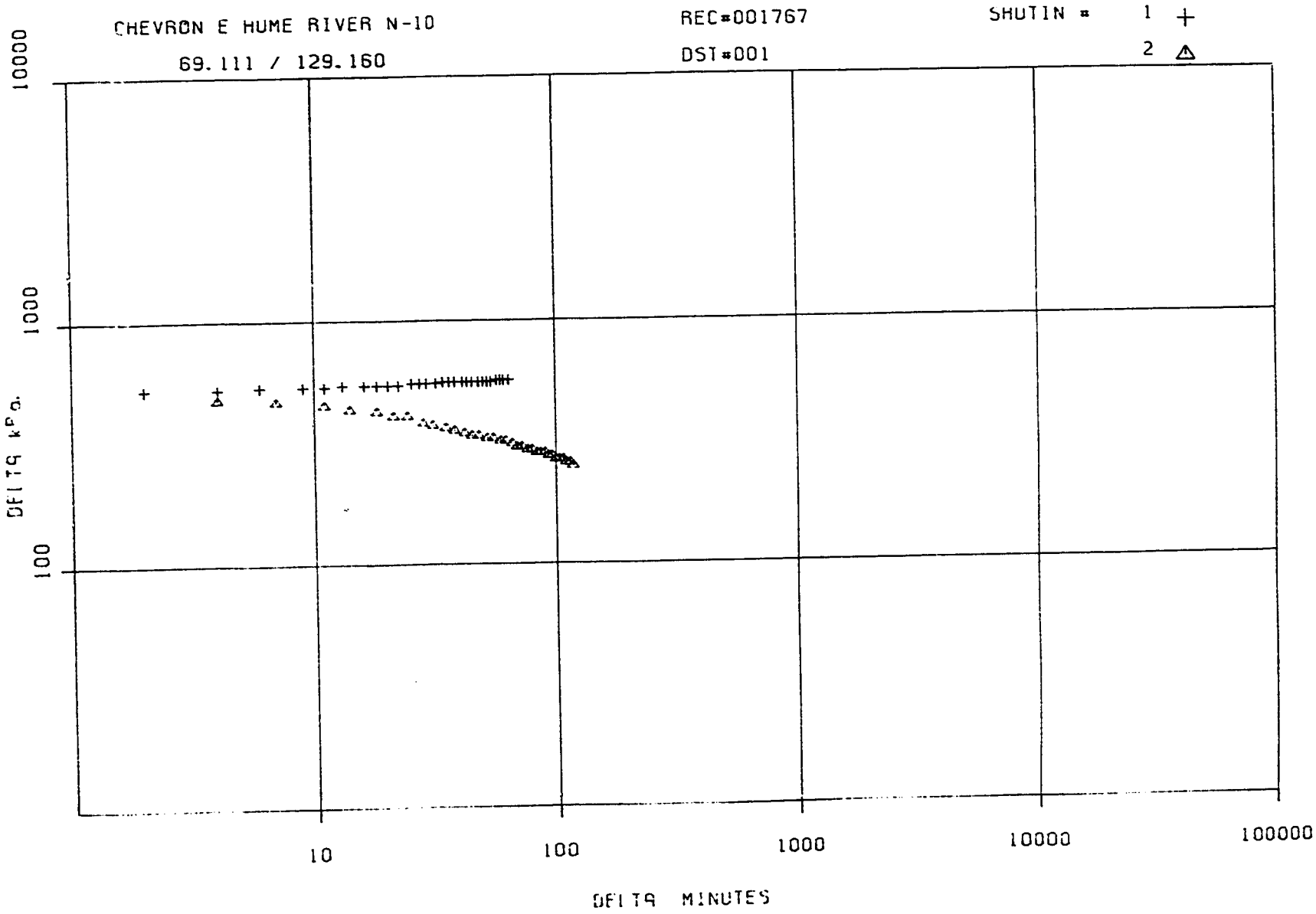
1st SHUT-IN
HORNER EXTRAPOLATION 1755.38 kPa(a)
HORNER SLOPE .65936 (kPa(a)**2/10**6)/CYCLE

2nd SHUT-IN
HORNER EXTRAPOLATION .00 kPa(a)
HORNER SLOPE .00000 (kPa(a)**2/10**6)/CYCLE

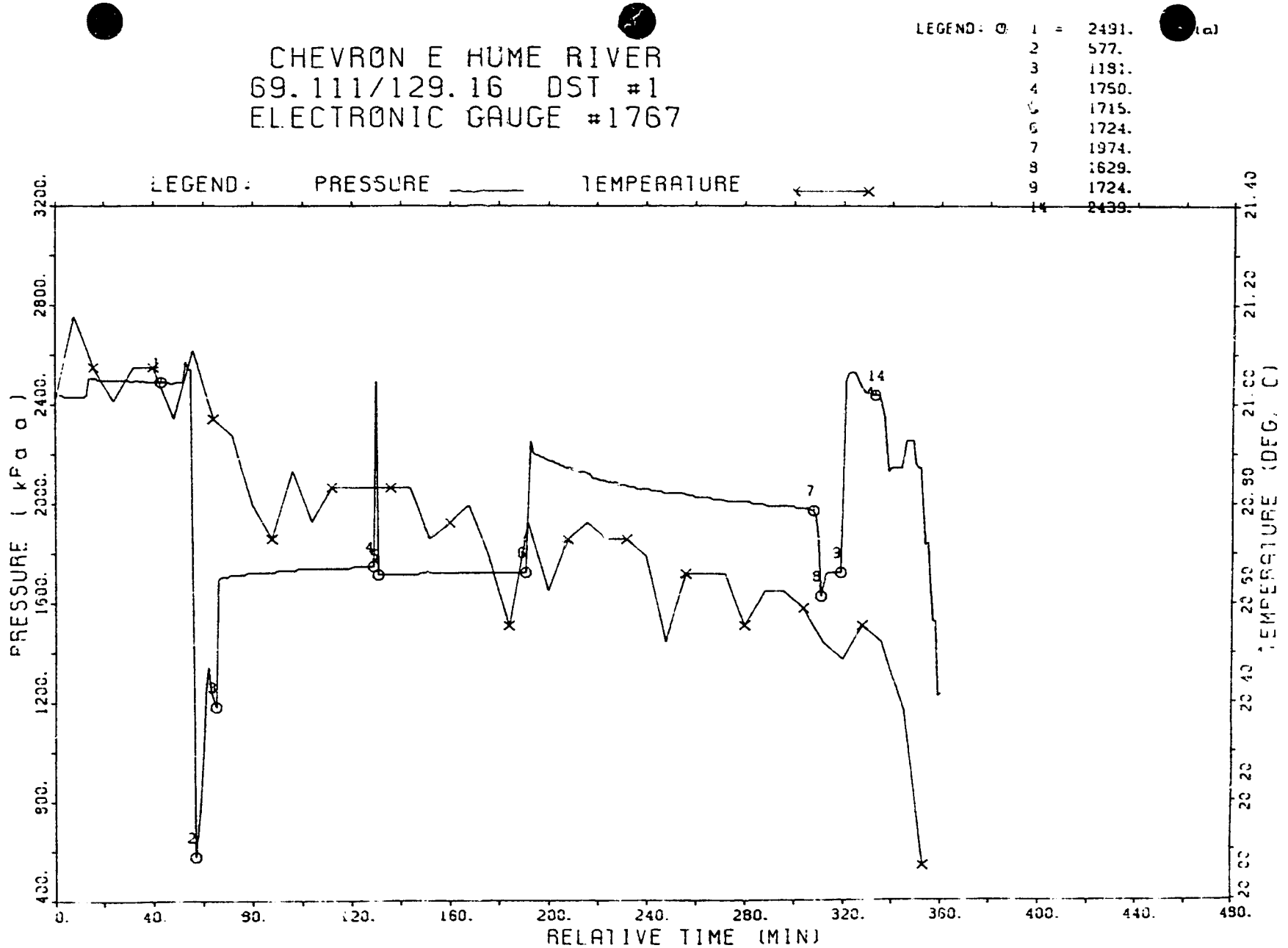
3rd SHUT-IN
HORNER EXTRAPOLATION .00 kPa(a)
HORNER SLOPE .00000 (kPa(a)**2/10**6)/CYCLE


VRON E HUME RIVER N-10
69.111 / 129.160
DST# 001 REC# 001767 SHUTIN# 1
EXTRAPOLATED PRESSURE: 1755.38 kPa A
SLOPE: 0.66 (kPa A**2/10**6)/CYCLE
2.90
2.70
2.50
2.30
2.10
1.90
1.70
1.50
1.30
PRESSURE (kPa A **2)/10**6 GAS
10
5
1
TIME (T+dT)/dT (MIN)


CHEVRON E HUME RIVER N-10
69.111 / 129.160
DST# 001 REC# 001767 SHUTIN# 2
100.
50
10
5.
1.
TIME (T+dT)/dT (MIN)
2.80
3.20
3.60
4.00
4.40
4.80
5.20
5.60
6.00
PRESSURE (kPa A **2)/10**6 GAS


CHEVRON E HUME RIVER N-10
69.111 / 129.160
REC=001767
DST=001
SHUTIN = 1 +
2 △
10000
1000
100
DELTA kPa.
10
100
1000
10000
100000
DELTA MINUTES

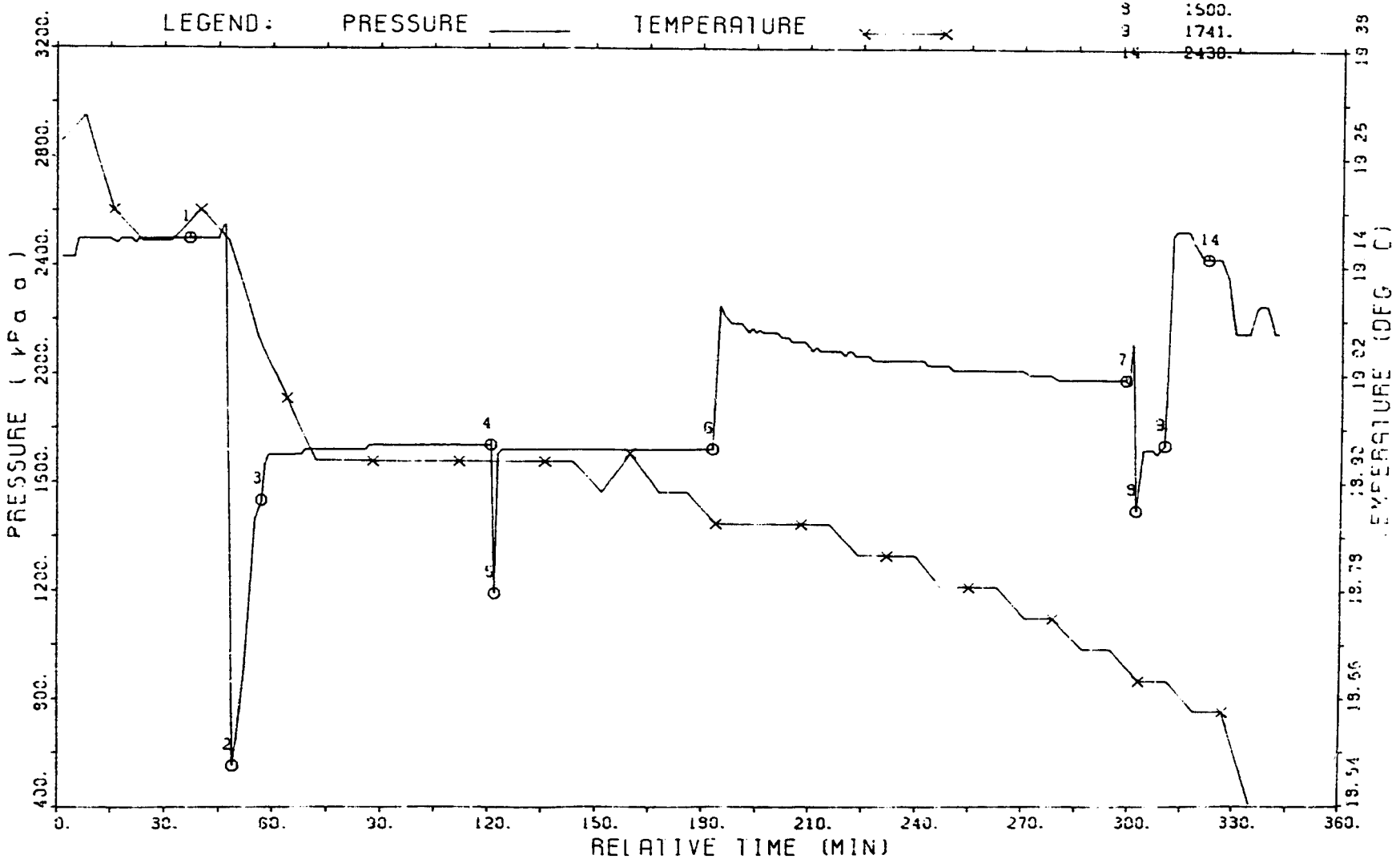
CHEVRON E HUME RIVER
69.111/129.16 DST #1
ELECTRONIC GAUGE #1767



CHEVRON E HUME RIVER
69.111/129.16 DST #1
ELECTRONIC GAUGE #1785

LEGEND: PRESSURE ——— TEMPERATURE ←—×—→

LEGEND. ⊙			
	1	=	2499.
	2		552.
	3		1534.
	4		1741.
	5		1189.
	6		1724.
	7		1382.
	8		1500.
	9		1741.
	14		2438.

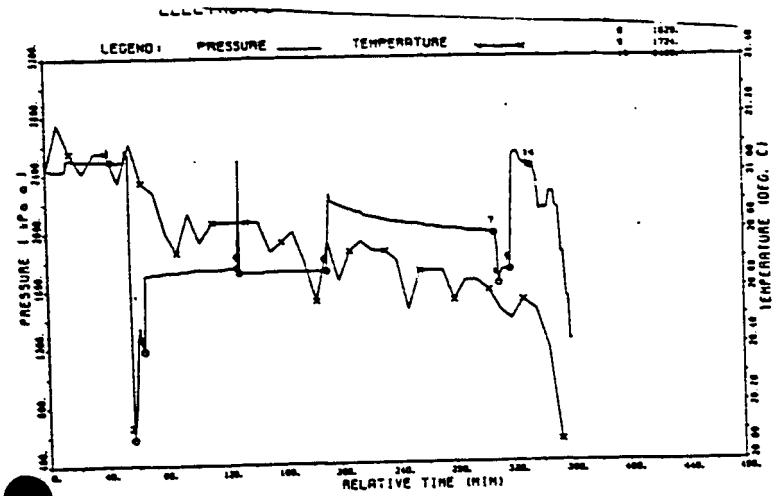


DST#01
CHEVRON E HUME RIVER N-10
217.90m to 335.00m

PRESSURE RECORDER NUMBER : 001767

DEPTH : 219.00m LOCATION : OUTSIDE
TYPE : DMRB CAPACITY : 34500.00kPa(a)

***** TEMPERATURE AT RECORDER DEPTH = 20.8 C



	PRESSURE kPa(a)
1) Initial Hydro :	2491.
2) 1st Flow Start:	577.
3) 1st Flow End :	1181.
4) END 1st Shutin:	1750.
5) 2nd Flow Start:	1715.
6) 2nd Flow End :	1724.
7) END 2nd Shutin:	1974.
8) 3rd Flow Start:	1629.
9) 3rd Flow End :	1724.
10) END 3rd Shutin:	0.
14) Final Hydro. :	2439.

ELECTRONIC GAUGE.

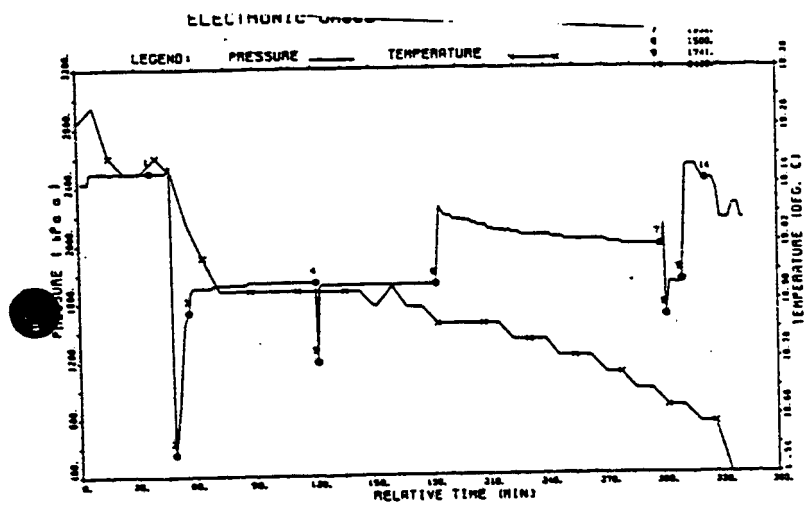
TEST TIMES(MIN)

1st FLOW :	8.0
SHUTIN:	64.0
2nd FLOW :	60.0
SHUTIN:	117.0
3rd FLOW :	8.0
SHUTIN:	.0

PRESSURE RECORDER NUMBER : 001785

DEPTH : 219.00m LOCATION : OUTSIDE
TYPE : DMRB CAPACITY : 68900.00kPa(a)

***** TEMPERATURE AT RECORDER DEPTH = 18.9 C



	PRESSURE kPa(a)
1) Initial Hydro :	2499.
2) 1st Flow Start:	552.
3) 1st Flow End :	1534.
4) END 1st Shutin:	1741.
5) 2nd Flow Start:	1189.
6) 2nd Flow End :	1724.
7) END 2nd Shutin:	1982.
8) 3rd Flow Start:	1500.
9) 3rd Flow End :	1741.
10) END 3rd Shutin:	0.
14) Final Hydro. :	2430.

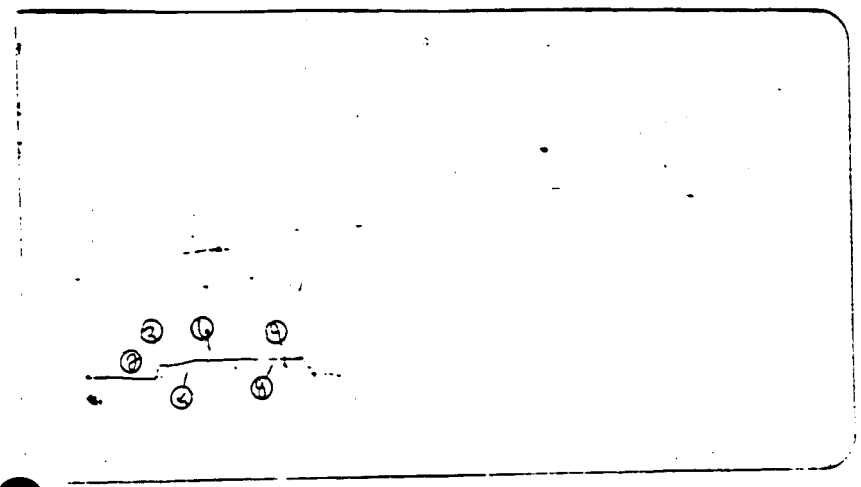
ELECTRONIC GAUGE.

DST#01
CHEVRON E HUME RIVER N-10
217.90m to 335.00m

PRESSURE RECORDER NUMBER : 021150

DEPTH : 203.00m LOCATION : INSIDE
TYPE : K-3 CAPACITY : 20500.00 kPa

	PRESSURE kPa
1) Initial Hydro :	
2) 1st Flow Start:	0.
3) 1st Flow End :	707.
4) END 1st Shutin:	
5) 2nd Flow Start:	680.
6) 2nd Flow End :	779.
7) END 2nd Shutin:	
8) 3rd Flow Start:	780.
9) 3rd Flow End :	860.
10) END 3rd Shutin:	
14) Final Hydro. :	



ABOVE HYDRAULIC TOOL.

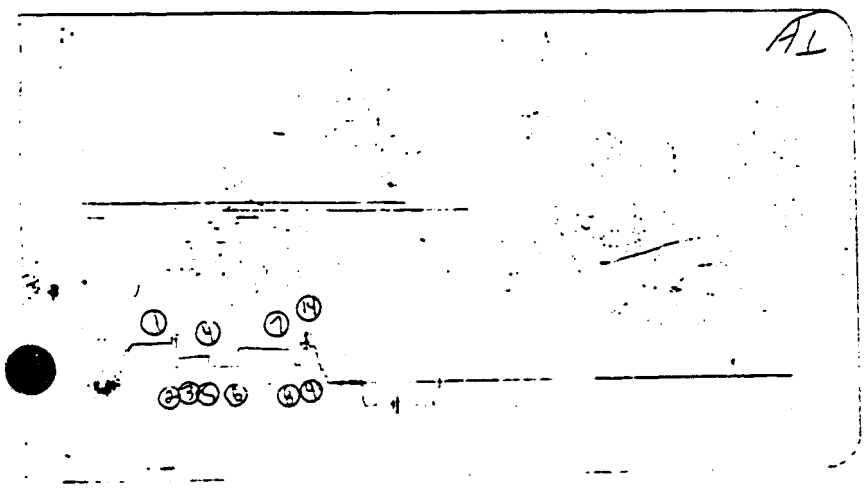
TEST TIMES (MIN)

1st FLOW :	8.0
SHUTIN:	64.0
2nd FLOW :	60.0
SHUTIN:	117.0
3rd FLOW :	8.0
SHUTIN:	.0

PRESSURE RECORDER NUMBER : 021162

DEPTH : 207.00m LOCATION : INSIDE
TYPE : K-3 CAPACITY : 21900.00 kPa

	PRESSURE kPa
1) Initial Hydro :	2162.
2) 1st Flow Start:	713.
3) 1st Flow End :	809.
4) END 1st Shutin:	1478.
5) 2nd Flow Start:	977.
6) 2nd Flow End :	862.
7) END 2nd Shutin:	1749.
8) 3rd Flow Start:	924.
9) 3rd Flow End :	924.
10) END 3rd Shutin:	
14) Final Hydro. :	1917.

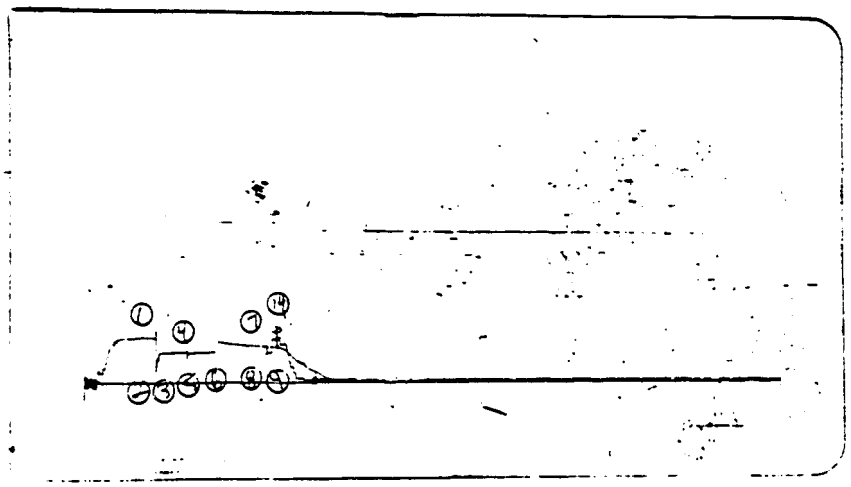


ABOVE INTERVAL.

DST#01
CHEVRON E HUME RIVER N-10
217.90m to 335.00m

PRESSURE RECORDER NUMBER : 021347

DEPTH : 219.00m LOCATION : OUTSIDE
TYPE : K-3 CAPACITY : 22000.00 kPa



	PRESSURE kPa
1) Initial Hydro :	2392.
2) 1st Flow Start:	518.
3) 1st Flow End :	1476.
4) END 1st Shutin:	1588.
5) 2nd Flow Start:	1145.
6) 2nd Flow End :	1559.
7) END 2nd Shutin:	1829.
8) 3rd Flow Start:	1405.
9) 3rd Flow End :	1471.
10) END 3rd Shutin:	
14) Final Hydro. :	2198.

TEST TIMES (MIN)	
1st FLOW :	8.0
SHUTIN:	64.0
2nd FLOW :	60.0
SHUTIN:	117.0
3rd FLOW :	8.0
SHUTIN:	.0

CLOSED CHAMBER TESTING
DST FLUID ANALYSIS
HORNER ANALYSIS
PH: 433-3443

THE EVALUATORS

CHEVRON EAST HUME RIVER

N-10

DST #2

FORMATION: Gilmore Sands

INTERVAL: 284-316

REPORT FOR: Al Lishman
PREPARED BY: Greg Zinter

TEST DATE:
2/26/90

WELL DATA

HOLE (mm)	216
TD (m)	335
GE (m)	74.4
KB (m)	80.0
FORMATION TEMP (DEG C)	20
FORMATION POROSITY (%)	6

MUD INFORMATION

MUD TYPE	Gel Chem
WEIGHT (Kg/mΣ)	1090
VISCOSITY (SEC)	66
WATER LOSS (cc)	8.4
FILTRATE pH	9.5
FILTRATE SALINITY(ppm Cl^-)	250
CUSHION TYPE	
CUSHION AMOUNT	
CUSHION SALINITY(ppm Cl^-)	

ON SITE PERSONNEL

COMPANY REPRESENTATIVE	Bill Meyer
EVALUATOR	Greg Zinter
TESTING COMPANY	Baker
TESTER	Rick Andrews
DRILLING CONTRACTOR	Shetah 1

Chevron East Hume River
N-10 DST #2

Test Times: 10-60-50-160-100

Blow Description (Closed Chamber):

Preflow: 0 to 31 kPa

Average Liquid Rate	16 m^3/day
Average Gas Rate	40 scm/day
GLR	2.6 scm/m^3

Initial Shutin: no pressure increase

Final Flow: 30 to 263 kPa

Average Liquid Rate	4.3 m^3/day
Average Gas Rate	69 scm/day
GLR	16 scm/m^3

Final Shutin: no pressure increase

3rd Flow:

	0-30 min closed chamber	31-70 min flow prover	71-100 min closed chamber
Pressure	0 to 123 kPa	123 - 2 kPa	2 to 135 kPa
Av. Gas Rate scm/day	62.0	sub critical no rates	63.5
Av. Liquid Rate m^3/day	1.6		1.6
GLR scm/m^3	38		39

Pipe Recovery:

50 m drilling fluid - Salinity 200 ppm Cl^-
Mud Filtrate Salinity 250 ppm Cl^-

Pressures (DMR #1767 Outside)

IH	3,473 kPa
IPF	405 kPa
FPF	664 kPa
ISI	2,422 kPa
IFF	517 kPa
FF	767 kPa

FSI 2,585 kPa
3IF 594 kPa
3FF 905 kPa
FH 3,249 kPa

Pressure Transient Analysis:

	ISI	FSI
Mobility (md/cp)	1.01	0.78
Skin	2.4	0.1
Radius of Inv (m)	0.3	0.6

Comments:

Low rate gas, tight formation.
No evidence of connate water production.

Closed Chamber Report

Pretest

Compressed air was blown through the lines to ensure there was no blockage. Preliminary test time were 10-60-60-120, to be adjusted during the test if necessary. The ambient temperature was approximately -15°C.

