

CS RED KNIFE

I-24

Drilling Authority No. 336
Date Issued 17 December 1968

WELL NAME CS Redknife I-24

FIELD

LOCATION: Unit

I

Area:

Section

24

Grid

61-10-119-35

Latitude

61-03-40-18

Longitude

119-13-49-28

From Established Reference Marker

U.W.L.R.

61-03-40-18

U.W.I.

300124611011915

Rig Release Date: 3/1/69

Status

Information Release Date

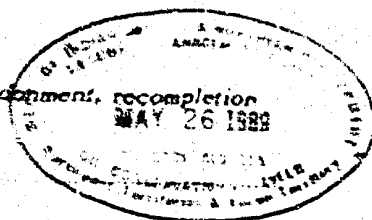
CHANGE OF NAME:

DATE RECEIVED	INDEX
17-12-68	Application for a Drilling Authority. Well Completion Data. Well History Report.
27/3/69	Application to Amend a Drilling Authority. Application to change a Well Name.
21/3/69	Application to Abandon a Well or Suspend Drilling. Application to Alter Condition of a Well. Well History Supplement.
22-5-69	Well Completion Data. Work-over Report No.
	Application to Commingle Production before Measurement.
	Data for Back Pressure Test on Natural Gas Wells — Monograph 7 Method.
	Data for Back Pressure Test on Natural Gas Wells — Vitter's Method.
	M.P.R. — Oil — Calculations.
	New Oil Well Report.
	New Gas Well Report.
	Well Inspection Report.
	Rig Inspection Report.
	Battery Inspection Report.
	Equipment Report.
	Well Card.
	New Service Well Report.
	Monthly Water Flood Operations Report
	Monthly Water Receipts and Disposal of Fluids Report Logs. Large scale Small scale

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

WELL COMPLETION DATA

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



Well name and number CS Redmine I-24, 300I246110119150

Permit No. 4387

Canada-Cities Service

Petroleum Corporation

Canada-Cities Service

Petroleum Corporation

Lease No.

Exploratory Licence No. 1099

Exploratory Licence No. 1099

Location: Unit

I

Section

24

Guid

61-10, 119-15

Latitude 61° 03' 40.18"

Longitude 119° 18' 49.28"

From Established Reference Markers

Per. 117 00

Universal Well Location Reference

Lat. 61.06116°N Long 119.31369°W

	DATE	DEPTH
Spudded	2/8/69	
Suspended		
Resumed Operations		
Finished Drilling	2/24/69	3048
Deepened		
Complete (gas/oil)		
Abandoned	3/1/69	3048
Rig released	3/1/69	3048

Pool(s) **Nil**

Interval(s) open to production

N11

Elevation: Gr. 885 K.R. 899

Rig No. 1

Drilling Contractor **Vandergrift Oil and Gas Enterprises Ltd.**

Contractor's Business Licence No. A-11238

CASING RECORD

Casing Size (Inches)	Grade	Weight	Amount	Set at -	Sacks of Cement and Additives
1. 8 5/8	J.55	24#	323	335	80 + 4% Gel
2.					100 + 2% CaCl ₂
3.					
4.					
5.					
6.					

GEOLOGICAL TOPS	ELEVATION		CORE RECORD					
	Depth	Sub-Sea	From	To	Rec.	From	To	Rec.
KaKisa	250	+649	NIL					
Redknife	420	+479						
Island River	595	+304						
Hay River Shale	623	+276						
Horn River	2413	-1514						
Slave Point	2474	-1575						
Watt Mountain	2650	-1751	LOG RECORD					
Elk Point	2660	-1761	Run No.	Type of Log	From	To		
Granite Wash	2982	-2083	1	Induction Electric	334	304		
Pre Cambrian	3024	-2125	1	Borehole Compensated				
				Sonic	334	304		
			1	Microlog-Caliper	300	304		
			1	Sidewall Neutron				
				Porosity	2450	304		
			1	Formation Density	2450	304		
			1	Porosity Lithology	2450	304		

CEMENTING RECORD (Plug, Squeeze, etc.)				PERFORATING RECORD (Bullet, Jet)				SERVICING RECORD (Acidizing, Fracturing, etc.)			
Date	From	To	Remarks	Date	From	To	Remarks	Date	From	To	Remarks
2/28/69	3048'KB	2900'KB	70 sacks cement								
2/28/69	2650'KB	2425'KB	100 sacks cement, felt @ 2415'								
2/28/69	384'KB	284'KB	50 sacks cement, felt @ 270'								
3/1/69	3' GL	18' GL	5 sacks cement								
3/2/69	Welded steel plate and monument	Welded steel plate on 8 5/8" casing and monument well name plate									

DRILL STEM TESTS

No.	Date	Formation	From	To	V.O. Mins.	I.S.L. Mins.	F.S.L. Mins.	I.S.L.R.H.P.	F.S.L.R.H.P.	I.P.R.H.P.	F.F.R.H.P.	I.H.P.	F.H.P.	REMARKS
1	2/26/69	Slave Point	2476	2624	60	30	60	1140	1130	420	1130	1310	1290	Good initial puff, steady blow throughout test. Recovered 120' drilling mud, 2264' salty brackish water.
2	2/26/69	Elk Point	2890	3048										MISGRIN
2a	2/27/69	Elk Point	2890	3048	60	30	60	1331	1233	44	88	1474	1455	Good initial puff, weak air blow throughout test. Recovered 380' slightly gas cut drilling mud.

Pressures reported are field readings.

ANALYSIS

Lab. No.	Sample	From	To	Source	Remarks	PRESENT STATUS OF WELL			
E69-9486-3	Water	2476	2624	DST #1		Oil			(Interval)
E69-9487-9	Water	2890	3048	DST #2		Gas			(Interval)
						Dry	X		
						Susp.			

Company **Canada-Citizens Service Petroleum Corporation**

Signed by *[Signature]*

Title **Manager of Operations**

Date **May 22, 1969**

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



DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
RESOURCE MANAGEMENT DIVISION

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

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

Name and number of well CS Redknife I-24

Location: Unit Section 24

Latitude 61° 03' 40.18"

Grid 61° 10' N. Lat. 119° 15' W. Long.
Longitude 119° 26' 49.28"

From Established Reference Marker Shot Point 412 Line C or Shot Point 73, Line I

Universal Well Location Reference 61.06116° N. Lat. 119.31369° W. Long.

Permit No. 4387

Lease No.

Canada-Cities Service Petroleum Corporation

(Permittee, Licensee, Lessee)

Date of commencement of proposed program—

OIL, GAS, AND WATER ENCOUNTERED
(Depths)

Oil at None

Gas at D.S.T. #2 2890'-3048' Rec. 380' Slightly Gas cut drilling mud

Water at D.S.T. #1 3476'-2624' Rec. 2264' Salty brackish water

Total Depth 3048'

Date of last operations March 1, 1969

Present condition of well Plugged and Abandon

CASING RECORD

Casing Size O.D. Inches	Weight	Amount	Set At—	Kinds of Cement and Additives	Amount Pulled
1. 8 5/8"	244	323.12'	334.82"	80 sacks 4% Gel	None
2.				100 sacks 2% Cal.Clo.	
3.					
4.					
5.					

PROPOSED ABANDONMENT PROGRAM

No.	Plug Position	Geological Formation	Number of Sacks of Cement	Remarks
1	2900'-3048'	Granite wash; PreCambrian	70	Plug down 3:25A.M. 2-28-69
2	2425'-2650'	Slave Point; Watt Mt	100	Plug down 4.45 A.M. 2-28-69
		Felt Plug after 8 hrs		Plug 2415; 12:45 P.M. 2-28-69
3	284'-384'	Base of Surface Pipe	50	Plug down 3:30 P.M. 2-28-69
		Felt Plug after 8 hrs		Plug 270', 11:30 P.M. 2-28-69
4	3' - 18'	Top of Surface Pipe	5	Plug down 8:30 A.M. 3-1-69
		Cut off 8 5/8" casing 3' below ground level weld on steel cap and well marker 4' above ground level		

The following logs have been run Ind.-E.S., F.D., S.N.P., B.H.C., Micro-Caliper, Velocity survey.
Other operations proposed Clean up and level location. Clean up access road.

Enterprises Ltd.

Operations to be carried out by Vandergrift Gas & Oil

Contractor Licence No. A 11238

Address P.O. Box 4338, 5634 - 103A Street

Address Edmonton, Alberta.

Responsible Agent in field E.S. Armstrong

Dated at Drayton Valley, Alberta, this

17th

Day of March

1969

Signed by *E.S. Armstrong*

Company Canada-Cities Service Petroleum Corporation

Title District Superintendent

Operator's Exploratory Licence No. 1099

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

(For RESOURCE MANAGEMENT DIVISION use only)

APPROVAL

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

Confirming oral approval given by Mr. E.S.J. Thomas on the
26th February 1969.

Dated 21st March, 19 69.

B.H. Thomas
Oil Conservation Engineer

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



DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
RESOURCE MANAGEMENT DIVISION

Application to Amend a Drilling Authority

This application, in triplicate, must be submitted and approved before commencing operations. If the well location is changed, this application must be accompanied where required, with a plan of survey approved by the Surveyor General.

In compliance with the "Canada Oil and Gas Land Regulations", application is hereby made to amend Drilling Authority No. 336, concerning CS Redknife I-24

(Name and Number of Well)

The following amendments are required:

Change the well number to CS Redknife I-24, 61-10, 119-15

Location should be recorded as Unit I; Section 24; Grid 61°10' N Lat, 119°15' W Long; Latitude 61°03'40.18"; Longitude 119°18'49.28"

Reasons for the amendments:

The well location was surveyed by a certified land surveyor and the estimated location based on the seismic survey was slightly out. We are forwarding with this application three (3) copies of the final plan for this well location.

Dated at Calgary, this 25th day of February, 1969

Signed by *Robert Mackay*
Title Vice President, Manager of Operations
Company Canada-Cities Service Petroleum Corporation

(For Resource Management Division use only)

APPROVED

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

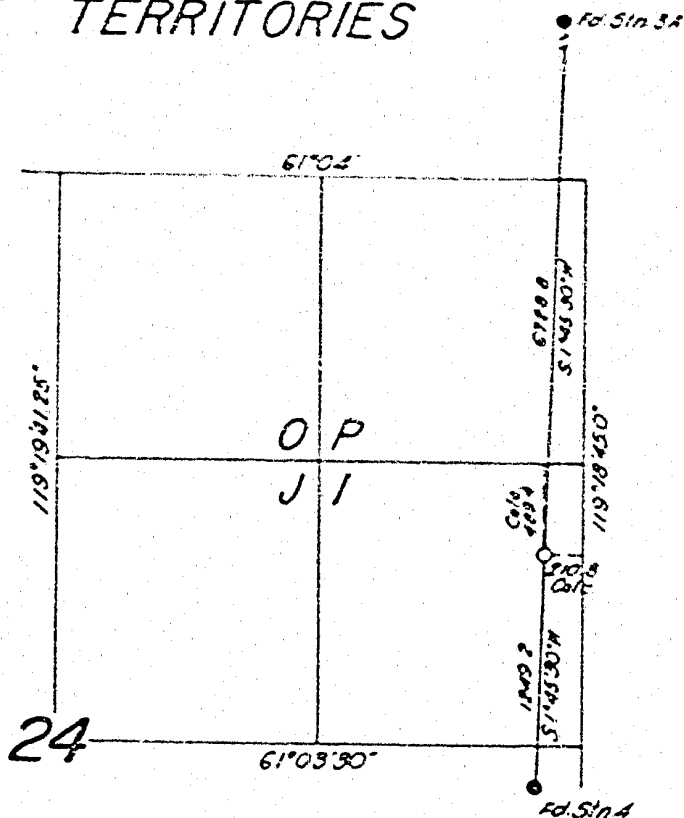
UNIVERSAL WELL LOCATION REFERENCE: Lat. 61.06116° N.
Long. 119.31369° W.

Date 27th February 69, 19

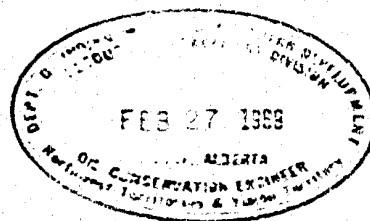
B. H. Thomas
Oil Conservation Engineer

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

CS REDKNIFE
124, 61-10, 119-15
 Latitude $61^{\circ}03'40.18''$ Longitude $119^{\circ}18'49.28''$
NORTHWEST TERRITORIES



Scale: 1000' to 1"



CO-ORDINATE TABLE				
U.T.M. Values: Scale Factor 09999: Ref Mer. 117°00'				
Station	Bearing	Distance	North	West
3A				
Well Loc	S 1°45'30" W.	6,728.8	22,229,937.9	409,641.1
4	S 1°45'30" W.	1,249.2	22,223,212.4	409,847.5
			22,221,965.8	409,885.9

Survey completed
 Certified correct.

NOTE:
 1. Distances are in feet and decimals.

[Signature]
 Alberta Land Surveyor

CANADA-CITIES SERVICE
 PETROLEUM CORPORATION

ELEVATION: 886 Ground
 DATUM: N. 1/4 Sec. 35-140-BWG
 Elev. 468

[Signature]
[Signature] P. Eng

MIDWEST SURVEYS CO. LTD.



C 73-69

Drilling Authority No. 336

Project No.

File No.



DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
~~MINERAL DEVELOPMENT~~ DIVISION
 OIL AND MINERAL

Application for a Drilling Authority

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

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

Name and number of well **CS Redknife I-24**

Location: Unit **I** Section **24**

Latitude **61° 03' 38"**

Grid **6190N** Lat. **119° 15' W** Long. **119° 18' 48"**

From Established Reference Marker **Shot Point 412, Line C or Shot Point 73, Line I**

Universal Well Location Reference **61.06355° N. Lat. 119.31333° W. Long.**

Elevation: Ground **(est) 894'**

K.B. 907

feet above sea-level.

Well is expected to produce from **Devonian Carbonates**

formation at a depth

of about **3200**

feet.

Expected total final depth

3300'

Area assigned to well

(For Oil Conservation Engineer's use only)

Permit No. **4387**

Lease No.

Acreage **61,920**

Permitter, licensee, or lessee **Canada-Cities Service Petroleum Corporation**

Exploratory Licence No. **1099**

Surface owned by Crown **Crown**

Petroleum and natural-gas rights owned by **Crown** (If allocated, submit name and address of owner and assignment.)

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

Casing Size O.D. (Inches)	Weight (Lb./Ft.)	Grade	New or Used	Estimated Depth	Depth of Cement
1. 8 5/8	24	J-55	New	320	165
2. 5 1/2	14	J-55	New	3300	155
3.					
4.					
5.					

Expected water, gas, and oil horizons and type of control equipment **All fluid bearing horizons encountered will be controlled by bentonitic base drilling fluid weighted with barite if required to control formation pressure. BOPs Double Gate 10" series 900 Shaffer & CK 10" series 900 Hydril.**

Well will be drilled with Rotary Rig No. **1** by **Vandergrift Gas & Oil Enterprises Ltd.**
 (Drilling Contractor or company)

P.O. Box 4338, 5634 - 103A Street, Edmonton, Alberta

Responsible agent of applicant:—

Contractor's business Licence No. **A11238**

At well **E. S. Armstrong**

At registered office **R. A. Grady**

Address **P.O. Box 89, Drayton**

Address **P.O. Box 2727, Calgary, Alberta**

Valley, Alberta

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

Dated at **Calgary**

this **12th**

day of **December**

19 **68**

Signed by **Robert Grady**

Company **Canada-Cities Service Pet. Corp.**

Title **Vice President & Manager of**

Operator's Licence No. **1099**

Operations

(For Resource Management Division use only)

APPROVED

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

The Company will submit to this office, on Tuesday of each week, the latest reports received by radio on the progress of the well.

Dated **17th December** 19 **68**

Oil Conservation Engineer

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

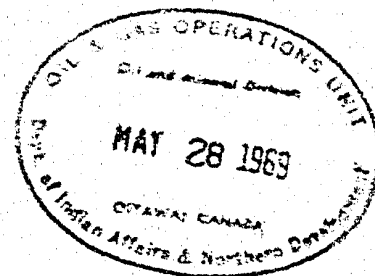
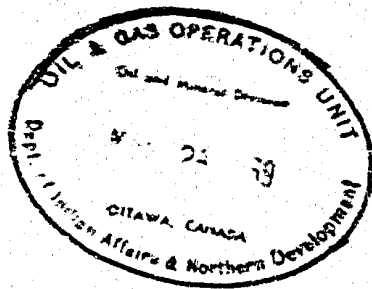
IAND 52-90-1 (3-67)

UNI-2E WELL IDENTIFIER: **3001246110119150**

62-11-4-20

WELL HISTORY REPORT

C. S. REDKNIFE 1 - 24



WELL HISTORY REPORT

CS REDKNIFE I - 24

UNIQUE WELL IDENTIFIER 300 I-24 6110119150

TABLE OF CONTENTS

SECTION I:	Summary of Well Data
SECTION II:	Geological Summary
SECTION III:	Engineering Summary
SECTION IV:	Logs
SECTION V:	Analysis

CS REDKNIFE I-24.