Preflow/Initial Shutin

At the end of the 10 preflow the pressure had reached 31 kPa. There was no further pressure increase during the 60 minute initial shutin. A closed chamber mass balance resulted in the following calculations:

Average Gas Rate (scm/d)	40.3
Average Liquid Rate (m^3/d)	15.8
GLR (scm/m^3)	2.6

Final Flow/Final Shutin

A gas huff on valve open for the final flow period identified the production as predominantly gas. Dp/dt then stabilized at approximately 3.5 kPa/minute for most of the ramainder of the fifty minute final flow. The downhole valve was closed short of the planned 60 minute test time due to some fluctuating pressure readings that could have indicated that the well was killing itself. In any case, the flow time had been sufficiently long to collect a formation sample.

There was no change in pressure during the 120 minute final shutin. The closed chamber mass balance resulted in the following:

Average Gas rate (scm/d)	69
Average Liquid rate (m^3/d)	4.3
GLR (scm/m^3)	16

Third Flow Period

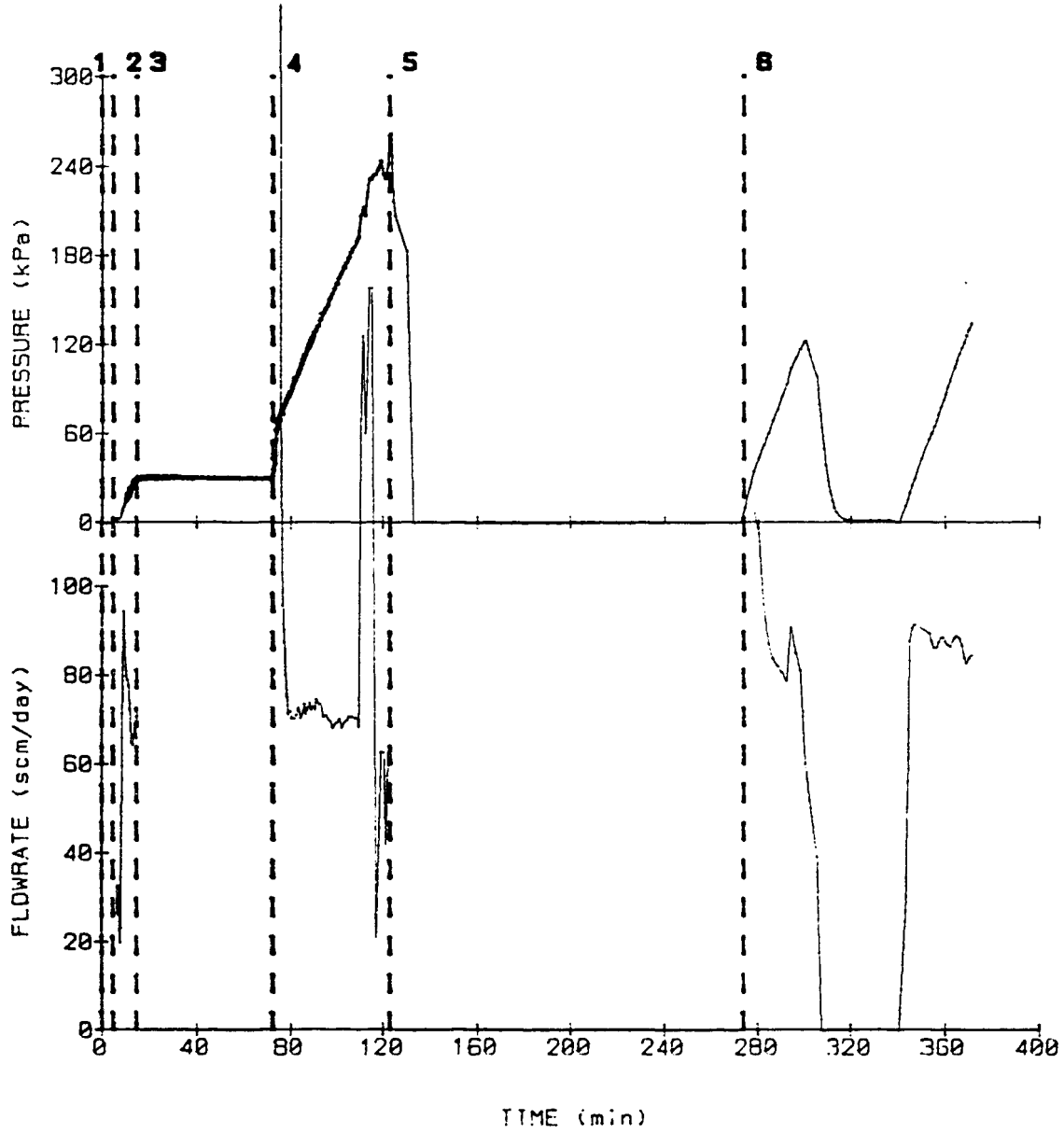
A third flow was called for to collect further gas samples and to flow the well through a critical flow prover. The first 30 minutes was conducted under closed chamber to pressurize the chamber to allow the collect of 2 more gas samples. The pressure was at 123 kPa at this point. The closed chamber mass balance for this flow period resulted in:

Average Gas rate (scm/d)	62
Average Liquid rate (m^3/d)	1.6
GLR (scm/m^3)	38

The well was vented to the flow prover at this time to see if a critical flow could be reached through a 1/8 inch orafice. The pressure dropped to 2 kPa in 22 minutes and did not increase for the next 18 minutes. Due the sub critical flow, flowrate calculations were invalid for this time.

The last 30 minutes of this flow period were again conducted under closed chamber conditions. During this time the pressure reached 133 kPa. The following rates were calculated from the closed chamber mass balance:

Average Gas rate (scm/d)	63.5
Average Liquid rate (m^3/d)	1.6
GLR (scm/m^3)	39



SURFACE PRESSURE
and FLOWRATE vs
ELAPSED TEST TIME
for a
GAS FLOW

Chevron Canada
Well Name:
Chevron East Hume River
Location: M-18
Formation: Bilmore Sands
Interval (m): 284-316
DST #2 Date: 82/28/88

1 Pretest
2 Preflow
3 Initial Shutin
4 Final Flow
5 Final Shutin
6 3rd Flow Period

THE EVALUATORS

Pipe Recovery

The pipe recovery consisted of 50 m of drilling mud. The results of the specific ion analysis (done by the mud man on location) are as follows:

	Salinity (ppm Cl^-)	Hardness (ppm Ca^{+2})	Nitrates (ppm NO_3^+)
Sample above tool	200	0	75
Mud Filtrate	250	0	75

Pressure Transient Analysis

The outside chart (k3 #21347) was digitized and plotted on site. The Horner plots were somewhat ambiguous. The electronic data from Baker's DMR was more concise in this respect so the Horner analysis has been based on the DMR data.

Gas is assumed to be the dominant phase for the purposes of the pressure transient analysis.

DOWNHOLE CHART SUMMARY

Chevron E Hume River N-10 DST #2

Formation: Gilmore Sands Interval: 284-316

DOWNHOLE PRESSURES (kPa)

IH	3034.2
IPF	305.6
FPF	305.6
ISI	2200.0
IFF	418.5
FF	578.8
FSI	2382.1
FH	2961.4
I3F	447
F3F	565

Rec. type K3 # 21347 Test Times 10-60-50-160-100

HORNER DATA

ISI

tp= 10 min q= 40.3 m3/d

P(kPa)	dt(min)	dt+tp/dt
306	0.0	1.17
440	1.7	6.78
655	3.1	4.18
918	6.0	2.67
1133	8.2	2.22
1315	10.1	1.99
1453	12.3	1.82
1643	14.8	1.68
1748	17.5	1.57
1861	19.0	1.53
1905	21.9	1.46
1952	23.4	1.43
2000	25.6	1.39
2051	27.2	1.37
2051	28.9	1.35
2094	31.1	1.32
2124	33.5	1.30
2138	36.3	1.28
2160	40.9	1.24
2171	48.3	1.21
2200	53.2	1.19
2200	59.3	1.17
2200	59.5	1.17

FSI

tp= 50 min q= 69.3 m3/d

P(kPa)	dt(min)	dt+tp/dt
579	0.0	1.24
827	2.5	20.87
1125	4.9	11.25
1428	7.4	7.76
1646	9.6	6.21
1796	11.8	5.24
1909	14.9	4.35
2000	18.2	3.74
2069	21.5	3.32
2127	24.2	3.06
2156	25.8	2.94
2179	27.5	2.82
2222	33.8	2.48
2233	47.8	2.05
2269	71.6	1.70
2298	102.7	1.49
2353	129.0	1.39
2382	157.8	1.32

DOWNHOLE CHART SUMMARY

Chevron East Hume Ri | N-10 | DST #2

Formation: Gilmore Sands | Interval: 284-316

DOWNHOLE PRESSURES (kPa)

IH	3473
IPF	405
FPF	664
ISI	2422
IFF	517
FF	767
FSI	2585
FH	3249
I3F	594
F3F	905

Rec. type DMR | # 1767 | Test Times 10-60-50-160-100

HORNER DATA

ISI

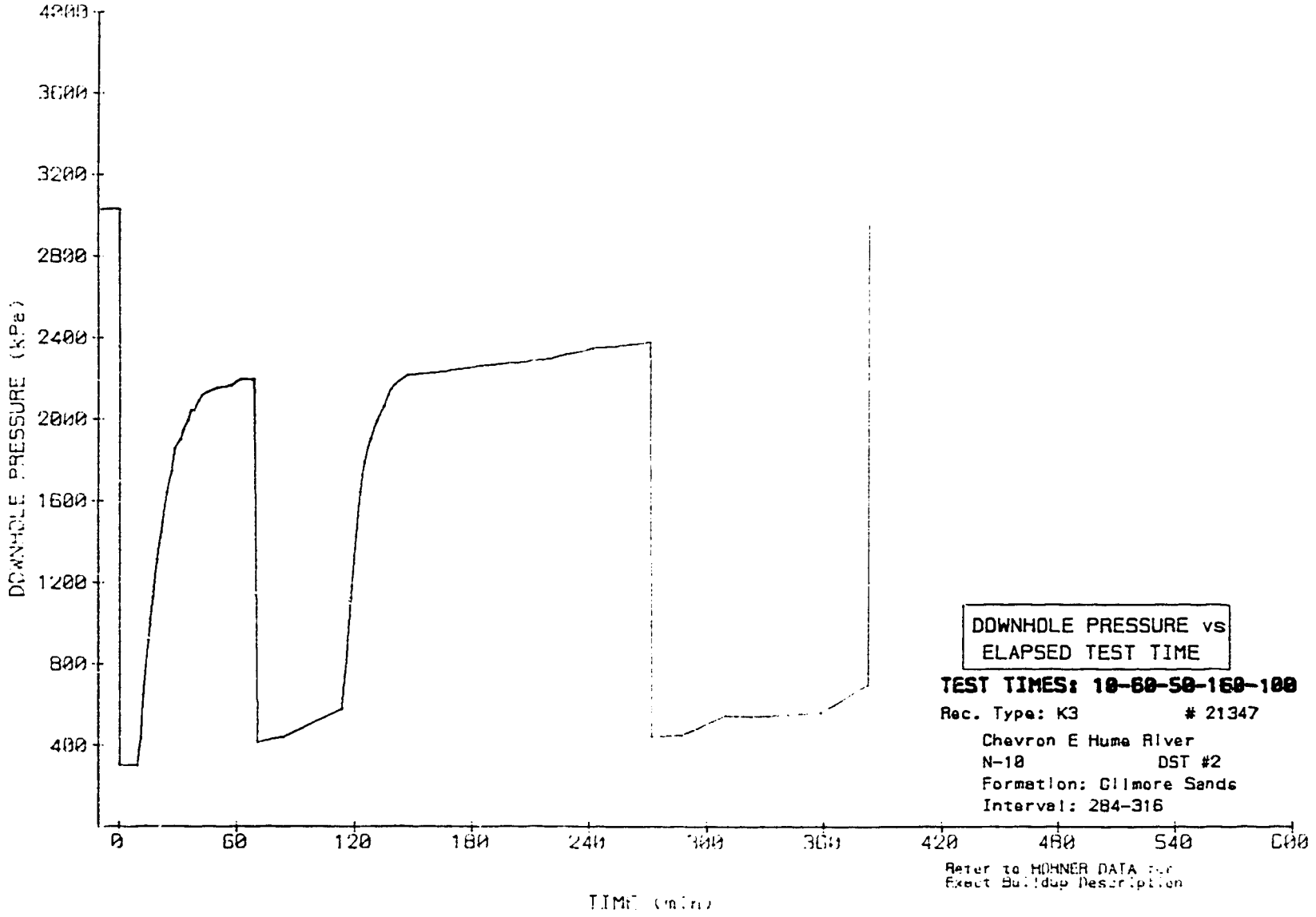
tp= 10 min q= 40.3 m3/d

P(kPa)	dt(min)	dt+tp/dt
664	0.0	0.00
1043	3.0	4.33
1439	7.0	2.43
1681	10.0	2.00
1870	13.0	1.77
2025	16.0	1.63
2137	19.0	1.53
2224	22.0	1.45
2301	25.0	1.40
2370	28.0	1.36
2387	30.0	1.33
2395	32.0	1.31
2404	34.0	1.29
2404	42.0	1.24
2413	46.0	1.22
2422	52.0	1.19
2422	60.0	1.17

FSI

tp= 50 min q= 69.3 m3/d

P(kPa)	dt(min)	dt+tp/dt
767	0.0	0.00
1154	2.0	26.00
1405	4.0	13.50
1646	6.0	9.33
1922	8.0	7.25
2094	10.0	6.00
2163	12.0	5.17
2258	14.0	4.57
2310	16.0	4.13
2344	18.0	3.78
2379	20.0	3.50
2404	23.0	3.17
2413	28.0	2.79
2422	33.0	2.52
2422	43.0	2.16
2422	53.0	1.94
2430	58.0	1.86
2439	63.0	1.79
2447	71.0	1.70
2473	75.0	1.67
2482	80.0	1.63
2491	83.0	1.60
2499	88.0	1.57
2507	93.0	1.54
2516	96.0	1.52
2525	100.0	1.50
2534	105.0	1.48
2542	110.0	1.45



DOWNHOLE PRESSURE vs
ELAPSED TEST TIME

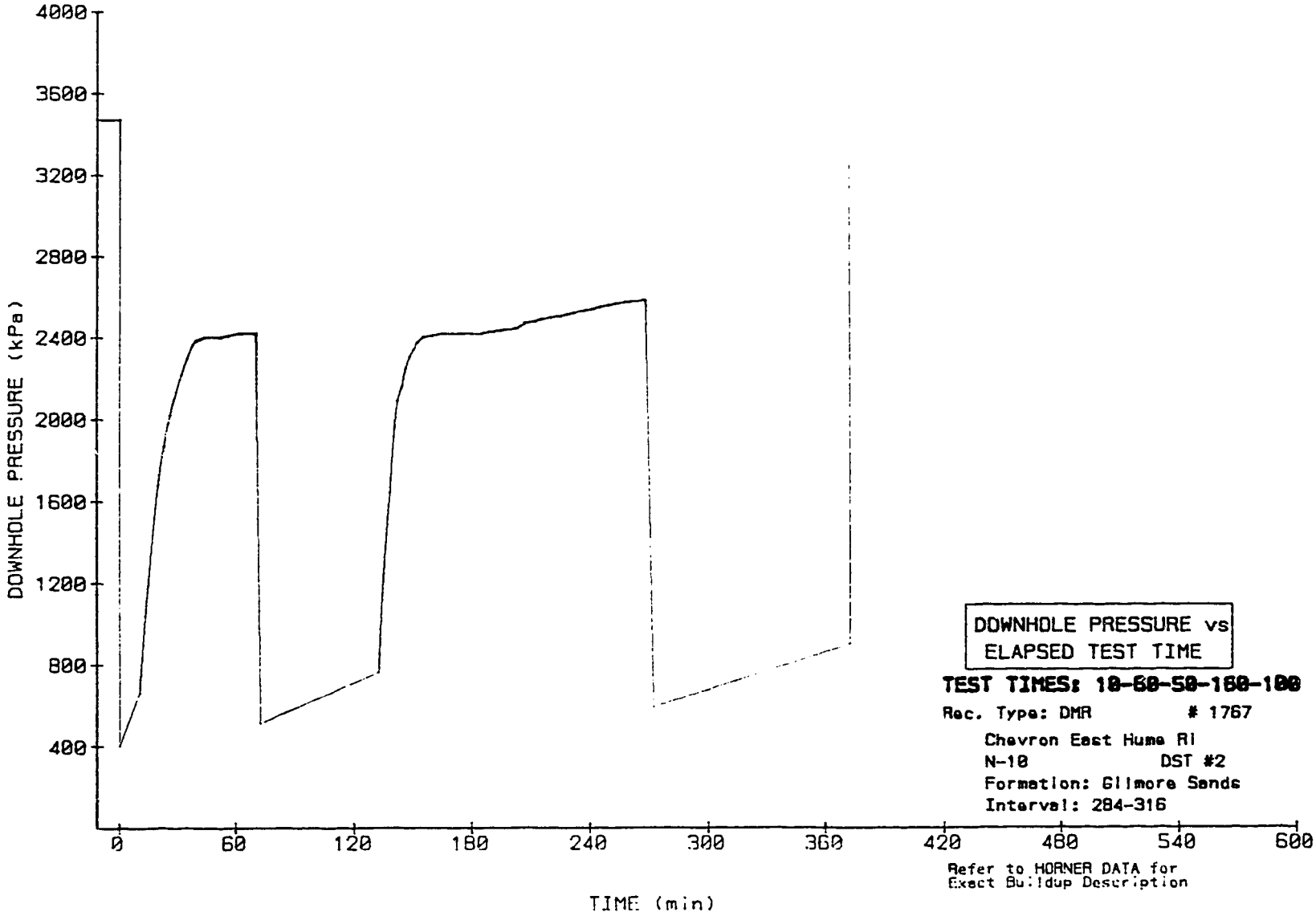
TEST TIMES: 10-60-50-160-100

Rec. Type: K3 # 21347

Chevron E Hume River
N-10 DST #2
Formation: Gilmore Sands
Interval: 284-316

Refer to HOHNER DATA for
Exact Buildup Description

THE EVALUATORS



DOWNHOLE PRESSURE vs
ELAPSED TEST TIME

TEST TIMES: 10-60-50-160-100

Rec. Type: DMR # 1767

Chevron East Hume RI
N-10 DST #2
Formation: Gilmore Sands
Interval: 284-316

Refer to HORNER DATA for
Exact Buildup Description

THE EVALUATORS

PRESSURE TRANSIENT ANALYSIS

DST # 2

	Initial Shut In	Final Shut In
Transmissibility (md.m/cp)	5.07	3.88
Mobility (md/cp)	1.01	0.78
Permeability (md)	0.01	0.01
Skin	2.4	0.1
Radius of Investigation (m)	0.3	0.6
Flow Efficiency (%)	26.3	95.0
Damage Ratio	3.80	1.05
Extrapolated Horner Pressure (kPa)	2470	2777

P.T.A. Assumptions

	Initial Shut In	Final Shut In	Source
tp (min)	10	50	Actual Flowtimes
FVF	.037	.037	
m (kPa/cycle)	631	1419	
P (dt=1hr)	2430	2400	
P(wf) (kPa)	664	767	
P* (kPa)	2470	2777	
Q (scm/day)	40.3	69.3	Average Flowrates

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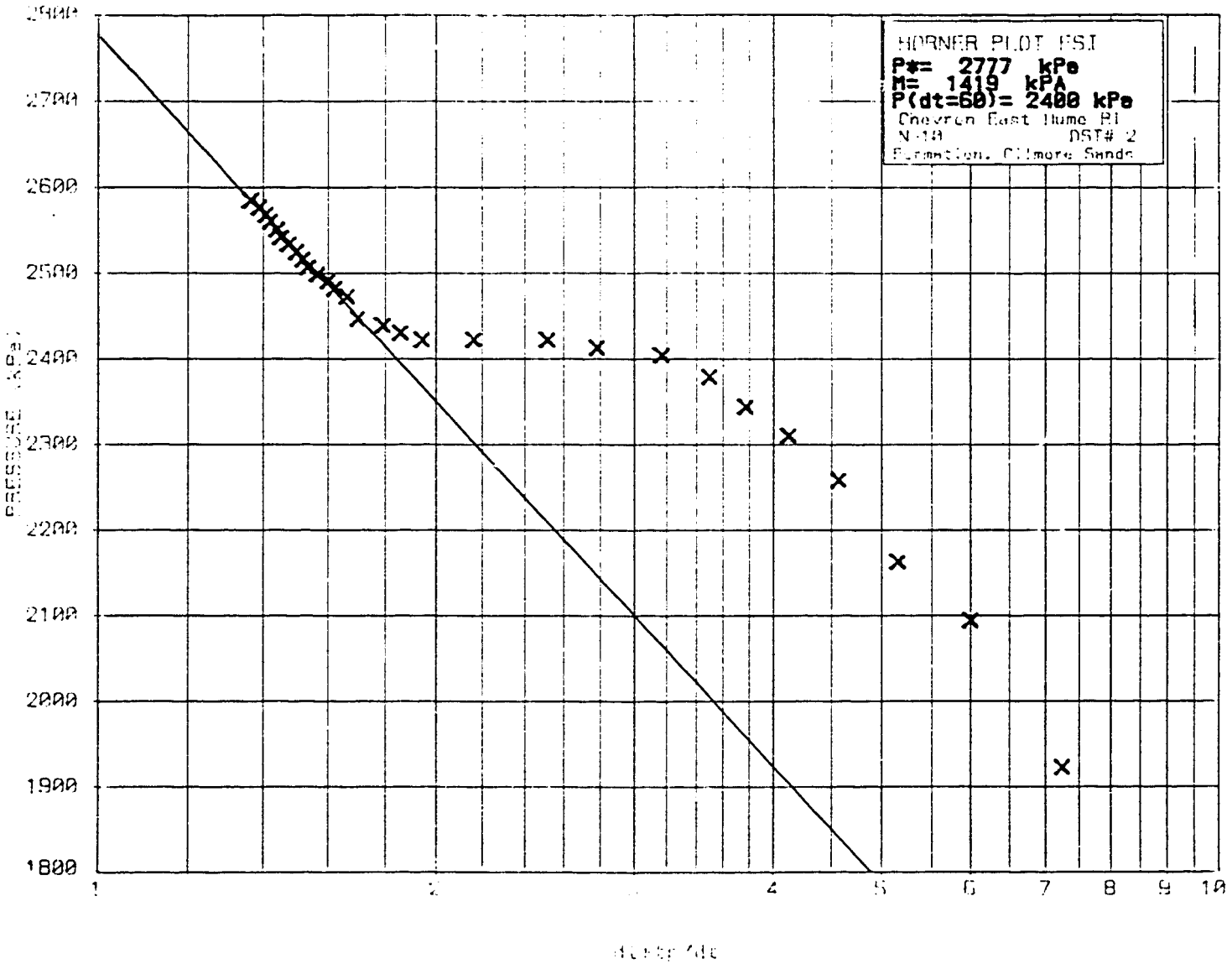
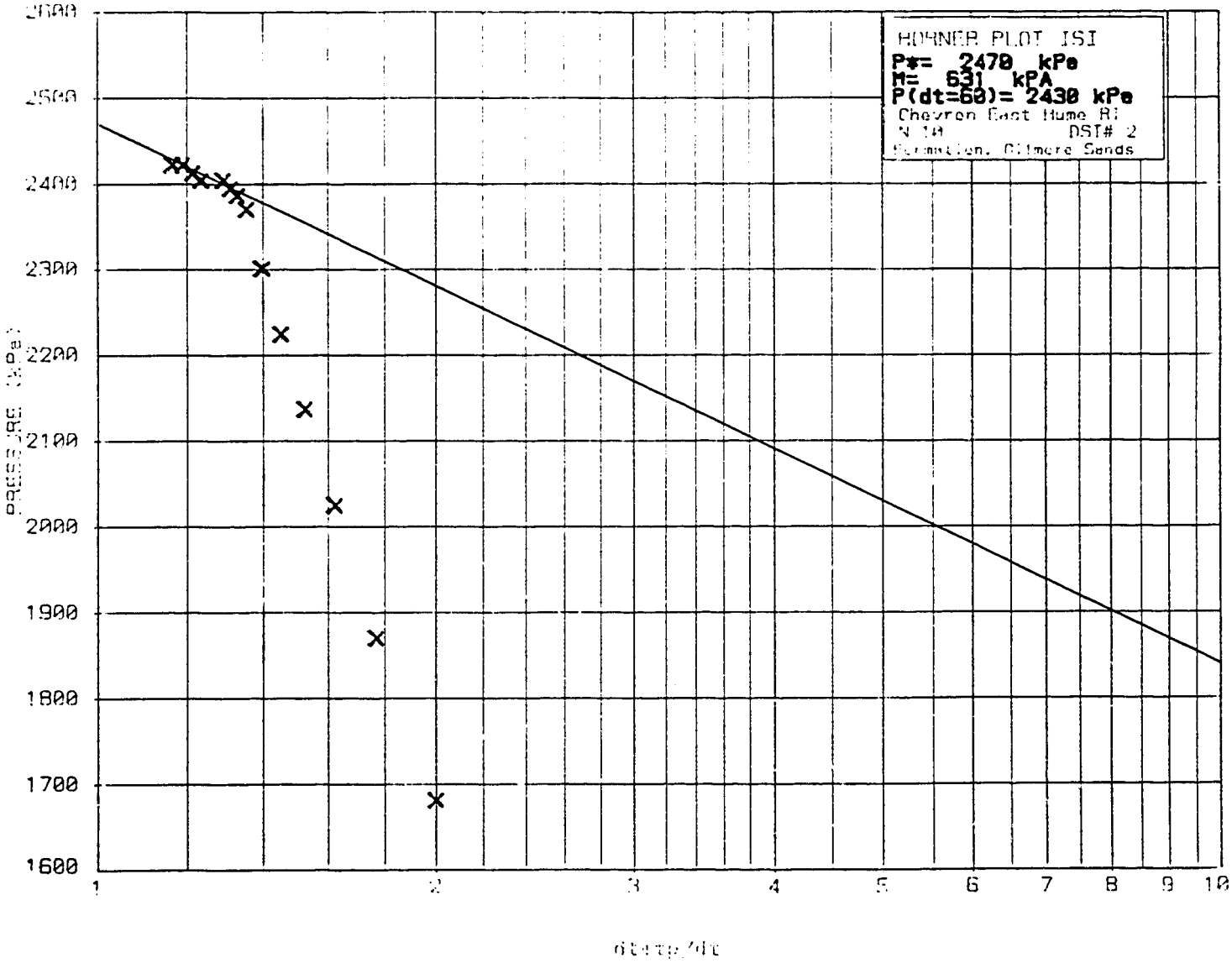
h (m)	5	Log Analyist
u (cp)	.0105	Gas @ Est Res Cond
Porosity	.1	Log Analyist
CT (x10(-6)/kPa)	200	Eval/SPE Corr
Hole dia. (mm)	216	

Flowrates used for these calculations are based on drill stem test data only. They should not be used for any further application as changing reservoir conditions and completion design may result in different flowrates.



THE EVALUATORS



THE EVALUATORS

Reservoir Analysis

The low rate of gas production seen in this test would not have been measured without closed chamber testing methods. This low rate gas, produced without evidence of formation fluid, is encouraging. The pipe recovery, however, was only .23 m^3 compared to a rat hole volume of .4 m^3. Therefore, whatever fluid that was produced from the formation probably did not reach the drillstring. This fluid, either connate fluid or invaded filtrate being produced back from the formation, remained in the test interval at the end of the test. Perhaps the contents of the downhole sampler will shed some light on the nature of the fluid production.

When considering the results of the pressure transient analysis, one key is missing. The test interval encompassed 2 potential sandstone formations (apparently isolated from one another) and a coal stringer. The analysis of this test depends on which of these zones is responsible for the various parts of the results. While it is probable that the lower most porous standstone formation is responsible for the pressure curves, it is possible that all or part of the gas produced may have come from the upper sandstone or the coal stringer. For the purposes of this discussion, however, the lower sandstone zone, found in the Gilmore Lake Coal sequence, is assumed to be the dominant zone. (A pressure transient analysis of the other zone had very similar results.)

The chart pressures and resulting Horner plots may also be an amalgamation of pressure responses from multiple zones. This is probably the biggest limiting factor of the PTA.

The Skin value decreased from 2.4 to .1 between the ISI and FSI. This could mean that the formation was slightly damaged at the start of the test, probably due to some filtrate invasion. As the test drew down formation fluids, all or part of this invasion fluid may have been producd. The FSI skin value is indicative of a formation with a constant mobility within the radius of investigation.

On the surface, the decrease in mobility from ISI to FSI (1.01 vs .78 md/cp) does not substantiate this theory. If fluid was taken out of the formation during the flows, the gas saturation would have increased which would have increased the mobility. The magitude of this change in mobility is so small, however, it probably does not represent a significant change in formation mobility.

Again, for an accurate analysis of this formation, the producing zone must be defined. The numbers discussed here are, at best, indicators of trends or orders of magnitude.

Further study of these formations through cores and logs, is recommended.

Chevron Canada N-10 DST #2

TEST STRING INFORMATION

CLOSED CHAMBER:

No.	COMPONENT NAME	ID (MM)	OD (MM)	LENGTH (M)	VOLUME (M3)
1	Chicksans	38		10	0.0113
2	Drillpipe	97.18		74.05	0.5492
3	Heavy Weight	70		139.2	0.5357
4	Drill Collars	77		65.5	0.3050
5	Tools Above	25		3.48	0.0017

RATHOLE:

1	Tools Below	25	127	9.22	0.00453
2	Perf	25	127	.3	0.00015
3	Interval Tools	25	127	3.9	0.00000
4	Drill Collars	73	171	21.5	0.00000

TOTAL CLOSED CHAMBER VOLUME: 1.40 M3

TOTAL RATHOLE VOLUME: 0.399 M3

THE INITIAL PARAMETERS ARE:

AVERAGE DRILLING FLUID TEMPERATURE: 20 C
ATMOSPHERIC PRESSURE: 100 kPA
N1: 1.37 scm

MINIMUM SURFACE PRESSURE WHEN RATHOLE VOLUME HAS BEEN PRODUCED THROUGH SHUTIN TOOL: 39.80 kPA

MAXIMUM UNRECORDABLE FLOWRATE = 0.3 scm/day

Pretest

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	GAS FLOWRATE scm/day	CUMMULATIVE PRODUCTION scm
1.00	0.06	0.06		
1.50	0.00	-0.13		
2.00	0.06	0.13		
3.00	0.06	0.00		
4.00	0.06	0.00		

Preflow

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	GAS FLOWRATE scm/day	CUMMULATIVE PRODUCTION scm
5.00	0.50	0.44	8.64	0.01
5.50	1.50	2.00	39.50	0.02
6.00	2.25	1.50	29.63	0.03
6.50	3.00	1.50	29.63	0.04
7.00	3.50	1.00	19.75	0.05
7.50	3.75	0.50	9.88	0.05
8.00	6.56	5.63	111.13	0.09
8.50	8.94	4.75	93.86	0.12
9.00	10.94	4.00	79.05	0.15
9.50	12.94	4.00	79.07	0.18
10.00	15.00	4.13	81.55	0.20
10.50	16.94	3.88	76.62	0.23
11.00	18.81	3.75	74.16	0.26
11.50	20.50	3.38	66.75	0.28
12.00	22.06	3.13	61.81	0.30
12.50	23.75	3.38	66.76	0.33
13.00	25.38	3.25	64.30	0.35
13.50	27.13	3.50	69.25	0.37
14.00	29.00	3.75	74.21	0.40
14.50	30.38	2.75	54.43	0.42

Initial Shutin

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	BREAKOUT GAS FLOWRATE scm/day	CUMMULATIVE PRODUCTION scm
15.00	30.69	0.63	12.37	0.42
15.50	30.81	0.25	4.95	0.42
16.00	30.69	-0.25	-4.95	0.42
16.50	30.81	0.25	4.95	0.42
17.00	30.63	-0.38	-7.42	0.42
17.50	30.69	0.13	2.47	0.42
18.00	30.75	0.13	2.47	0.42
19.00	30.63	-0.13	-2.47	0.42
20.00	30.56	-0.06	-1.24	0.42
21.00	30.56	0.00	0.00	0.42
22.00	30.50	-0.06	-1.24	0.42
23.00	30.56	0.06	1.24	0.42
24.00	30.50	-0.06	-1.24	0.42
25.00	30.56	0.06	1.24	0.42
26.00	30.50	-0.06	-1.24	0.42
27.00	30.50	0.00	0.00	0.42
28.00	30.50	0.00	0.00	0.42
30.00	30.44	-0.03	-0.62	0.42
32.00	30.44	0.00	0.00	0.42
34.00	30.50	0.03	0.62	0.42
36.00	30.50	0.00	0.00	0.42
38.00	30.44	-0.03	-0.62	0.42
40.00	30.44	0.00	0.00	0.42
42.00	30.44	0.00	0.00	0.42
44.00	30.38	-0.03	-0.62	0.42
46.00	30.38	0.00	0.00	0.42
48.00	30.38	0.00	0.00	0.42
50.00	30.44	0.03	0.62	0.42
52.00	30.50	0.03	0.62	0.42
54.00	30.50	0.00	0.00	0.42
56.00	30.50	0.00	0.00	0.42
58.00	30.56	0.03	0.62	0.42
60.00	30.38	-0.09	-1.86	0.42
62.00	30.38	0.00	0.00	0.42
64.00	30.38	0.00	0.00	0.42
66.00	30.38	0.00	0.00	0.42
68.00	30.38	0.00	0.00	0.42
70.00	30.38	0.00	0.00	0.42
72.00	30.38	0.00	0.00	0.42

Final Flow

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	GAS FLOWRATE scm/day	CUMMULATIVE PRODUCTION scm
73.50	40.81	6.96	137.78	0.56
74.00	62.63	43.63	864.78	0.86
74.50	67.56	9.88	195.94	0.93
75.00	70.31	5.50	109.16	0.97
75.50	73.06	5.50	109.18	1.00
76.00	75.38	4.63	91.83	1.04
76.50	77.56	4.38	86.88	1.07
77.00	79.69	4.25	84.41	1.10
77.50	81.44	3.50	69.52	1.12
78.00	83.25	3.63	72.02	1.14
78.50	85.06	3.63	72.03	1.17
79.00	86.88	3.63	72.04	1.19
79.50	88.69	3.63	72.04	1.22
80.00	90.38	3.38	67.08	1.24
80.50	92.19	3.63	72.06	1.27
81.00	94.00	3.63	72.07	1.29
81.50	95.69	3.38	67.11	1.32
82.00	97.56	3.75	74.58	1.34
82.50	99.38	3.63	72.10	1.37
83.00	101.19	3.63	72.11	1.39
83.50	103.00	3.63	72.12	1.42
84.00	104.69	3.38	67.15	1.44
84.50	106.50	3.62	72.14	1.47
85.00	108.38	3.75	74.63	1.49
85.50	110.13	3.50	69.67	1.52
86.00	112.06	3.88	77.14	1.54
86.50	113.75	3.37	67.20	1.57
87.00	115.56	3.63	72.18	1.59
87.50	117.56	4.00	79.66	1.62
88.00	119.25	3.38	67.22	1.64
88.50	121.13	3.75	74.70	1.67
89.00	123.00	3.75	74.71	1.69
89.50	124.75	3.50	69.74	1.72
90.00	126.63	3.75	74.73	1.74
90.50	128.44	3.63	72.25	1.77
91.00	130.38	3.88	77.24	1.80
92.00	133.94	3.56	71.03	1.84
93.00	137.56	3.63	72.29	1.90
94.00	141.00	3.44	68.57	1.94
95.00	144.63	3.63	72.33	1.99
96.00	148.13	3.50	69.85	2.04

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	GAS FLOWRATE scm/day	CUMMULATIVE PRODUCTION scm
97.00	151.50	3.38	67.37	2.09
98.00	154.88	3.38	67.39	2.14
99.00	158.50	3.63	72.40	2.19
100.00	161.94	3.44	68.67	2.23
101.00	165.44	3.50	69.94	2.28
102.00	168.75	3.31	66.21	2.33
103.00	172.38	3.63	72.47	2.38
104.00	175.94	3.56	71.24	2.43
105.00	179.38	3.44	68.76	2.48
106.00	183.00	3.63	72.53	2.53
107.00	186.50	3.50	70.04	2.57
108.00	189.94	3.44	68.81	2.62
109.00	193.25	3.31	66.32	2.67
110.00	207.13	13.88	277.98	2.86
111.00	213.38	6.25	125.30	2.95
112.00	207.13	-6.25	-125.30	2.86
113.00	222.75	15.63	313.37	3.08
114.00	232.13	9.37	188.19	3.21
115.00	232.13	0.00	0.00	3.21
116.00	235.25	3.13	62.76	3.25
117.00	235.25	0.00	0.00	3.25
118.00	238.38	3.13	62.77	3.30
119.00	244.63	6.25	125.58	3.38
120.00	235.25	-9.38	-188.35	3.25
121.00	232.13	-3.13	-62.76	3.21
122.00	241.50	9.38	188.31	3.34

Final Shutin

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	BREAKOUT GAS FLOWRATE scm/day	CUMMULATIVE PRODUCTION scm
123.00	263.38	21.88	439.88	3.65
124.00	216.50	-46.88	-941.77	2.99
125.00	207.13	-9.38	-187.98	2.86
130.00	183.19	-4.79	-95.88	2.53
133.00	-0.88	-61.35	-1219.67	-0.01
134.00	-0.94	-0.06	-1.23	-0.01
135.00	-0.88	0.06	1.23	-0.01
136.00	-0.88	0.00	0.00	-0.01
137.00	-0.88	0.00	0.00	-0.01

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	BREAKOUT GAS FLOWRATE scm/day	CUMMULATIVE PRODUCTION scm
138.00	-0.81	0.06	1.23	-0.01
139.00	-0.81	0.00	0.00	-0.01
140.00	-0.81	0.00	0.00	-0.01
141.00	-0.75	0.06	1.23	-0.01
145.00	-0.75	0.00	0.00	-0.01
150.00	-0.69	0.01	0.25	-0.01
155.00	-0.56	0.03	0.49	-0.01
160.00	-0.63	-0.01	-0.25	-0.01
165.00	-0.56	0.01	0.25	-0.01
170.00	-0.50	0.01	0.25	-0.01
175.00	-0.50	0.00	0.00	-0.01
180.00	-0.50	0.00	0.00	-0.01
190.00	-0.50	0.00	0.00	-0.01
195.00	-0.50	0.00	0.00	-0.01
200.00	-0.44	0.01	0.25	-0.01
205.00	-0.50	-0.01	-0.25	-0.01
210.00	-0.44	0.01	0.25	-0.01
215.00	-0.44	0.00	0.00	-0.01
220.00	-0.50	-0.01	-0.25	-0.01
225.00	-0.50	0.00	0.00	-0.01
268.02	-0.25	0.01	0.11	-0.00
270.00	-0.81	-0.28	-5.60	-0.01
272.00	-0.81	0.00	0.00	-0.01

3rd Flow Period

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	GAS FLOWRATE scm/day	CUMMULATIVE PRODUCTION scm
274.00	10.38	5.59	110.51	0.14
276.00	23.63	6.63	131.00	0.32
278.00	34.88	5.63	111.32	0.48
280.00	44.25	4.69	92.84	0.61
282.00	52.69	4.22	83.61	0.72
284.00	61.25	4.28	84.90	0.84
286.00	69.56	4.16	82.47	0.96
288.00	77.50	3.97	78.80	1.07
290.00	85.63	4.06	80.70	1.18

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	GAS FLOWRATE scm/day	CUMMULATIVE PRODUCTION scm
292.00	93.31	3.84	76.40	1.28
294.00	104.94	5.81	115.61	1.44
296.00	111.25	3.16	62.82	1.53
298.00	117.75	3.25	64.72	1.62
300.00	123.00	2.63	52.29	1.69
305.00	98.75	-4.85	-96.55	1.36
306.00	79.75	-19.00	-377.65	1.10
307.00	64.69	-15.06	-299.02	0.89
308.00	50.50	-14.19	-281.36	0.69
309.00	38.75	-11.75	-232.80	0.53
310.00	28.81	-9.94	-196.74	0.39
311.00	20.88	-7.94	-157.04	0.29
312.00	14.94	-5.94	-117.41	0.20
313.00	10.25	-4.69	-92.66	0.14
314.00	7.19	-3.06	-60.52	0.10
315.00	5.00	-2.19	-43.22	0.07
317.00	2.94	-1.03	-20.37	0.04
318.00	2.50	-0.44	-8.64	0.03
319.00	2.19	-0.31	-6.17	0.03
320.00	2.25	0.06	1.23	0.03
322.00	2.13	-0.06	-1.23	0.03
324.00	1.94	-0.09	-1.85	0.03
328.00	2.13	0.05	0.93	0.03
332.00	2.06	-0.02	-0.31	0.03
336.00	2.13	0.02	0.31	0.03
340.00	-0.75	-0.72	-14.20	-0.01
343.00	11.63	4.13	81.50	0.16
344.00	16.06	4.44	87.73	0.22
345.00	20.81	4.75	93.93	0.28
346.00	25.38	4.56	90.26	0.35
347.00	29.94	4.56	90.29	0.41
353.00	56.69	4.46	88.32	0.78
354.00	60.88	4.19	83.05	0.84
355.00	65.25	4.38	86.80	0.90
356.00	69.75	4.50	89.30	0.96
357.00	74.13	4.38	86.85	1.02
358.00	78.63	4.50	89.36	1.08
359.00	83.13	4.50	89.39	1.14
360.00	87.31	4.19	83.21	1.20
361.00	91.75	4.44	88.20	1.26
362.00	96.19	4.44	88.23	1.32
364.00	105.13	4.47	88.90	1.45
365.00	109.63	4.50	89.56	1.51
366.00	114.00	4.38	87.10	1.57
367.00	118.19	4.19	83.39	1.63

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	GAS FLOWRATE scm/day	CUMMULATIVE PRODUCTION scm
368.00	122.25	4.06	80.93	1.68
369.00	126.44	4.19	83.44	1.74
370.00	130.81	4.38	87.20	1.80
371.00	135.00	4.19	83.49	1.86

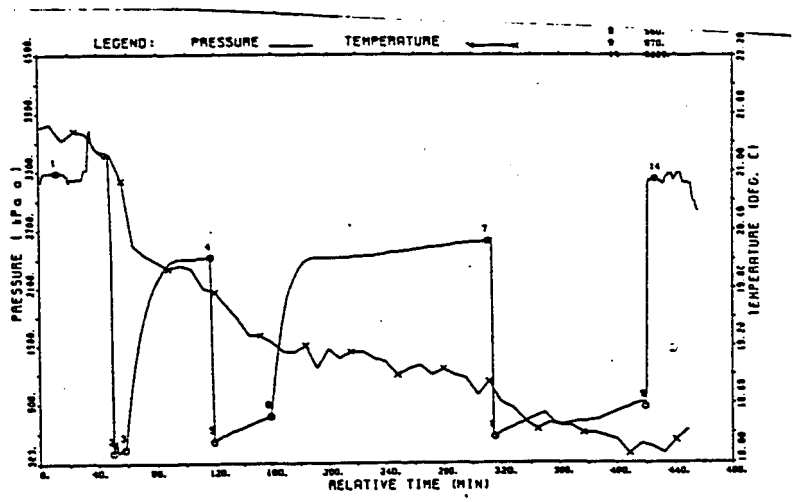
REF#:C-76-999-81178-66

TEST DATE: 90/02/26

CHEVRON E HUME RIVER N-10
400/ 69.111 / 129.160 /00
DST#02
284.00m to 315.90m
ARCTIC RED/GILMOOR

DEPTH: 286.00m

RECORDER # 021347



	PRESSURE kPa
1) Initial Hydro :	3096.
2) 1st Flow Start:	284.
3) 1st Flow End :	272.
4) END 1st Shutin:	2218.
5) 2nd Flow Start:	425.
6) 2nd Flow End :	543.
7) END 2nd Shutin:	2384.
8) 3rd Flow Start:	427.
9) 3rd Flow End :	716.
10) END 3rd Shutin:	
14) Final Hydro. :	3064.

TEST TIMES (MIN)	
1st FLOW :	8.0
SHUTIN:	59.0
2nd FLOW :	40.0
SHUTIN:	152.0
3rd FLOW :	103.0
SHUTIN:	.0

RECOVERY DATA

TOTAL FLUID RECOVERY CONSISTED OF 50.00 M OF DRILLING MUD. THIS TEST WAS RUN UNDER CLOSED CHAMBER CONDITIONS.

REMARKS AND TEST SUMMARY

Test results indicate a mechanically successful test. Bottom hole pressures and the shape of the shut-in curves suggest RELATIVELY HIGH PERMEABILITY within the interval tested. Flowed to surface for final flow. Too small to measure on Critical Flow Prover, the maximum pressure recorded was 123 kPa. The slope change during the final shut-in period suggests a permeability change within the radius of investigation of the test.

TABLE OF CONTENTS

BAKER OIL TOOLS CANADA
DST#02 REPORT

Well name : CHEVRON E HUME RIVER N-10
Location : 400/ 69.111 / 129.160 /00
Interval : 284.00m to 315.90m
Test Date : 90/02/26
Test Type : INFLATE STRADDLE
Formation : ARCTIC RED/GILMOOR

K.B.Elevation : 80.06m
Grd.Elevation : 74.40m
TD @ test Date: 335.00m
Ticket Number : 81179
Unit Number :

Started in hole at :
Tool opened at : 0410 hrs
Reverse circulated?: NO
Contractor & Rig No: SHEHTAH #1
Baker#2 : 1 of 1 on the same trip.

Operator: CHEVRON CANADA RESOURCES LIMITED
14TH FLOOR
500 - 5TH AVE. S.W.
CALGARY, ALBERTA
T2P0L7

Company Rep : MEYER B
Testers : ANDREWS R

5 REPORTS(S) TO: DOUG LEWIS
Company:

BLOW DESCRIPTION

Closed Chamber run with The Evaluators.

TOTAL LIQUID RECOVERY : 50.00m

For DST# 2 through DST# 2

2 Fluid Samples
Sent to: GEO TECH

Field Est. Salinity :250.0g/m3

Btm. Hole Sampler #: 53
Sent to: GEO TECH

50.00m DRILLING MUD.

GAS MEASUREMENTS

Bomb#: 6002,6763,6384
Sent to: GEO TECH

No Gas Measurements

CHEVRON E HUME RIVER N-10
284.00m to 315.90m

TOOL SEQUENCE

SUB	LENGTH (m)
PUMP OUT SUB	.30
CROSS OVER SUB	.30
INSIDE RECORDER	1.38
HYDRAULIC TOOL	1.50
BTM HOLE SAMPLER	1.03
HYDRAULIC JARS	2.22
SAFETY JOINT	.65
INFLATE PUMP	2.38
SCREEN	1.16
TOP INFLATE PACKER	1.78
PACKER STICK DOWN	.82
PORTED COMB SUB	.50
OUTSIDE RECORDER	2.06
CROSS OVER SUB	.30
DRILL COLLARS	27.50
CRSOS OVER SUB	.30
PACKER STICK UP	.42
BTM INFLATE PACKER	1.90
SPACING	.60
INSIDE RECORDER	1.38
BELLY SPRING	2.00

RECORDER SUMMARY

1) NUMBER : 001767 ELECTRONIC GAUGE.
TYPE : DMRB
LOCATION: OUTSIDE
RANGE: 34500.00kPa(a)
DEPTH : 286.00m

2) NUMBER : 014156 BELOW INTERVAL.
TYPE : K-3
LOCATION: OUTSIDE
RANGE: 21900.00kPa
DEPTH : 319.00m

3) NUMBER : 021150 ABOVE HYDRAULIC
TYPE : K-3 TOOL.
LOCATION: INSIDE
RANGE: 20500.00kPa
DEPTH : 272.00m

4) NUMBER : 021347
TYPE : K-3
LOCATION: OUTSIDE
RANGE: 22000.00kPa
DEPTH : 286.00m

******** TOOL TOTAL	50.48
DRILL COLLARS	
ID= 73.0mm:	56.04
ID= :	
DRILL PIPE	
OD=114.3mm:	222.83
OD= :	
COLLAR-PIPE TOTAL	278.87

STICK UP ABOVE TABLE : 7.57
TOOL ABOVE INTERVAL : 12.70
TOTAL INTERVAL : 31.90
BOTTOM CHOKE SIZE: 25.40 mm

MUD AND HOLE DATA

Calipered Hole Size @ Test Depth: 220.00mm Water Loss : 8.0cc/s
Hole Condition at Test Time : GOOD Filter Cake: 2.0 mm
Hole Conditioned Prior to Test? : NO
Mud Weight : 10901. kg/m3 Main Hole Size: 216.00mm
Mud Type : GEL CHEMICAL
Viscosity : 55.0s/l Temperature @286.00m =

DST#02
CHEVRON E HUME RIVER N-10
284.00 m to 315.90 m

Location: 400/ 69.111 / 129.160 /00
Test Type: INFLATE STRADDLE
Formation: ARCTIC RED/GILMOOR
Recorder Number: 021347
Recorder Depth: 286.00 m
Subsea Depth: -205.94 m

TIME-PRESSURE LISTING

CHART LABEL	COMMENTS	TIME MIN.	DELTA P kPa	PRESSURE kPa	(T+dt)/dt ABSCISSA	PRESSURE SQUARED kPa ^2/10^6
1	INITIAL HYDROSTATIC			3096		
2	START OF 1st FLOW	0.0		284		
	1st SHUTIN PERIOD	0.0		272		
		2.0	270	542	5.0000	.2938
		4.0	553	825	3.0000	.6806
		6.0	763	1035	2.3333	1.0712
		8.0	928	1200	2.0000	1.4400
		10.0	1079	1351	1.8000	1.8252
		12.0	1207	1479	1.6667	2.1874
		14.0	1325	1597	1.5714	2.5504
		16.0	1403	1675	1.5000	2.8056
		18.0	1504	1776	1.4444	3.1542
		20.0	1581	1853	1.4000	3.4336
		25.0	1711	1983	1.3200	3.9323
		30.0	1825	2097	1.2667	4.3974
		35.0	1889	2161	1.2286	4.6699
		40.0	1910	2182	1.2000*	4.7611
		45.0	1919	2191	1.1778*	4.8005
		50.0	1930	2202	1.1600*	4.8488
		55.0	1940	2212	1.1455*	4.8929
4	END OF 1st SHUTIN	59.0	1946	2218	1.1356*	4.9195
5	START OF 2nd FLOW	0.0		425		
	2nd SHUTIN PERIOD	0.0		543		
		2.0	355	898	25.0000	.8064
		4.0	554	1097	13.0000	1.2034
		6.0	761	1304	9.0000	1.7004
		8.0	985	1528	7.0000	2.3348
		10.0	1123	1666	5.8000	2.7756
		12.0	1238	1781	5.0000	3.1720
		14.0	1321	1864	4.4286	3.4745

* VALUES USED FOR EXTRAPOLATIONS

DST#02
CHEVRON E HUME RIVER N-10
284.00 m to 315.90 m

Location: 400/ 69.111 / 129.160 /00
Test Type: INFLATE STRADDLE
Formation: ARCTIC RED/GILMOOR

Recorder Number: 021347
Recorder Depth: 286.00 m
Subsea Depth: -205.94 m

TIME-PRESSURE LISTING

CHART LABEL	COMMENTS	TIME MIN.	DELTA P kPa	PRESSURE kPa	(T+dt)/dt ABSCISSA	PRESSURE SQUARED kPa ^2/10^6
		16.0	1387	1930	4.0000	3.7249
		18.0	1451	1994	3.6667	3.9760
		20.0	1508	2051	3.4000	4.2066
		25.0	1586	2129	2.9200	4.5326
		30.0	1642	2185	2.6000	4.7742
		35.0	1667	2210	2.3714*	4.8841
		40.0	1675	2218	2.2000*	4.9195
		45.0	1684	2227	2.0667*	4.9595
		50.0	1692	2235	1.9600*	4.9952
		55.0	1700	2243	1.8727*	5.0310
		60.0	1706	2249	1.8000*	5.0580
		65.0	1711	2254	1.7385*	5.0805
		70.0	1717	2260	1.6857*	5.1076
		75.0	1722	2265	1.6400*	5.1302
		80.0	1724	2267	1.6000*	5.1393
		85.0	1731	2274	1.5647*	5.1711
		90.0	1736	2279	1.5333*	5.1938
		95.0	1740	2283	1.5053*	5.2121
		100.0	1749	2292	1.4800*	5.2533
		105.0	1757	2300	1.4571*	5.2900
		110.0	1764	2307	1.4364*	5.3222
		115.0	1774	2317	1.4174*	5.3685
		120.0	1785	2328	1.4000*	5.4196
		130.0	1800	2343	1.3692*	5.4896
		140.0	1817	2360	1.3429*	5.5696
		150.0	1826	2369	1.3200*	5.6122
7	END OF 2nd SHUTIN	152.0	1841	2384	1.3158*	5.6835
8	START OF 3rd FLOW	0.0		427		
14	FINAL HYDROSTATIC			3064		