.300 I-24 6110119150

Section I - Summary of Well Data

Well Name & Number: CS Redknife I-24, Unique Well Identifier 300 I-24 6110119150

Permittee: Canada-Cities Service Petroleum Corporation

Operator: Canada-Cities Service Petroleum Corporation
1100 Calgary House
550 - 6th Avenue, S.W.
P. O. Box 2727
Calgary, Alberta

Location: Lat 61°03'40.18", Long 119°18'49.28" Northwest Territories
Unit I, Section 24, Grid 61°10'; 119°15'

Universal Well Location Reference: Lat 61.06116°N, Long 119.31369°W

Permit Number: 4387

Drilling Contractor: Vandergrift Oil and Gas Enterprises Ltd. Rig #1

Drilling Authority: No. 336 Issued December 17, 1968, Amended February 27, 1969

Well Classification: Wildcat

Elevation: Ground 886' KB 899'

Spudded: 3:00 a.m. February 8, 1969

Completed Drilling: February 24, 1969

Total Depth: 3048'

Well Status: Plugged and Abandoned

Rig Released: 9:00 a.m. March 1, 1969

Hole Size: Surface to 338' - 12 1/4"; 338' to 3048' - 7 7/8"

Casing: 10 jts 8 5/8", 24# J-55 Grade A Mann. Csg. (323.12'). Set at 334.82'.
with 80 sacks cement + 4% gel and 100 sacks * 2% CaCl₂

SECTION II:

WELL HISTORY REPORT

GEOLOGICAL SUMMARY

CS REDKNIFE 1-24

Elev. 886 GL 899 KB

	<u>SAMPLE TOP</u>	<u>LOG TOP</u>
Trout River	4	----
Kakisa	----	250
Redknife	456	420
Island River	595	595
Hay River Shale	621	623
Horn River	2415	2413
Slave Point	2474	2474
Watt Mountain	----	2650
Elk Point	----	2660
Granite Wash	2985	2982
Precambrian	3025	3024
T.D.	3048	3048

NO CORES

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife 1-24

Location Lat 61° 03' 40.18" N, Long 119° 12' 19.28" W

NORTHWEST TERRITORIES

From	To	Lithology
0	10	Ls, cream, f gr calcarenite, bioclastic, crin, ost, chalky matrix, non porous
10	20	Aa; tr calcite, xls, evidence of surface weathering
20	30	Aa; becoming f-m calcarenite, abd calcite veining & phenocrysts
30	50	Aa; tr brach frags & pyr
50	70	Ls, cream, f-occ m calcarenite, sl-v bioclastic, crin & ost, occ brach, chalky to calcite matrix, occ calcite xls, occ aren-silty
70	80	Aa; tr gy grn sh
80	90	Aa; decr fossil content, ls becoming psuedo oolitic i/p
90	100	Aa; incr fossil content, sl incr silt-v f aren content
100	110	Ls, cream, f-occ m gr calcarenite, bioclastic, occ psuedo oolitic, chalky matrix, ost, crin & brach frag, silty-v f aren i/p
110	120	Aa; tr calcite veining; decr silt & aren content
120	130	Aa; ls occ v silty-v f aren
130	150	Aa; decr bioclastic content
150	160	Ls, cream, v f-f calcarenite, v f aren-silty, chalky matrix, occ bioclastic & oolitic or abd ost, tr crin & brach, tr pyr
160	170	Aa; ls becoming micro-v f calcarenite, bioclastic i/p, tr foss frags, semi chalky i/p, occ slty-v f aren
170	180	Ls similar to 150-60 w/sl grn cast, sl argil, fossil frags, occ abd vf-f aren content
180	190	Aa; i/p micro calcarenite, pred non argil
190	200	Aa; pred f calcarenite, foss frag, occ sl argil, slty-f aren

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife Location

From	To	Lithology
200	210	Ls, cream, v f-f calcarenite, chalky matrix, occ calcite matrix, ost crin & brach, slty-v f aren, occ sl argil, occ bioclastic; occ v f gr ss, v calc, lt gy
210	220	Aa; pred v f xln ls, v aren or ss, v calc, sl argil (sl grn tinge), incipient i/xln por, no stain
220	230	Aa; sl tr glauc or grn sh frags?, sl-argil i/p, sl mic; s/ls, cream, micro-v f calcarenite, sl-chalky; decr ss
230	240	Aa w/ls occ v argil or grading to sh, gy grn, v calc, slty-v f aren, sl mic
240	250	Ls aa i/p; pred ls, gy grn, v argil, v f-f calcarenite, sl mic, tr brach, occ grades to sh, v calc, slty-v f aren
250	260	Aa; occ spores; tr ls, lt brn, non argil
260	270	Aa i/p; pred ls, cream, grn tinge, sl-argil, micro-f calcarenite, bioclastic i/p, occ sl mic, ost crin & brach; occ ls, non argil
270	280	Aa; incr argil & mic
280	290	Ls, cream, gy grn cast, micro-v f calcarenite, sl bioclastic i/p, sl chalky, sl-argil, s/crin, tr brach & ost, sl mic, slty-occ v f aren
290	300	Aa i/p; pred ls, cream -lt brn, non argil, m xln, calcite veining, crin, ost & brach, no clastics
300	310	Aa i/p; abd f calcarenite, occ slty-v f aren, foss frag, non-argil, occ v bioclastic, chalky matrix, tr pyr
310	320	Aa; decr argil content (trace), tr glauc
320	330	Aa w/incr argil content i/p, tr glauc
330	340	Aa; decr argil content
340	350	No Sample
350	370	Ls, cream-tan, micro-f calcarenite, sl bioclastic, sl chalky, tr foss frags, occ sl tr silt & v f aren content

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife Location

From	To	Lithology
200	210	Ls, cream, v f-f calcarenite, chalky matrix, occ calcite matrix, os crin & brach, slty-v f aren, occ sl argil, occ bioclastic; occ v f gr ss, v calc, lt gy
210	220	Aa; pred v f xln ls, v aren or ss, v calc, sl argil (sl grn tinge), incipient i/xln por, no stain
220	230	Aa; sl tr glauc or grn sh frags?, sl-argil i/p, sl mic; s/ls, cream, micro-v f calcarenite, sl-chalky; decr ss
230	240	Aa w/ls occ v argil or grading to sh, gy grn, v calc, slty-v f aren, sl mic
240	250	Ls aa i/p; pred ls, gy grn, v argil, v f-f calcarenite, sl mic, tr brach, occ grades to sh, v calc, slty-v f aren
250	260	Aa; occ spores; tr ls, lt brn, non argil
260	270	Aa i/p; pred ls, cream, grn tinge, sl-argil, micro-f calcarenite, bioclastic i/p, occ sl mic, ost crin & brach; occ ls, non argil
270	280	Aa; incr argil & mic
280	290	Ls, cream, gy grn cast, micro-v f calcarenite, sl bioclastic i/p, sl chalky, sl-argil, s/crin, tr brach & ost, sl mic, slty-occ v f aren
290	300	Aa i/p; pred ls, cream -lt brn, non argil, m xln, calcite veining, crin, ost & brach, no clastics
300	310	Aa i/p; abd f calcarenite, occ slty-v f aren, foss frag, non-argil, occ v bioclastic, chalky matrix, tr pyr
310	320	Aa; decr argil content (trace), tr glauc
320	330	Aa w/incr argil content i/p, tr glauc
330	340	Aa; decr argil content
340	350	No Sample
350	370	Ls, cream-tan, micro-f calcarenite, sl bioclastic, sl chalky, tr foss frags, occ sl tr silt & v f aren content

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife I-24 Location

From	To	Lithology
370	380	Ls. cream-lt brn, micro-f calcarenite, bioclastic i/p, occ chalky, abd brach, tr crin & ost, sl slty-v f aren i/p, occ sl mic, tr spores, tr v f pyr
380	390	Aa; ls pred micro-v f calcarenite, non-v sl aren & slty
390	400	Aa; occ sl gy grn tinge i/p to ls & sl argil
400	410	Aa; occ ls w/incr argil content, mic, pred f calcarenite, chalky matrix, slty-f aren i/p
410	420	Ls, lt brn, micro-f calcarenite, sl slty-v f aren i/p, occ v sl argil, sl mic i/p, bioclastic, foss frags; ls, lt brn, f-xln, non argil
420	430	Ls, cream-tan, occ gy grn cast, non-v argil, v f-f calcarenite, slty-f aren, mic i/p, tr glauc, occ v f pyr, tr foss frags; s/ss, lt gy grn, calc, v f gr, slty i/p, sl argil, glauc
430	440	Aa; s/sh, lt grn, calc
440	450	Aa i/p; incr lt grn, sh, calc; occ ls, tan, m xln, non-argil, foss frags
450	460	Aa; incr sh, grn, sl calc
460	470	Ls, lt brn, occ sl-grn tinge, non-argil, micro-m xln, occ sl mic, slty-v f aren; abd sh, lt grn, calc, sl mic, occ slty
470	480	Aa; abd ls, lt brn, grn cast, f aren-slty, f calcarenite, sl-argil, occ grades to sh, v calc
480	490	Aa; pred sh, sl-v calc, gy grn, occ mic, occ slty-v f aren
490	500	Aa; sl incr, ls content aa
500	510	Sh m grn, calc; ls, lt-m brn, grn cast, argil, vf-f calcarenite, bioclastic, foss frags, slty-f aren, sl mic, ostracods
510	520	Aa; occ ls, tan, non argil, slty
520	530	Aa w/decr sh & argil cont; incr ls, v aren & slty, occ grades to ss, slty, v calc, crin & ost

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife I-24 Location _____

From	To	Lithology
530	540	Aa; incr ss, calc aa; s/brachs
540	550	Ss, lt brn, occ grn tinge, calc, slty, v f-f gr, sl-argil, sl mic; tr sh, grn, calc; ss occ grades to ls, v aren, tr foss
550	560	Sh, lt brn, sl-calc; s/ss aa; abd ls, lt brn, occ grn tinge, sl-argil mic, slty, occ v f aren, brach frags
560	570	Aa; incr v aren ls, or ss, v calc
570	580	Sh, grn, calc; abd ls, lt brn, micro-v f calcarenite, occ grn tinge & argil, occ f aren, sl-slty, tr ost & brach
580	590	Aa i/p; ls, lt brn, micro-f calcarenite, bioclastic, abd brach, occ ost & crin, non-sl slty
590	610	Ls, lt brn, micro-v f calcarenite, occ micro mic, slty i/p, sl argil? rare ost & crin & brach, sl chalky
610	620	Ls aa, incr foss & incr slty; s/ls, lt grn brn, micro-v f calcarenite, slty, argil, occ v f aren, sl mic, foss, bioclastic; tr sh, grn, calc
620	630	Aa; abd foss frags
630	650	Ls, lt brn, occ grn cast, sl-argil, f calcarenite, sl-slty, occ f aren, abd brach & foss frag, bioclastic, tr pyr; s/sh, grn, calc
650	660	Aa; ls incr argil i/p & occ grades to sh, v calc, slty, abd brachs
660	670	Ls aa becoming incr slty & f aren, occ grades to ss, slty, calc, argil, etc, mic, tr pyr, decr fossil content; incr sh
670	680	Aa incr sh, decr f aren content; incr slty ls
680	690	Aa; tr red brn sh, sl calc
690	700	Ls, slty, argil etc; s/grn sh, calc; tr red brn sh
700	710	Sh, red brn (maroon), sl calc, sl mic; sh, grn, sl-calc, sl mic; ls, lt brn-gy grn, micro xln, slty-v f aren, sl-argil, mic, occ grades to sltstn, v calc

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife I-24

Location _____

From	To	Lithology
710	720	Aa; sl incr clastics
720	730	Pred sh, grn, sl-calc; s/red brn sh aa; occ slty ls
730	750	Aa w/ls, v slty-v f aren, occ grades to ss, slty, calc, mic, sl-argil, tr brach frags
750	760	Sh, grn & maroon aa; s/ss, v calc aa or ls, v aren, occ yellow, abd mica content, tr foss
760	770	Aa; incr sh
770	780	Aa; abd ls, buff, micro-v f calcarenite, bioclastic i/p, tr foss frags, non argil, occ v sl slty
780	790	Ls, buff aa; abd sh, grn, occ slty-v f aren, mic i/p, sl-calc; occ sltstn & ss, v f gr, argil, calc
790	800	Sh, gy grn, occ red brn, sl-calc, slty-v f aren i/p, mic; ls, v f aren & slty or ss, slty, v calc, sl-argil, mic
800	810	Aa; tr foss frags
810	830	Aa; occ ss, v f gr, slty, sl-argil, rusty brn, v calc, mic
830	840	Pred sh, gy grn, occ maroon, sl-calc, occ slty, mic; s/sltstn, gy grn-lt brn, sl-v calc, sl-argil, mic; occ ss, buff, v calc, non argil
840	860	Aa; sl decr clastics
860	870	Aa; sl incr red brn sh aa
870	880	Sh, gy grn, sl calc, occ sl slty & mic; s/sltstn, v f aren or ss, slty, buff-gy grn, sl-argil, v calc, mic
880	900	Aa; incr red brn sh; decr clastics
900	910	Sh, gy grn, sl calc, occ sl slty-v f aren, mic i/p; occ tr red brn sh; sltstn, v f aren or ss, slty, buff-grn, sl-argil, calc, mic
910	920	Aa incr sh

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife-1-24 Location _____

From	To	Lithology
920	930	Aa incr clastics; occ ls, buff-lt grn, slty-v f aren, sl-argil, mic i/p
930	940	Aa; sl decr ls aa; sl incr red brn sh
940	950	Aa; pred sh; tr bioclastic foss ls, mottled brn & grn, sl-argil
950	970	Sh, gy grn, sl calc, sl mic, occ sl slty; abd sh, red brn (maroon) sl mic, sl calc; tr sltstn, occ f aren, argil, gy grn, calc
970	980	Aa; pred gy grn sh
980	990	Aa; tr ls
990	1000	Sh aa; incr sltstn, calc, buff-gy grn, occ v f aren, sl-argil, mic, tr foss frags
1000	1020	Sh, red brn (maroon), sl calc, micro mic i/p; tr sh, grn, sl calc; tr sltstn, argil, calc
1020	1030	Sh, lt grn, sl calc, occ sl mic; tr ls, lt grn, argil occ sl slty
1030	1040	Aa; sl incr ls, aa, bioclastic, f-m xln, tr ost & brach frags
1040	1080	Aa; tr red brn sh
1080	1090	Pred sh, red brn (maroon), sl calc, micro mic i/p; tr grn sh aa; v sl tr sltstn, calc
1090	1100	Sh, red brn, sl calc, micro mic i/p; occ sh, grn, sl calc; s/ls, buff, occ mottled rusty, c xln, foss; tr sltstn, calc
1100	1110	Sh, red brn, sl calc, micro mic i/p; occ sh, grn, sl calc; s/ls buff, occ mottled rusty, c xln, foss; tr sltstn, calc
1110	1120	Pred sh, red brn aa
1120	1130	Aa; tr slty ls
1130	1140	Aa; incr grn sh aa; sl incr ls; buff, grn tinge, occ slty
1140	1150	Sh, gy grn, slty i/p, mic, calc-sl calc; occ ls, slty; argil aa; oc red brn sh

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C-S. Redknife-I-24 Location _____

From	To	Lithology
1150	1160	Pred red brn sh aa; occ grn sh & slty ls
1160	1170	Incr grn sh, slty, mic, calc; tr ls, slty, tr foss frag
1170	1180	Decr slty sh, incr grn sh
1180	1190	Incr sh, red brn; sh, grn, slty, mic
1190	1200	Pred sh, grn, micro mic, sl calc; aa i/p; decr clastics
1200	1220	Sh, grn, sl calc, micro mic; occ maroon sh & v sl tr slty, sh
1220	1230	Aa i/p; abd ls, buff, microxln, slty-v f aren, gy grn tinge i/p & sl-argil, mic, occ grades to sltstn, v f aren or ss, slty, calc, etc
1230	1240	Aa; tr foss frags; pred sltstn vs, ss
1240	1260	Aa; tr pyr; sl decr clastics
1260	1270	Aa; incr sh, decr clastics
1270	1280	Pred sh, grn, sl calc; occ sh grn, slty, mic; tr sltstn, argil, calc; occ maroon sh
1280	1300	Sh aa; abd ls, buff, grn tinge, microxln, sl-argil, slty, mic, occ grades to sltstn, calc, etc
1300	1310	Sh, gy grn-grn, v sl calc, mic i/p, occ sl slty; tr red brn (maroon) sh; occ ls, lt gy grn, v slty or sltstn, calc, argil, mic
1310	1340	Aa; incr ls, slty
1340	1360	Aa; occ tr ss, slty, v f gr, argil, mic, v calc
1360	1380	Sh, gy grn-grn, v sl calc, occ sl mic & sl slty; sl tr maroon sh; sl tr sltstn, calc, argil, gy grn
1380	1390	Aa occ ls, slty, argil
1390	1400	Pred sh, grn aa; tr pyr
1400	1410	Sh, gy grn-grn, v sl calc, occ micro mic, occ v sl slty; tr maroon sh; tr silt, v argil calc

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C-S. Redknife I-24 Location _____

From	To	Lithology
1410	1420	Aaocc tr ls, slty, gy grn, argil
1420	1480	Aa; tr pyr
1480	1500	Aa w/incr clastics & calc cont
1500	1510	Sh, gy grn-grn, sl calc, sl mic, occ sl slty, v sl tr maroon sh; occ ls, v slty, v argil, mic, gy grn
1510	1580	Aa; decr clastics
1550	1570	Aa; incr calc content
1570	1590	Aa i/p; incr calc content; occ ls, v, slty-v f aren, argil, gy grn
1590	1600	Aa; tr foss frag
1600	1620	Sh, gy grn, v sl calc, sl micro mic; v sl tr maroon sh; s/sh, ltgrn, slty, calc, mic; s/ls, lt gy grn, v argil, slty, mic, or sltstn, calc etc
1620	1670	Aa; sl decr clastics
1670	1700	Aa; decr clastics
1700	1710	Sh, gygrn, v sl calc, occ sl mic & sl slty; tr maroon sh; tr sltstn, calc, argil
1710	1720	Aa; sl incr silt content
1720	1730	Aa; incr maroon sh
1730	1750	Aa; tr foss frags
1750	1760	Aa; pred grn sh
1760	1770	Aa i/p; sh, gy grn, mottled w/dk gy specks, v sl calc
1770	1780	Similar to 1750-60
1780	1790	Aa; sl incr silt

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife 1-24 Location _____

From	To	Lithology
1790	1800	Pred sh, gy grn-grn; tr maroon sh & silt
1800	1810	Sh, gygrn-grn, occ micro mic, v sl calc; s/sh, maroon, v sl calc; sl tr ls, slty, argil
1810	1880	Pred grn sh aa
1880	1900	Pred grn sh, rare tr silt
1900	1920	Sh, gy grn-grn, v sl calc, occ micro mic, occ tr silt content; tr sh, maroon, v sl calc
1920	1950	Aa; tr ls, slty, argil
1950	1990	Aa i/p; occ sh, gy grn, speckled gy; occ sltstn, v calc, argil, gy grn
1990	2000	Aa w/incr maroon sh & gy speckled sh
2000	2010	Sh, gy grn-grn, v sl calc, sl mic; s/sh, maroon; sh, mgy-gy brn, speckled i/p, sl calc, sl carb
2010	2020	Aa w/incr speckled gy brn sh; rare tr maroon sh
2020	2030	Aa incr grn & maroon sh; tr pyr; v sl tr ls, argil, sl slty
2030	2040	Aa incrls, brn-gy brn, argil
2040	2050	Aa w/incr gy sh, speckled aa
2050	2080	Sh gy-gy brn, occ speckled, sl carb, sl-calc, sl mic, v sl tr slty ls & sh, slty, calc; s/grn & occ maroon sh
2080	2100	Sh gy brn, v sl carb, sl calc, sl mic; s/sh, maroon; sh, gy grn-grn, v calc, rare tr silt; tr pyr
2100	2120	Sh, gy grn-grn, v sl calc, occ micro mic; s/sh, red brn, sl mic; occ sh, gy brn, sl calc, v sl carb
2120	2160	Aa; incr gy brn sh, sl carb, sl calc
2160	2170	Sh, brn gy, v sl calc, sl carb?, occ micro mic; sh, grn; v sl calc; tr maroon sh

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife I-24

Location _____

From	To	Lithology
2170	2180	Aa; sl incr calc content
2180	2190	Sh, m gy, sl grn tinge sl-calc, micro mic, occ sl speckled i/p. sh, grn aa; tr maroon sh
2190	2200	Aa w/incr calc content of sh
2200	2210	Sh, gy, sl brn tinge, calc, micro mic i/p; s/sh, grn, v sl calc; tr maroon sh
2210	2220	Aa w/sh becoming incr calc
2220	2230	Aa w/sh occ grading to ls, gy brn, micro-v f calcarenite, v argil, tr ost?
2230	2240	Ls, m dk gy brn, micro-v f calcarenite, v argil, tr ostracods, occ grades to sh, v ca c, gy brn, mic; tr grn sh
2240	2250	Aa; sl incr sh content, calc
2250	2260	Aa; incr ls, v argil or sh, v calc
2260	2270	Sh, brn gy, sl-v calc, sl mic i/p; tr-occ ls, gy brn, microxln, v argil
2270	2280	Sh, gy brn tinge v calc occ grades to ls, v argil, sl mic
2280	2300	Aa; decr ls, v argil
2300	2310	Sh, m gy, sl brn tinge, calc-v calc, sl mic, occ grades to ls, v argil
2310	2320	Aa; incr calc content to sh; incr ls, v argil, gy brn, micritic, sl mic i/p
2320	2340	Aa; sl decr calc content
2340	2350	Aa i/p w/incr sh, calc aa; s/sh, grn, sl calc; occ maroon sh
2350	2370	Aa; incr gy brn sh, v calc; tr pyr
2370	2380	Sh, m gy, brn tinge, sl-calc, occ sl mic, tr pyr, occ tr ls, v argil aa; occ sh grn, sl calc(c vb?)