* VALUES USED FOR EXTRAPOLATIONS

DST#02
CHEVRON E HUME RIVER N-10
284.00 m to 315.90 m

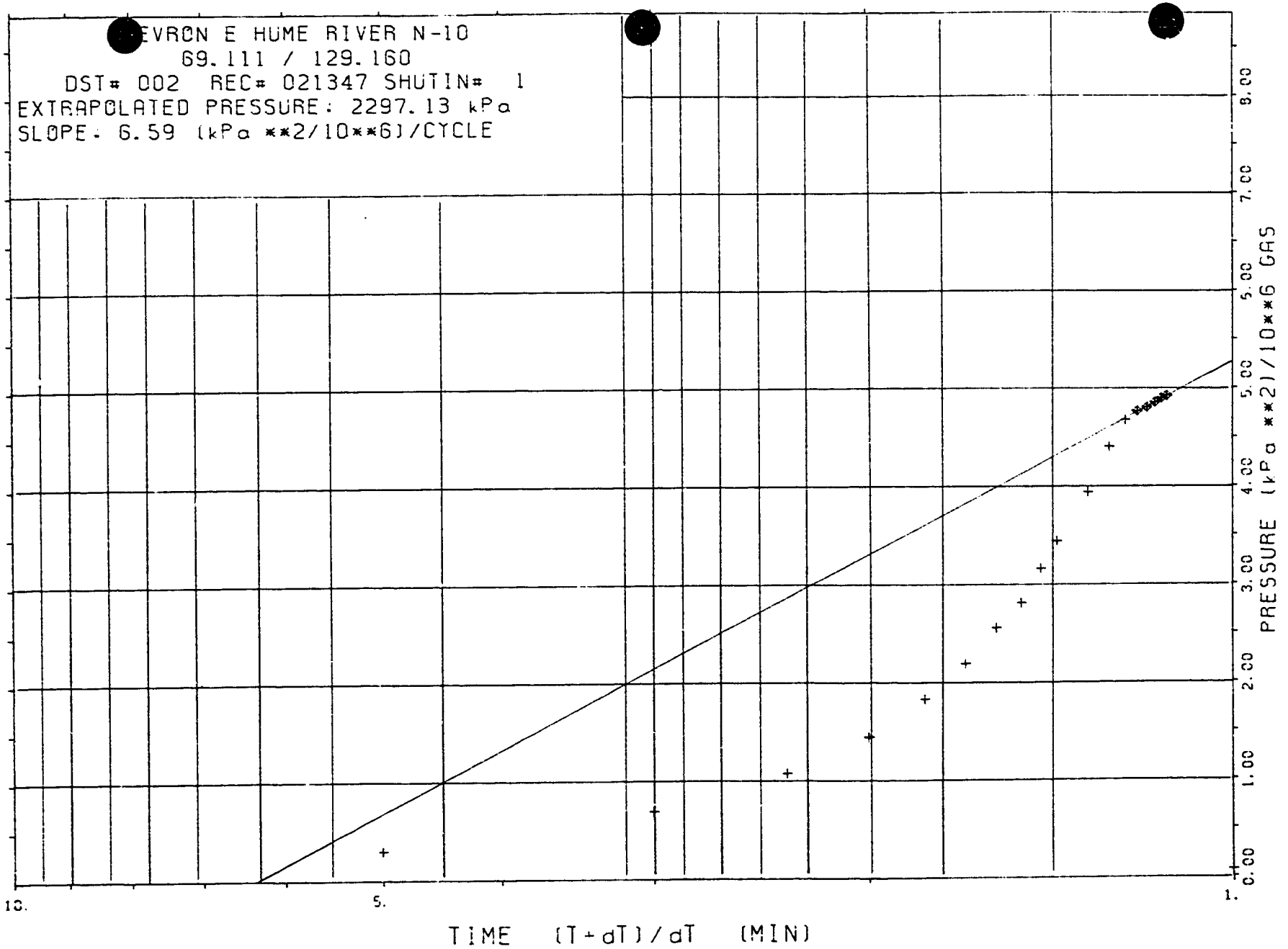
Location: 400/ 69.111 / 129.160 /00
Test Type: INFLATE STRADDLE
Formation: ARCTIC RED/GILMOOR

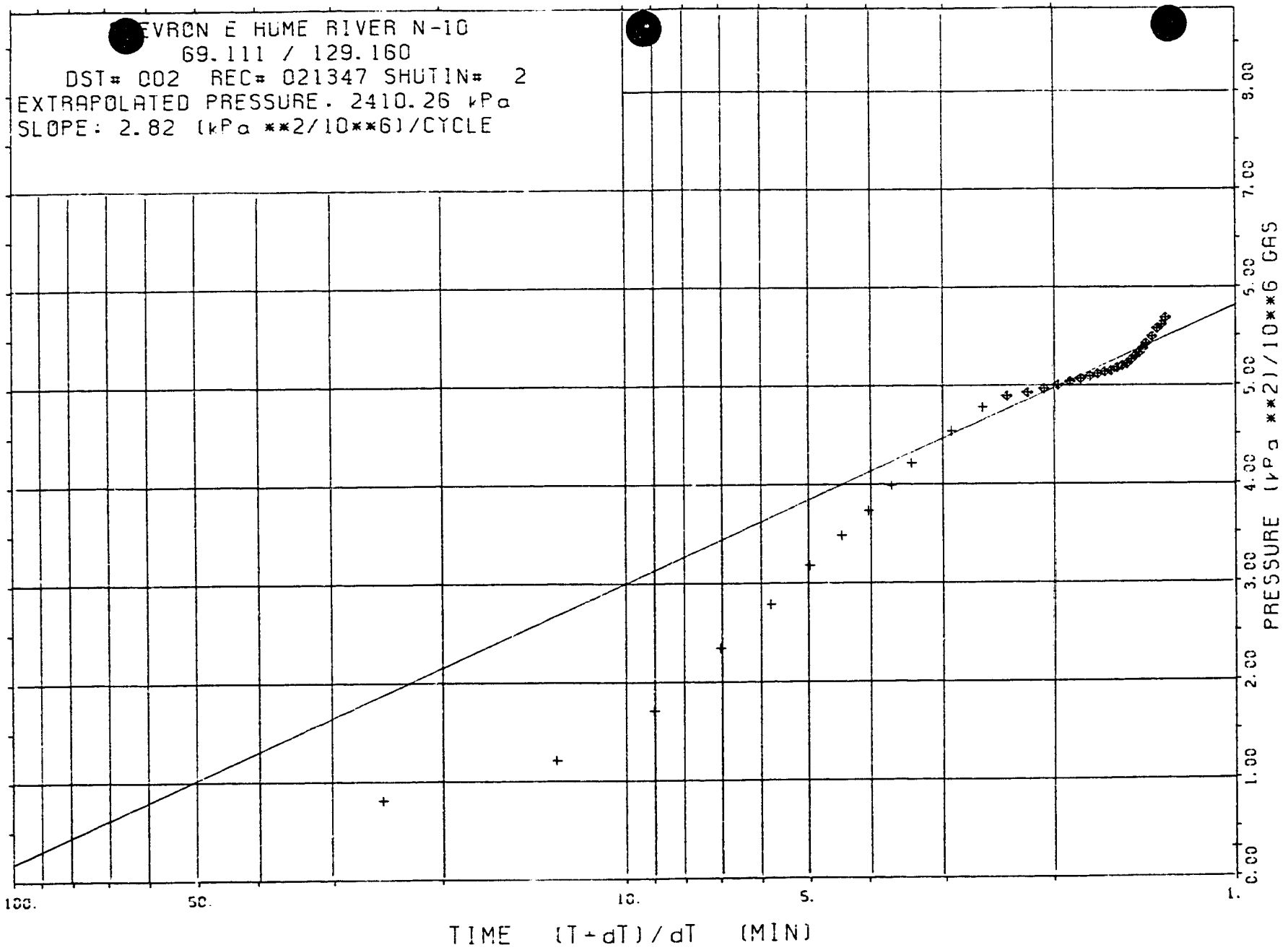
Recorder Number: 021347
Recorder Depth: 286.00 m
Subsea Depth: -205.94 m

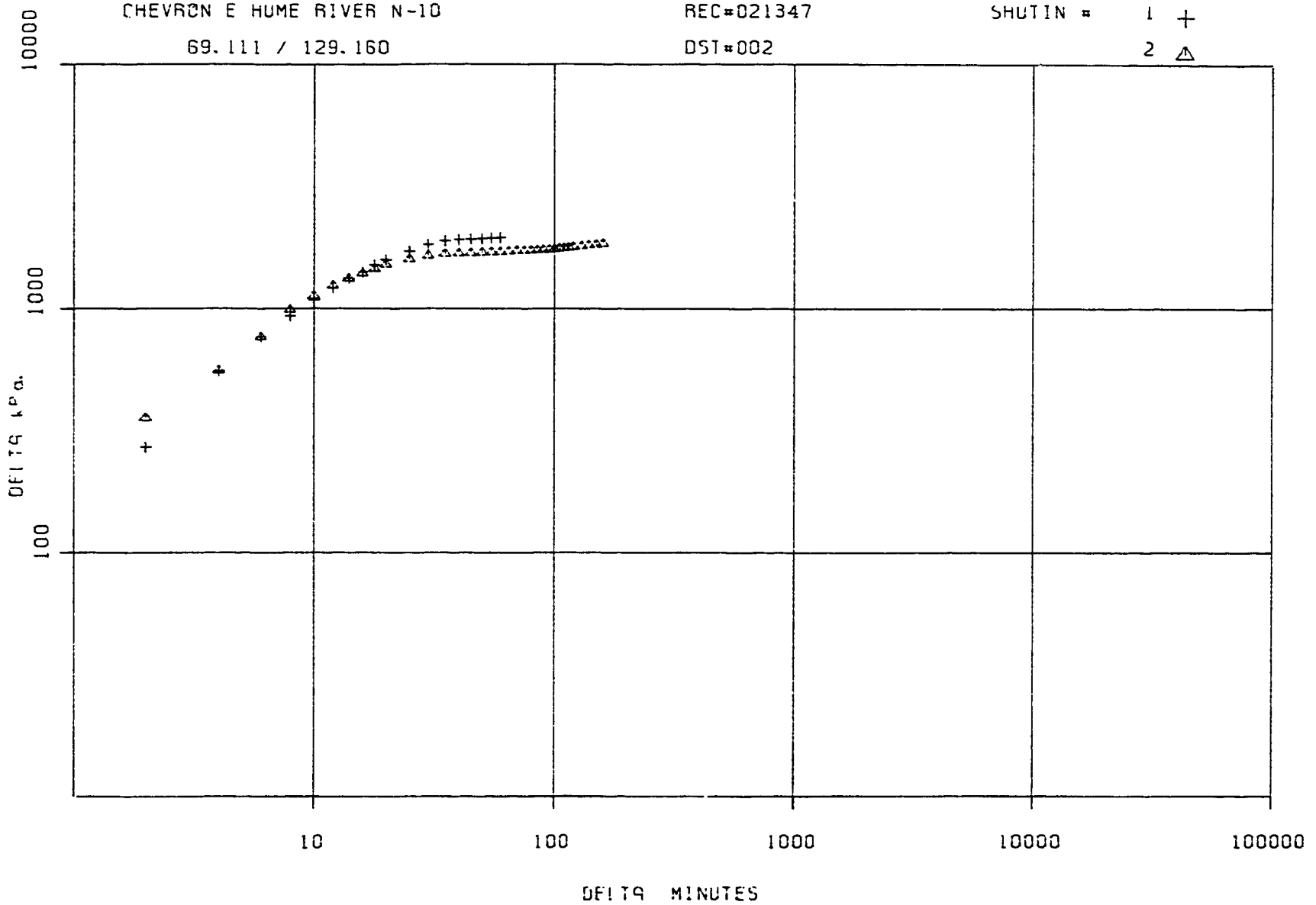
1st SHUT-IN
HORNER EXTRAPOLATION 2298.78 kPa
HORNER SLOPE 5.46008 (kPa**2/10**6)/CYCLE

2nd SHUT-IN
HORNER EXTRAPOLATION 2416.32 kPa
HORNER SLOPE 2.49561 (kPa**2/10**6)/CYCLE

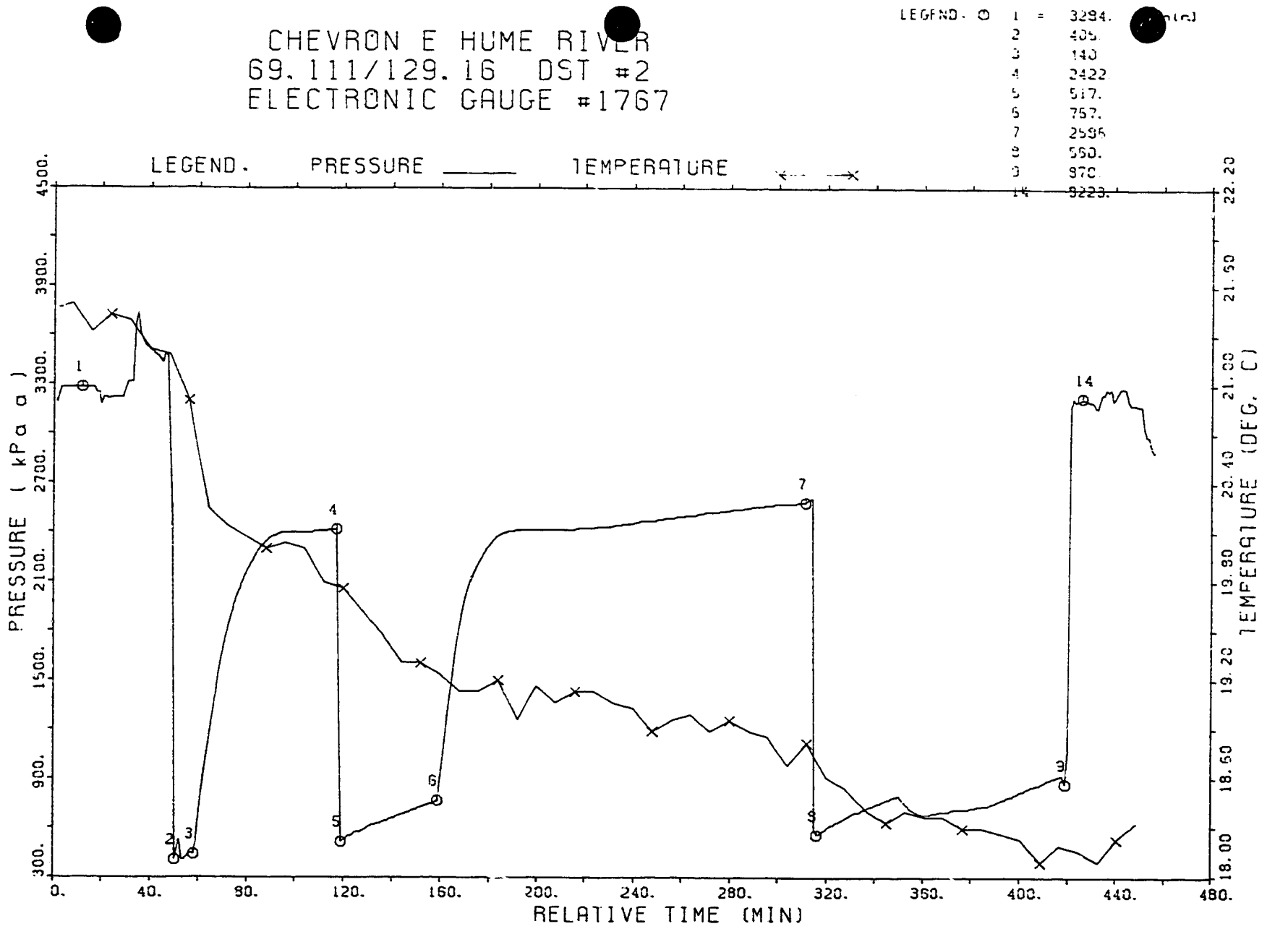
3rd SHUT-IN
HORNER EXTRAPOLATION .00 kPa
HORNER SLOPE .00000 (kPa**2/10**6)/CYCLE


EVRON E HUME RIVER N-10
69.111 / 129.160
DST# 002 REC# 021347 SHUTIN# 1
EXTRAPOLATED PRESSURE: 2297.13 kPa
SLOPE: 6.59 (kPa **2/10**6)/CYCLE
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
PRESSURE (kPa **2)/10**6 GAS
10.
5.
1.
TIME (T+dT)/dT (MIN)


EVRON E HUME RIVER N-10
69.111 / 129.160
DST# 002 REC# 021347 SHUTIN# 2
EXTRAPOLATED PRESSURE. 2410.26 kPa
SLOPE: 2.82 (kPa **2/10**6)/CYCLE
PRESSURE (kPa **2)/10**6 GAS
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
100.
50.
10.
5.
1.
TIME (T+dT)/dT (MIN)


CHEVRON E HUME RIVER N-10
69.111 / 129.160
REC=021347
DST=002
SHUTIN = 1
2
10000
1000
100
DELTA kPa
10
100
1000
10000
100000
DELTA MINUTES

CHEVRON E HUME RIVER
69.111/129.16 DST #2
ELECTRONIC GAUGE #1767



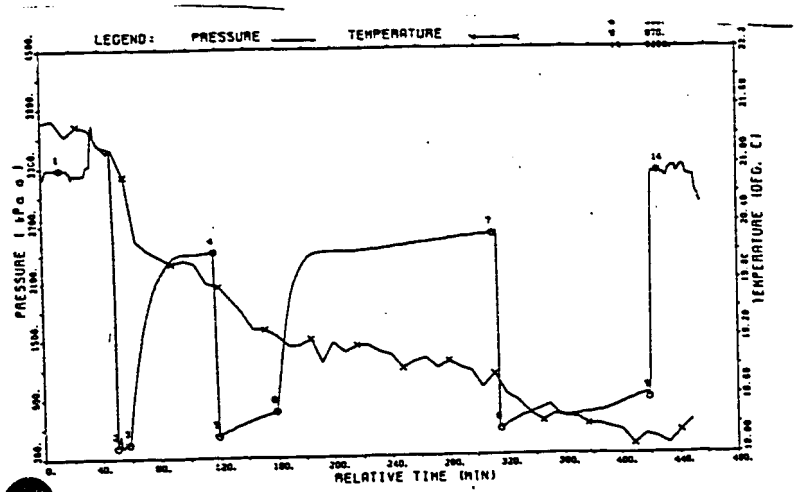
DST#02
CHEVRON E HUME RIVER N-10
284.00m to 315.90m

PRESSURE RECORDER NUMBER : 001767

DEPTH : 286.00m LOCATION : OUTSIDE
TYPE : DMRB CAPACITY : 34500.00kPa(a)

***** TEMPERATURE AT RECORDER DEPTH = 20.1 C

	PRESSURE kPa(a)
1) Initial Hydro :	3284.
2) 1st Flow Start:	405.
3) 1st Flow End :	440.
4) END 1st Shutin:	2422.
5) 2nd Flow Start:	517.
6) 2nd Flow End :	767.
7) END 2nd Shutin:	2586.
8) 3rd Flow Start:	560.
9) 3rd Flow End :	870.
10) END 3rd Shutin:	0.
14) Final Hydro. :	3223.



ELECTRONIC GAUGE.

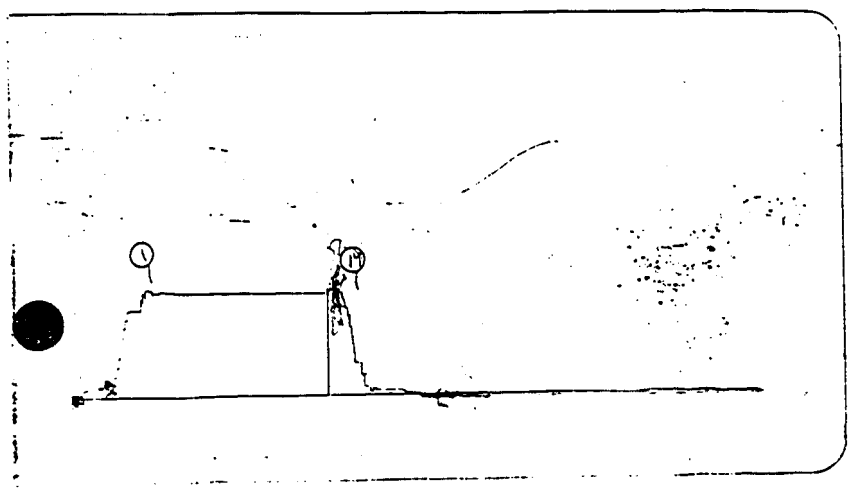
TEST TIMES(MIN)

1st FLOW :	8.0
SHUTIN:	59.0
2nd FLOW :	40.0
SHUTIN:	152.0
3rd FLOW :	103.0
SHUTIN:	.0

PRESSURE RECORDER NUMBER : 014156

DEPTH : 319.00m LOCATION : OUTSIDE
TYPE : K-3 CAPACITY : 21900.00 kPa

	PRESSURE kPa
1) Initial Hydro :	3292.
14) Final Hydro. :	3289.



BELOW INTERVAL.

DST#02
CHEVRON E HUME RIVER N-10
284.00m to 315.90m

PRESSURE RECORDER NUMBER : 021150

DEPTH : 272.00m
TYPE : K-3
LOCATION : INSIDE
CAPACITY : 20500.00 kPa

	PRESSURE kPa
1) Initial Hydro :	
2) 1st Flow Start:	18.
3) 1st Flow End :	172.
4) END 1st Shutin:	
5) 2nd Flow Start:	196.
6) 2nd Flow End :	472.
7) END 2nd Shutin:	
8) 3rd Flow Start:	374.
9) 3rd Flow End :	468.
10) END 3rd Shutin:	
14) Final Hydro. :	

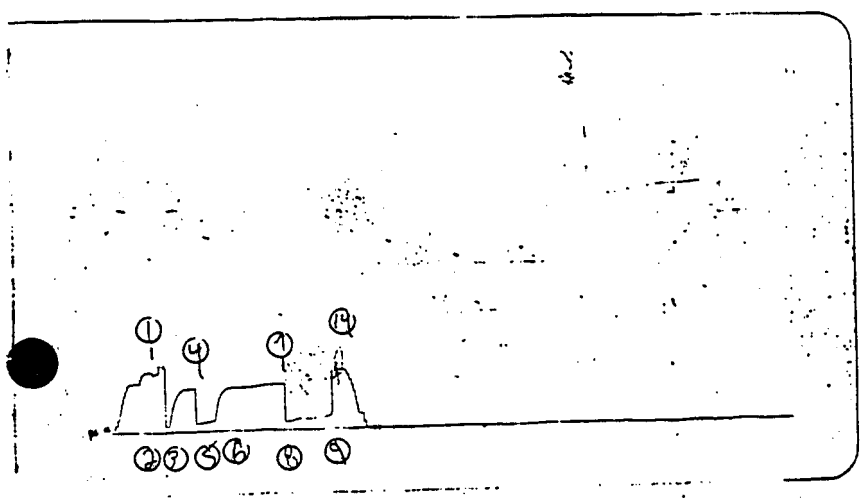
ABOVE HYDRAULIC TOOL.

TEST TIMES (MIN)

1st FLOW :	8.0
SHUTIN:	59.0
2nd FLOW :	40.0
SHUTIN:	152.0
3rd FLOW :	103.0
SHUTIN:	.0

PRESSURE RECORDER NUMBER : 021347

DEPTH : 286.00m
TYPE : K-3
LOCATION : OUTSIDE
CAPACITY : 22000.00 kPa



	PRESSURE kPa
1) Initial Hydro :	3096.
2) 1st Flow Start:	284.
3) 1st Flow End :	272.
4) END 1st Shutin:	2218.
5) 2nd Flow Start:	425.
6) 2nd Flow End :	543.
7) END 2nd Shutin:	2384.
8) 3rd Flow Start:	427.
9) 3rd Flow End :	716.
10) END 3rd Shutin:	
14) Final Hydro. :	3064.

CLOSED CHAMBER TESTING
DST FLUID ANALYSIS
HORNER ANALYSIS
PH: 433-3443

THE EVALUATORS

CHEVRON EAST HUME RIVER

N-10

DST #1

FORMATION: Gilmore Sands

INTERVAL: 218-335

REPORT FOR: Al Lishman
PREPARED BY: Greg Zinter

TEST DATE:
2/25/90

WELL DATA	
HOLE (mm)	216
TD (m)	335
GE (m)	74.4
KB (m)	80.0
FORMATION TEMP (DEG C)	20
FORMATION POROSITY (%)	6

MUD INFORMATION		
MUD TYPE	GelChem	
WEIGHT (Kg/m3)	1090	
VISCOSITY (SEC)	66	
WATER LOSS (cc)	8.4	
FILTRATE pH	9.5	
FILTRATE SALINITY(ppm Cl^-)		250
CUSHION TYPE		none
CUSHION AMOUNT		
CUSHION SALINITY(ppm Cl^-)		

ON SITE PERSONNEL	
COMPANY REPRESENTATIVE	Bill Marsh
EVALUATOR	Greg Zinter
TESTING COMPANY	Baker
TESTER	Rick
DRILLING CONTRACTOR	Shetah 1

Chevron East Hume River
N-10 DST #1

Test Times: 10-60-60-120

Blow Description (Closed Chamber):

Preflow: 0 to 39 kPa

Average Liquid Rate 36 m^3/day
no measurable gas production

Initial Shutin: no pressure increase

Final Flow: 0 to 8.4 kPa

Average Liquid Rate .7 m^3/day
Average Gas Rate .5 scm/day
GLR .6 scm/m^3

Final Shutin: no pressure increase

Pipe Recovery:

61 m drilling fluid - Salinity 200 ppm Cl^-
Mud Filtrate Salinity 250 ppm Cl^-

Pressures (k3 #22347 Outside)

IH	2,323 kPa
IPF	509 kPa
FPF	1,172 kPa
ISI	1,562 kPa
IFF	1,194 kPa
FF	1,577 kPa
FSI	1,915 kPa
FH	2,258 kPa

Comments:

Test was a limited mechanical success, tool plugged during FF, lost packer seat during FSI.

Closed Chamber Report

Pretest

Compressed air was blown through the lines to ensure there was no blockage. Preliminary test times were 10-30-60-120, to be adjusted during the test if necessary. The ambient temperature was approximately -30°C.

Preflow/Initial Shutin

The pressure increased steadily to reach 39 kPa by the end of the 10 minute preflow. The pressure did not change during the 60 minute initial shutin. The average liquid flowrate for the preflow was calculated to be 36 m^3/day. There was no measurable gas production.

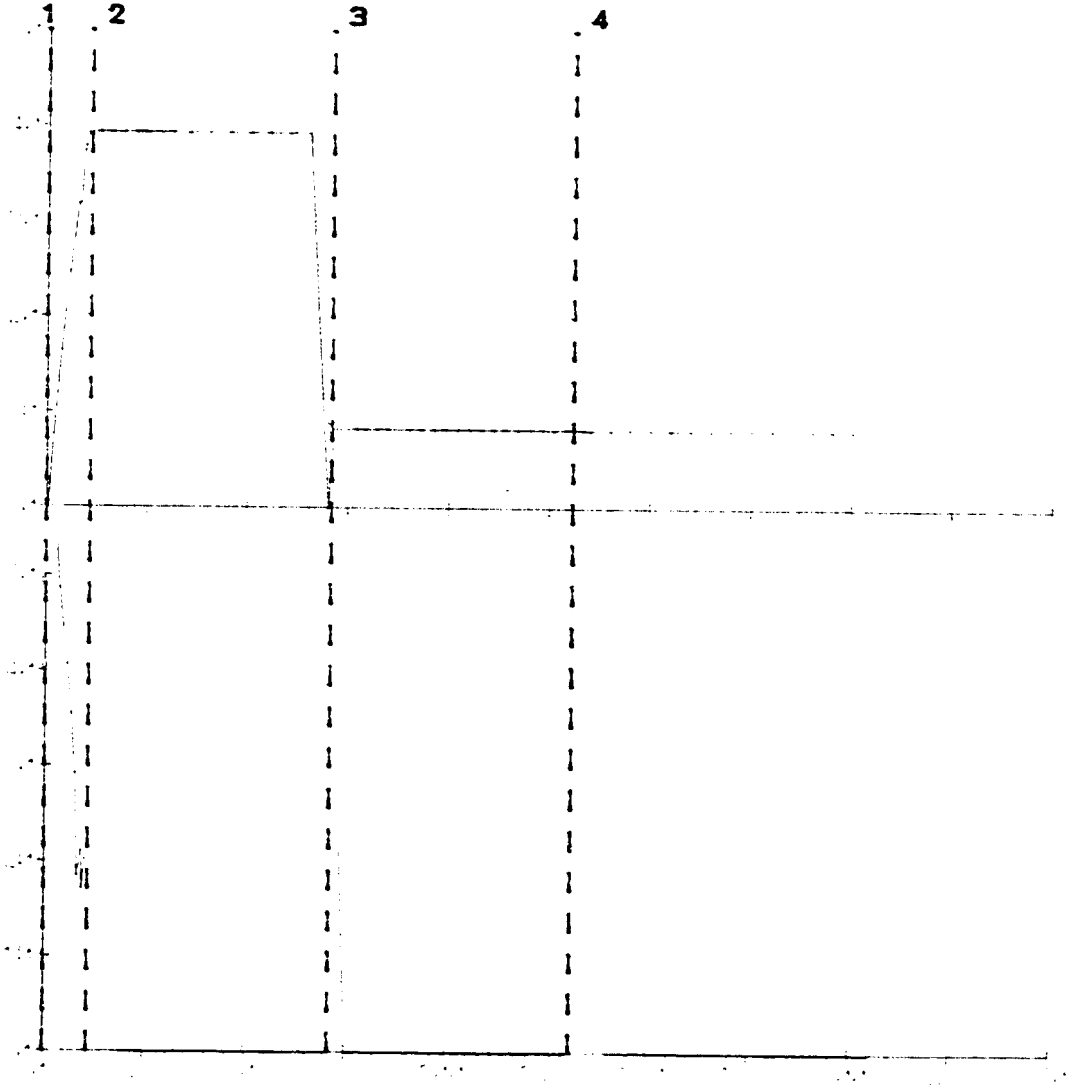
The chamber was bled down before the start of the final flow.

Final Flow/Final Shutin

The pressure immediately increased to 8.4 kPa in the first 2 minutes of the final flow. As this point, the pressure stabilized and did not change for the remainder of the 60 minute FF. This pressure response is typical of a plugging downhole tool.

There was no change in pressure during the 120 minute final shutin. The average flowrates were calculated as follows:

Liquid rate	.7 m^3/day
Gas rate	.5 scm/day
GLR	.6 scm/m^3



Chevron Canada
Well Name:
Chevron E Hume River
Location: N-18
Formation: Gilmore Sand
Interval (m): 218-335
DST #1 Date: 02/25/98

1 Preflow
2 Initial Shutin
3 Final Flow
4 Final Shutin

THE EVALUATORS

Pipe Recovery

61 m of drilling mud was recovered after the test. The results of the specific ion analysis (done by the mud man on location) are as follows:

	Salinity (ppm Cl^-)	Hardness (ppm Ca^{+2})	Nitrates (ppm NO^{3+})
Sample above tool	200	0	75
Mud Filtrate	250	0	75

Pressure Transient Analysis

The inside chart (k3 #21162) and the outside chart (k3 #22347) were both digitized and plotted on site. Both are included in the report.

Two things are apparent from the charts. First, plugging at the start of the final flow caused the pressure on the outside chart to increase sharply. The inside chart, isolated from the zone by the tool blockage shows no corresponding pressure increase.

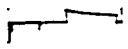
The sudden pressure increase seen on both charts at the start of the final shutin indicates partial packer failure as the chart is measuring near hydrostatic pressures. At this point, the downhole valve was closed so the failure could not be seen at the surface, either by a drop in the annular mud or a pressure increase inside the drillstring.

Due to the packer failure, the shutin data was invalid for Horner analysis.

DOWNHOLE CHART SUMMARY

Chevron E Hume River | N-10 | DST #1

Formation: Acrtic Red | Interval: 218-335



DOWNHOLE PRESSURES (kPa)

IH	2323.8
IPF	509.6
FPF	1172.6
ISI	1562.4
IFF	1194.5
FF	1577.0
FSI	1915.8
FH	2258.3

Rec. type K3 Outside # 22347 Test Times 10-60-60-120-5

HORNER DATA

ISI

tp= 10 min q= 36 m3/d

P(kPa)	dt(min)	dt+tp/dt
1173	0.0	0.00
1526	1.3	8.41
1537	2.1	5.76
1544	25.9	1.39
1562	50.4	1.20
1562	63.3	1.16
1562	63.3	1.16

FSI

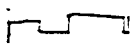
tp= 60 min q= .7 m3/d

P(kPa)	dt(min)	dt+tp/dt
1577	0.0	0.00
2218	0.4	%134.41
2218	2.2	27.68
2171	6.1	10.76
2142	12.4	5.82
2127	19.8	4.03
2051	34.9	2.72
1978	69.3	1.87
1916	113.6	1.52

DOWNHOLE CHART SUMMARY

Chevron E Hume River | N-10 | DST #1

Formation: Acrtic Red | Interval: 218-335



DOWNHOLE PRESSURES (kPa)

IH	2099.5
IPF	368.4
FPF	797.6
ISI	1480.7
IFF	1015.8
FF	901.3
FSI	1756.2
FH	2085.5

Rec. type K3 INSIDE # 21162 Test Times 10-60-60-125

HORNER DATA

ISI

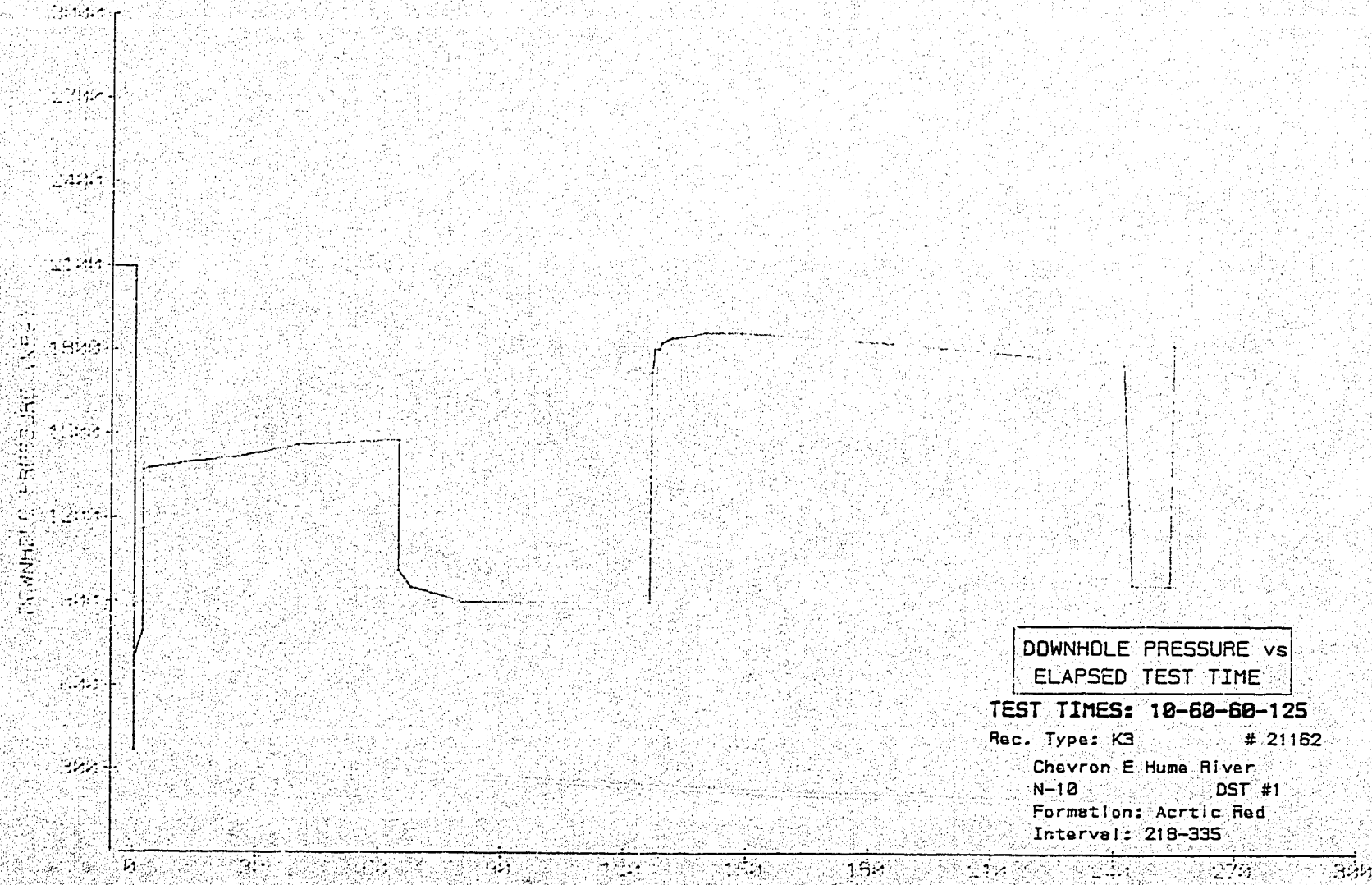
tp= 10 min q= 36 m3/d

P(kPa)	dt(min)	dt+tp/dt
798	0.0	0.00
1373	0.0	% 1.70141E+38
1399	10.3	1.97
1416	22.1	1.45
1463	37.8	1.26
1481	62.4	1.16

FSI

tp= 60 min q= .7 m3/d

P(kPa)	dt(min)	dt+tp/dt
901	0.0	0.00
1724	0.3	%214.40
1763	0.7	86.36
1810	1.0	61.97
1810	1.8	33.83
1831	2.4	26.11
1849	5.2	12.86
1849	6.2	10.76
1867	13.4	5.49
1867	22.1	3.72
1838	51.2	2.17
1799	85.0	1.71
1756	115.7	1.52



DOWNHOLE PRESSURE vs
ELAPSED TEST TIME

TEST TIMES: 10-60-60-125

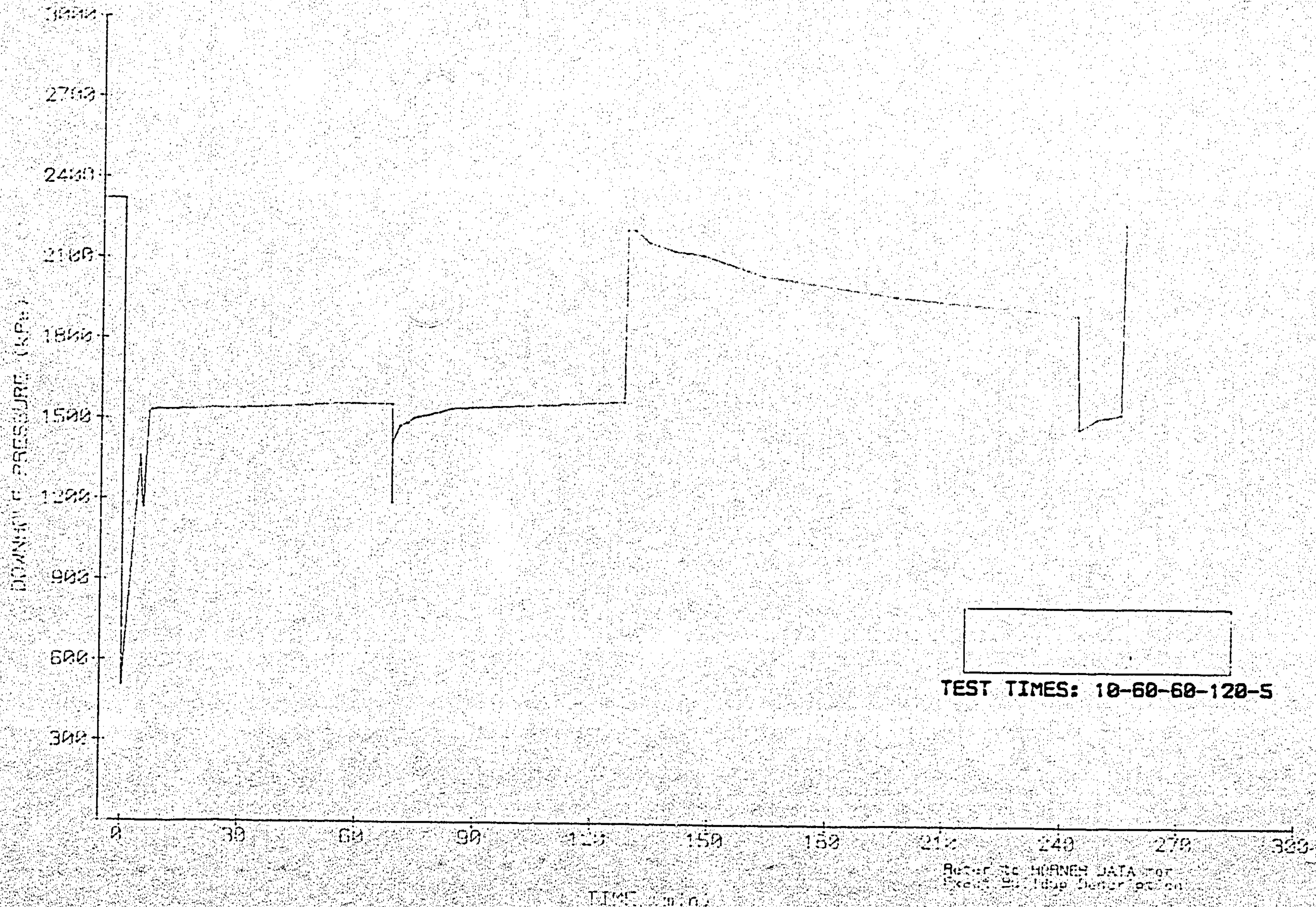
Rec. Type: K3 # 21162

Chevron E Hume River

N-10 DST #1

Formation: Acrtic Red

Interval: 218-335


2700
2400
2100
1800
1500
1200
900
600
300
0
30
60
90
150
180
240
270
TEST TIMES: 10-60-60-120-5

Reservoir Analysis

This test is, for the most part, inconclusive. Some formation permeability is demonstrated by the initial shutin data. No gas was produced during the preflow. The gas production seen in the final flow should be considered with some caution as the magnitude of this flow is very small.

TEST STRING INFORMATION

CLOSED CHAMBER:

No.	COMPONENT NAME	ID (MM)	OD (MM)	LENGTH (M)	VOLUME (M3)
1	Chicksans	38		7	0.0079
2	Drillpipe	97.18		9.85	0.0731
3	Heavy Weight	70		139.35	0.5363
4	Drill Collars	73		56.46	0.2363
5	Tools Above	25		5.46	0.0027

RATHOLE:

1	Tools Below	25	127	8.8	0.00432
2	Perf	25	127	2.8	0.00137
3	Interval Tools	25	127	2.36	0.00000
4	Drill Collars	73	171	83.5	0.00000

TOTAL CLOSED CHAMBER VOLUME: 0.86 M3

TOTAL RATHOLE VOLUME: 1.272 M3

THE INITIAL PARAMETERS ARE:

AVERAGE DRILLING FLUID TEMPERATURE: 25 C
ATMOSPHERIC PRESSURE: 100 kPA
N1: 0.82 scm

MAXIMUM UNRECORDABLE FLOWRATE = 0.1 scm/day

Preflow

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	LIQUID FLOWRATE m3/day	CUMMULATIVE PRODUCTION m3
0.50	2.50	5.00	60.35	0.02
1.50	7.75	5.25	58.81	0.06
2.50	12.13	4.38	44.85	0.09
3.50	16.63	4.50	42.57	0.12
5.50	24.81	4.09	34.76	0.17
6.50	28.63	3.82	29.44	0.19
7.50	31.88	3.25	23.70	0.21
8.00	32.06	0.36	2.56	0.21
9.00	37.56	5.50	37.46	0.23
9.25	38.00	1.76	11.47	0.24
10.00	39.44	1.92	12.34	0.24

Initial Shutin

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	LIQUID FLOWRATE m3/day	CUMMULATIVE PRODUCTION m3
13.00	39.44	0.00	0.00	0.24
16.00	39.44	0.00	0.00	0.24
19.00	39.44	0.00	0.00	0.24
22.00	39.44	0.00	0.00	0.24
23.00	39.44	0.00	0.00	0.24
24.00	39.44	0.00	0.00	0.24
25.00	39.44	0.00	0.00	0.24
28.00	39.44	0.00	0.00	0.24
31.00	39.44	0.00	0.00	0.24
35.00	39.38	-0.01	0.00	0.24
40.00	39.44	0.01	0.00	0.24
45.00	39.44	0.00	0.00	0.24
50.00	39.38	-0.01	0.00	0.24
55.00	39.44	0.01	0.00	0.24
60.00	39.38	-0.01	0.00	0.24
65.00	39.44	0.01	0.00	0.24
70.00	0.00	-7.89	0.00	0.24

Final Flow

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	LIQUID FLOWRATE m3/day	CUMMULATIVE PRODUCTION m3
71.00	8.38	8.38	68.51	0.29
72.00	8.38	0.00	0.00	0.29
73.00	8.38	0.00	0.00	0.29
75.00	8.38	0.00	0.00	0.29
77.00	8.38	0.00	0.00	0.29
79.00	8.38	0.00	0.00	0.29
82.00	8.38	0.00	0.00	0.29
85.00	8.38	0.00	0.00	0.29
90.00	8.38	0.00	0.00	0.29
93.00	8.38	0.00	0.00	0.29
96.00	8.38	0.00	0.00	0.29
99.00	8.38	0.00	0.00	0.29
102.00	8.38	0.00	0.00	0.29
105.00	8.38	0.00	0.00	0.29
108.00	8.38	0.00	0.00	0.29
111.00	8.38	0.00	0.00	0.29
114.00	8.38	0.00	0.00	0.29
117.00	8.38	0.00	0.00	0.29
120.00	8.38	0.00	0.00	0.29
123.00	8.38	0.00	0.00	0.29
126.00	8.31	-0.02	0.00	0.29
129.00	8.38	0.02	0.18	0.29
130.00	8.38	0.00	0.00	0.29

Final Shutin

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	LIQUID FLOWRATE m3/day	CUMMULATIVE PRODUCTION m3
133.00	8.38	0.00	0.00	0.29
135.00	8.31	-0.03	0.00	0.29
140.00	8.31	0.00	0.00	0.29
145.00	8.38	0.01	0.00	0.29
150.00	8.38	0.00	0.00	0.29
155.00	8.31	-0.01	0.00	0.29
160.00	8.31	0.00	0.00	0.29
165.00	8.31	0.00	0.00	0.29
170.00	8.31	0.00	0.00	0.29

TIME min	SURFACE PRESSURE kPa	dP/dt kPa/min	LIQUID FLOWRATE m3/day	CUMMULATIVE PRODUCTION m3
175.00	8.38	0.01	0.00	0.29
180.00	8.38	0.00	0.00	0.29
185.00	8.31	-0.01	0.00	0.29
190.00	8.31	0.00	0.00	0.29
195.00	8.31	0.00	0.00	0.29
200.00	8.31	0.00	0.00	0.29
205.00	8.31	0.00	0.00	0.29

APPENDIX 6

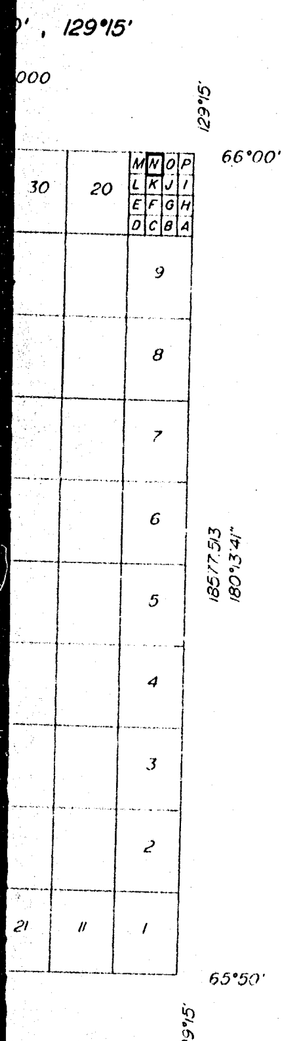
LOCALITY MAP

PLAN AND FIELD NOTES OF SURVEY OF

PROPOSED EXPLORATORY WELL CHEVRON HUME RIVER IN UNIT N, SECTION 10 GRID AREA 66°00', 129°15'

NORTHWEST TERRITORIES

CANADA OIL AND GAS REGULATIONS



LEGEND

UTM coordinates are computed for Zone 09, central meridian 129° W.

Bearings were derived (adjusted) by GPS observations as shown and are referred to meridian 129°W.

Distances are expressed in metres and decimals thereof and have been check measured.

Distances shown in traverse are measured distances reduced to the horizontal at general ground level.

For the computation of coordinates measured distances have been reduced to the UTM plane by multiplying them by an average combined scale factor of 0.999575

Distances shown on grid area subdivisions are UTM plane.

Authorized control monuments found shown thus . . . . . ●

Monuments placed shown thus (C.L.S. '77). . . . . ○

Traverse lines shown thus — — — — — — — — — —

Wooden Hub placed shown thus . . . . . □

Elevations were derived from GPS data. Average elevation is 75m.

Survey was completed prior to drilling; therefore well as drilled may not necessarily agree with proposed location.

AFFIDAVIT

I, Akbar Karsan, of the City of Edmonton, Alberta, Canada Lands Surveyor, make oath and say that I have in my own proper person, according to the law and the instructions of the Surveyor General of Canada Lands, faithfully and correctly executed the survey shown by this plan and field notes, and that the said plan and field notes are correct and true to the best of my knowledge and belief. SO HELP ME GOD.

Sworn before me at the City of Edmonton in the Province of Alberta this 7th day of December, 1989.

Akbar Karsan
Canada Lands Surveyor

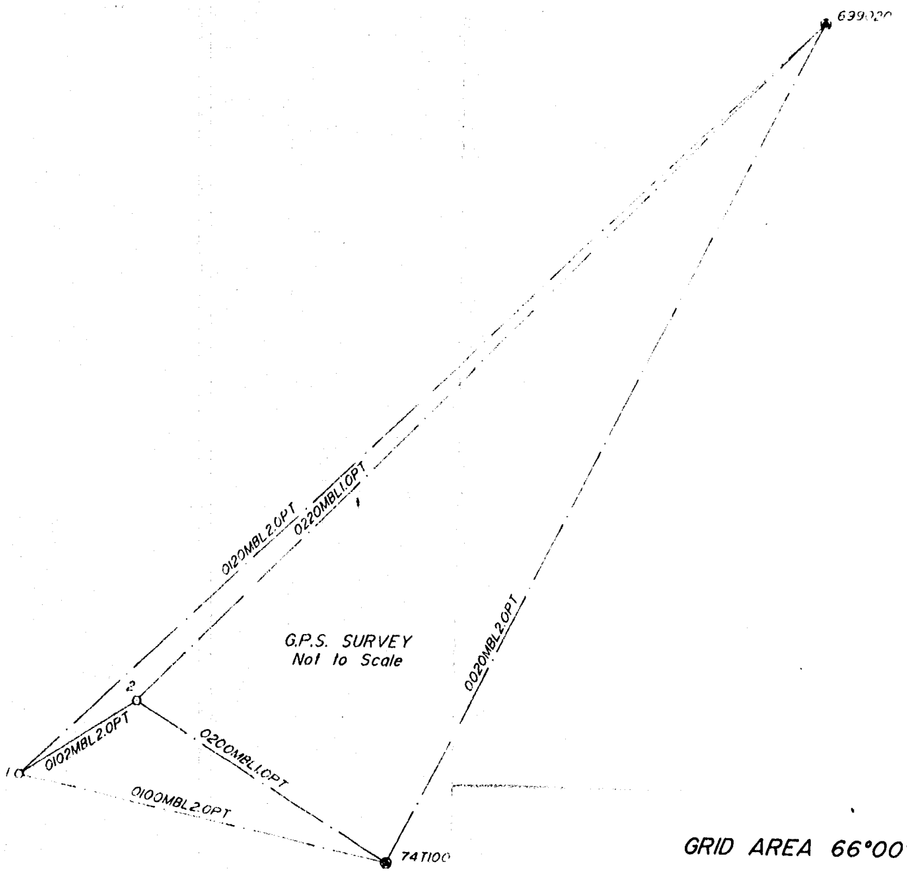
A Commisioner for Oaths in and for the Province of Alberta.
Robert A. Gibennus
25/03/1991

THIS SURVEY WAS EXECUTED DURING THE PERIOD NOVEMBER 29 TO NOVEMBER 30, 1989, BY AKBAR KARSAN, C.L.S.

CHEVRON CANADA RESOURCES LIMITED.

STAR TECH LAND SURVEYS LTD.
[illegible] 132nd Street Edmonton
Phone [illegible]

K. E. Boland P. Eng.



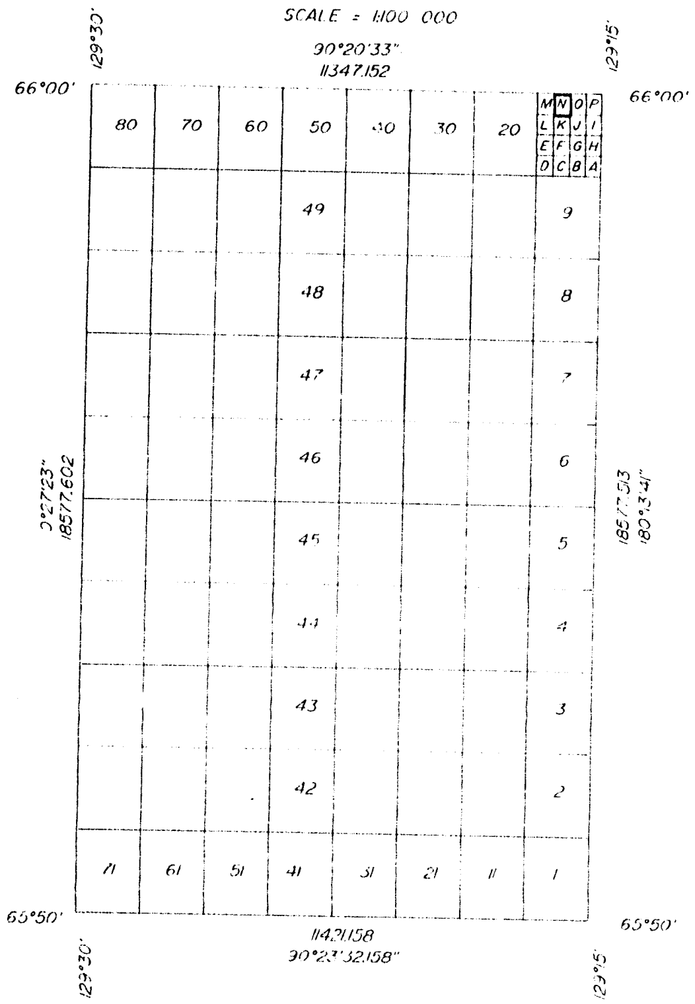
	BASELINE LENGTH (M)
535	200.005
842	41564.748
692	13077.741
504	42420.437
992	12994.870
563	42226.940

°W (NAD 1927)

GEOID ELLIPSOID SEPERATION (M)	ORTHOMETRIC HEIGHT (M)
6.62	45.131
6.92	112.825
6.68	75.17
6.69	75.02
	75.09

GRID AREA 66°00', 129°15'

SCALE = 1:100 000



PLAN AND FI
OF SURV

PROPOSED EXPL
CHEVRON HU
IN UNIT N, S
GRID AREA 6

NORTHWEST T

CANADA OIL AND GA

LEGEND

UTM coordinates are computed for Zone 09, cen

Bearings were derived (adjusted) by G.P.S. observa
are referred to meridian 129°W

Distances are expressed in metres and decimals

Distances shown in traverse are measured distanc
horizontal at general ground level.

For the computation of coordinates measured dist
reduced to the UTM plane by multiplying them by
scale factor of 0.9995/5

Distances shown on grid area subdivisions are UT

Authorized control monuments found shown thus

Monuments placed shown thus (C.L.S. 771)

Traverse lines shown thus

Wooden Hub placed shown thus

Elevations were derived from GPS data. Average
Survey was completed prior to drilling; therefore
not necessarily agree with proposed location.