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife I-24 Location _____

From	To	Lithology
2380	2390	Aa; incr ls. v argil
2390	2400	Aa; s/v f dissemin pyr; tr ls. argil
2400	2410	Sh, m brn gy. sl-calc, dissemin. pyr. occ v sl mic, occ ls. v argil, m gy brn
2410	2420	Aa i/p; s/sh. blk-dk gy. sl carb
2420	2430	Sh, m gy brn. sl-calc, tr pyr, occ grades to ls. v argil, matrix; s/sh. dk gy-blk, carb i/p; tr pyr
2430	2470	Aa i/p; pred sh, dk gy-blk, occ brn tinge, carb, s/pyr. sl bit?
2470	2480	Ls, cream-lt brn, micro-f calcarenite, sl-chalky, bioclastic, reef fossils
2480	2490	Aa i/p; abd ls, cream, v chalky, micro calcarenite
2490	2500	Aa w/decr chalky ls?, abd reefy ls, rare tr & p p por
2500	2540	Ls, cream, chalky, micro-v f calcarenite; ls, lt brn-cream, micro-v f bioclastic calcarenite, occ reef fossils, v sl tr v f p p por, no perm?
2540	2550	Ls, lt brn, micro-v f bioclastic calcarenite w/reef foss frags (Amphipora or coral?), sl-chalky, possible tr v f matrix porosity, no perm?
2550	2560	Aa w/occ v f calcite phenocrysts
2560	2590	Aa, possible rare tr v f vugs
2590	2610	Aa i/p; ls, cream, f calcarenite, chalky matrix, occ calcite matrix, sl bioclastic?, tight
2610	2620	Ls, cream-tan, micro-v f calcarenite, occ sl bioclastic, tr reef fossils, tr calcite phenocrysts, rare tr v f vugs, sl-semi chalky
2620	2630	Aa; occ ls, lt brn, occ c calcite phenocrysts

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife I-24 Location _____

From	To	Lithology
2630	2640	Ls, cream-lt brn, micro-f calcarenite, occ tr bioclastic content, tr calcite xls, non-occ chalky, rare tr reef foss?
2640	2650	Aa w/s/l s w/incr xlt y, incr reef fossils, occ crin stems
2650	2670	Ls, cream, pred micro to occ v f calcarenite, sl-chalky, tr reef fossils, tr crin: s/sh, gy grn, calc
2670	2680	Ls, cream, micro-occ v f-f calcarenite, occ sl bioclastic, tr foss & reef foss frags, non-semi chalky, tight
2680	2690	Aa decr chalky cont (tr)
2690	2700	Aa; tr calcite phenocrysts
2700	2710	Ls, cream, micro calcarenite, semi chalky, abd reef fossils
2710	2720	Aa w/occ large calcite xls intergrown with ls
2720	2730	Aa w/incr xlt y
2730	2750	Aa tr crin
2750	2760	Aa i/p; becoming ls, cream-whitish, micro calcarenite, v chalky
2760	2770	Pred chalky ls aa; occ ls, lt brn, micro-v f calcarenite, tr reef foss
2770	2780	Ls, cream-lt brn, micro-f calcarenite, occ sl chalky, tr brach & foss frags
2780	2790	Aa; occ calcite xls in ls, incr chalky & becoming microcalcarenite
2790	2800	Aa i/p; abd ls, lt brn-tan, f-m xln calcarenite, non-sl chalky, foss frags
2800	2810	Ls, lt brn, m xln calcarenite, occ rexlized, abd calcite xls in groundmass; s/l s aa
2810	2830	Ls, lt brn, f-m xln calcarenite, rexlized i/p, crin, tr brach, occ v sl chalky; tr ls, wh, chalky, reef foss

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife 1-24 Location _____

From	To	Lithology
2830	2840	Aa; ls occ v sl bit
2840	2850	Ls aa becoming m dk brn, occ sl bk, crin, possible grn sh laminae?
2850	2860	Ls, m brn, microxln, occ frags semi chalky, v sl bit, rare tr foss frag
2860	2870	Aa; tr ostracods
2870	2880	Ls aa becoming micro-v f calcarenite, tr brach, tr ost, rare bit laminae, frags semi chalky
2880	2900	Ls, lt-m brn, micro-v f calcarenite, frags chalky i/p, bioclastic i/p, tr ost & crin; occ ls, m dk brn, micritic, v sl bit
2900	2910	Ls, lt-m brn, micro-v f calcarenite, frags chalky i/p, bioclastic i/p, tr ost & crin; occ ls, m dk brn, micritic, v sl bit
2910	2920	Aa w/incr micritic ls, occ dlic
2920	2930	Dol, m brn, microxln, sl calc, frac sl chalky
2930	2940	Dol, m brn, cryptoxln, tr calcite veining
2940	2950	Dol, m brn, microxln, occ v sl calc, occ frac semi chalky
2950	2960	Dol, lt brn-m brn, microxln, sl-calc, frags semi chalky i/p, occ v sl argil
2960	2970	Aa i/p; pred dol, m dk brn micro-f xln
2970	2980	Dol, lt brn, micritic, psuedo chalky appearance
2980	2990	Dol aa; s/sh, bright grn
2990	3000	Sh aa; s/ss, qtz, rd grs, frosted & pitted i/p, f-c gr
3000	3010	Sh, br grn, occ sl mic; s/ss v f-c gr, calc matrix, friable, rd, frosted & pitted
3010	3020	Sh, br grn, occ slty-aren, mic; ss, v f-c gr, calc matrix (chalky), friable, rd grs, frosted-pitted

GEOLOGICAL SAMPLE DESCRIPTIONS

Well C. S. Redknife-1-24 Location _____

From	To	Lithology
3020	3030	Aa i/p; weathered granite
3030	3040	Granite weathered in part
3040	3050	Granite
		T. D. Driller 3048'
		Surveys: Induction Electrical Log BHC Gamma Sonic Log Compensated Density Log Microlog Caliper Log Sidewall Neutron Porosity Log
		Status: Dry and Abandoned

Section III Engineering Summary

Report of Drill Stem Tests: DST #1 2476'-2624' (148') Slave Point ISI 30 mins, VO 60 mins, FSI 60 mins. Good initial puff, steady blow throughout test. Recovered 120' drilling mud, 2264' salty brackish water.
IHP 1310 ISIP 1140 IFP 420
FHP 1290 FSIP 1130 FFP 1130
DST #2 2890'-3048' (158') Elk Point - misrun. Hit bridge at 2620'.
DST #2A 2890'-3048' (158') Elk Point ISI 30 mins, VO 60 mins, FSI 60 mins. Good initial puff, weak air blow throughout test. Recovered 380' slightly gas cut drilling mud.
IHP 1474 ISIP 1331 IFP 44
FHP 1455 FSIP 1233 FFP 88

Casing Record: *NB Pressures reported are field readings.
Surface casing - 10 jts 8 5/8", 24# J-55 Grade A Mann. Casing (323.12'). Cemented at 334.82' with 80 sacks cement plus 4% Gel and 100 sacks cement plus 2% CaCl₂.

<u>Bit Record:</u>	<u>Bit No.</u>	<u>Size (in.)</u>	<u>Manufacturer</u>	<u>Type</u>	<u>Serial No.</u>	<u>Footage Drilled</u>	<u>Time</u>	<u>Comments</u>
	1	7 7/8	Reed	YMR	E95242	105	13 hrs.	
	2	12 1/4	Reed	SIR	463095	152	20 hrs.	Reamed 155 22 1/2 hours
	3	7 7/8	Security	DS-J	908473	50	10 1/4 hrs.	
	4	12 1/4	Reed	YSI	D41342	31 6	3 1/4 hrs.	
	5	7 7/8	Security	S44J	176879	652	35 hrs.	
	6	7 7/8	Reed	ST3J	183945	686	25 1/2 hrs.	
	7	7 7/8	Security	M44NJ	162474	436	30 1/4 hrs.	
	8	7 7/8	Security	S4TJ	909746	376	24 1/4 hrs.	
	9	7 7/8	Security	M44NJ	168591	314	27 hrs.	
	10	7 7/8	Security	M44GJ	908965	112	23 1/4 hrs.	
	11	7 7/8	Reed	SSIGJ	485589	102	18 1/2 hrs.	
	12	7 7/8	Security	M44GJ	908955	33	5 1/2 hrs.	

Mud Record: Normal bentonite and water slurry drilling fluid was used:

<u>Material</u>	<u>Amount (lbs)</u>
Gel	21,900
Lime	115
Fiber Seal	180
Saw dust	20 Sacks
Bicarb of Soda	200
Caustic Soda	275
Spersene	700
CMC	150
Soda Ash	100

Section III Engineering Summary

Page 2

<u>Deviation Record:</u>	<u>Depth</u>	<u>Dev.</u>	<u>Depth</u>	<u>Dev.</u>	<u>Depth</u>	<u>Dev.</u>	<u>Depth</u>	<u>Dev.</u>
	60'	- 1°	330'	- 1/4°	2040'	- 1 3/4°	2498'	- 1 1/16°
	96'	- 1 3/4°	774'	- 3/4°	2111'	- 1 3/4°	2610'	- 3/4°
	105'	- 1°	990'	- 1/2°	2200'	- 1 7/8°	2800'	- 3/4°
	125'	- 1/2°	1480'	- 1 1/4°	2640'	- 7/8°	2913'	- 3/4°
	155'	- 3/4°	1730'	- 1 1/4°	2330'	- 1/3°	3048'	- 0°
	237'	- 3/4°	1980'	- 2°	2525'	- 3/4°		

Abandonment Plugs: Plug #1 3048' KB - 2900' KB (148') 70 sacks.
Plug #2 2650' KB - 2425' KB (225') 100 sacks.
Felt Plug #2 at 2415'.
Plug #3 384' KB - 284' KB (100') 50 sacks.
Felt Plug #3 at 270'.
Plug #4 3' GL - 18' GL (15') 5 sacks.
Welded steel plate to casing stub and 2" pipe with well monument plate.

Lost Circulation Zones: Lost partial circulation at 96'
Lost partial circulation at 220'

Report of Blowouts: Nil

Test Ticker No. D 01736

Flow Rate

Q 610.7 BBLs/Day

Productivity Index
P.I. _____

ABOVE RECORDER

C S REDKNIFE ~~24~~ 24 I-24

61-03'38.00 - 119-18'48.00 Lat 61° 03' 40.18"
2476 - 2624 Long 119° 18' 49.28"
DST#1

THE ENCLOSED TEST APPEARS TO BE A GOOD MECHANICAL DRILL STEM TEST DURING WHICH THE TOOLS DID FUNCTION PROPERLY. THE FORMATION DID PRODUCE ENOUGH RESERVOIR FLUID FOR PROPER IDENTIFICATION. RESERVOIR PRESSURE DRAWDOWN WAS SUFFICIENT AND ADE-
QUATE SHUT-IN BUILD-UPS DID OCCUR FOR RELIABLE QUANTITATIVE ANALYSIS.

1. FLOW RATE: A FLOW RATE OF 610.7 BBLS/DAY OF WATER WAS NOTED DURING THIS TEST.

2. RESERVOIR PRESSURE: EXTRAPOLATIONS OF THE INITIAL SHUT-IN PRESSURE BUILD-UP AND FINAL SHUT-IN PRESSURE BUILD-UP INDICATE A MAXIMUM RESERVOIR PRESSURE OF 1120 PSIG AT RECORDER DEPTH.

3. PERMEABILITY: THE CALCULATED TRANSMISSIBILITY FACTOR OF 49649.9 MD.-FT./CP. INDICATES AN AVERAGE EFFECTIVE PERMEABILITY TO WATER OF 359.8 MD. FOR THE REPORTED 138 FOOT POROUS INTERVAL. THE CALCULATIONS WERE BASED ON A SLOPE OF 2 PSI/LOG CYCLE OBTAINED FROM THE FINAL SHUT-IN BUILD-UP PLOT. IT WAS ASSUMED FOR THESE CALCULATIONS THE PRODUCT OF THE WATER VISCOSITY AND FORMATION VOLUME FACTOR TO BE 1.0.

[Handwritten notes:]

- UP
- F
- Affected by [unclear]
- Spikes in [unclear]
- /CP. [unclear] [unclear]
- ORTED
- OG
- ESE
- TO
- Value

4. WELL BORE DAMAGE: THE CALCULATED ESTIMATED DAMAGE RATIO OF .3 INDICATES THAT NO WELL BORE DAMAGE IS PRESENT AT THE TIME AND CONDITIONS OF THIS TEST.

5. RADIUS OF INVESTIGATION: THE CALCULATED RADIUS OF INVESTIGATION OF THIS TEST IS 1005.5 FEET BASED ON AN ASSUMED POROSITY OF 11.8%, COMPRESSIBILITY OF 3.3×10^{-6} , AND OTHER ASSUMPTIONS MADE IN NUMBER 3 ABOVE.

6. GENERAL COMMENTS: THE FORMATION EXHIBITS THE CHARACTERISTICS OF RELATIVELY HIGH PERMEABILITY EFFECTIVE TO THE RESERVOIR FLUID AND INDICATES THE ABSENCE OF WELL BORE DAMAGE. NO UNUSUAL CHARACTERISTIC IS OBSERVED FROM THESE TEST DATA.

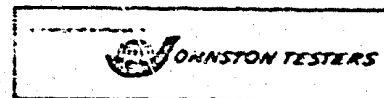
YOURS TRULY,

M. C. Gupta

M. C. GUPTA, P. ENG.
INTERPRETATION & EVALUATION

MCG:1AG

RESERVOIR PRESSURE PLOT



ORDER No. AK1-2036

CAPACITY

4400

FIELD REPORT No. D 01736

MAXIMUM RESERVOIR PRESSURE P.

1120

PSIG

INITIAL SHUT-IN

SLOPE OF SHUT-IN CURVE M

2

PSIG LOG CYCLE

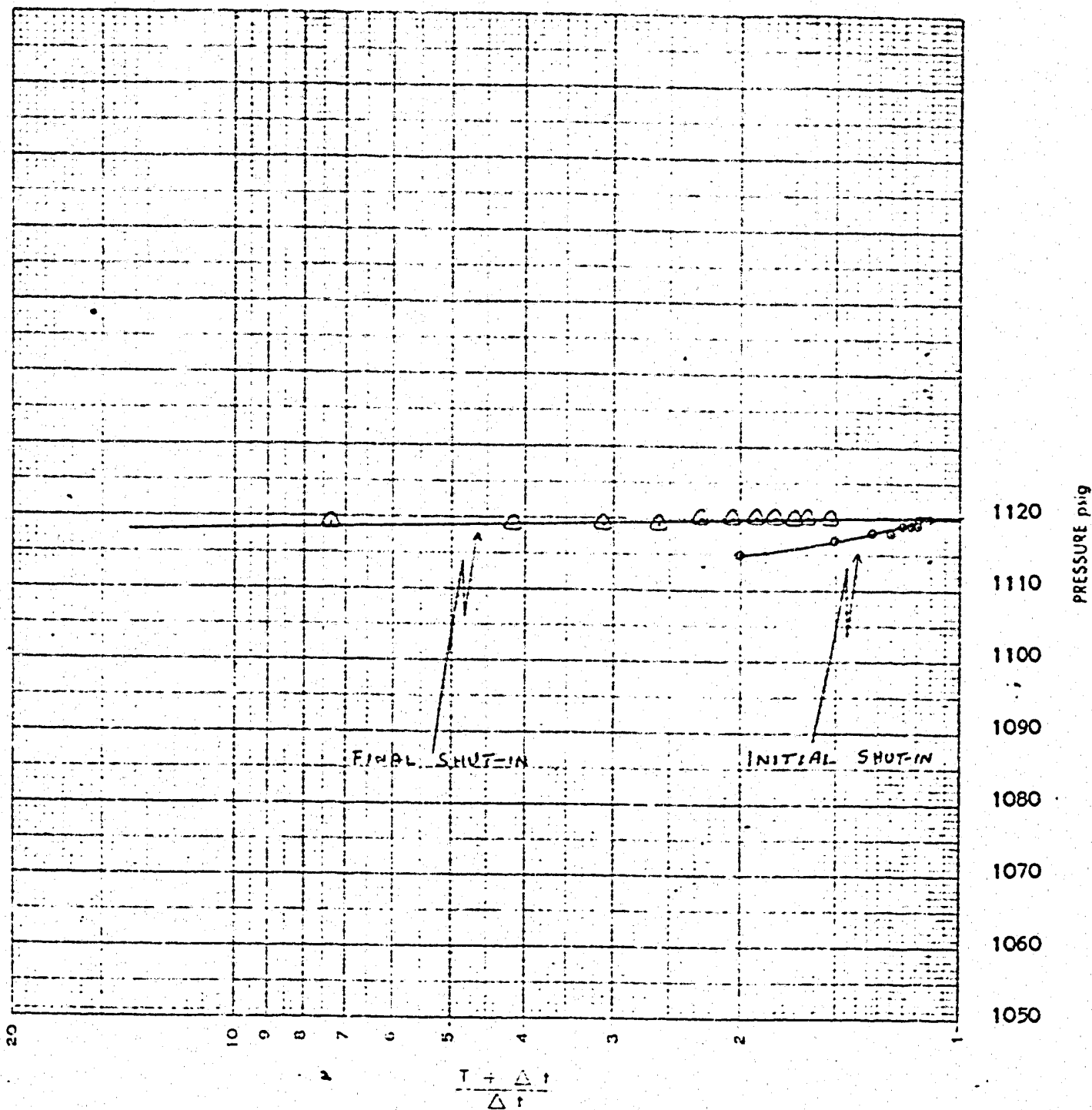
FINAL SHUT-IN

SLOPE M₁ P₁ 1120.3

P₂ 1118.3

PSIG LOG CYCLE

FINAL SHUT-IN



PRESSURE psig

$$\frac{T + \Delta t}{\Delta t}$$

1050

1060

1070

1080

1090

1100

1110

1120

20

10

9

8

7

6

5

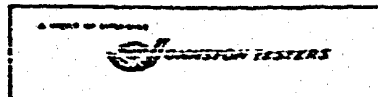
4

3

2

1

2



TEST DATA						TOOL SEQUENCE		
Formation		Zone Thickness		Fr.		Tool		O.D.
Interval:	2476	To	2624	T.D.	3048	Sub.	1.00	
Type of Test	OPEN HOLE, STRADDLE, BYPASS.					P. O. SUB.	1.00	
Time Started in Hole	0100	Hrs.	Tool Opened	0252	Hrs.	Sub.	1.00	
First Flow	3	Min.	Initial Shut-in	30	Min.	D. P. SUB.	.85	
Second Flow	60	Min.	Second Shut in		Min.	MFE TOOL	10.00	
Third Flow		Min.	Final Shut in	60	Min.	BYPASS TOOL	3.55	
Pulled Loose @	0525	Hrs.	Out of Hole	1000	Hrs.	JARS	7.10	
Wt. Set/on Packers	40.000	#	Pulled Loose Wt.	40.000	#	H. SUB.	.85	
Description of Blow During Test						SAFETY JOINT	1.75	
FAIR BLOW THROUGHOUT TEST.						S. S. & PACKER	9.00	
						T. C. & PACKER	6.00	
						TOTAL	42.10	
FLUID RECOVERY Was Test Reverse Circulated Yes ☐ No ☐						STUB.	1.10	
Total Fluid Recovered 2230						PERF.	7.00	
Description of Fluid Recovered						R. SUB.	.85	
						RECORDER	4.40	
2230' BLACK, SULPHUROUS, SALT WATER,						RECORDER	4.40	
						SUB.	.75	
						DRILL PIPE	124.91	
						SUB.	1.00	
						T. C. & STUB.	3.50	
GAS BLOW MEASUREMENT						TOTAL INTERVAL	147.91	
Measured With I.D. Riser						PACKER	2.60	
Type of Instrument						T. C. & PACKER	7.10	
Time	Stce. Choke	Reading Inches	M Cubic Feet/Day			PERF.	3.00	
						SUB.	.80	
						DRILL PIPE	407.76	
						SUB.	.85	
						B. N. & PERF.	1.80	
						TOTAL BELOW INTV.	423.91	
						TOTAL LENGTH	613.92	
						Elevation	NOT REPORTED	
						Bottom Hole Choke Size		
REMARKS: TEST SATISFACTORY.						Fluid Cushion Type	Amt.	
						MUD AND HOLE DATA		
						Mud Type	GFI	W.L. 7.8
						Filter Cake	2/32	Visc. 65 Wt. 10.0
						Time Taken	FEB. 26, 1969	
						Contractor	VANDERGRIFF	Rig No.
RESISTIVITY						Drill Pipe Size	4 1/2	XH
CHLORIDE CONTENT						Drill Collar Size	Length	480'
Recovery Water	@	°F.	ppm.			Main Hole Size	7 7/8"	
Mud Pit sample filtrate	@	°F.	ppm.			Rat Hole Size		
District	HIGH LEVEL	Ticket No.	D 01736	Date	FEB. 26, 1969	Test No.	1	J.T. No. 1
Company	CANADA-CITIES SERVICE PETROLEUM CORP.					Address	1100 - CALGARY HOUSE	
Well Name	C S REDKNIFE #1-24 I-24					CALGARY 1, ALBERTA		
Number	LAT 60-03-38.00 61°03' 40.12"					Field	REDKNIFE RIVER	Province N.W.T.
	Long. 119-13-48.00 119°13' 40.28"					Co. Rep.	B. DEGENHARDT	
and Interval	2476 - 2624		DST#1		Technician	H. BELL		
Distribution of Reports								
5 - CALGARY								

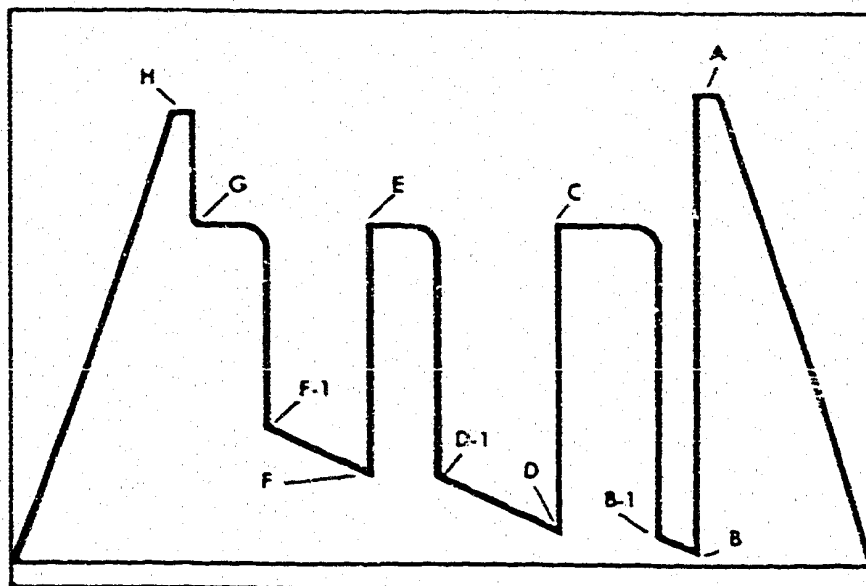
PRESSURE DATA

INSTRUMENT DATA		PRESSURE DATA		FIELD REPORT No. <u>D 01736</u>	
CAPACITY (gpm)	AK1-2086	AK1-2110			
INSTRUMENT DEPTH	4400	4000			
INSTRUMENT OPENING	2485	2489			
PRESSURE GRADIENT (psi/ft)	OUTSIDE	OUTSIDE			
WELL TEMP °F					
TIME DATA					
INITIAL HYDROSTATIC	A	1280#	1280#	TIME GIVEN	TIME COMPUTED
FIRST FLOW	B	398#	397#	MINS	MINS
B-1		540#	537#		
INITIAL SHUT IN	C	1120#	1117#	MINS	MINS
SECOND FLOW	D	555#	552#	MINS	MINS
D-1		1117#	1114#		
SECOND SHUT IN	E			MINS	MINS
THIRD FLOW	F			MINS	MINS
				MINS	MINS
FINAL SHUT IN	G	1120#	1117#	MINS	MINS
FINAL HYDROSTATIC	H	1265#	1263#	MINS	MINS
REMARKS:				CLOCK TRAVEL	IN/MIN

PRESSURE INCREMENTS ON RECORDER AK1-2086

INITIAL SHUT - IN			FINAL SHUT - IN			ON RECORDER		
POINT MINUTES	PRESSURE	$\frac{T - \Delta T}{\Delta T}$	POINT MINUTES	PRESSURE	$\frac{T - \Delta T}{\Delta T}$	POINT MINUTES	PRESSURE	$\frac{T - \Delta T}{\Delta T}$
0	540	----	0	1117	----			
3	1115	2.00	10	1119	7.30			
6	1117	1.50	20	1119	4.15			
9	1118	1.33	30	1119	3.10			
12	1118	1.25	40	1119	2.58			
15	1119	1.20	50	1120	2.26			
18	1119	1.17	60	1120	2.05			
21	1119	1.14	70	1120	1.90			
24	1120	1.13	80	1120	1.79			
27	1120	1.11	90	1120	1.70			
30	1120	1.10	100	1120	1.63			
			110	1120	1.57			
			120	1120	1.52			

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2. Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z—Special pressure points such as pumping pressures recorded for formation breakdown.

FIELD
REPORT NO.

D 01736

RECORDER NO.

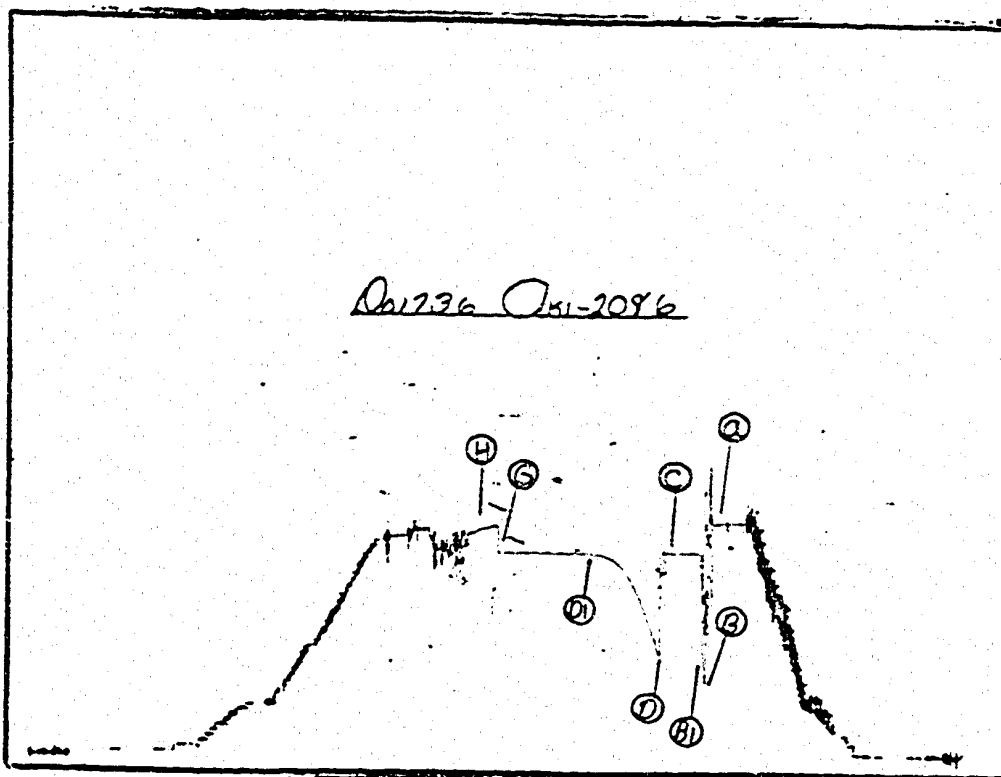
AKI-2086

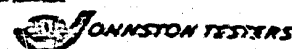
CAPACITY

4400

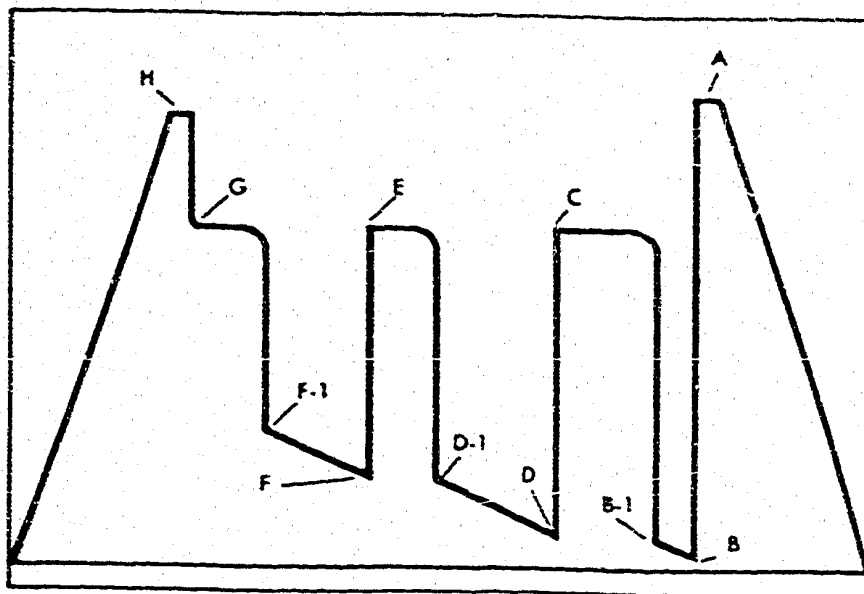
REPORTS
REQUESTED

5





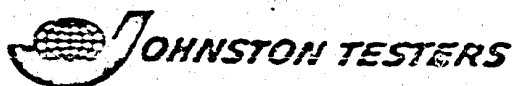
GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

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- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2, Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z — Special pressure points such as pumping pressures recorded for formation breakdown.



FIELD
REPORT NO.

D 01736

RECORDER NO.

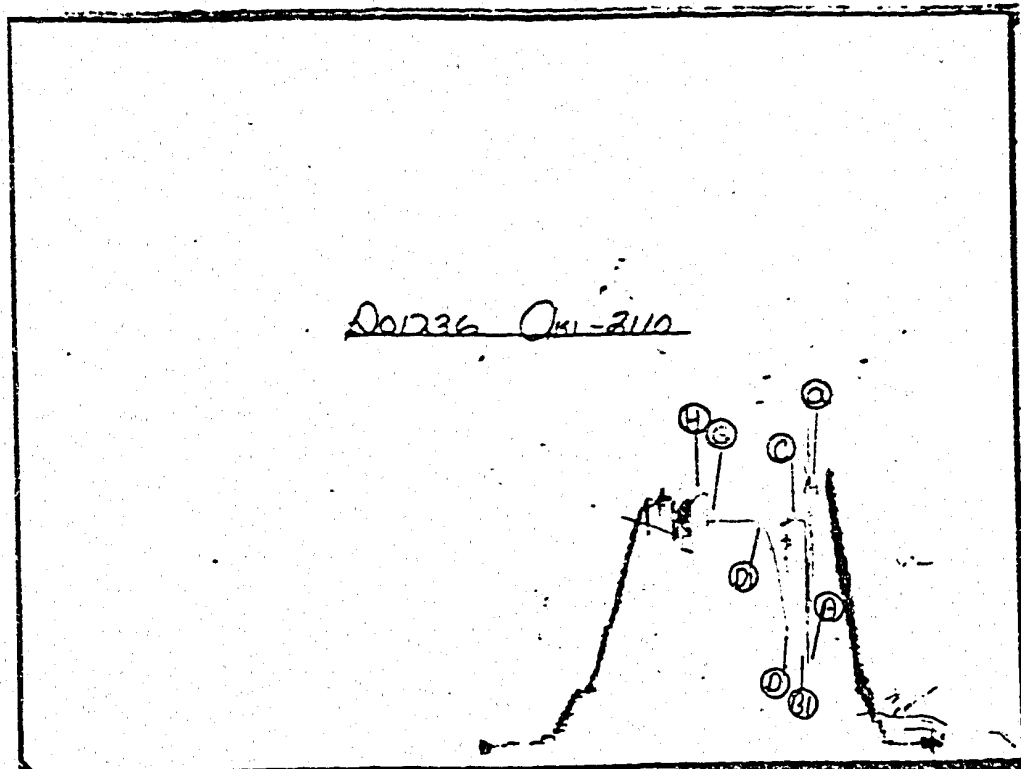
AK1-2110

CAPACITY

4000

REPORTS
REQUESTED

5



GIL AND/OR WATER CALCULATIONS

Test No. CNE Index No. D-01736

Company CANADA CITIL SERVICE PETROLEUM CORPORATION

Well Name & No. C.S. RED KNIFE #1-24

$$Q = \frac{1440 \left\{ \begin{array}{l} \text{(Drill Collar Capacity) (Recovery)} + \text{(Drill Pipe Capacity) (Recovery)} \\ \text{(Initial \pm Final Flow Time)} \end{array} \right\}}{1440 \left\{ \begin{array}{l} (1.0039)(480) + (1.0142)(1750) \\ (63) \end{array} \right\}}$$

$$Q = \underline{616.7} \text{ Bbls./Day}$$

Transmissibility

$$\frac{Kh}{\mu B} = \frac{162.6Q}{M} = \frac{162.6(616.7)}{2} = \underline{49649.9} \frac{\text{md-ft.}}{\text{cp}}$$

Average Effective Permeability (h = 133 ft. PERVIOUS MATERIAL)

$$\frac{K}{\mu B} = \frac{49649.9}{133} = \underline{359.8} \frac{\text{md-ft.}}{\text{cp}}$$

Productivity Index

$$\text{Theoretical } J = \frac{7.08 \times 10^{-3} Kh}{\mu B \ln(r_e/r_w)} \quad \text{Assumed } \ln(r_e/r_w) = 7.60$$

$$J = \frac{7.08 \times 10^{-3} Kh}{\mu B \ln(r_e/r_w)} = \frac{() ()}{() ()} = \underline{46.3} \text{ bbls./day/psi}$$

Estimate Damage Ratio

$$\text{E.D.R.} = \frac{1}{\log T + 2.65} \left[\frac{P_o - P_i}{M} \right] = \frac{1}{(\log 4.143)} \left[\frac{3}{2} \right] = () () =$$

$$\text{E.D.R.} = \underline{.2}$$

Potentiometric Surface

$$\text{P.S.} = \left[(P_o \times 2.309 \text{ Ft./PSI}) \right] - \left[(\text{Recorder Depth to Sea Level}) \right]$$

$$\text{P.S.} = \left[(1120)(2.309) \right] - \left[() \right]$$

$$\text{P.S.} = \underline{2586} \text{ Ft. ABOVE RECORDER}$$

Estimated Potential with Damage Ratio Removed

$$(\text{E.D.R.})(Q) = () () = \underline{\hspace{2cm}} \text{ Bbls./Day}$$

$$\text{Radius of investigation, } r_i = \sqrt{\frac{Kt}{40\phi\mu c}} \quad \text{where } t = \text{time in days}$$

$$R_i = \sqrt{\frac{(359.8)(.04375)}{40(.118)(1)(.000033)}} = \sqrt{1015798.71} = \underline{1005.5} \text{ ft.}$$