AFFIDAVIT

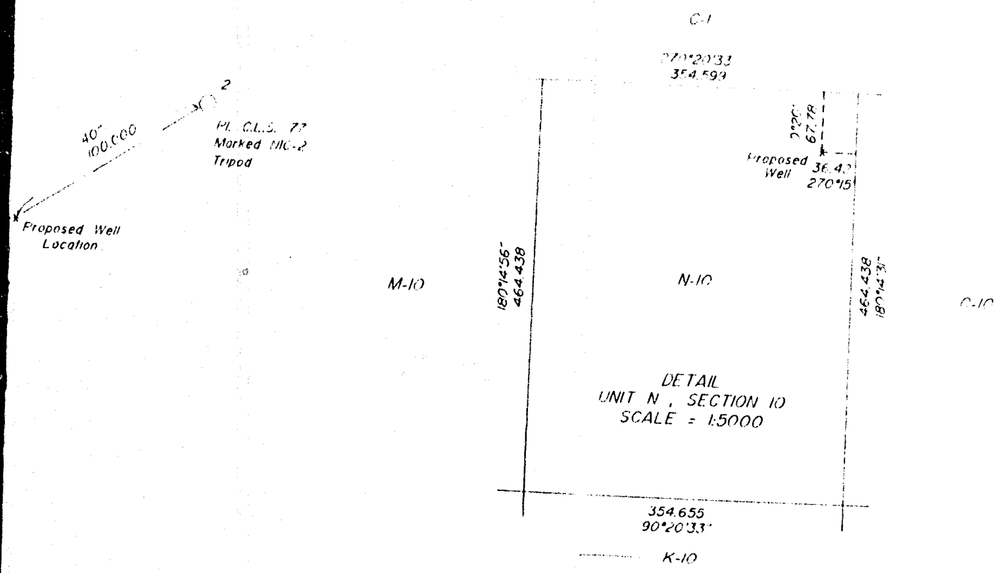
I, Akbar Karsan, of the City of Edmonton, Al
make oath and say that I have in my own prope
instructions of the Surveyor General of Canada L
executed the survey shown by this plan and field
field notes are correct and true to the best of
SO HELP ME GOD.

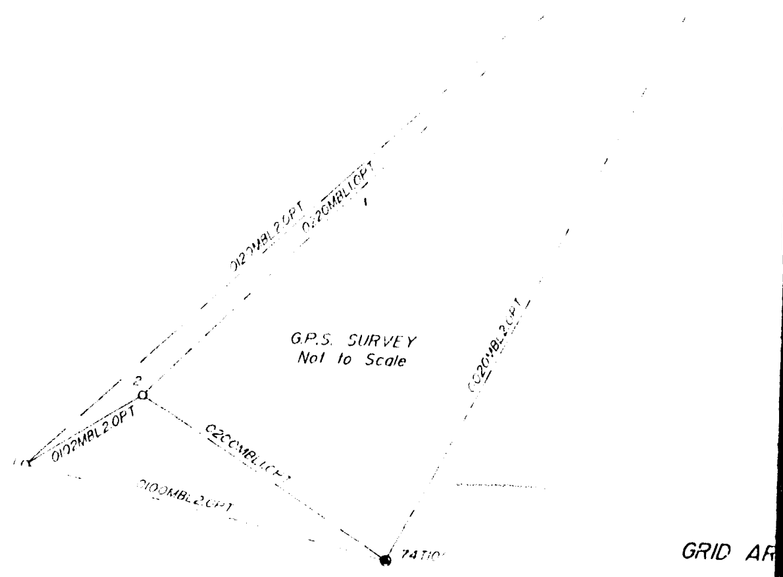
Sworn before me at the City of Edmonton
in the Province of Alberta this 7th day
of December, 1989.

A Commisioner for Oaths in and for
the Province of Alberta.
Robert A. Gibennus
25/03/1991

THIS SURVEY WAS EXECUTED DURIN
NOVEMBER 29 TO NOVEMBER 30, 19

CHEVRON CANADA RESOUR





40°

GRID AR

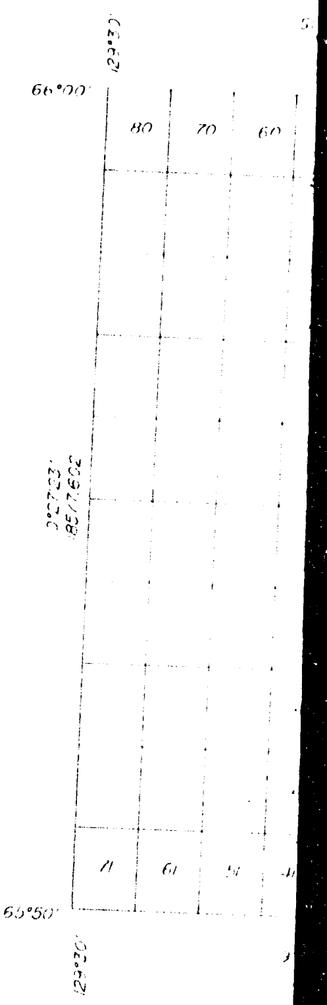


TABLE OF GPS OBSERVATIONS (ECEF, WGS84)

BASELINE	FROM STATION	TO STATION	DELTA X (M)	DELTA Y (M)	DELTA Z (M)	BASELINE LENGTH (M)
0102MBL2.OPT	2	1	-192.948	28.099	-44.535	200.005
0020MBL2.OPT	74T100	699020	35880.282	14591.862	15076.842	41564.748
0100MBL2.OPT	1	74T100	4647.002	-11890.578	-2836.692	13077.741
0120MBL2.OPT	699020	1	-40526.309	-2702.564	-12239.604	42420.437
0200MBL1.OPT	74T100	2	-4454.057	11862.619	2881.292	12994.870
0220MBL1.OPT	2	699020	40335.201	2730.250	12195.563	42226.940

TABLE OF GEOGRAPHIC AND U.T.M. COORDINATES ZONE 9 CM 129°W (NAD 1927)

STATION	NORTH LATITUDE	WEST LONGITUDE	NORTHING (M)	EASTING (M)	SPHEROID HEIGHT (M)	GEOID ELLIPSOID SEPERATION (M)	ORTHOMETRIC HEIGHT (M)
FIXED CONTROL MONUMENTS							
74T100	65°56'13.38655"	129°01'25.97481"	7 312 703.8192	498 913.3662	51.75	6.62	45.131
699020	66°16'09.95830"	128°36'28.82510"	7 349 808.4764	517 603.9677	119.75	6.92	112.825
NEW MONUMENTS							
1	65°59'56.08333"	129°16'05.76460"	7 319 624.9448	487 823.2379	81.85	6.68	75.17
2	65°59'59.62819"	129°15'52.51149"	7 319 733.9929	487 990.8008	81.71	6.69	75.02
GRID AREA							
N.E.	66°00'	129°15'	7 319 742.789	488 652.905			
S.E.	65°50	129°15'	7 301 165.423	488 578.902			
N.W.	66°00'	129°30	7 319 810.635	477 305.955			
S.W.	65°50	129°30	7 301 233.623	477 157.948			
N-10 N.E.			7 319 747.028	487 943.720			
N-10 S.E.			7 319 282.594	487 941.758			
N-10 N.W.			7 319 749.148	487 589.127			
N-10 S.W.			7 319 284.714	487 587.110			
PROPOSED WELL LOCATION							
*	65°59'57.85581"	129°15'59.13820"	7 319 679.469	487 907.019			75.09

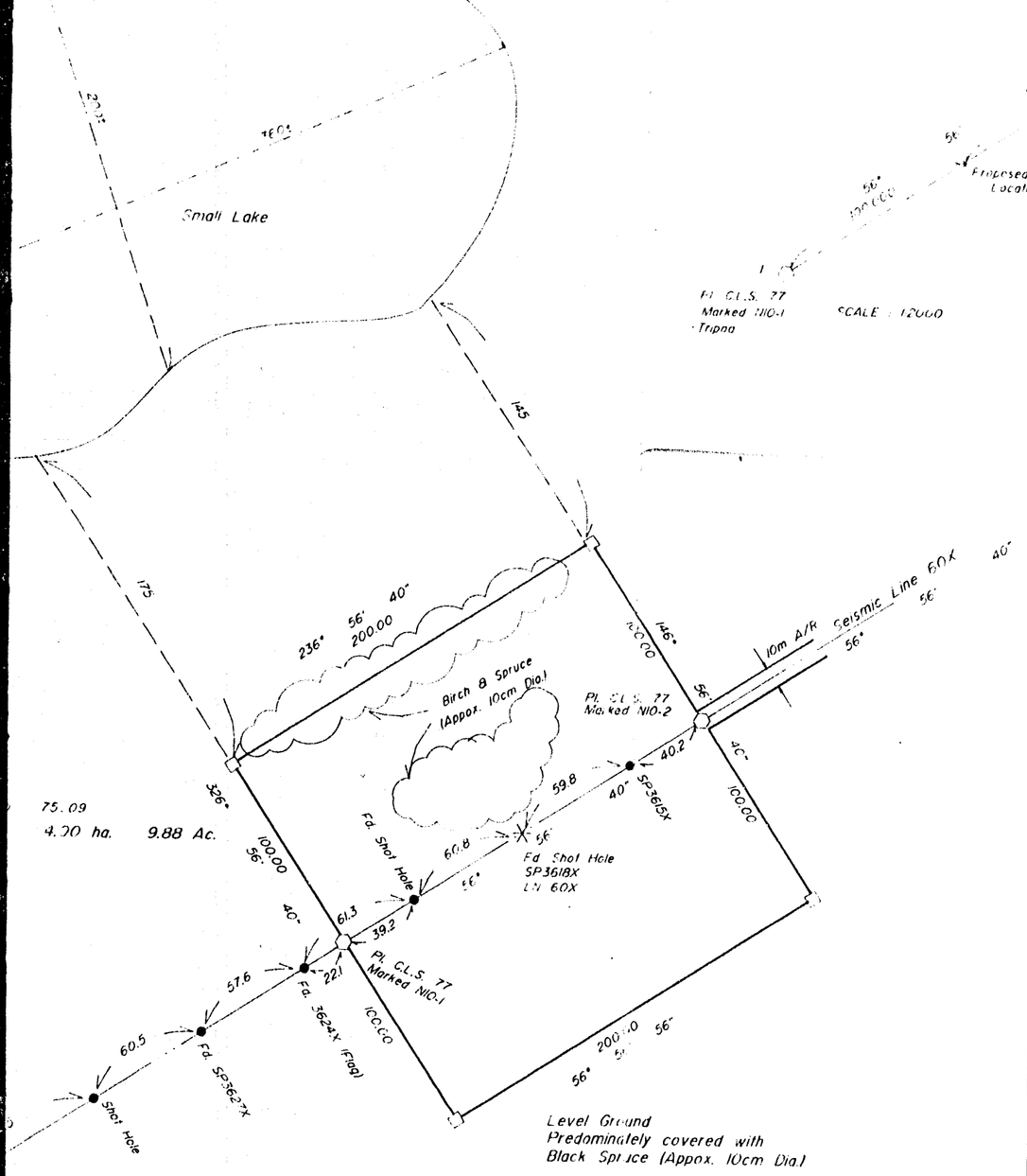
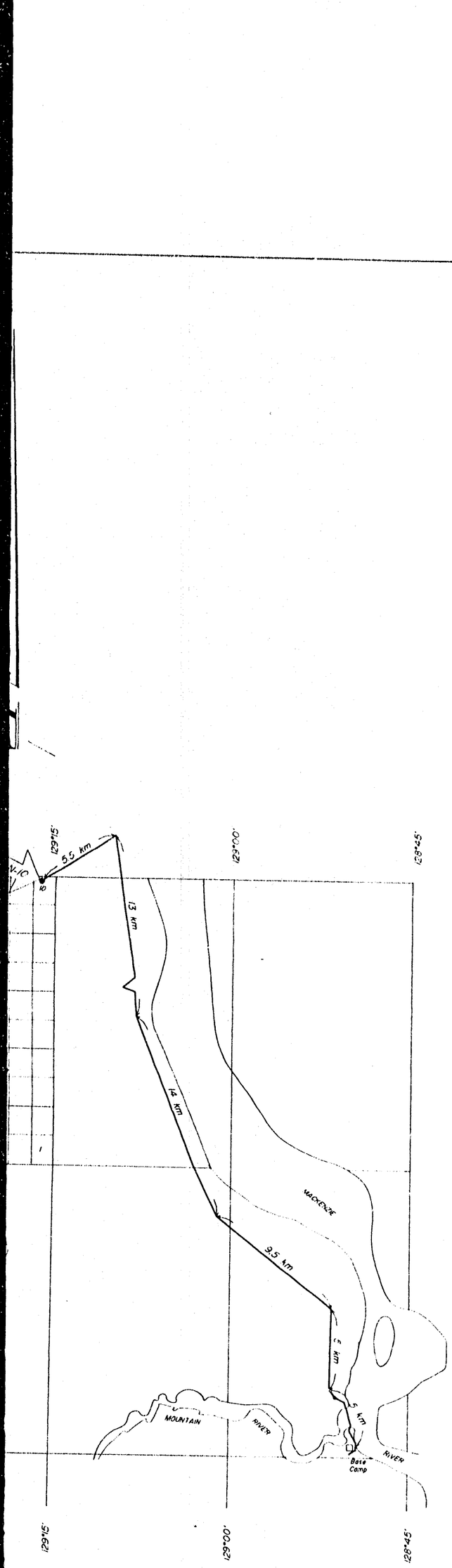


TABLE OF GPS OBSERVATIONS

BASELINE	FROM STATION	TO STATION	DELTA X (M)
0102MBL2.OP1	2	1	192.948
0020MBL2.OP1	74T100	699020	35887.282
0100MBL2.OP1	1	74T100	4647.002
0120MBL2.OP1	699020	1	40726.309
0200MBL1.OP1	74T100	2	4454.557
0220MBL1.OP1	2	699020	40335.201

TABLE OF GEOGRAPHIC AND U.T.M. COORDINATES

STATION	NORTH LATITUDE	WEST LONGITUDE	NORTHING (M)	
FIXED CONTROL MONUMENTS				
74T100	65°56'13.38655"	129°01'25.97481"	7 312 703.8192	
699020	66°16'09.95830"	128°36'28.82510"	7 349 408.4764	
NEW MONUMENTS				
1	65°59'56.08333"	129°16'05.76460"	7 319 624.9446	
2	65°59'59.62810"	129°15'52.51149"	7 319 733.1374	
GRID AREA				
N.E.	66°00'	129°5	7 319 742.789	
S.E.	65°59	129°15'	7 301 165.423	
N.W.	66°00	129°30	7 319 810.635	
S.W.	65°50	129°30	7 301 233.623	
N-10 N.E.			7 319 747.008	
N-10 S.E.			7 319 280.594	
N-10 N.W.			7 319 749.148	
N-10 S.W.			7 319 284.7.4	
PROPOSED WELL LOCATION				
*	65°59'57.85581"	129°15'59.38620"	7 319 679.410	

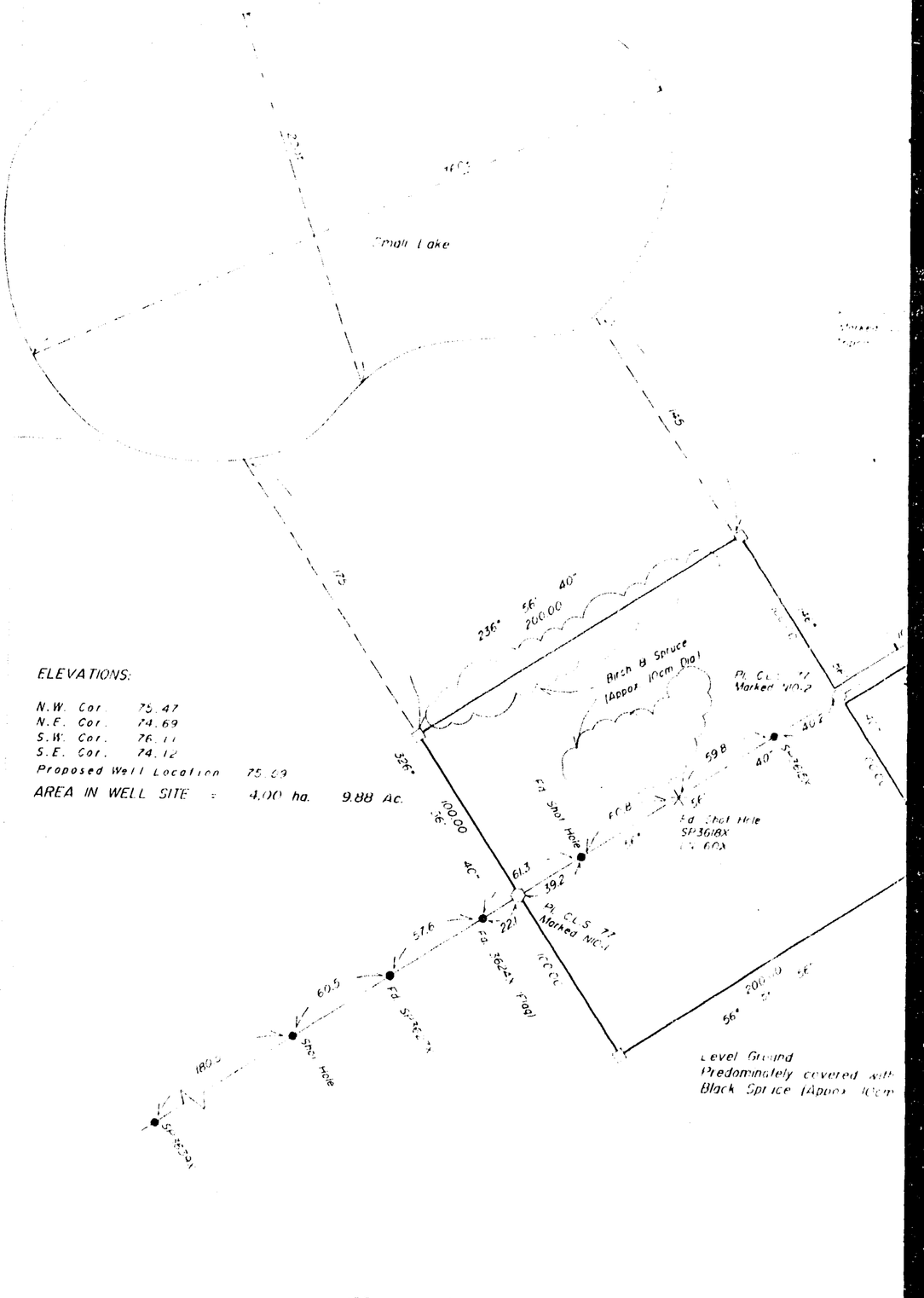


ROUTE MAP
1:200,000

ELEVATIONS:

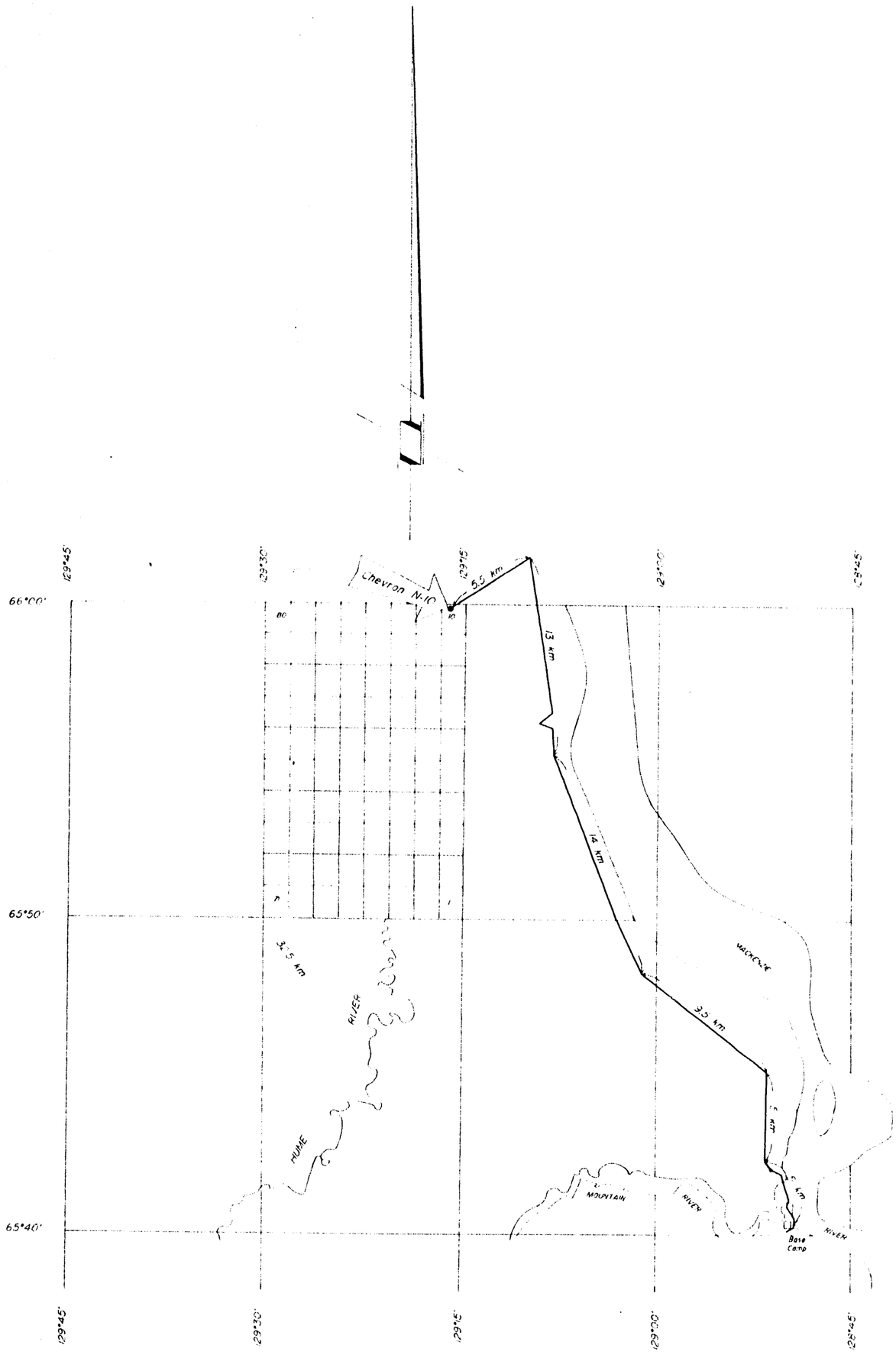
N.W. Cor.	75.47
N.E. Cor.	74.69
S.W. Cor.	76.11
S.E. Cor.	74.12
Proposed Well Location	75.69

AREA IN WELL SITE = 4.00 ha. 9.88 Ac.



100 50 25 0 50 100 metres

Scale: 1:2000



ROUTE MAP
1:200,000

APPENDIX 7

DRILLING FLUID REPORT

Chevron Hume River N-10
65 59' 57.30"N
129 16' 15.23"W
Well Recap

M-I Drilling Fluids Canada, Inc.

Chevron Hume River N-10

65 59' 57.30"N

129 16' 15.23"W

Spud Date:	Feb. 15, 1990
Rig Release Date:	March 2, 1990
Total Days:	16
Total Depth:	445 m

Sales Representative:	Mark Ralph
Field Representative:	Tim Aldridge

TABLE OF CONTENTS

CONDUCTOR HOLE SECTION:

Interval:	0 - 70 m
Mud Type:	Gel / Slurry
Hole Size:	660 mm
Casing Size:	508 mm
Total Days:	2

Comments: Minor mud losses through cellar pumping system and across shaker screens. Screen blinded when large volumes of mud were pumped over while jetting cellar.

Material Usage:

Product	Units
Caustic Soda	3
Bentonite (40 Kg)	155

SURFACE HOLE SECTION:

Interval:	70 - 240 m
Mud Type:	Gel / Kelzan
Hole Size:	445 mm
Casing Size:	339 mm
Total Days:	5

Comments: Very sandy and silty lithology contributed to rapid solids build up.

Material Usage:

Product	Units
Caustic Soda	5
Bentonite (40 kg)	40
Bentonite (100 lb)	75
Bicarbonate	16
Kelzan XC	9

MAIN HOLE SECTION:

Interval:	240 - 445 m
Mud Type:	Gel / Kelzan
Hole Size:	216 mm
Casing Size:	178 mm
Total Days:	8

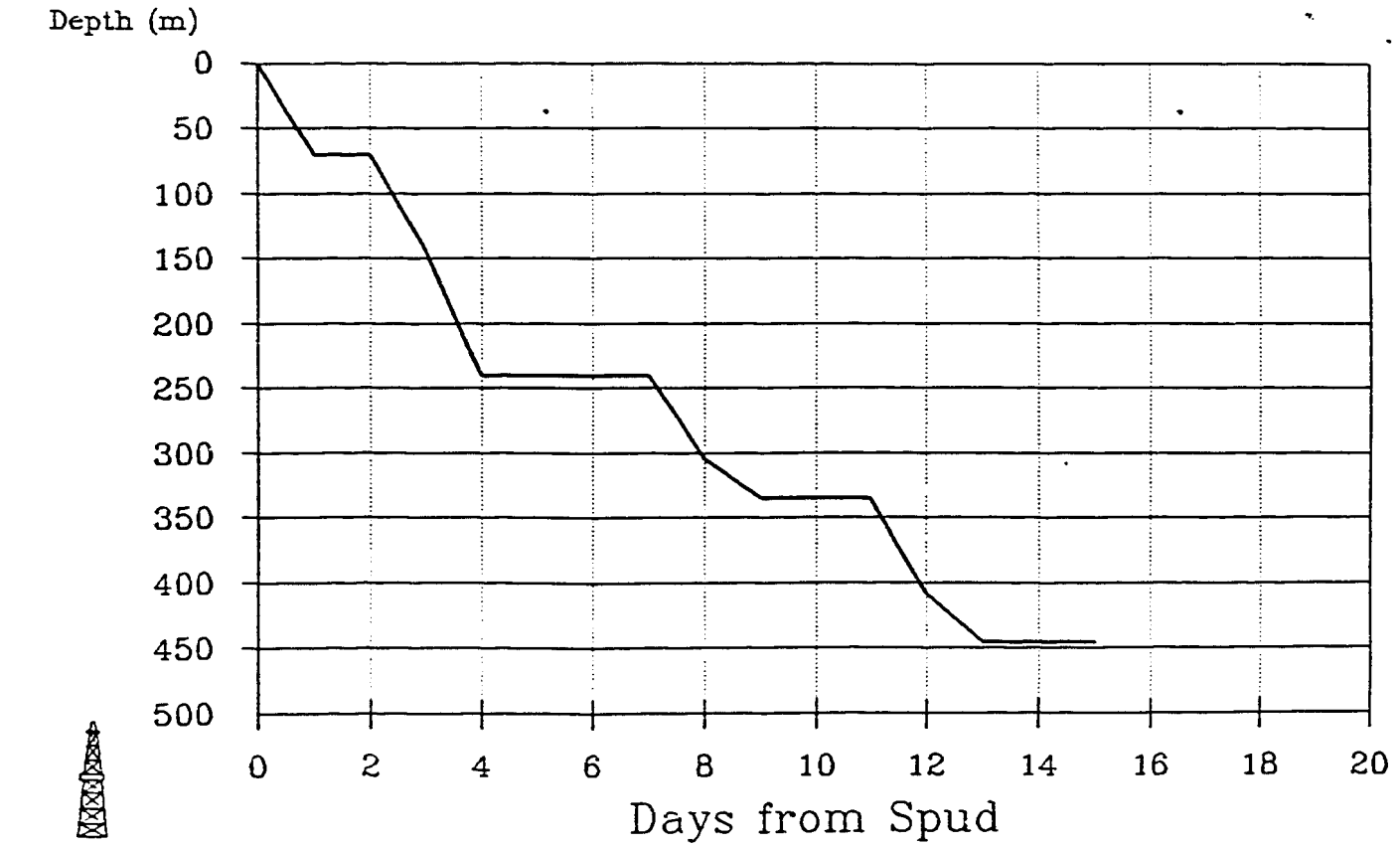
Comments: No mud related problems reported.