Gravity =

G.O.R. =

$$\mu = 1 \text{ cp.}$$

$$\beta = 1 \text{ vol/vol.}$$

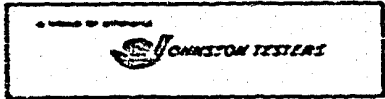
$$\mu B = 1$$

$$Kh = 49649.9 \text{ md-ft.}$$

$$K = 359.8 \text{ md.}$$

$$\phi = 11.8\%$$

$$c = 3.3 \times 10^{-6} \text{ PSI}^{-1}$$

[illegible]

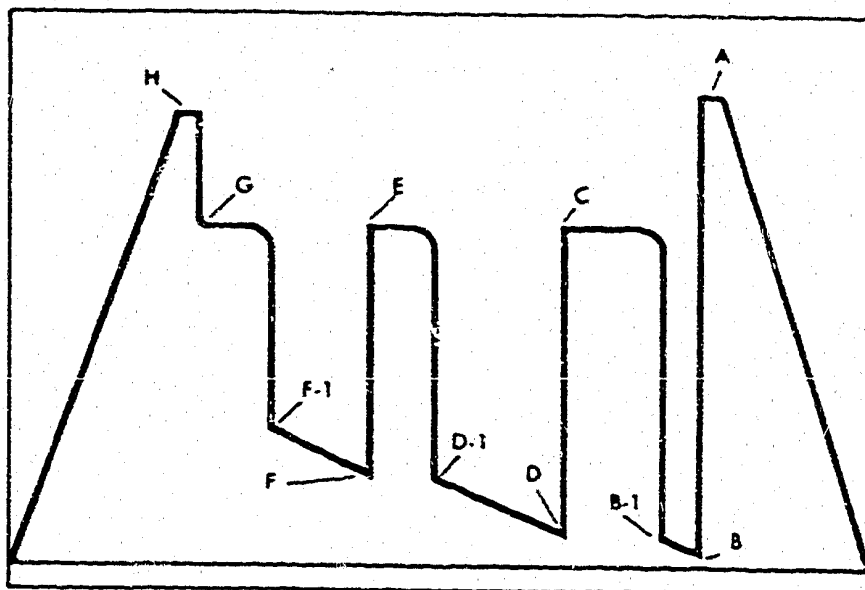
PRESSURE DATA

INSTRUMENT NO.		AKI-2086	AKI-2110		FIELD REPORT NO. <u>D 01737</u>	
CAPACITY gpm		4400	4000			
INSTRUMENT DEPTH						
INSTRUMENT OPENING		OUTSIDE	OUTSIDE			
PRESSURE GRADIENT psi/ft					TIME DATA	
WELL TEMP. °F.						
INITIAL HYDROSTATIC	A				TIME GIVEN	TIME COMPUTED
FIRST FLOW	B				MINS	MINS
INITIAL SHUT-IN	C				MINS	MINS
SECOND FLOW	D				MINS	MINS
SECOND SHUT-IN	E	MISRUN, COULD NOT REACH BOTTOM.			MINS	MINS
THIRD FLOW	F				MINS	MINS
FINAL SHUT-IN	G				MINS	MINS
FINAL HYDROSTATIC	H	1317#	1317#		CLOCK TRAVEL	IN/MIN
REMARKS:						

PRESSURE INCREMENTS

[illegible]

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2, Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z — Special pressure points such as pumping pressures recorded for formation breakdown.

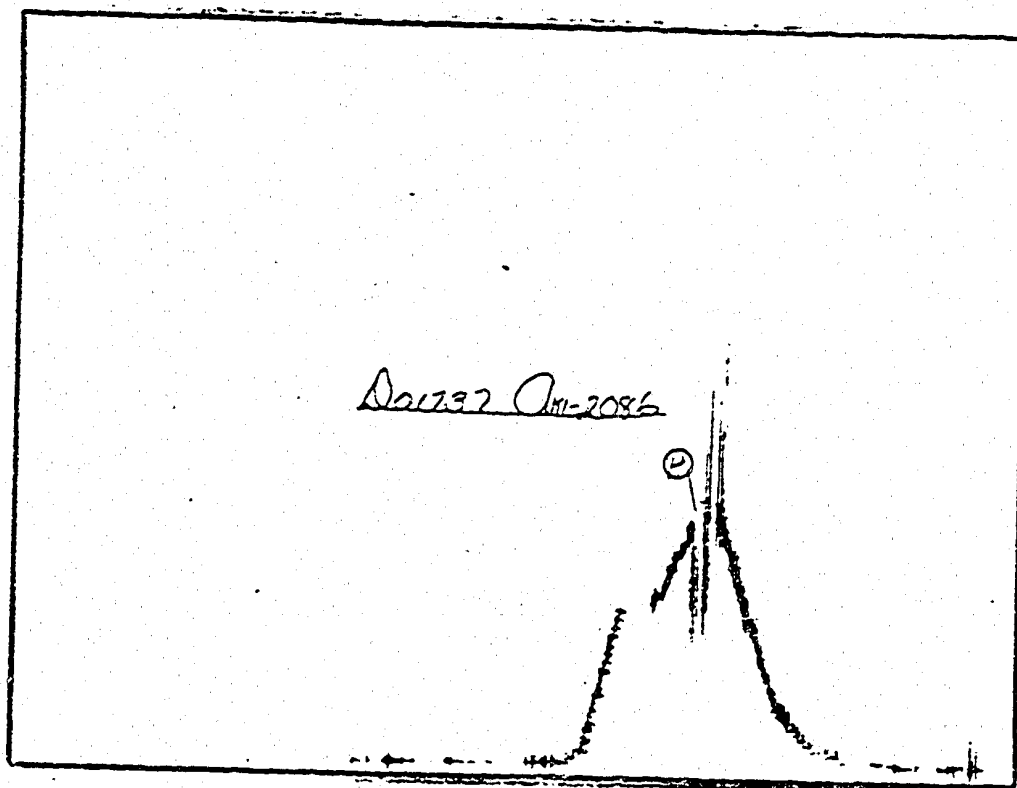


FIELD
REPORT NO.
D 01737

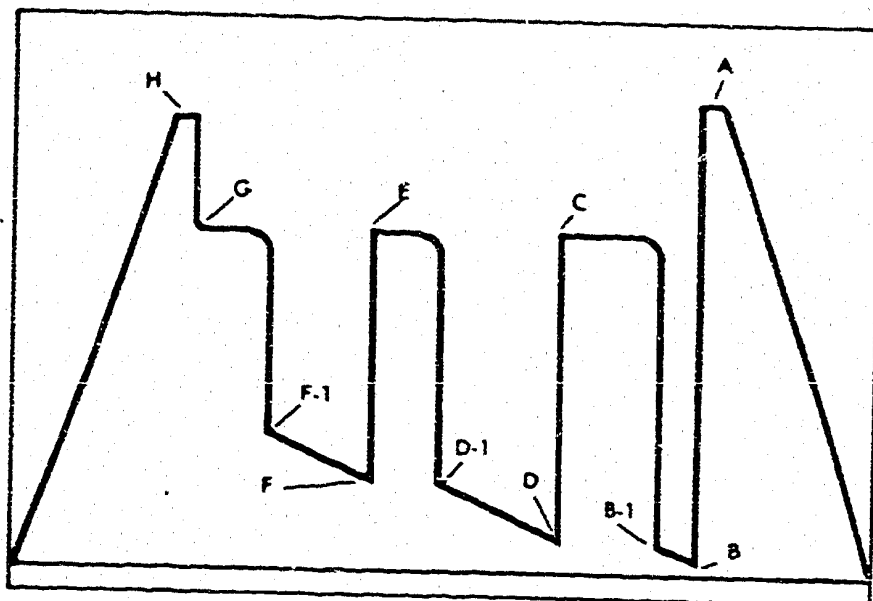
RECORDER NO.
AKI-2086

CAPACITY
4400

REPORTS
REQUESTED
5



GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

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- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2, Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z — Special pressure points such as pumping pressures recorded for formation breakdown.



FIELD
REPORT NO.

D 01737

RECORDER NO.

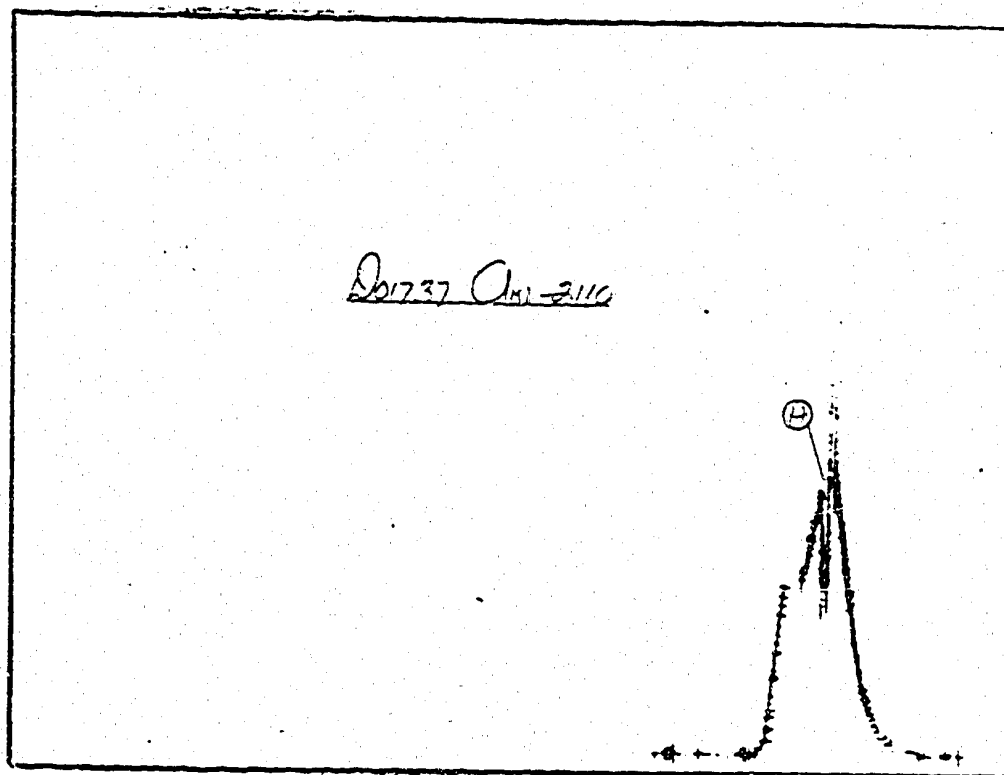
AK1-2110

CAPACITY

4000

REPORTS
REQUESTED

5





PRESSURE DATA

INSTRUMENT NO.			FIELD REPORT NO.	
CAPACITY (GAL)	AKI-2086	AKI-2110	D 01738	
INSTRUMENT DEPTH	4400	4000		
INSTRUMENT OPENING	2907	2912		
PRESSURE GRADIENT (psi/ft)	OUTSIDE	OUTSIDE		
WELL TEMP. °F	120°	120°	TIME DATA	
INITIAL HYDROSTATIC	A 1440#		TIME GIVEN	TIME COMPUTED
FIRST FLOW	B 42#		MINS	MINS
B-1	89#			
INITIAL SHUT-IN	C 1296#		MINS	MINS
SECOND FLOW	D 90#		MINS	MINS
D-1	195#	CLOCK		
SECOND SHUT-IN	E	STOPPED	MINS	MINS
THIRD FLOW	F		MINS	MINS
FINAL SHUT-IN	G 1212#		MINS	MINS
FINAL HYDROSTATIC	H 1415#		CLOCK TRAVEL	IN/MIN.
REMARKS:				

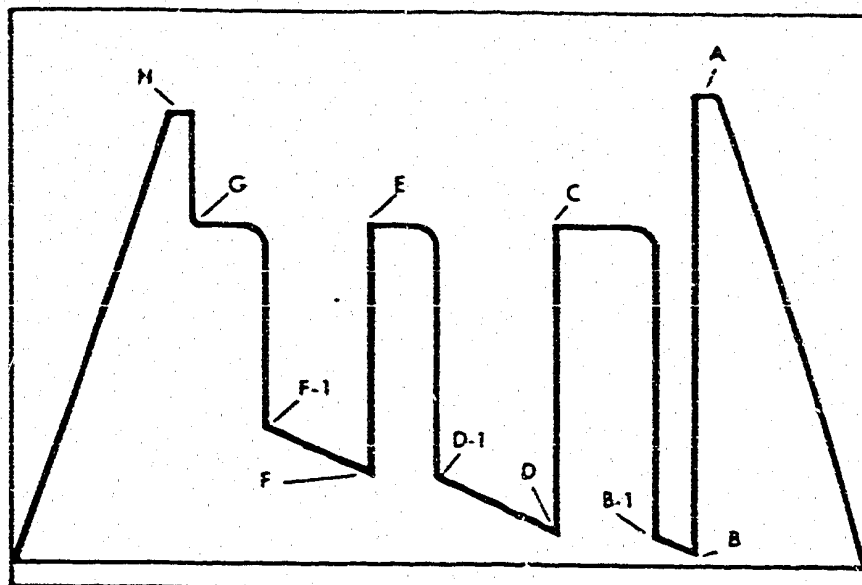
PRESSURE INCREMENTS

[illegible]



JOHNSTON TESTERS

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2. Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z - Special pressure points such as pumping pressures recorded for formation breakdown.



JOHNSTON TESTERS

FIELD
REPORT NO.

D 01738

RECORDER NO.

AKI-2086

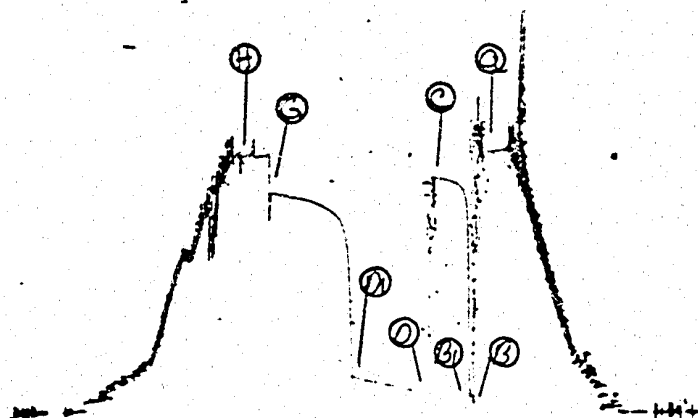
CAPACITY

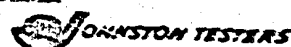
4400

REPORTS
REQUESTED

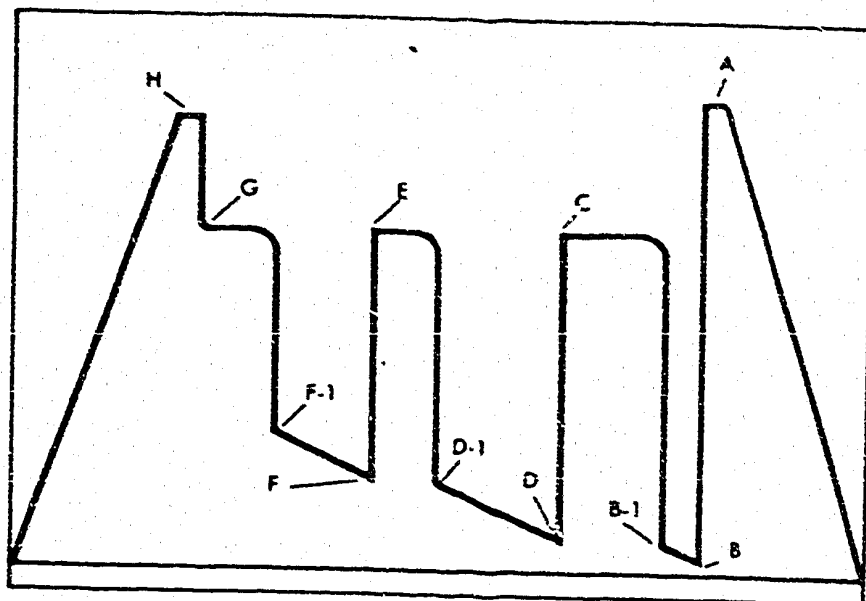
5

D01738 AKI-2086





GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS



- A. Initial Hyd. Mud
- B. First Flow
- C. Initial Shut-In
- D. Second Flow
- E. Second Shut-In
- F. Third Flow
- G. Final Shut-In
- H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

- A-1, A-2, A-3, etc. Initial Hyd. Pressures
- B, B-1, Initial Flow Pressures
- C, Initial Shut-In
- D-1, D-2, D-3, etc. Second Flow Pressures
- E, Second Shut-In
- F, F-1, F-2, Third Flow Pressures
- G, Final Shut-In
- H, Final Hyd. Pressures
- Z — Special pressure points such as pumping pressures recorded for formation breakdown.



FIELD
REPORT NO.
D 01738

RECORDER NO.
AK1-2110

CAPACITY
4000

REPORTS
REQUESTED
5

D 01738 AK1-2110
Black Stopped

SECTION IV:

WELL HISTORY REPORT

LOGS

	<u>INTERVAL</u>	<u>DATE</u>
Schlumberger Induction Electrical	334 - 3047	2-24-69
Schlumberger Borehole Compensated Sonic	334 - 3040	2-24-69
Schlumberger Microlog Caliper	300 - 3047	2-24-69
Schlumberger Sidewall Neutron Porosity	2450 - 3047	2-24-69
Schlumberger Formation Density	2450 - 3047	2-24-69
Schlumberger Porosity - Lithology	2450 - 3047	2-24-69

SECTION V:

WELL HISTORY REPORT

ANALYSIS

Core Analysis:	No Cores
Gas Analysis:	None
Water Analysis:	See Following Page - Lab Reports E69-9486-3 E69-9487-3

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

WATER ANALYSIS

Lab No. E69-940

Received: Mar. 14, 1969 Reported: Mar. 19, 1969

Well Location: CS Redknife I-24

Operator: CANADA CITIES SERVICE PETROLEUM

Field or Area: Lat 61° 03' 40.13" Long 119° 18' 49.28" Northwest Territories

Elev.: K.B. 899 Grd. 886

Zone/Formation: S/2000 P/1000

Sample Interval: 2476 - 2484

Method of Production:

D.S.T. #1

Sampled from: Top of tool

Sampled by: L. P. S.

Date: Feb 20 - 69

OTHER PERTINENT DATA

Recovered: 2230' 0111c Sulphurous SW

(Signed)

Mg./L	Na	K	Ca	Mg	SO ₄	Cl	CO ₃	HCO ₃
27703			8176	2576	309	64204		340
Meq./L	1205.09		407.98	211.75	6.43	1012.01		5.50
Meq. %	33.02		11.10	5.00	0.10	49.67		0.15

Total Solids Mg/L:

By Evaporation 120,100

Fe Present Specific Gravity 1.000

Observed pH 6.5 @ 72 °F

Calculated 103,388

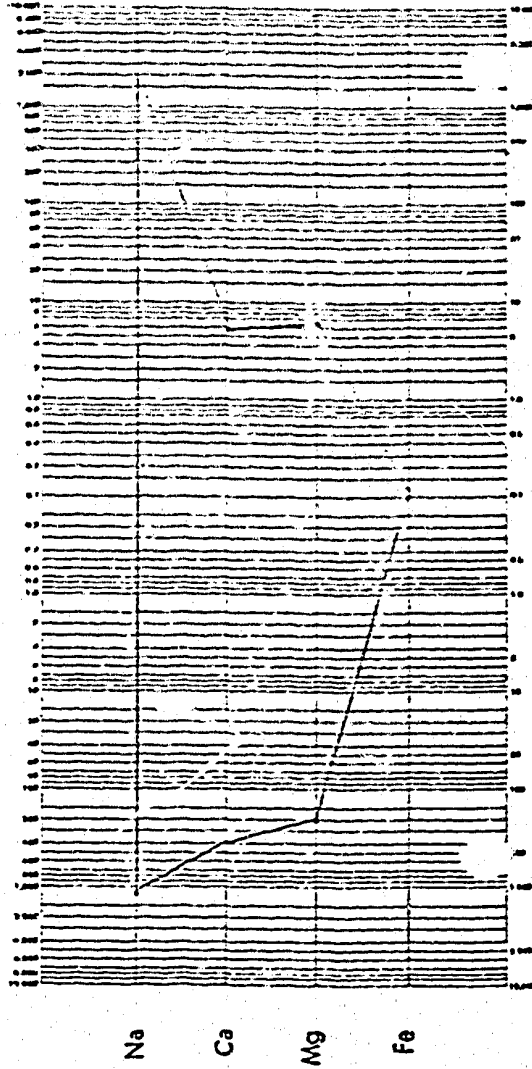
After Ignition 97,560

H₂S Nil

Refractive Index 1.3522 @ 75°C

Resistivity 0.006 ohm meters @ 60 °F

Pattern Unit Meq./L



Remarks and Conclusions The sample consisted of approximately 70% yellow coloured free water, 30% mud Inorg. Organic matter in total solids.

E69-9402-1 (Top) Approximately 60% yellow coloured free water, 40% mud. Resistivity: 0.161 Ohm meters @ 60°F

E69-9402-2 (Middle) Approximately 75% yellow coloured free water, 25% mud. Resistivity: 0.119 Ohm meters @ 60°F

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

WATER ANALYSIS

Lab No. E69-943

Received: Mar. 14, 1969 Reported: Mar. 19, 1969

Operator: CANADA CITIES SERVICE PETROLEUM

Elev.: K.B.

Zone/formation:

Method of Production:

D.S.T. #3

Sampled from: Bottoms

OTHER PERTINENT DATA

Recovered: 380' S/A

Grand D. 1900

Sample Interval: 2890 - 3042

Sampled by:

Date: 10/10/99

(Signed)									
Na	K	Ca	Mg			SO ₄	Cl	CO ₃	HCO ₃
14496		4252	1176			520	32842		156
630.58		212.17	96.67			10.82	926.14		2.46
33.56		11.29	5.15			0.58	49.29		

Total Solids Mg/i:

By Evaporation 60.02%

Calculated 53.436

After Ignition 47. £60

to Present

H.S. No. 11

Specific Gravity

Refractive Index

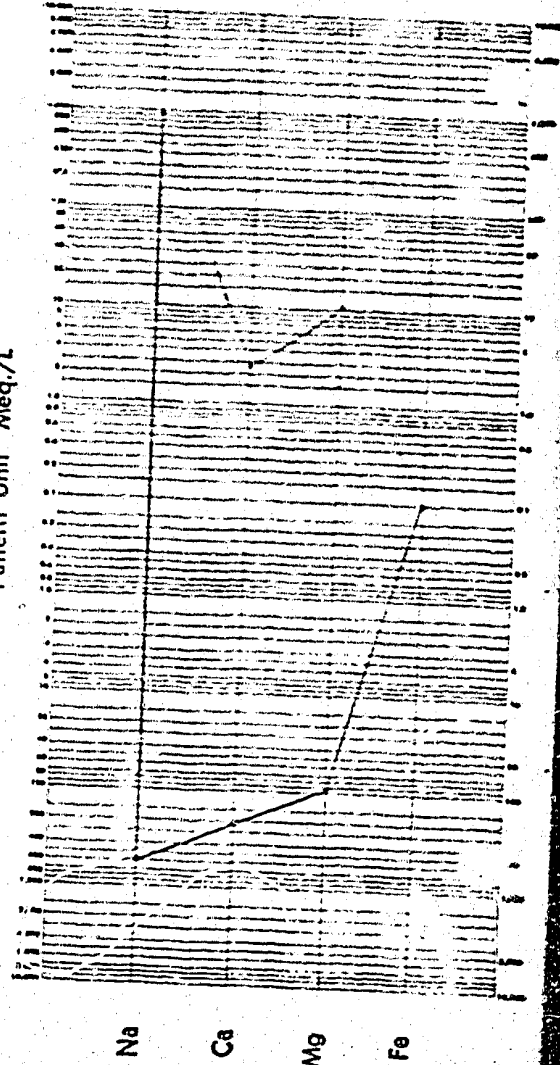
0906

Observed pH	6.8
-------------	-----

12 12

Pattern	Unit	Meq./L
1		
2		
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7		
8		
9		
10		
11		
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96		
97		
98		
99		
100		

81 @



Remarks and Conclusions Sample consisted of approximately 30% yellow coloured free water, 70% mud.

Organic matter in total solids.

E69-9487-1: Top

RESISTIVITY: 0.282 Ohm-meters at 68°v

50% pure
Apply

169-9487-2: Middle.

RESISTIVITY: 0.166 Ohm-meters at 68°F.

Approximately 50% yellow coloured free water,
50% mud.

CANADA CITIES SERVICE PETROLEUM CORPORATION

DAILY DRILLING REPORT

Lease & Well No. CS REDKNIFE I-24 Location I-24 N.W.T. Province N.W.T.
 Contractor VANDERBRIET GAS OIL ENTERPRISE RIG #1 Date 3-1-69
 Depth at 8 AM 4 PM Midnight
 Driller's 12-8A 8A-4 P 4 P-12

FORMATION RECORD

FROM	TO	FORMATION
		<u>PLUGGING & ABANDON</u>
		<u>PLUG #4 - 3' to 18' = 15', 5 SKS. CEMENT, PLUG DOWN AT 8:30 AM 3-1-69.</u>

SLOPE TESTS

MUD RECORD

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
			1						
			1						
			1						
DRILL PIPE TRIPS			2						
DEPTH	REASON		2						
			2						
			3						
			3						
			3						

SIZE HOLE 7 7/8"

PUMP PRESSURE MIDNIGHT

DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	SIZE BIT		FORMATION	SHOWING
						KIND		
D.S.T. No.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS			

CASING RECORD

SIZE	WEIGHT	MAKE	MAKE		TALLY	CEMENTED AT	SACKS	KIND CEMENT
			F. COLLAR	SHOE				

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

Remarks:

12.00 - 8.00 TEARING OUT. 8.00 - 8.30 RUN PLUG #4
8.30 - 9.00 TEAR OUT.

RIG RELEASED AT 9:00 AM, 3-1-69.

SIGNATURE

W. J. J. J. J.

CANADA CITIES SERVICE PETROLEUM CORPORATION
DAILY DRILLING REPORT

Lease & Well No.	C.S. REDKNIFE T-24	Location	T-24 NAT	Province	NWT.
Contractor	LANDERGRIFT GAS & OIL ENTERPRISE INC #1			Date	2-28-69
Depth at	8 AM	4 PM	Midnight		
Driller's	12-8A	8A-4 P	4 P-12		

FORMATION RECORD

FROM	TO	POUCING & Y ALTERNATE
PLUS #1	2900' - 3048' = 148'	70 EKS CEMENT PLUS DOWN AT 3:25 AM 2-28-69
PLUS #2	2425' - 2650' = 225'	100 SKS CEMENT PLUS DOWN AT 4:45 AM 2-28-69
FEET PLUS #2	AT 2415' AT 1245 PM 2-28-69	
RAN PLUS #3	284' - 384' = 100'	50 SKS CEMENT PLUS DOWN AT 3:30 PM 2-28-69
FEET PLUS #3	AT 270' AT 11:30 PM 2-28-69	

SLOPE TESTS

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
			1						
			1						
			1						
DRILL PIPE TRIPS			2						
DEPTH	REASON		2						
			2						
			3						
			3						
			3						

MUD RECORD

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
			1						
			1						
			1						
DRILL PIPE TRIPS			2						
DEPTH	REASON		2						
			2						
			3						
			3						
			3						

SIZE HOLE 7/8"

PUMP PRESSURE MIDNIGHT

DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

[illegible][illegible]

CASING RECORD

[illegible]

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

400 1130 420.0

Remarks:

12⁰⁰ 1⁰⁰ PICK UP SINGLES LAY DOWN DRILL PIPA PIPA TEAR OUT
1⁰⁰ 2⁴⁰ RUNNING PLUG 3⁰⁰ 3⁰⁰ TRIP WOPAN AND
4⁴⁰ 8⁰⁰ W. O. C. TO RUN PLUG #3
3⁰⁰ 3³⁰ RUN PLUG # 3
3³⁰ 4⁰⁰ 11) P.C.

SIGNATURE

DRILL STEM TEST REPORT

Line 1. Well CS REDKNIFE T-24 D.S.T. No. 2A Date 2-27-69

2. Formation GRANITE WASH Testing Company JOHNSTON

3. Packer @ 2890' T.D. 3048 Feet tested 158'

4. Tool Open 1105 A.M. Tool closed 1205 A.M. Time of test 60 P.M.

5. Choke size, top _____, bottom 1/2 Water cushion ft. _____

6. Time fluid to surface Air _____ Mins.; Gas _____ Mins.;

7. Mud _____ Mins. Oil _____ Mins.; Distillate _____ Mins.;

8. Production - Total oil _____ BBLS. Time _____ HRS. _____ Mins.;

9. Gauges - 1st _____ bbls., 2nd _____ bbls., 3rd _____ bbls., 4th _____ bbls.

10. Average cut _____ %

11. Gas production _____ MCF/24 hrs. Ratio _____ Sour or sweet _____

12. Recovery in drill pipe 380' Feet Size of drill pipe 4 1/2" EX.H

13. Give detailed description of fluid recovered in feet _____
380' SLIGHTLY GAS CUT DRILLING MUD

14. Surface flowing pressure _____ psi Bbls. per 100'

15. Bottom Hole 1474 1331 151 30 4 1/2" drill pipe 1.42

16. I.F.P. 44 psi 10 60 3 1/2" drill pipe 0.74

17. F.F.P. 88 psi FSI 60 2" tubing 0.39

18. FS.I.P. 1233 psi Minutes S.I. _____ 2 1/2" tubing 0.58

19. FHP 1455

20. Mud column pressure 120 psi

21. Oil gravity _____ ° A.P.I. Corr. to 60° F.

22. Company employees present W. DEGENHARDT

23. Remarks: G.I.P. GLEAK AIR BLOW STRADY THROUGH
OUT TEST

Note: Original to District Office Conservation Board
 Copies (2) To Cities Service.
 Calgary, Alberta.
 Copy (1) - Retain at Well.

Signed by W. Degenhardt

CANADA CITIES SERVICE PETROLEUM CORPORATION

DAILY DRILLING REPORT

Lease & Well No. C.S. REDKNIFE I-24 Location I-24 NAT Province NWT
 Contractor VANDERGRIFT GAS & OIL ENTERPRISE RISE#1 Date 2-27-89
 Depth at 8 AM 3048 4 PM 3048 Midnight 3048
 Driller's 12-BA W. ORBACK 8A-4 P.F. LAPLANTE 4 P-12 P. MOSER

FORMATION RECORD

FROM	TO	FORMATION
<u>3048</u>	<u>TD</u>	

SLOPE TESTS

MUD RECORD

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIS-SEC.	CC WL	AMOUNT	KIND
			1		<u>10</u>	<u>22</u>	<u>8.6</u>	<u>50"</u>	<u>SPERASENE</u>
			1						
			1						
			2						
			2						
			2						
			3						
			3						
			3						

DRILL PIPE TRIPS

DEPTH	REASON

SIZE HOLE

PUMP PRESSURE MIDNIGHT

DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	SIZE BIT		FORMATION	SHOWING
						KIND		

D.S.T. No.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS
<u>2A</u>	<u>2890</u>	<u>3048</u>	<u>60</u>	<u>GRANITE DIASH</u>	<u>380' SLIGHTLY GAS CUT DRILLING AND A</u> <u>C.I.P. WAAK AIR BLOW STRADY THROUGHOUT</u>
<u>1HP1474</u>	<u>151P1331</u>	<u>1FP44</u>	<u>FP88</u>		<u>TEST</u>
<u>FS1P1233</u>	<u>FHP 1452</u>	<u>TRMP 120</u>			

CASING RECORD

SIZE	WEIGHT	MAKE	MAKE		TALLY	CEMENTED AT	SACKS	KIND CEMENT
			F. COLLAR	SHOE				

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

400' 4" SRR RIS
12" 1" FINISH TRIP IN 8" 8" MAKE UP PACKER 4" 6" FINISH BREAKING DOWN
1" 1" WORK ON PUMP 8" 10" TRIP IN W/ PACKER TECH & LOAD OUT SARR
14" 5" PULL TO TEST CIRC 10" 10" TRIP IN 64" 3" CLEAN UP FLOOR
8" CONDITION MUD Y HOLE 13" 3" PULL PACKER 73" 10" LAY DOWN D.C
5" 7" PULL TO TEST 33" 4" BREAK & LAY DOWN 10" 12" RUN IN OPEN
7" 8" PICK UP Y MAKE PACKER AND 121P
UP PACKER

SIGNATURE

W. Degenhardt

DRILL STEM TEST REPORT

Line 1. Well CS. REDKNIFE I-24 D.S.T. No. 2 Date 2-26-69

2. Formation GRANITE WASH Testing Company JOHNSTON

3. Packer @ 2890 T.D. 3048 Feet tested 158'

4. Tool Open _____ A.M. Tool closed _____ A.M. Time of test _____ P.M.

5. Choke size, top _____, bottom 1/2 Water cushion ft. _____

6. Time fluid to surface Air _____ Mins.; Gas _____ Mins.;

7. Mud _____ Mins. Oil _____ Mins.; Distillate _____ Mins.;

8. Production - Total oil _____ BBLS. Time _____ HRS. _____ Mins.;

9. Gauges - 1st _____ bbls., 2nd _____ bbls., 3rd _____ bbls., 4th _____ bbls.

10. Average cut _____ %

11. Gas production _____ MCF/24 hrs. Ratio _____ Sour or sweet _____

12. Recovery in drill pipe _____ Feet Size of drill pipe _____

13. Give detailed description of fluid recovered in feet _____

14. Surface flowing pressure _____ psi Bbls. per 100'

<u>Bottom Hole</u>		<u>4 1/2"</u> drill pipe	1.42
15. I.F.P. _____ psi		<u>3 1/2"</u> drill pipe	0.74
16. F.F.P. _____ psi		<u>2"</u> tubing	0.39
17. S.I.P. _____ psi	Minutes S.I. _____	<u>2 1/2"</u> tubing	0.58

18. Mud column pressure _____ psi

19. Oil gravity _____ ° A.P.I. Corr. to 60° F.

20. Company employees present W. DIEGENHARDT

21. Remarks: MIS RUN HIT BRIDGE AT 2620'

Note: Original to District Office Conservation Board
 Copies (2) To Cities Service.
 Calgary, Alberta.
 Copy (1) - Retain at Well.