Material Usage:

Product	Units
Caustic Soda	8
Bentonite (40 Kg)	70
Bentonite (100 lb)	6
Kelzan XC	6
Nitrate (2 kg)	5
Nitrate (25 kg)	1
M-I Natural Gel	10

Days vs. Depth

Chevron Hume River N-10

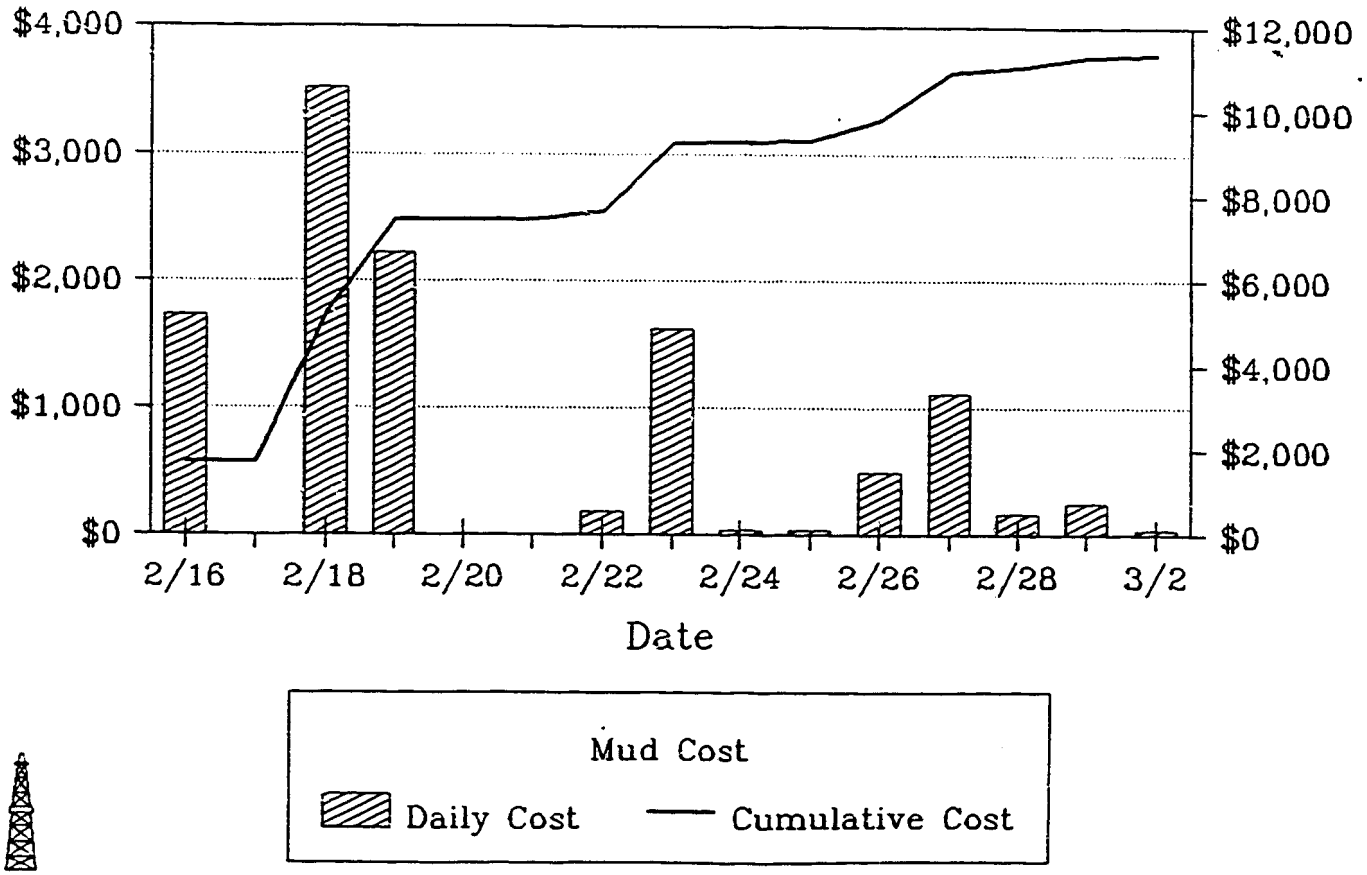


M - I Drilling Fluids Canada, Inc.

X Data	Days from Spud
	0
70	1
70	2
143	3
240	4
240	5
240	6
240	7
305	8
335	9
335	10
335	11
408	12
445	13
445	14
445	15

Mud Costs – Daily/Total

Chevron Hume River N-10

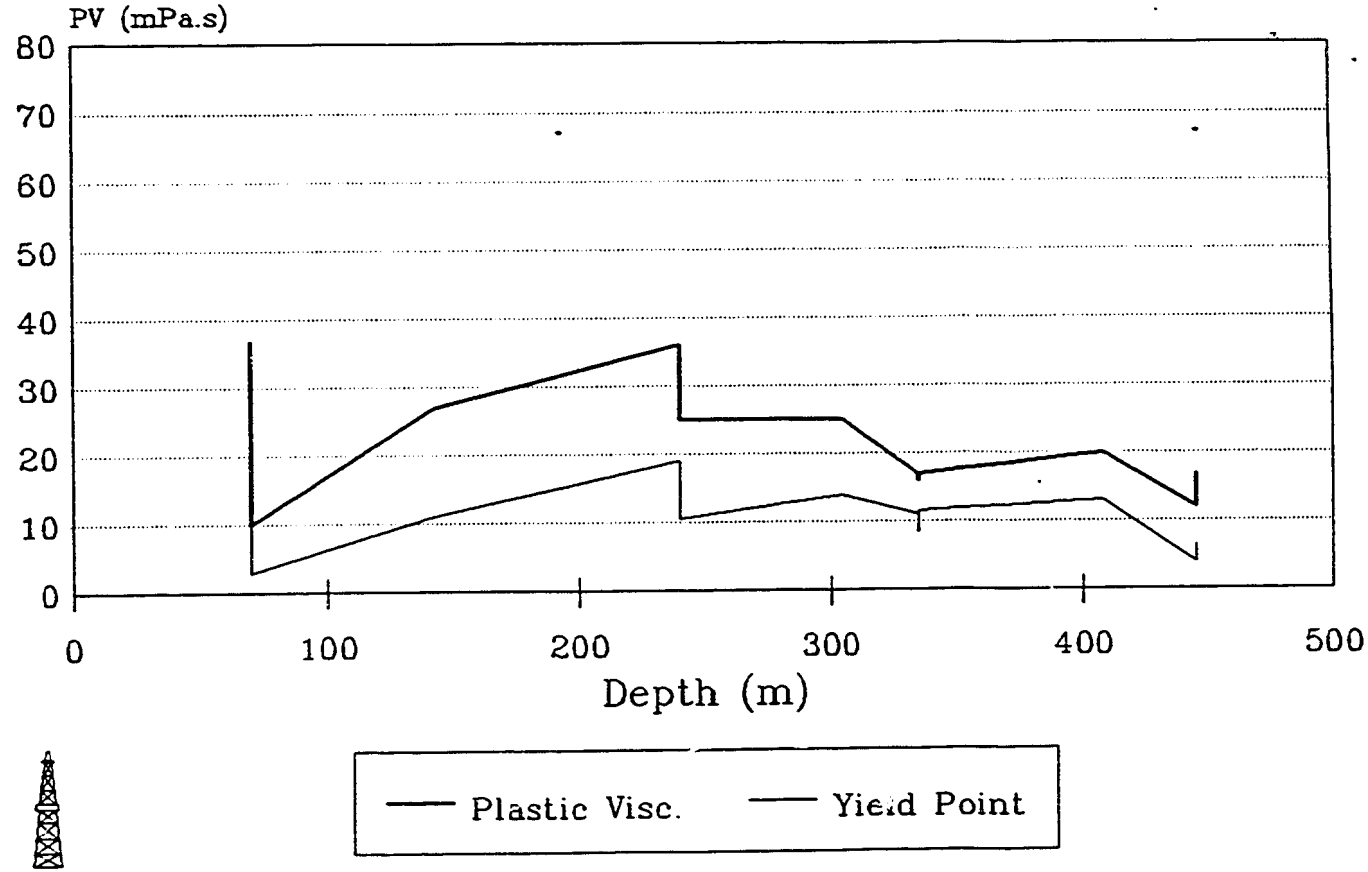


M– I Drilling Fluids Canada, Inc.

X Data	Daily Cost	Cumulative Cos
16	1728	1728
2/17	0	1728
2/18	3516	5244
2/19	2223	7467
2/20	0	7467
2/21	0	7467
2/22	177	7644
2/23	1617	9261
2/24	32	9293
2/25	32	9325
2/26	490	9815
2/27	1110	10925
2/28	158	11083
3/1	243	11326
3/2	32	11358

PV/YP vs. Depth

Chevron Hume River N-10



M – I Drilling Fluids Canada, Inc.

X Data	Plastic Visc.	Yield Point
70	37	10
70	10	3
143	27	11
240	36	19
240	34	16.5
240	27	11.5
240	25	10.5
305	25	14
335	17	11
335	16	8.5
335	17	11.5
408	20	13
445	12	4
445	17	6.5
445	14	5

M-I Drilling Fluids MagcobarIMCO A Dresser/Halliburton Company

WEEKLY SUMMARY

WELL NAME: CHEVRON - EAST HUME RIVER
LEGAL: N-10
MUD TYPE: GEL KELZAN
MUD ENGINEER: TIM ALDRIDGE
CONTRACTOR: SHEHTAH
PAGE 1 OF

DATE 1990 / DAYS FROM SPUD	DEPTH m	MUD DENSITY Kg/m³	FUN VIS s/L	FANN READINGS θ 600	FANN READINGS θ 300	P.V. mPa.s	Y.P. Pa	GEL STRENGTH Pa 10 sec	GEL STRENGTH Pa 10 min	FLUID LOSS cm³/30 min Std. API	FLUID LOSS HTHP	FILT CAKE mm	EXC. SULF. mg/L	pH	ALKALINITY Pf	ALKALINITY Mf	CHLORIDES mg/L	Ca mg/L	CO_3 mg/L	HCO_3 mg/L	K+ ion mg/L	POLYMER kg/m³	MBT kg/m³	VOLUME FRACTION OIL	VOLUME FRACTION SOLIDS	VOLUME FRACTION SAND	N	kg/m³	ESTIMATED DAILY COST $	ESTIMATED ACCUM. COST $
Feb 15	0			SPUD REPORT.																							/			
Feb 16	70	1320	70	94	57	37	10	2	10	6.4	-	2	-	9.0	.15	.35	150	0	3	15	-	-	64	0	.20	.05	65/.321	467	1728	[illegible]
		SAM WELL @ 02:00 - DRILL 660 MM CONDUCTOR HOLE W PREDOMINANTLY SANDSTONE																												
		MINOR LOSSES THRU CELLAR PUMPING SYSTEM & ACROSS SCREENS																												1728.-
Feb 17	70	1080	44	26	16	10	3	2	3	18	-	2	-	9.0	.15	.30	150	0	-	-	-	-	43	0	.05	TR	/			
		DRILL 660 MM CONDUCTOR HOLE TO 70 M - WIPER TRIP - CIRCULATE -																												
1		RUN LAND & CEMENT 508 MM CONDUCTOR PIPE - MAKE UP DIVERTER SYSTEM.																												1728.-

CALGARY OFFICE

M-I Drilling Fluids — Magcobar/IMCO, A Dresser/Halliburton Company

WEEKLY SUMMARY

WELL NAME: CHEVRON EAST HUME RIVER
LEGAL: N-10
MUD TYPE: GEL-KELZAN
MUD ENGINEER: TIM ALDRIDGE
CONTRACTOR: SHEHTAH 1E
PAGE 2 OF

DATE	DEPTH m	MUD DENSITY Kg/m³	FUN VIS s/L	FANN θ 600	FANN θ 300	P.V. mPa.s	Y.P. Pa	GEL STRENGTH Pa 10 sec	GEL STRENGTH Pa 10 min	FLUID LOSS cm³/30 min Std. API	FLUID LOSS HTHP	FILT CAKE mm	EXC. SULF. mg/L	pH	ALKALINITY Pf	ALKALINITY Mf	CHLORIDES mg/L	Ca mg/L	CO_3 mg/L	HCO_3 mg/L	NO_3 mg/L	POLYMER kg/m³	MBT kg/m³	VOLUME FRACTION OIL	VOLUME FRACTION SOLIDS	VOLUME FRACTION SAND	LOW N MEAN	RZ #	ESTIMATED DAILY COST $	ESTIMATED ACCUM. COST $
FEB 18	113	1165	66	72	49	23	11	4	12	11.2	-	2	-	9.5	.2	.5	250	0	4	7	-	-	60	0	.06	1/2	516/233	[illegible]	3516	
DAYS FROM SPUD		NIPPLE UP + PRESS TEST DIVERTER - DRILL OUT CONDUCTOR - MODERATE CEMENT CONTAMINATION																												
2		DUMP CEMENT CUT MUD - BUILD VOLUME + INCREASE RHEOLOGY - DRILLING 445MM HOLE																												5244.-
FEB 19	240	[illegible]	65	110	74	36	19	6	12	9.6	-	2	-	9.5	.5	.6	250	0	5	8	-	-	60	0	.07	1/2	53/25	457	2223	
		DRILL 445MM HOLE - WIPER TRIP @ 232M - TIGHT @ 170M - CHANGE BHA - RIH - REAM TIGHT HOLE																												
3		@ 170M 2HRS - DRILL 445MM HOLE TO 240M - TRIP OUT TO LOG.																												7468.-
FEB 20	240	1110	86	101	67	34	16.5	6	12	8.4	-	2	-	10.0	.4	1.0	250	0	-	-	-	-	60	0	.07	1/2	50/[illegible]	512	[illegible]	
		LOG WELL OK - CLEAN OUT TRIP OK - RUN + LAND 339 MM CSG CIRC CASING 2M TO BOTTOM																												
4		CEMENT CSG. - BUMP PLUG.																												7468.-
FEB 21	240	1110	66	77	50	27	11.5	4	10	10.0	-	2	-	9.5	.1	.9	250	0	-	-	-	-	49	0	.07	TR	/		-	
		W.O.C. - NIPPLE UP BOP STACK - CHANGE SHAKER SCREENS TO DX110																												
5		PREPARE TO DRILL OUT WITH WATER																												
FEB 22	240	1110	60	71	46	25	10.5	4	10	9.6	-	1	-	9.0	.1	.35	250	0	2	10	-	-	49	0	.07	1/8	/		177	
		PRESS TEST BOP. STACK - REPAIR BLIND RAMS - RIH TO DRILL OUT WITH WATER																												
6																														7644.-
FEB 23	304	1095	66	76	55	25	14	7	12	8.4	-	1	-	9.5	.2	.5	250	0	-	-	75	-	57	0	.057	TR	403/55	962	1617	
		DRILL OUT 339MM CASING WITH WATER - DISPLACE TO MUD - LEAK OFF TEST - TRIP OUT + CHANGE BHA																												
7		CONTROL DRILL 216MM HOLE.																												9261.-
FEB 24	335	1090	55	56	39	17	11	3.5	12	8.0	-	1	-	9.0	.1	.35	250	0	2	10	75	-	57	0	.057	TR	410/50	163	32.	
		CONTROL DRILL 216 MM HOLE - TRIP OUT TO CORE - RIH CUT CORE #1 - TRIP OUT																												
8		RECOVER CORE - MAKE UP TOOLS + RIH FOR DST #1.																												9293.-

CALGARY OFFICE

M-I Drilling Fluids
Magcobar/IMCO A Dresser/Halliburton Company

WEEKLY SUMMARY

WELL NAME CHEVRON EAST HUME RIVER
LEGAL N-10
MUD TYPE GEL KELZAN
MUD ENGINEER TIM ALDRIDGE
CONTRACTOR SHEHTAH IE
PAGE 3 OF

DATE 1990 / DAYS FROM SPUD	DEPTH m	MUD DENSITY kg/m³	FUN VIS s/L	FANN READINGS θ 600	FANN READINGS θ 300	P.V. mPa.s	Y.P. Pa	GEL STRENGTH Pa 10 sec	GEL STRENGTH Pa 10 min	FLUID LOSS cm³/30 min Std. API	FLUID LOSS cm³/30 min HTHP	FILT CAKE mm	EXC. SULF. mg/L	pH	ALKALINITY Pf	ALKALINITY Mf	CHLORIDES mg/L	Ca mg/L	CO₃ mg/L	HCO₃ mg/L	NO₃ Nitrates mg/L	POLYMER kg/m³	MBT kg/m³	VOLUME FRACTION OIL	VOLUME FRACTION SOLIDS	VOLUME FRACTION SAND	LOW/HIGH D/B ratio	REV #	ESTIMATED DAILY COST $	ESTIMATED ACCUM. COST $
FEB 25	335	1090	56	49	33	16	8.5	4	9	8.0	-	1	-	9.0	.1	.3	250	0	2	10	75	-	49	0	.057	TR	[illegible]	-	32.	
	DST # 1 - TRIP OUT DST # 1 - DROPPED TOOLS - FISH TOOLS - TRIP OUT W TOOLS - RIH CIRC - TRIP OUT TO LOG.																													
9	LOG WELL - RIH WITH BIT.																													9325.–
FEB 26	335	1080	52	57	40	17	11.5	5	11.5	8.0	-	1	-	9.0	.1	.3	250	0	2	10	75	-	49	0	.051	TR	[illegible]	1330	490.	
	DST # 2 - RIH FOR CLEAN OUT TRIP - TRIP OUT TO LOG																													
10	LOGGING.																													9815.–
FEB 27	409	1080	62	66	46	20	13	4.5	13	8.0	-	2	-	9.5	.1	1.0	250	0	2	3	70	-	57	0	.05	TR	[illegible]	162	1110.	
	FINISH LOGGING JOB - INSPECT BHA - DRILLING 216 MM HOLE.																													
11																														10925.–
FEB 28	445	1075	52	32	20	12	4	2.5	9	9.2	-	2	-	9.0	.1	1.0	250	0	-	-	-	-	49	0	.048	TR	-	-	158.	
	DRILL TO 445M - WIPER TRIP - TRIP OUT TO LOG - LOGGING.																													
12																														11083.
MAR 01	445	1075	55	47	30	17	6.5	2.7	7	9.0	-	2	-	9.0	.1	.9	250	0	-	-	-	-	53	0	.048	TR	[illegible]	1337	243.	
	LOGGING - RIH - LAY DOWN BHA - RIH & CIRCULATE - TRIP OUT TO LOG.																													
13	RIH WITH PIPE.																													11326.–
MAR 02	445	1075	46	38	24	14	5	2	7	9.0	-	2	-	9.0	.1	.8	250	0	-	-	-	-	49	0	.048	TR	-	-	32.	
	TRIP TO LOG. - FINISH LOGGING JOB - PREPARE TO RUN CEMENT PLUGS.																													
14	END OF WELL.																													11358.–
MAR 03																														
15																														

CALGARY OFFICE

APPENDIX 8

DEVIATION SURVEYS

EASTMAN CHRISTENSEN

Canada District

WELL DEFLECTION SURVEY

for

CHEVRON CANADA RESOURCES LIMITED

FORT GOOD HOPE

Slot :
Well : HUME RVR N-10

Survey Reference : S02642.0CH

Measured Depth	Drift Angle	Drift Direction	Course Length	Vertical Depth	Vertical Section	RECTANGULAR COORDINATES		Dogleg Severity
0.00	0.00	0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00
83.00	1.00	129.00	83.00	83.00	-0.46	0.46 S	0.56 E	0.36
110.00	1.25	140.00	27.00	109.99	-0.83	0.83 S	0.94 E	0.37
137.00	1.75	145.00	27.00	136.98	-1.39	1.39 S	1.36 E	0.57
164.00	2.00	155.00	27.00	163.97	-2.16	2.16 S	1.80 E	0.46
191.00	2.25	159.00	27.00	190.95	-3.08	3.08 S	2.19 E	0.32
218.00	2.25	166.00	27.00	217.93	-4.09	4.09 S	2.50 E	0.31
288.00	1.25	205.00	70.00	287.90	-6.11	6.11 S	2.51 E	0.64
434.00	0.75	215.00	146.00	433.87	-8.34	8.34 S	1.29 E	0.11
445.00	0.75	216.00	11.00	444.87	-8.46	8.46 S	1.21 E	0.04

CALCULATION METHOD : Minimum curvature
SLOT COORDINATES : 0.00 N 0.00 E
BOTTOM HOLE LOCATION : Referenced to SLOT
DISTANCE : 8.54
DIRECTION : 171.87

Report Units : Meters
Accepted by :
Checked by :

SURVEY RUN INFORMATION

SURVEY FILE COMPLETE: 05-MAR-90
445m MD EXTRAPOLATION TO T.D. NOT AN ACTUAL SURVEY

APPENDIX 9

WELLSITE ROCK LOG

APPENDIX 9

WELLSITE ROCK LOG

APPENDIX 10

WELLSITE HYDROCARBON REPORT

DATALOG
TECHNOLOGY INC.

WELLSITE HYDROCARBON REPORT

FOR

CHEVRON CANADA RESOURCES

CHEVRON EAST HUME RIVER N-10

prepared by

SHELDON HARBINSON

and

RANDY SCARLETT

7139K 40th STREET S.E., CALGARY, ALBERTA T2C 2H9 TELEPHONE: BUS. (403) 279-5363

ARCTIC RED 70 m to 283 m

Chevron East Hume River N-10 was spudded on February 16, 1990. The conductor barrel was then set at a depth of 70 meters. The entire hole was drilled with a gel-chem mud system. Logging was commenced on February 18, 1990 at a depth of 71 meters in the Arctic Red formation.

Upon penetration through the shoe some strong flourescence was seen in the first sample. This was thought to be the result of the formation just previous to where the conductor barrel was set. The penetration rate was fairly consistent up to 150 meters as it ranged from 2 to 5 min/m. At this point the penetration rate changed to between 5 to 10 min/m until surface casing point was reached. The background gas level was also quite consistent as it averaged from about 6 to 20 units for the majority of this section. After casing was set the penetration rate once again was quicker and the gas ranged from 0 to 10 units. Throughout this formation the gas was composed of almost entirely C1 with only trace levels of C2 present. The low gas is probably the result of drilling through abundant shale as seen in the samples. No shows were noted in this formation.

From 159 meters to 172 meters no gas readings were noted because of repairs being made to the gas trap. From noting the penetration rate and content of the samples at this point it can be concluded that the gas level did not vary from the level it had previously attained and therefore critical gas readings were probably not missed.

The carbon dioxide level in this formation ranged from about .010 % to .070 % and was quite consistent for the majority of this section.

ARCTIC RED SANDSTONE 283 m to 290 m

The penetration rate slower somewhat upon entering this formation which may have been a result of the presence of some tight siltstone and traces of tight sandstone. The total gas background level was low once again ranging from 3 units to 7 units. This gas was composed of mainly C1 with only very minor levels of C2 present. No shows were seen in this formation.

The carbon dioxide level here ranged from about .020 % to .070 %.

GILMORE LAKE 290 m to 317.5 m

The Gilmore Lake Sandstone formation came in at 290 meters and continued until 297 meters at which point the Gilmore Lake Shale was encountered. The penetration rate slowed somewhat through the sandstone section ranging from 5 min/m to 9 min/m as opposed to 3 min/m to 5 min/m for the shale section. The background gas for these sections ranged from 2 units to 9 units and was composed of C1 with only trace levels of C2 present. No shows were observed in these two sections of the Gilmore Lake formation.

The Gilmore Lake Coal section came in at 302 meters which was obvious from the penetration rate and the presence of coal in the samples. Some porosity was seen in the sample just previous to where this section was cored but the porosity was very low. This section was cored from 308 meters on through into the Imperial Shale formation. Two shows were seen in the Gilmore Lake Coal and they are as follows:

		oil ind.
1. 301.4 m to 302.2 m	100 units over 5 units	.010
2. 311.4 m to 313.4 m	216 units over 5 units	.010

Both of the shows can be considered as good shows because of their high increase over background levels but both shows were quite thin. These two shows are probably the result of drilling through coal in the Gilmore Lake Coal formation. The fact that both of these shows are probably coal suggests that they are relatively insignificant.

The carbon dioxide level throughout this formation was very consistent and it generally ranged from .060 % to .070 %.

IMPERIAL SHALE 317.5 m to 375 m

The top of this section was cored until 335 meters at which point drilling was resumed. 81.5 % of Core #1 was recovered. The background gas was quite low for the entire formation as it ranged from about 6 units to 20 units with only the top and base of the formation having slightly higher gas readings. The gas through most of this section was composed of mostly C1 with small amounts of C2 present in the base of the formation. The presence of small levels of heavier components resulted in a higher oil indicator ratio than previously. The abundance of shale in this formation resulted in the low gas readings. No significant gas responses

were noted in this formation.

The carbon dioxide level was very consistent again as it ranged from .060 % to .070 %.

CANOL 375 m to 381 m

The Canol formation was very thin here containing a significant gas response which resulted in a high gas level for this section. The gas was composed of mostly C1 with trace to small levels of C2 through C4 present. The shale seen in the corresponding samples was somewhat bituminous which resulted in the following show:

		oil ind.
375.2 m to 378.8 m	85 units over 15 units	.012

The above show can be considered a fair show because of its increase over background levels and its relative thickness in comparison to previous shows. The oil indicator previous to this show was considerably higher because of the nature of these shales. The bituminous shales are probably the cause of this gas response and therefore this show is

probably not significant.

The carbon dioxide level remained at around .070 % through this formation.

KEE SCARP 381 m to 417 m

The total gas background through this section was fairly low as it ranged from about 10 units to 25 units and was composed of mostly C1 with some C2 and only trace levels of C3 and C4. The dense limestone as seen in the corresponding samples resulted in a fairly consistent but low gas background and resulted in no shows being observed. The amount of heavier components present increased somewhat at the base of the formation resulting in a higher oil indicator ratio.

The carbon dioxide level remained between .070 % and .080 %.

HARE INDIAN 417 m to 445 m (F.T.D.)

The gas background in this formation was consistent but low as well ranging from 10 units to 20 units. The gas was

composed of C1 and C2 with little or no C3 and C4 present. The low background gas was a result of drilling in a dense limestone with only small amounts of a green-grey shale present. One significant gas response was noted in this section and it is as follows:

		oil ind.
434.8 m to 436.4 m	36 units over 8 units	.032

The above show is a poor show because of its thin interval and because of its low gas peak relative to the background level. The show seems fairly insignificant and may be the result of gas charged water because of its composition of mostly C1 and C2.

The carbon dioxide level was consistent ranging from .070 % to .080 %

Final total depth was reached on February 28, 1990 at a depth of 445 meters.

APPENDIX 11

WATER ANALYSIS

GEOTECH

EAST HUME RIVER

N-10

WATER AND GAS ANALYSES

Prepared For:

CHEVRON CANADA RESOURCES

File No: 90AS5263

Date: March 2, 1990

GEOTECHnical resources ltd.

4500 - 5th STREET N.E., CALGARY, ALBERTA T2E 7C3 (403) 230-4128
TELEX 03-821172 ENVOY 100: TELEX. GEO FAX: (403) 230-4370

BOTTOM HOLE SAMPLER DEPLETION

GEOTECH

FILE # 90AS5263 DATE: March 1, 1990

COMPANY: CHEVRON CANADA RESOURCES

WELL NAME: EAST HUME RIVER

LSD: N-10 TESTER: BAKER

DST: 2 FORMATION: Arctic Red

INTERVALS: 284 - 316 OPENING PRESSURE: 50 psi

FLUID BREAKDOWN: WATER:

MUD: 2000 mL

OIL:

TOTAL FLUID RECOVERED: 2000 mL mud.

COMMENTS:

GEOTECH

PARTIAL WATER ANALYSIS

COMPANY NAME: CHEVRON CANADA RESOURCES

WELL NAME: EAST HUME RIVER

LSD: N-10

FILE NUMBER: 90AS5263 DATE: March 2, 1990

SAMPLED DATE: February 26, 1990

DST: 1

FORMATION: ARCTIC RED / GILMOOR

INTERVAL: 239 - 335

SAMPLE POINT	:	TOP	MIDDLE
CHOLRIDE (mg/L)	:	168	152
SALINITY (ppm NaCl)	:	276	250
NITRATE (mg/L)	:	2.4	<0.5
NITRITE (mg/L)	:	28.1	28.7

GEOTECH

PARTIAL WATER ANALYSIS

COMPANY NAME: CHEVRON CANADA RESOURCES

WELL NAME: EAST HUME RIVER

LSD: N-10

FILE NUMBER: 90AS5263 DATE: March 2, 1990

SAMPLED DATE: February 26, 1990

DST: 2

FORMATION: ARCTIC RED / GILMOOR

INTERVAL: 284 - 316

SAMPLE POINT	:	TOP	BOTTOM
CHOLRIDE (mg/L)	:	230	426
SALINITY (ppm NaCl)	:	378	701
NITRATE (mg/L)	:	<0.5	3.1
NITRITE (mg/L)	:	19.7	17.0

GEOTECHnical resources ltd.
4500 - 5th STREET N.E., CALGARY, ALBERTA T2E 7C3
(403) 230-4128

WATER ANALYSIS

FILE NUMBER ▶ 90AS5263

LABORATORY NUMBER ▶ 5263-W3

CONTAINER IDENTITY
5263F3

OPERATOR'S NAME
CHEVRON CANADA RESOURCES

SAMPLE LOCATION

WELL NAME
EAST HUME RIVER N-10

ELEVATIONS KB GRD

FIELD OR AREA

POOL OR ZONE
ARCTIC RED / GILMOOR

NAME OF SAMPLER

COMPANY

TEST TYPE DST NO 1

TEST RECOVERY

SAMPLING POINT
BOTTOM HOLE SAMPLER

AMT. AND TYPE OF CUSHION

MUD RESISTIVITY Ω/m

MULTIPLE RECOVERY TEST INTERVAL
FROM 239
TO 335

PUMPING FLOWING GAS LIFT SWAB

WATER m^3/d OIL m^3/d GAS $10^3m^3/d$

PERFORATIONS
FROM

SEPARATOR TREATER RESERVOIR SAMPLED RECEIVED

GAUGE PRESSURE K/Pa

TEMPERATURE (°C)

TO

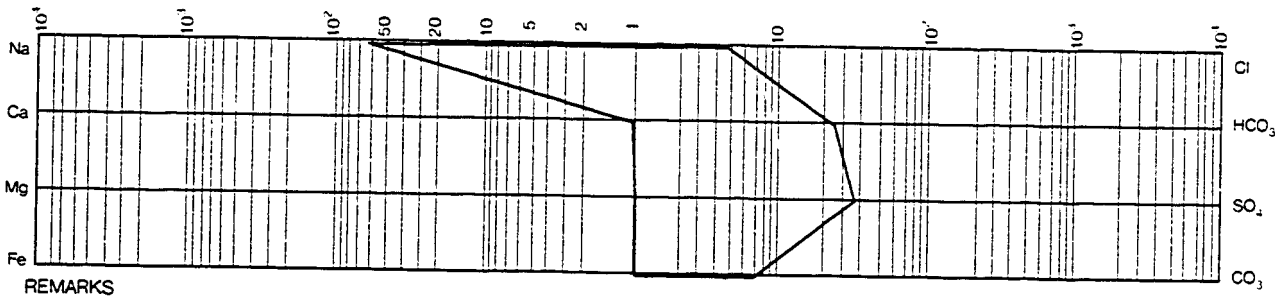
DATE SAMPLED Y M D	H M	DATE RECEIVED Y M D	DATE ANALYZED Y M D	ANALYST
26-FEB-90		01-MAR-90	02-MAR-90	GB

SUMMARY DATA

TOTAL HARDNESS AS $CaCO_3$	83	g/m^3
TOTAL ALKALINITY	1406	g/m^3
SALINITY AS NaCl	240	ppm
SATURATION INDEX	1.88	CaCO3 SCALING TENDENCY
STABILITY INDEX	5.03	CaCO3 SCALING TENDENCY
CORROSION TENDENCY	1.22	

Scaling calculations done at 30 C

LOGARITHMIC PATTERN MEQ PER LITRE



REMARKS

GEOTECH Analytical

GEOTECHnical resources ltd.
4500 - 5th STREET N.E., CALGARY, ALBERTA T2E 7C3
(403) 230-4128

WATER ANALYSIS
DETAILED REPORT

OPERATOR'S NAME	CHEVRON CANADA RESOURCES
WELL NAME	EAST HUME RIVER
LOCATION	N-10
SAMPLING POINT	BOTTOM HOLE SAMPLER

FILE NUMBER ▶ 90AS5263

LABORATORY NUMBER ▶ 5263-W3

CATIONS ION	g/m³	MASS FRACTION	MEQ/L	ANIONS ION	g/m³	MASS FRACTION	MEQ/L
Na	1450	0.32	63.1	Cl	146	0.03	4.1
K	34.5	0.01	0.88	Br			
Ca	21.1	0.00	1.05	I			
Mg	6.77	0.00	0.56	F			
Ba	0.38	0.00	0.006	HCO_3	1320	0.29	21.8
Sr	0.66	0.00	0.015	CO_3	189	0.04	6.3
Fe	0.26	0.00	0.014	OH	0.00	0.00	0.00
Mn				SO_4	1440	0.31	30
Al				H_2S			
Si				PO_4			
B	2.43						
U							
Th							

TOTAL SOLIDS (g/m³)

EVAPORATED AT 110°C — EVAPORATED AT 180°C

AT IGNITION — CALCULATED

4611

SPECIFIC GRAVITY at 15°C — REFRACTIVE INDEX (R) at 25°C

1.343

OBSERVED pH at 25°C

8.80

RESISTIVITY (RW) Ω m at 25°C

1.787

REDOX POTENTIAL (Eh) — DISSOLVED O_2 g/m³

TOTAL METALS

METAL	g/m³
Fe	
Mn	

Cations/Anions: 1.06

DST 1

Interval: 239 to 335

KB: GRD:

Perfs to

REMARKS

IODIDE NOT AVAILABLE - INSUFFICIENT SAMPLE
NITRATE <.05 mg/L NITRITE 38.3 mg/L

GEOTECHnical resources ltd.
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(403) 230-4128

WATER ANALYSIS

FILE NUMBER ▶ 90AS5263

LABORATORY NUMBER ▶ 5263-W6

CONTAINER IDENTITY: 5263F6

OPERATOR'S NAME: CHEVRON CANADA RESOURCES

SAMPLE LOCATION

WELL NAME: EAST HUME RIVER N-10

ELEVATIONS KB GRD

FIELD OR AREA

POOL OR ZONE: ARCTIC RED / GILMOOR

NAME OF SAMPLER

COMPANY

TEST TYPE: DST NO: 2

TEST RECOVERY

SAMPLING POINT: BOTTOM HOLE SAMPLER

AMT. AND TYPE OF CUSHION

MUD RESISTIVITY Ω/m

MULTIPLE RECOVERY TEST INTERVAL FROM: 284 TO: 316

PUMPING FLOWING GAS LIFT SWAB

WATER m^3/d OIL m^3/d GAS $10^3m^3/d$

PERFORATIONS FROM

SEPARATOR TREATER RESERVOIR SAMPLED RECEIVED

GAUGE PRESSURE K. Pa

TEMPERATURE (°C)

TO

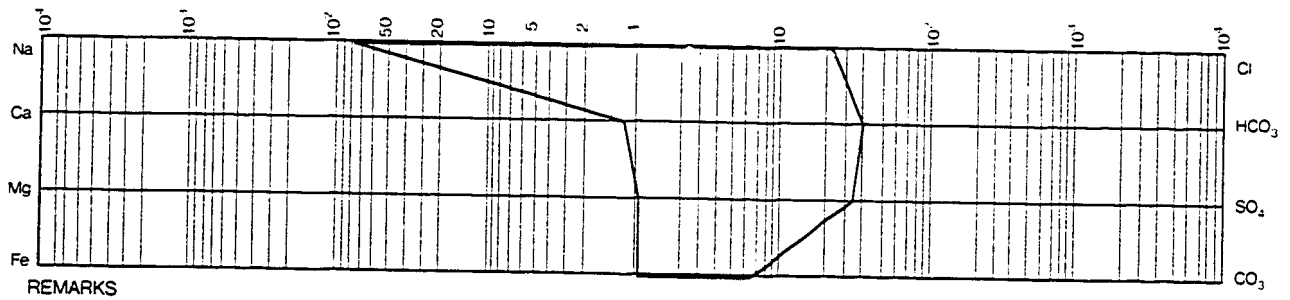
DATE SAMPLED Y M D	H M	DATE RECEIVED Y M D	DATE ANALYZED Y M D	ANALYST
26-FEB-90		01-MAR-90	02-MAR-90	GB

SUMMARY DATA

TOTAL HARDNESS AS $CaCO_3$	99	g/m^3
TOTAL ALKALINITY	1886	g/m^3
SALINITY AS NaCl	1150	ppm
SATURATION INDEX	2.25	CaCO3 SCALING TENDENCY
STABILITY INDEX	4.45	CaCO3 SCALING TENDENCY
CORROSION TENDENCY	1.25	

Scaling calculations done at 30 C

LOGARITHMIC PATTERN MEQ PER LITRE



REMARKS

GEOTECH Analytical

GEOTECHnical resources ltd.
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(403) 230-4128

WATER ANALYSIS
DETAILED REPORT

OPERATOR'S NAME	CHEVRON CANADA RESOURCES
WELL NAME	EAST HUME RIVER
LOCATION	N-10
SAMPLING POINT	BOTTOM HOLE SAMPLER

FILE NUMBER ▶ 90AS5263

LABORATORY NUMBER ▶ 5263-W6

CATIONS				ANIONS			
ION	g/m³	MASS FRACTION	MEQ/L	ION	g/m³	MASS FRACTION	MEQ/L
Na	1930	0.31	83.9	Cl	699	0.11	19.7
K	32	0.01	0.82	Br			
Ca	25.3	0.00	1.26	I			
Mg	8.3	0.00	0.68	F			
Ba	0.127	0.00	0.002	HCO_3	1950	0.33	32
Sr	0.764	0.00	0.017	CO_3	170	0.03	5.6
Fe	< 0.05			OH	0.00	0.00	0.00
Mn				SO_4	1310	0.21	27.3
Al				H_2S			
Si				PO_4			
B	2.11						
U							
Th							

TOTAL SOLIDS (g/m³)

EVAPORATED AT 110°C | EVAPORATED AT 180°C

AT IGNITION | CALCULATED: 6127

SPECIFIC GRAVITY at 15°C | REFRACTIVE INDEX (RI) at 25°C: 1.343

OBSERVED pH at 25°C: 8.97 | RESISTIVITY (RW) Ω m at 25°C: 1.390

REDOX POTENTIAL (Eh) | DISSOLVED O_2 g/m³

TOTAL METALS

METAL	g/m³
Fe	
Mn	

Cations/Anions: 1.02

DST 2

Interval: 284 to 316

KB: GRD:

Perfs to

REMARKS

IODIDE NOT AVAILABLE - INSUFFICIENT SAMPLE
NITRATE <0.5 mg/L NITRITE 36.7 mg/L

GEOTECHnical resources ltd.
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(403) 230-4128

GAS ANALYSIS

FILE NUMBER ▶ 90AS5263

LABORATORY NUMBER ▶ 5263-GR1

NTAINER IDENTITY
999

OPERATOR'S NAME
CHEVRON CANADA RESOURCES

SAMPLE LOCATION

WELL NAME
EAST HUME RIVER N-10

KB ELEVATIONS GRD

FIELD OR AREA

POOL OR ZONE
ARCTIC RED / GILMOOR

NAME OF SAMPLER

COMPANY

TEST TYPE NO.
DST 2

TEST RECOVERY

SAMPLING POINT
FLARELINE

AMT. AND TYPE OF CUSHION

MUD RESISTIVITY (Ω/M)

MULTIPLE RECOVERY TEST INTERVAL

FRM 284

TO 316

PUMPING FLOWING GAS LIFT SWAB

WATER m^3/d OIL m^3/d GAS $10^3m^3/d$

SEPARATOR TREATER RESERVOIR SAMPLED RECEIVED

PERFORATIONS

GAUGE PRESSURE K Pa 120 150

FRM

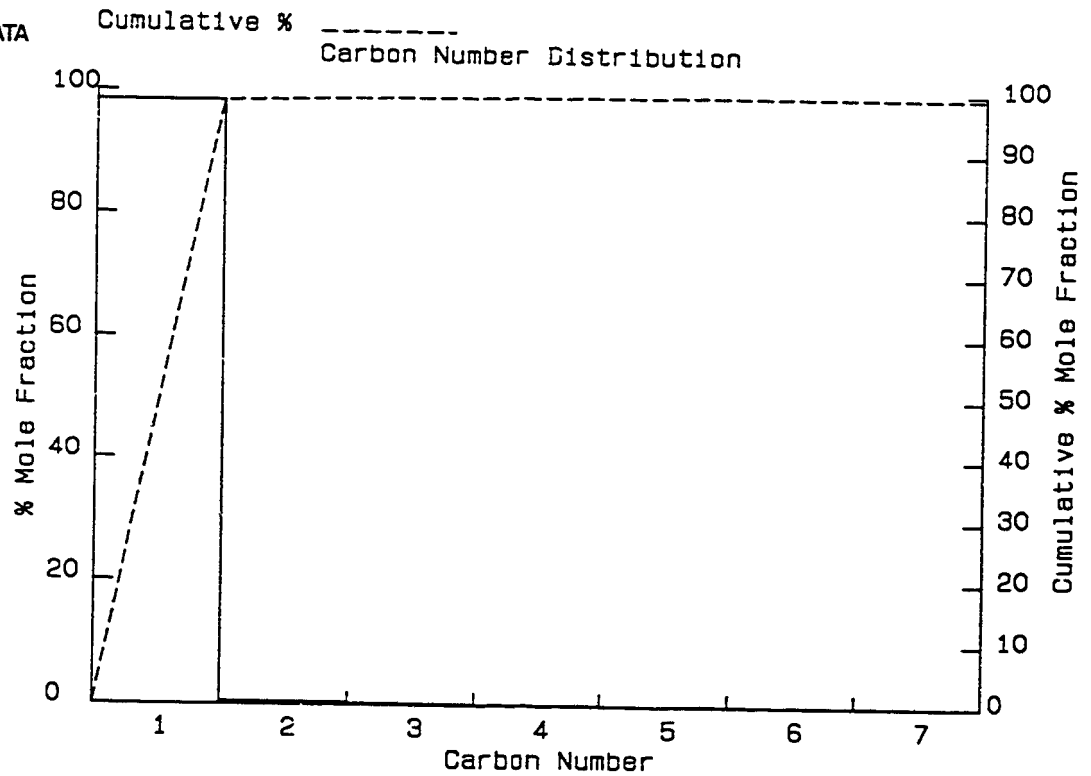
TEMPERATURE (°C) 50

TO

DATE SAMPLED Y M D | DATE RECEIVED H M Y M D | DATE ANALYZED Y M D | ANALYST

26-FEB-90 01-MAR-90 02-MAR-90 EGC

SUMMARY DATA



Weighted Average Carbon Number : 1.01

GEOTECHnical resources ltd.
4500 - 5th STREET N.E., CALGARY, ALBERTA T2E 7C3
(403) 230-4128

GAS ANALYSIS

DETAILED REPORT

OPERATOR'S NAME	CHEVRON CANADA RESOURCES
WELL NAME	EAST HUME RIVER
LOCATION	N-10
SAMPLING POINT	FLARELINE

FILE NUMBER ▶	90AS5263
LABORATORY NUMBER ▶	5263-GR1

COMPOSITION

COMP.	MOLE FRACTION AIR FREE AS RECEIVED	MOLE FRACTION AIR FREE ACID GAS FREE	PETROLEUM LIQUID CONTENT mL/m³
H_2	0.0000	0.0000	
He	0.0001	0.0001	
N_2	0.0049	0.0049	
CO_2	0.0010	0.0000	
H_2S	0.0000	0.0000	
C_1	0.9844	0.9854	
C_2	0.0044	0.0044	
C_3	0.0022	0.0022	8.6
IC_4	0.0007	0.0007	3.3
NC_4	0.0010	0.0010	4.5
IC_5	0.0004	0.0004	2.1
NC_5	0.0003	0.0003	1.5
C_6	0.0003	0.0003	1.7
C_7 +	0.0003	0.0003	2.0
C_8			
C_9			
C_{10}+			
TOTAL	1.0000	1.0000	23.8

CALCULATED GROSS HEATING VALUE

MJ/m³ at 15°C - 101.325 kPa

MOISTURE FREE	MOISTURE & ACID GAS FREE
38.18	38.22

VAPOUR PRESSURE

PENTANES PLUS: 78.05 kPa

RELATIVE DENSITY

MOISTURE FREE		ACID FREE		DENSITY kg/m³
MEASURED	CALCULATED	MEASURED	CALCULATED	MOISTURE FREE
	0.567		0.566	0.693

CALCULATED PSEUDO CRITICAL PROPERTIES

MOISTURE FREE			ACID FREE		
pPc (abs)		pTc	pPc (abs)		pTc
4597.8	kPa	192.0 °K	4595.0	kPa	191.9 °K

RELATIVE MOLECULAR MASS

MOISTURE FREE	C_7+
16.41	104.88

H_2S g/m³ 0.00

DST 2

Interval: 284 to 316

KB: GRD:

Perfs to

REMARKS:

AGAT Laboratories

CALGARY — EDMONTON — GRANDE PRAIRIE

GAS ANALYSIS

CONTAINER IDENTIFICATION: PB#1

LABORATORY NUMBER: 62793A1

OPERATOR NAME: CHEVRON CANADA RESOURCES LIMITED *****

UNIQUE WELL IDENTIFIER:

WELL NAME: CHEVRON HUME RIVER N-10

ELEVATIONS: KB m / GRD m

FIELD OR AREA: HUME RIVER

POOL OR ZONE:

NAME OF SAMPLER:

COMPANY: SAME

TEST TYPE / NO / TEST RECOVERY

TEST INTERVAL OR PERFS: 311.2

SAMPLING POINT

	SEPARATOR	TREATER	RESERVOIR	SOURCE	SAMPLED	RECEIVED
GAUGE PRESSURE kPa						
TEMPERATURE °C						

DATE SAMPLED (Y-M-D): | DATE RECEIVED (Y-M-D): 90-03-06 | DATE REPORTED (Y-M-D): 90-03-13 | ANALYST: RT DG | OTHER INFORMATION: RUN # 2

COMP	MOLE FRACTION: AIR FREE AS RECEIVED	MOLE FRACTION: AIR FREE ACID GAS FREE	PETROLEUM LIQUID CONTENT mL/m³
H_2	0.0000	0.0000	
He	0.0000	0.0000	
*AIR	0.9844	0.9885	
CO_2	0.0042	0.0000	
H_2S	0.0000	0.0000	
C_1	0.0112	0.0113	
C_2	0.0001	0.0001	
C_3	0.0001	0.0001	0.2
iC_4	0.0000	0.0000	0.0
nC_4	0.0000	0.0000	0.0
iC_5	0.0000	0.0000	0.0
nC_5	0.0000	0.0000	0.0
C_6	0.0000	0.0000	0.0
C_{7+}	0.0000	0.0000	0.0
C_8			
C_9			
C_{10+}			
TOTAL	1.0000	1.0000	0.2

GROSS HEATING VALUE MJm³ @ 15°C AND 101.325 kPa

MOISTURE AND ACID GAS FREE

MEASURED	CALCULATED	DETERMINED DEW POINT	VAPOUR PRESSURE PENTANES PLUS
	0.44	°C	0.0 kPa

ACTUAL GROSS HEATING VALUE: 0.43

RELATIVE DENSITY

MOISTURE FREE AS SAMPLED: MEASURED	MOISTURE FREE AS SAMPLED: CALCULATED	MOISTURE AND ACID GAS FREE: MEASURED	MOISTURE AND ACID GAS FREE: CALCULATED
	0.965		0.963

PSEUDO CRITICAL PROPERTIES (CALCULATED)

AS SAMPLED: pPc (abs)	AS SAMPLED: pTc	ACID GAS FREE: pPc (abs)	ACID GAS FREE: pTc
3430 kPa	127.6 K	3413 kPa	126.9 K

RELATIVE MOLECULAR MASS

TOTAL GAS	C_{7+}
27.9	0.0

H_2S g/m³: 0.00

REMARKS: *AIR COMPOSITION: O_2 = 15.72%

N_2 = 84.28%

EXCEED NORMAL LIMITS : N2

AGAT Laboratories

CALGARY — EDMONTON — GRANDE PRAIRIE

GAS ANALYSIS

CONTAINER IDENTIFICATION: PB#2

LABORATORY NUMBER: G2793B1

OPERATOR NAME: CHEVRON CANADA RESOURCES LIMITED *****

UNIQUE WELL IDENTIFIER:

WELL NAME: CHEVRON HUME RIVER N-10

ELEVATIONS KB m: GRD m:

FIELD OR AREA: HUME RIVER

POOL OR ZONE:

NAME OF SAMPLER:

COMPANY: SAME

TEST TYPE: NO:

TEST RECOVERY:

TEST INTERVAL OR PERFS: 312.0 m

SAMPLING POINT:

	SEPARATOR	TREATER	RESERVOIR	SOURCE	SAMPLED	RECEIVED
GAUGE PRESSURE kPa						
TEMPERATURE °C						

DATE SAMPLED (Y-M-D):

DATE RECEIVED (Y-M-D): 90-03-06

DATE REPORTED (Y-M-D): 90-03-13

ANALYST: RT DG

OTHER INFORMATION: RUN # 2

COMP	MOLE FRACTION AIR FREE AS RECEIVED	MOLE FRACTION AIR FREE ACID GAS FREE	PETROLEUM LIQUID CONTENT mL • m⁻³
H_2	0.0000	0.0000	
He	0.0000	0.0000	
*AIR	0.9777	0.9826	
CO_2	0.0050	0.0000	
H_2S	0.0000	0.0000	
C_1	0.0173	0.0174	
C_2	TRACE	TRACE	
C_3	0.0000	0.0000	0.0
iC_4	0.0000	0.0000	0.0
NC_4	0.0000	0.0000	0.0
iC_5	0.0000	0.0000	0.0
NC_5	0.0000	0.0000	0.0
C_6	0.0000	0.0000	0.0
C_7+	0.0000	0.0000	0.0
C_8			
C_9			
$C_{10}-$			
TOTAL	1.0000	1.0000	0.0

GROSS HEATING VALUE MJ/m³ 15° C AND 101.325 kPa

MOISTURE AND ACID GAS FREE

MEASURED	CALCULATED	DETERMINED DEW POINT	VAPOUR PRESSURE PENTANES PLUS
	0.66	°C	0.0 kPa

ACTUAL GROSS HEATING VALUE: 0.66

RELATIVE DENSITY

MOISTURE FREE AS SAMPLED		MOISTURE AND ACID GAS FREE	
MEASURED	CALCULATED	MEASURED	CALCULATED
	0.963		0.960

PSEUDO CRITICAL PROPERTIES (CALCULATED)

AS SAMPLED		ACID GAS FREE	
pPc (abs)	pTc	pPc (abs)	pTc
3440 kPa	128.1 K	3420 kPa	127.2 K

RELATIVE MOLECULAR MASS

TOTAL GAS	C_7+
27.9	0.0

H_2S g/m³: 0.00

REMARKS: * AIR COMPOSITION: O_2 = 17.29%
N_2 = 82.71%

EXCEED NORMAL LIMITS : N2

APPENDIX 12

LOGS

Canada Oil and Gas Lands Administration / Administration du pétrole du gaz des terres du Canada

D.A. 1411

				Well Status	
Nova Scotia	☐	West Coast	☐	Suspended	☐
Newfoundland	☐	Northern	☒	Completed	☐
Gulf of St. Lawrence	☐	Hudson Bay	☐	Abandoned	☒

WELL TERMINATION RECORD

This record is submitted in triplicate in compliance with Section 184 of the Canada Oil and Gas Drilling Regulations.

WELL DATA

Well Name: CHEVRON EAST HUME RIVER N-10 Area: N-10

Grid Area: 66 -00 -129 -15 Field/Pool: Exploratory Wildcat

Permit or Lease No.: N 89 A 120 Final Coordinates: Lat: 65° 59' 27.30" N Long: 129° 16' 5.23" W

Drilling Unit: Shehtah 1E Elevations-RT/KB: 80.1m SF/GL: 74.4m

Spud Date: 1990-02-16 Rig Released: 1990-03-04 Total Depth: 445m

CASING AND CEMENTING

O.D.:	Weight:	Grade:	Depth Set:	Cement and Additives:
508.0mm	139.9 kg/m	X-56	69m	Alaskan Class "G" Permafrost + 6% Gilsonite + .15% Permafrost retarder.
339.7mm	101.2 kg/m	K-55	239m	Alaskan Class "G" Permafrost + 6% Gilsonite + .15% Permafrost retarder.

PLUGGING PROGRAM

Approval of the following program was obtained by (person) Bill Marsh from (person) Dave Scratch of the Canada Oil and Gas Lands Administration by means of Telephone on February 28th 1990.

Type of Plug:	Interval:	Felt:	Cement and Additives:
Abandonment #1	445m - 225m	No Feel (17.2T	Class "G" Neat + .25% CFR-3)
Halliburton EZ-SV	150m	153m	
Abandonment #2	150m - 120m	No Feel (3.2T	Class "G" Neat + .25% CFR-3)

Lost Circulation/Overpressure Zones: Nil

Equipment left on Seafloor (Describe): N/A

Provision for Re-entry (Describe and attach sketch): See attached sketch.

Cores: Type: Intervals: See attached.

Other Downhole Completion/Suspension Equipment:

CERTIFICATION

I certify on the basis of personal knowledge of operations undertaken at the above named well that the above information is accurate.

Signed: [signature] P. Eng. Title: Manager Drilling Division

Name: for W. H. Garman Date: 1990-03-06

Acknowledged by: [signature] Engineering Branch

Date: 90-04-02

File: 9211-C4-1-3

Department of Energy, Mines and Resources / Ministère de l'Énergie, des Mines et des Ressources

Department of Indian Affairs and Northern Development / Ministère des Affaires indiennes et du Nord canadien

Canada