Signed by W. Diegenhardt

CANADA CITIES SERVICE PETROLEUM CORPORATION

DAILY DRILLING REPORT

Lease & Well No. C.S. REDKNIFE I-24 Location I-24 NAT Province N.W.T.
 Contractor VANDERGRAFT GAS & OIL ENTERPRISE INC #1 Date 2-26-69
 Depth at 8 AM 3048 4 PM 3048 Midnight 3048
 Driller's 12-8A W. ORBEN 8A-4 P F. LAPLANTE 4 P-12 P. MOSER

FORMATION RECORD

FROM	TO	FORMATION
3048	TD	

SLOPE TESTS

MUD RECORD

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
			1						
			1						
			1						
			2						
			2						
			2						
			3						
			3						
			3						

DRILL PIPE TRIPS

DEPTH	REASON	TOUR	TIME	WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND

SIZE HOLE

PUMP PRESSURE MIDNIGHT

DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	SIZE BIT		FORMATION	SHOWING
						KIND		

D.S.T. No.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS
2	2890	3048	MIRON	GRANITE WASH	HIT BRICK AT 2620'

CASING RECORD

SIZE	WEIGHT	MAKE	MAKE		TALLY	CEMENTED AT	SACKS	KIND CEMENT
			P. COLLAR	SHOE				

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

Remarks: 4007⁰⁰ PULL. PACKER
 8⁰⁰ 5¹⁵ RES. SRR 7⁰⁰ BREAK Y LAY DOWN SAME
 8¹⁰ 10⁰⁰ PULL. PACKER 7¹⁰ 8⁰⁰ CLEAN UP FLOOR
 12⁰⁰ 12³⁰ MAKE UP TAST TOOL 10⁰⁰ 13⁰⁰ LAY DOWN TASTING REPAIR DERRICK LIGHT
 12³⁰ 2³⁰ RUN IN SAME TOOL MAKE UP 8³⁰ 12⁰⁰ TRIP IN W BIT
 2³⁰ 5³⁰ TASTING 1⁰⁰ TOOL FOR DST #2 RAAM TIGHT HOLE
 5³⁰ 8⁰⁰ PULL. PACKER 1⁰⁰ 3¹⁵ TRIP IN W DST #2
 HIT BRICK AT 2620
 3³⁵ 4⁰⁰ MIRON 12000
 D.S.T #2 SIGNATURE *W. Degenhardt*

DRILL STEM TEST REPORT

- Line 1. Well CS. REDKNIE T-24 D.S.T. No. 1 Date 2-26-69
2. Formation SLAVE POINT Testing Company JOHNSTON
3. Packer @ 2476 T.D. 2624 Feet tested 148
4. Tool Open 325 A.M. Tool closed 425 A.M. Time of test 60 P.M.
5. Choke size, top _____, bottom 1/2 Water cushion ft. _____
6. Time fluid to surface Air _____ Mins.; Gas _____ Mins.;
7. Mud _____ Mins. Oil _____ Mins.; Distillate _____ Mins.;
8. Production - Total oil _____ BBLS. Time _____ HRS. _____ Mins.;
9. Gauges - 1st _____ bbls., 2nd _____ bbls., 3rd _____ bbls., 4th _____ bbls.
10. Average cut _____ %
11. Gas production _____ MCF/24 hrs. Ratio _____ Sour or sweet _____
12. Recovery in drill pipe 2384 Feet Size of drill pipe 4 1/2" 15X11
13. Give detailed description of fluid recovered in feet 126' DRINKING MUD
2264' BRACKISH SALT WATER
-
14. Surface flowing pressure _____ psi Bbls. per 100'
- | | | |
|------------------------------|--------------------|------------------------|
| 15. I.F.P. <u>1310</u> psi | 151 30 | 4 1/2" drill pipe 1.42 |
| 16. F.F.P. <u>1130</u> psi | 100 60 | 3 1/2" drill pipe 0.74 |
| 17. F.S.I.P. <u>1130</u> psi | FSI 60 | 2" tubing 0.39 |
| | Minutes S.I. _____ | 2 1/2" tubing 0.58 |
18. Mud column pressure 1290 psi
19. Oil gravity _____ A.P.I. Corr. to 60°F.
20. Company employees present W. Degenhardt
21. Remarks: C.I.P. GOOD AIR BLOW STEADY THROUGH TEST

Note: Original to District Office Conservation Board
 Copies (2) To Cities Service.
 Calgary, Alberta.
 Copy (1) - Retain at Well.

Signed by W. Degenhardt

CANADA CITIES SERVICE PETROLEUM CORPORATION

DAILY DRILLING REPORT

Lease & Well No. C.S. RACKNIFE I-24 Location I-24 NWT Province NWT
 Contractor VANDERBRIEF GAS & OIL ENTERPRISE RIS # 1 Date 2-25-69
 Depth at 8 AM 3048 4 PM 3048 Midnight 3048
 Driller's 12-8A W. ORBAEK 8A-4P F. LAPLANTA 4P-12 P. MOSAR

FORMATION RECORD

FROM	TO	FORMATION
3048	TD	

SLOPE TESTS

MUD RECORD

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
			1						
			1						
			1						
			2						
			2						
			2						
			3		10.	56		3.5KS	CHL
			3		10.	62	7.8	30"	CAUSTIC
			3		10.	65			

DRILL PIPE TRIPS

DEPTH	REASON

SIZE HOLE 7 7/8" PUMP PRESSURE MIDNIGHT DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	SIZE BIT		FORMATION	SHOWING
						KIND		

D.S.T. No.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS
1	2426	2624	120	SLAVE PRINT	120' DRILLING MUD 2264' BRACKISH SALT WATER
5130	1060	15160			
				1HP1310 1S1P1140 1FP120 1FP 1130 F51P 1130 FHP 1290	

CASING RECORD

SIZE	WEIGHT	MAKE	MAKE		TALLY	CEMENTED AT	SACKS	KIND CEMENT
			F. COLLAR	SHOE				

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

Remarks: 8⁰⁰ 11⁰⁰ 609 4⁰⁰ 8⁰⁰ RIRC CONDITION MUD
11⁰⁰ 11¹⁵ TAAR OUT 7400 OUT 5⁰⁰ 10⁰⁰ PULL TO TEST
12⁰⁰ 8⁰⁰ 609 609 TOOKS 10⁰⁰ 12⁰⁰ MAKING UP TEST TOOL
11⁰⁰ 11¹⁵ TRIP IN w/ BIT TO TO RUN DST #1
TEST
1⁰⁰ 4⁰⁰ RIRC CONDITION MUD
7 HOLE.

SIGNATURE W. Orbaek

CANADA CITIES SERVICE PETROLEUM CORPORATION
DAILY DRILLING REPORT

Lease & Well No.	S. RADKOVIE I-24	Location	I-24 NAT	Province	NAT.
Contractor	VANDERKIFT BAS & OIL	ENTERPRISE	RIS# 1	Date	2-24-69
Depth at	8 AM 3040	4 PM	3048	Midnight	3048
Driller's	12-8A G. ORBACK	8A-4P F. LADWANTZ	4 P-12 P MASHIR		

FORMATION RECORD

FROM	TO	FORMATION
3014	3048 TD	GRANITE
		B.T. #11-7 $\frac{1}{2}$ ' SSIG J. RARE #185589 102' 18 $\frac{1}{2}$ HRS
		B.T. #12-7 $\frac{1}{2}$ ' MN4CJ SEC #908655 33 5 $\frac{1}{2}$ HRS

SLOPE TESTS

MUD RECORD

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIB.-SEC.	CC WL	AMOUNT	KIND
291.3	34	Toto	1		9.9	45			
			1		9.9	48	8.4		
			1						
DRILL PIPE TRIPS			2		9.9	43			
DEPTH	REASON		2		9.9	52.	8.4	15 SKS	GR L
			2		9.9	24.			
			3						
			3						
			3						

SIZE HOLE	7 3/8"	PUMP PRESSURE MIDNIGHT	650	DRILL PIPE WT. MIDNIGHT
-----------	--------	------------------------	-----	-------------------------

CORE AND D.S.T. RECORD

[illegible][illegible]

CASING RECORD

[illegible]

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

12 ⁰⁰ 12 ³⁰	DRILL	8 ⁰⁰ 8 ¹⁵	SERALS	12
12 ³⁵ 1 ⁰⁰	TRIP OUT FOR N/BIT	8 ¹⁵ 8 ⁴⁵	DRILL	
1 ⁰⁵ 1 ⁴⁰	TRIP IN W/NEW BIT	8 ⁴⁵ 9 ¹⁵	WELD AIR CHAMBER	
1 ⁴⁰ 1 ³⁰	CLEAN UP TO BTM	9 ¹⁵ 11 ¹⁵	DRILL MIX MUD	
1 ³⁵ 8 ⁰⁰	DRILL	11 ¹⁵ 12 ¹⁵	CORE TO LOG	
		12 ¹⁵ 12 ³⁰	SURVEY	
		12 ³⁰ 2 ¹⁵	TRIP OUT TO LOG	
		2 ¹⁵ 4 ⁰⁰	LOGGING	

SIGNATURE

CANADA CITIES SERVICE PETROLEUM CORPORATION

DAILY DRILLING REPORT

Lease & Well No. C.S. RADKNIFE T-24 Location T-24 NWT Province NWT
 Contractor VANDERGRIET GAS & OIL ENTERPRISES R/S #1 Date 2-23-69
 Depth at 8 AM 2930 4 PM 2988 Midnight 3014
 Driller's 12-8A W. ORBACH 8A-4 P F. LAPLANTE 4 P-12 P. MOSIER

FORMATION RECORD

FROM	TO	FORMATION
2913	3014	LIMASTONE
		BIT #10-7/8 MANG S SEC "908965" 112' 23 1/4 HRS
		BIT #11 1/8 SSIG S REED "485589" 14 HOURS

SLOPE TESTS

MUD RECORD

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
2913	34	Y2TCO	1		9.9	48	7.4	100"	SODA ASH
			1					25	CAUSTIC
			1						
			2		10.	50			
			2		10.	53	6.5		
			2		10.	58			
			3		10.	58		10 SHS	CAL.
			3		10.	55	8.2	50"	CAUSTIC
			3		10.	56		50"	SPARSERITE

SIZE HOLE 7/8PUMP PRESSURE MIDNIGHT 100

DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	FORMATION		SHOWING
					SIZE BIT	KIND	

D.S.T. NO.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS

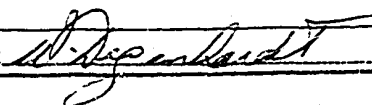
CASING RECORD

SIZE	WEIGHT	MAKE	MAKE		TALLY	CEMENTED AT	SACKS	KIND CEMENT
			P. COLLAR	SHOE				

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

12' 0" 4' 5" TRIP OUT FOR N.B.T. 8' 8" 5" SER R/S 4' 5" 7' 5" DRILL
 12' 3" 7' 5" TRIP IN OF BIT 8' 1" 4' 00" DRILL 7' 5" 7' 5" REPAIR DRIVE CHAIN
 3' 4" 4' 5" WORK ON MUD 7' 5" 12' 00" DRILL
 4' 4" 7' 10" DRILL
 2' 0" 2' 10" WORK ON PUMP
 7' 3" 8' 00" DRILL

SIGNATURE



CANADA CITIES SERVICE PETROLEUM CORPORATION

DAILY DRILLING REPORT

Lease & Well No. CS REDKNIFE I-24 Location I-24 Province ALB.
 Contractor VANDERBAET GAS OIL ENTERPRISE RIG #1 Date 2-22-69
 Depth at 8 AM 2841 4 PM 2872 Midnight 2913
 Driller's 12-8A P MOSAR 8A-4 P W. ORIBACK 4 P-12 F LAPLANTE

FORMATION RECORD

FROM	TO	FORMATION
2841	2913	LIMASTONE
		13.1" ID - 7.8" MANG. S. SEC "908965 1124 13 1/2 HRS

SLOPE TESTS

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS	CONDITIONERS
2913	34	TOTED	1		9.9 52	
			1		10.0 52	65KS CBL
			1		10.1 52	

DRILL PIPE TRIPS

DEPTH	REASON	TOUR	TIME	CHARACTERISTICS	CONDITIONERS
		2		10.1 52	
		2		10.1 50	7.8 50# KMC
		2		10.0 48	
		3		10.2 50	
		3		10.2 52	6.5 65KS CBL
		3		10.2 50	

SIZE HOLE 7.8"PUMP PRESSURE MIDNIGHT 650

DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	SIZE BIT	KIND	FORMATION	SHOWING

D.S.T. NO.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS

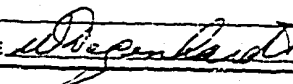
CASING RECORD

SIZE	WEIGHT	MAKE	MAKE	TALLY	CEMENTED AT	SACKS	KIND CEMENT
			F. COLLAR SHOE				

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

Remarks: 8" 8' 10" SRR RIG Y BOP S 4" 11' 30" SRR RIG
8" 4' 10" DRILL 11' 30" 11' 45" DRILL
12" 12' 15" SRR RIG 11' 45" 12" SURVEY
12" 8" DRILL 11' 45" 12" TRIP OUT FOR 1/2 BIT

SIGNATURE



CANADA CITIES SERVICE PETROLEUM CORPORATION
DAILY DRILLING REPORT

Lease & Well No.	S. PROKNER I-24	Location	I-24 NWT	Province	NWT
Contractor	HARDY CRIT GAS & OIL ENTERPRISE INC #1			Date	2-21-69
Depth at	8 AM 2739	4 PM	2782	Midnight	2804
Driller's	12-8A P. MOSIER	8A-4P	W. ORBIEZ	4 P-12	F. L. ATLANTA

FORMATION RECORD

FROM	TO	FORMATION
2676	2844	LIMESTONE
		BIT #9 - 7 7/8" MHHN ↓ SEE # 168591 3IN 27 HRS
		BIT #10 - 7 7/8" MHHN ↓ SEE 908965 IN HOUR

SLOPE TESTS

MUD RECORD

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
2610.	34	TOTCO	1		9.8	5.5			
			1		9.9	4.8	8.8		
			1		9.9	5.5			
DRILL PIPE TRIPS			2		10.	5.0			
DEPTH	REASON		2		9.8	4.8	8	58*	CME
			2		9.9	4.5			
			3		10.1	4.3			
			3		10.1	4.3.	7		
			3						

SIZE HOLE 1 7/8

PUMP PRESSURE MIDNIGHT: 600

DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

[illegible][illegible]

CASING RECORD

[illegible]

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

Remarks:

12⁰⁰ 12¹⁵ SUR RIG 12⁰⁰ 12¹⁵ DRILL 1130 12¹⁵ DRILL
12¹⁵ 8⁰⁰ DRILL 12¹⁵ 12⁴⁵ WORK ON PUMP
12⁴⁵ 2⁰⁰ DRILL
2⁰⁰ 2⁴⁵ WORK ON PUMP
2⁴⁵ 4⁰⁰ DRILL

SIGNATURE

CANADA CITIES SERVICE PETROLEUM CORPORATION
DAILY DRILLING REPORT

Lease & Well No	C.S. RABENHIER I-24	Location	I-24 NAT	Province	NAT.
Contractor	MANDARCAFT GAS & OIL ENTERPRISES R/S # 1			Date	2-20-64
Depth at	8 AM	4 PM	Midnight		
	2487	2538	2676		
Driller's	12-8A	8A-4 P	4 P-12		

FORMATION RECORD

FROM	TO	FORMATION
2383	2676	LIMESTONE
		BIT #8-78 SNT d SBC #909746 376' 24 1/4 HRS
		BIT #9-78 MANN d SBC #168891 1N HOLE

SLOPE TESTS

MUD RECORD

SLOPE TESTS			CHARACTERISTICS					CONDITIONERS	
DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
2425	3/4	TOTCO	1		10.1	45		24 SKS	GEL
2498	1 1/16	"	1		10.2	62		50	SPRASAIR
7616	3/4	"	1		9.9	55		50	CAUSTIC
DRILL PIPE TRIPS			2						
DEPTH	REASON		2		10.	47	8.2	50	CAUSTIC
			2						
			3		10	100			
			3		10	100	8.6	18 SKS	GEL
			3		9.8	50		50	BICARB

SIZE HOLE	1 7/8.	PUMP PRESSURE MIDNIGHT	600	DRILL PIPE WT. MIDNIGHT
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CORE AND D.S.T. RECORD

CORE AND D.S.T. RECORD								
CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	SIZE BIT	KIND	FORMATION	SHOWING
D.S.T. NO.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS			

CASING RECORD

[illegible]

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)		4 ⁰⁰ 4 ¹⁵ S&R RIE	
Remarks:	8 ⁰⁰ 8 ³⁰ S&R RIE	4 ¹⁵ 7 ¹⁵ DRILL	
	5 ³⁰ 9 ¹⁵ TRIP OUT	7 ¹⁵ 7 ³⁰ SURVEY	
12 ⁰⁰ 12 ¹⁵ S&R RIE	9 ¹⁵ 11 ¹⁵ TRIP IN & IN NEW BIT	7 ³⁰ 12 ⁰⁰ DRILL	
12 ¹⁵ 12 ³⁰ DRILL	11 ¹⁵ 11 ⁴⁵ CLEAN 15' TO BTM		
12 ³⁰ 2 ⁴⁵ SURVEY	11 ⁴⁵ 1 ⁰⁰ DRILL		
2 ⁴⁵ 4 ³⁰ DRILL	1 ⁰⁰ 2 ⁰⁰ WORK ON SHALE SHAKER		
4 ³⁰ 5 ⁰⁰ WORK ON FROZEN	2 ⁰⁰ 2 ³⁰ DRILL		
5 ⁰⁰ 5 ³⁰ AIR LINES	2 ³⁰ 2 ⁴⁵ WORK ON SURVEIL		
5 ³⁰ 6 ⁰⁰ DRILL	2 ⁴⁵ 4 ⁰⁰ DRILL	SIGNATURE	<i>W. J. [Signature]</i>
6 ⁰⁰ 6 ³⁰ TRIP OUT			

CANADA CITIES SERVICE PETROLEUM CORPORATION
DAILY DRILLING REPORT

Lease & Well No.	C.S. REDKNIFE I-21	Location	I-21 NWT	Province	NWT
Contractor	VANDERGRIFT DRILLING ENTERPRISE INC. # 1			Date	2-19-69
Depth at	8 AM 2195	4 PM	2279	Midnight	2383
Driller's	12-8A P. MOSEB	8A-4P	W. ORBACK	4 P-12	F. LAPLANTE

FORMATION RECORD

[illegible]

SLOPE TESTS

MUD RECORD

SLOPE TESTS			CHARACTERISTICS					CONDITIONERS	
DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	WEIGHT	VIS.-SEC.	CC WL	AMOUNT	KIND
2111	12 1/2	TATED	1		10.2	43		5 SKS	GRG
2200	1 1/8	"	1		10.1	40	9.2	50 "	SPRAUSENR
2260	1/8	"	1		10.1	43			
DRILL PIPE TRIPS			2		10.2	40			
DEPTH	REASON		2		10.2	42	9.2		
2330	1/3	TATED	2		10.2	43			
			3		10.1	48		100 "	SPRAUSENR
			3		10.1	38		100 "	SODA ASH
			3						

SIZE HOLE	1 3/8	PUMP PRESSURE MIDNIGHT	900	DRILL PIPE WT. MIDNIGHT
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CORE AND D.S.T. RECORD

[illegible][illegible]

CASING RECORD

[illegible]

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)	
Remarks:	8 ⁰⁰ 8 ⁴⁵ DRILL
	8 ⁴⁵ 9 ⁰⁰ SURVEY
12 ⁰⁰ 12 ³⁰ FINISH TRIP IN	9 ⁰⁰ 9 ⁴⁵ DRILL
12 ³⁰ 12 ⁴⁵ SRR. RIS	9 ⁴⁵ 10 ¹⁵ WORKEN MUD PUMP
12 ⁴⁵ 8 ⁰⁰ DRILL	10 ¹⁵ 12 ³⁰ DRILL
	12 ³⁰ 3 ⁰⁰ DRILL SHUT TANKS
	3 ⁰⁰ 4 ⁰⁰ DRILL

SIGNATURE

Richard Hardt

CANADA CITIES SERVICE PETROLEUM CORPORATION
DAILY DRILLING REPORT

Lease & Well No. <u>C.S. ROADKNEE I-24</u>	Location <u>I-24 NWT</u>	Province <u>NWT</u>
Contractor <u>VANDERGRIFF BAS YUK. ENTERPRISE</u>	<u>RIG # 1</u>	Date <u>2-18-69</u>
Depth at 8 AM <u>1986</u>	4 PM <u>2061</u>	Midnight <u>2111</u>
Driller's 12-8A <u>P. MOSER</u>	8A-4 P <u>W. ORBECK</u>	4 P-12 <u>E. LAPANTIS</u>

FORMATION RECORD

FROM		TO		FORMATION
1889	2111	SHALE		
		BIT # 7-78" MANN J. SEC "168474, 436 30 1/4 HRS		

SLOPE TESTS

MUD RECORD

SLOPE TESTS			CHARACTERISTICS				CONDITIONERS		
DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
1980	13 1/4	TOTEE	1		9.9	45			
			1		9.8	43	7.4		
			1		9.9	45			
DRILL PIPE TRIPS			2		9.9	48			
DEPTH	REASON		2		9.9	43	9.6	50"	CAUSTIC
			2		9.9	42			
			3		10.2	45			
			3		10.4	45			
			3		10.4	45			

SIZE HOLE $2\frac{1}{8}$

PUMP PRESSURE MIDNIGHT 900

DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

[illegible][illegible]

CASING RECORD

[illegible]

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

Remarks:

12° 12' S 82° 15' W

1215.800 DRILL

815 545 SURVEY

847-230 DRILL

230 300 SURVEY

3rd 4th DRILL.

400415. SAR RIS

410-830 DRILL

830 840 DROP SURVEY

5th 12th TRIP FOR N/1011
ALCOA SHAKE TANK

LEMAN CHARLES LEAN

SIGNATURE

SIGNATURE W. Degenhardt

CANADA CITIES SERVICE PETROLEUM CORPORATION
DAILY DRILLING REPORT

Lease & Well No	C.S. RADKNEB I-24	Location	I-24 NAIT	Province	NAIT
Contractor	LANDERGRIFT GAS & OIL ENTERPRISE RIS #1			Date	2-17-69
Depth at	8 AM 1662	4 PM	1738	Midnight	1889
Driller's	12-8A P. MCSEAR	8A-4 P	W. ORBEEK	4 P-12	F. LAPLANTE

FORMATION RECORD

FROM	TO	FORMATION
1509	1889	SHALE
		BIT #6-7 1/2" STB-J REED "183975- 686' 25 1/2 HRS.
		BIT #7-7 1/2" MUHN-J SBE "168474 10' 10 1/2 HRS.

SLOPE TESTS

DEPTH	DEGREES	INSTRUMENT	TOW	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIB-SEC.	CC WL	AMOUNT	KIND
1730	1 1/4	TSTEO	1		9.6	42		5 SKS	GAL
			1		9.7	45	10.	30"	GAL
			1		9.6	42		50"	SPARSENE
DRILL PIPE TRIPS			2		9.8	40		5 SKS	GAL
DEPTH	REASON		2		9.8	44	9.0	30"	SPARSENE
			2		9.8	44			
			3		10.1	56			
			3		10.1	48	9.2.	60 SKS	GAL
			3		10.0	38			

SIZE HOLE	1 3/4"	PUMP PRESSURE MIDNIGHT	900	DRILL PIPE WT. MIDNIGHT
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CORE AND D.S.T. RECORD

[illegible]

D.S.T. No.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS
					STARP PIPR AT 1670 NO CORR

CASING RECORD

[illegible]

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

400 - 1200 DRILL

Remarks:

Remarks:	8° 55' DRILL
12° 12' 52R RIG	8° 55' 52R RIG Y 130P3
12° 15' 50' DRILL	8° 55' SURVEY
1° 2' CLEAN UP	9° 10' TRIP OUT FOR N/131T
TANK	10° 11' SHARP PIPE IN
2° 5° 00' DRILL	11° 5' 12° 00' CLEAN TO BTM
	12° 00' 40° DRILL

SIGNATURE

CANADA CITIES SERVICE PETROLEUM CORPORATION

DAILY DRILLING REPORT

Lease & Well No. CS. RED KNIFE I-24 Location I-24 NWT Province NWT
 Contractor ANDERGRIFT RES & OIL ENTERPRISE RIS #1 Date 2-16-69
 Depth at 8 AM 1080 4 PM 1330 Midnight 1509
 Driller's 12-8A P MOSER 8A-4 P W. ORBEEK 4 P-12 F. LAPLANTE

FORMATION RECORD

FROM	TO	FORMATION
990	1509	SHALE
		BIT #6-1/8 ST3 J HARD "183945 IN HOLD

SLOPE TESTS

MUD RECORD

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
990	1/2	TOTCO	1						
1480	1 1/4		1	9.6	37				
			1	9.6	39				
			2		42				
			2	9.8	37			58"	SPARSINE
			2	9.9	37				
			3	10.	38			6 SKS	CIEL
			3	10	38			20"	SPARSINE
			3	10.	40				

SIZE HOLE 2 1/8PUMP PRESSURE MIDNIGHT 750

DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	SIZE BIT	KIND	FORMATION	SHOWING

D.S.T. NO.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS

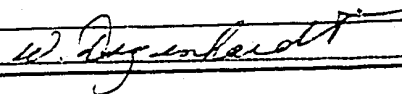
CASING RECORD

SIZE	WEIGHT	MAKE	MAKE		TALLY	CEMENTED AT	SACKS	KIND CEMENT
			F. COLLAR	SHOE				

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

12" 12' SUR R/S 8" 8' SUR R/S T BOP 4" 4' SUR R/S
12" 12' SUR R/S 5" 4' DRILL 4" 15' 78" DRILL
12" 3' TRIP FOR W/BIT 8" 10' DRILL 7" 30' 80" REPACK SWIRL
30" 40" PLANN TO BIT 10" 3' 11" SURVY PLANN MUD
4" 00' 53" DRILL TANK
5" 30' 60" WORK ON PUMP 11" 12" DRILL
1" 00' 80" DRILL

SIGNATURE



CANADA CITIES SERVICE PETROLEUM CORPORATION
DAILY DRILLING REPORT

Lease & Well No.	C.S. REDKNIER I-24	Location	I-24 NW 1/4	Province	WY
Contractor	VANDERGRIFT GAS & OIL ENTERPRISE INC.			Date	2-15-69
Depth at	8 AM 720	4 PM	840	Midnight	990
Driller's	12-8A F. LAPLANTE	8A-4 P	MOSER	4 P-12	W. ORBACK

FORMATION RECORD

FROM	TO	FORMATION
513	990	SHALE
		BIT #5-128 SHN & SHE #176879 652 30 HRS

SLOPE TESTS

MUD RECORD

SLOPE TESTS			CHARACTERISTICS				CONDITIONERS		
DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	WEIGHT	VIS-SEC.	CC WL	AMOUNT	KIND
774	34	TOTCO	1		9.6	40			
			1		9.6	40			
			1		9.6	40			
DRILL PIPE TRIPS			2		9.6	38			
DEPTH	REASON		2		9.7	45			
			2		9.6	42			
			3		9.6	34		5 SKS	CAL
			3		9.5	32		400*	SPARE 5NIZ
			3		9.6	36			

SIZE HOLE	128	PUMP PRESSURE MIDNIGHT	450	DRILL PIPE WT. MIDNIGHT
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CORE AND D.S.T. RECORD

[illegible]

D.S.T. No.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS

CASING RECORD

[illegible]

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

Remarks:

Remarks:	TIME	DESCRIPTION
12 ⁰⁰ 12 ¹²	8 ¹² 11 ¹⁵	SRR RIG DRILL
12 ¹² 8 ⁰⁰	11 ¹⁵ 11 ¹⁵	SURVEY CLEAN SHAKER TANK
	11 ⁴² 1 ¹⁵	DRILL
	1 ¹⁵ 1 ⁴⁵	WORK ON ARUG PUMP
	1 ⁴⁵ 4 ⁰⁰	DRILL

SIGNATURE W. J. Roperford

CANADA CITIES SERVICE PETROLEUM CORPORATION

DAILY DRILLING REPORT

Lease & Well No. PS-RUDKNIFE I-24 Location I-24 1/4 N 1/4 T Province W. T.
 Contractor WANDER GRIET OIL ENTERPRISE RIG #1 Date 2-14-69
 Depth at 8 AM 338 4 PM 377 Midnight 513
 Driller's 12-8A F LAPLANTH 8A-4 P 1st MOSER 4 P-12 W. CRANEK

FORMATION RECORD

FROM	TO	FORMATION
338	513	LIMESTONE
		BIT 5-7/8 SH45 SEC 176879 IN HOLD

SLOPE TESTS

MUD RECORD

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
			1						
			1						
			1						
			2					18 SKS	GAL
DRILL PIPE TRIPS			2					100"	BICARB
DEPTH	REASON		2		8.8	40			
			2						
			3		8.8	40			
			3		8.8	39			
			3		8.7	38			

SIZE HOLE 7/8 PUMP PRESSURE MIDNIGHT 700 DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

CORE AND LOG SHEET									
CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	SIZE BIT		KIND	FORMATION	SHOWING
					PRESSURE TEST BLIND RAMS 4 1/2" PIPE RAMS				
					Y HYDRIL TO 1000' EACH FOR 15 MIN OK				
								W.D.	
D.S.T. NO.	FROM	TO	TIME MIN.	FORMATION				RECOVERY AND REMARKS	
				PRESSURE TEST FORMATION TO 200' FOR				10 MIN OK	
								W.D.	

CASING RECORD

SIZE	WEIGHT	MAKE	MAKE		TALLY	CEMENTED AT	SACKS	KIND CEMENT
			F. COLLAR	SHOE				

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

Remarks: 400' 10³⁰ DRILL 7/8" HOLE
8⁰⁰ 9³⁰ REPAIR 1000 LINES 10³⁵ 10⁴⁵ REPAIR CHAIN
9⁰⁰ 10⁰⁰ DRILL OUT 10⁴⁵ 12⁰⁰ DRILL 7/8" HOLE
12⁰⁰ 8⁰⁰ W.D. RIG 10¹¹ 11³⁰ DRILL 7/8" HOLE
TO DRILL OUT 11³⁰ 12³⁰ PRESS UP FORMATION
REPAIR & REAMS 12³⁵ 4⁰⁰ DRILL 7/8" HOLE
IN MUD LINE
SUBJ. PRESS
UP BLIND RAMS
4 1/2" PIPE RAMS HYDRIL

SIGNATURE

[Signature]

CANADA CITIES SERVICE PETROLEUM CORPORATION

DAILY DRILLING REPORT

Lease & Well No. PS-ARPKNIFE I-24 Location I-24 NW 1 Province NWT
 Contractor AMARCAIRI SAS Y OIL ENTERPRISE R/S #1 Date 2-13-69
 Depth at 8 AM 338 4 PM 338 Midnight 338
 Driller's 12-8A F. LAPLANTE 8A-4P P. MOSAR 4P-12 W. ORBACIS

FORMATION RECORD

FROM	TO	FORMATION
338-		

SLOPE TESTS

MUD RECORD

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
			1						
			1						
			1						
			2						
			2						
			2						
			3						
			3						
			3						

DRILL PIPE TRIPS

DEPTH	REASON	TOUR	TIME	WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
		2						
		2						
		2						
		3						
		3						
		3						

SIZE HOLE

PUMP PRESSURE MIDNIGHT

DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	SIZE BIT		FORMATION	SHOWING

D.S.T. No.

FROM

TO

TIME MIN.

FORMATION

RECOVERY AND REMARKS

D.S.T. No.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS

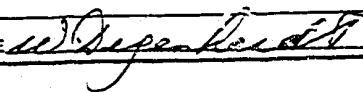
CASING RECORD

SIZE	WEIGHT	MAKE	MAKE		TALLY	CEMENTED AT	SACKS	KIND CEMENT
			P. COLLAR	SHOE				

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

Remarks: 400' 93" WELDING ON RIG
 800' 113" W.O.C. NIPPLE 930' 103" HOOK UP LINES
 1130' 400' WELDING ON 1030' 1100' PRESS UP 134 INCH RAM
 1200' 800' W.O.C. RIG TO 1000' FOR 12 INCH OK
 NIPPLE UP 1100' 1130' RAN IN BIT D.C. SINGLE
 Y KALLY
 1130' 1200' PRESS UP 4 1/2" NIPPLE
 RAMS

SIGNATURE



CANADA CITIES SERVICE PETROLEUM CORPORATION

DAILY DRILLING REPORT

Lease & Well No. CS. REDKNIFE I-24 Location I-24 NW1 Province W.T.
 Contractor WANDERLIFT RAS & CO. ENTERPRISE RES #1 Date 2-12-69
 Depth at 8 AM 338 4 PM 338 Midnight 338
 Driller's 12-8A F. LAPLANTE 8A-4 P P. MOSER 4 P-12 W. ORBECK

FORMATION RECORD

FROM	TO	FORMATION
308	338	LIMASTON
		BIT #4 - 12 1/4 YSI READ RR #041342 31' 6 3/4 HRS

SLOPE TESTS

MUD RECORD

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIS-SEC.	CC WL	AMOUNT	KIND
330	24	TOTCO	1		10	63			
			1		10	64			
			1		10	65			
DRILL PIPE TRIPS			2						
DEPTH	REASON		2						
			2						
			2						
			3						
			3						
			3						

SIZE HOLE 12 1/4 PUMP PRESSURE MIDNIGHT 350 DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	SIZE BIT	KIND	FORMATION	SHOWING
RAN 10 JOINTS 8 3/8" 24" J-55 CHASE R. MANN CASINGS 323.12 SKINAT 334.82								
LARKIN FLOAT Y SHOBB ST 30.96					4-8 3/8	WEATHERFORD KINSER TYPE CATALYZER		
AT 180 - 210 270 - 330								

D.S.T. NO.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS
					CEMENTED BY HOWE
					80 SKS CEMENT BY #90 REL PLUS 100 SKS CEMENT BY 290 CASH 2.
					CEMENT PIPE PUMP PLUS W/ 1000 P.S.I.G. PLUS DOWN AT 11:30 AM 2-12-69
					ORIGINAL C-F 885 1' FILL 586 K B 899

CASING RECORD

SIZE	WEIGHT	MAKE	MAKE		TALLY	CEMENTED AT	SACKS	KIND CEMENT
			F. COLLAR	SHOE				
8 3/8	24	MANN	LARKIN	LARKIN	323.12	334.82	180	C16 W44

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

Remarks:

12° 10' 11° 10' RAN 8 3/8" CASING 11° 10' 12° 00' BACKUP LANDING
 12° 10' 11° 10' RISE UP HOWE JOINT NIPPER UP
 12° 10' 11° 10' CIRE NOHE
 12° 10' 11° 10' DRILL 12 1/4 11° 10' RAN 180 SKS
 14° 10' 11° 10' SURVEY CEMENT
 14° 10' 11° 10' PULL TO RUN 8 3/8" CASING 11° 10' 11° 10' W.O.C
 14° 10' 11° 10' RISE TO RUN 8 3/8" CASING

SIGNATURE

[Signature]

CANADA CITIES SERVICE PETROLEUM CORPORATION

DAILY DRILLING REPORT

Lease & Well No. S. RED KNIFE I-24 Location I-24 NWT Province NWT
 Contractor VANDERGRIFT OIL ENTERPRISES RIG #1 Date 2-11-69
 Depth at 8 AM 253 4 PM 285 Midnight 308
 Driller's 12-8A F. LAPHANT 8A-4P P MOSER 4P-12 W. ORIBACK

FORMATION RECORD

FROM	TO	FORMATION
198	308	LIMESTONE
		BIT #2 12 1/4" SER RIGD "463093" REDA DRILL 70 HOLE
		109' 21 HRS
		BIT #4 12 1/4" YSI RIGD RR #D41342 1N HOLE

SLOPE TESTS

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	WEIGHT	VIS-SEC.	CC WL	AMOUNT	KIND
237	34	TOTEO	1		9.2	60			
			1		9.2	68		12 SK	GAL
			1		9.2	70			

DRILL PIPE TRIPS

DEPTH	REASON	TOUR	TIME	WEIGHT	VIS-SEC.	CC WL	AMOUNT	KIND
		2		9.2	68			
		2		9.2	65			
		2		9.3	65			
		3		9.9	70			
		3		10	90			
		3		10	55			

SIZE HOLE 12 1/4 PUMP PRESSURE MIDNIGHT 250 DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	SIZE BIT	KIND	FORMATION	SHOWING

D.S.T. No.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS

CASING RECORD

SIZE	WEIGHT	MAKE	MAKE	TALLY	CEMENTED AT	SACKS	KIND CEMENT
			R. COLLAR SHOE				

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

Remarks: 4°43' DRILL 12 1/4"
8°08' SER RIG 43°54' WORK ON SWIRL & PUMP
8°10' DRILL 12 1/4" 54°6' DRILL 12 1/4"
12°12' SER RIG 10°30' TRIP TO CHECK 6°7' REPAIR DRIVE CHAIN
12°43' DRILL 12 1/4" BIT 7°07' DRILL 12 1/4"
43°44' SER RIG 12°40' DRILL 12 1/4" 73°8' REPAIR 3 CHAINS
44°8' DRILL 12 1/4" 8°30' DRILL 12 1/4" HOLE
10°11' TRIP FOR A/BIT
11°30' DRILL 12 1/4"
 SIGNATURE W. Oriback

CANADA CITIES SERVICE PETROLEUM CORPORATION
DAILY DRILLING REPORT

Lease & Well No.	C.S. RACKKNIFE I-24	Location	I-24 NWT	Province	NWT
Contractor	VANDERGRIFT BAST OIL ENTERPRISE			PLS #	1
Depth at	8 AM	125'	4 PM	155'	Midnight
Driller's	12-8A	F. LAPLANTE	8A-4P	P. MOSER	4 P-12
					W. ORBICK

FORMATION RECORD

FORMATION RECORD

FROM	TO	FORMATION
125	198	LIMESTONE
		BIT # 3-78" D.S.J. SAC # 908473 50' 10 1/4 HRS
		BIT # 2A 12 1/4 SIR HARD # 895242 FROM 50' 6 3/4 HRS
		IN HOUR DRILLING

SLOPE TESTS

MUD RECORD

SLOPE TESTS			CHARACTERISTICS				CONDITIONERS		
DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	WEIGHT	VIS. SEC.	CC WL	AMOUNT	KIND
125	1/2	Totoo	1		8.8	53		25"	4 MIN
125	3/4		1		8.8	60		15 SKS	GEL
			1		8.8	20			
DRILL PIPE TRIPS			2		8.8	62		15 SKS	GEL
DEPTH	REASON		2		8.7	55		1 SKS	FIBER SAND
			2		8.7	48			
			3					12 SKS	GEL
			3		8.8	50		2 SKS	FIBER SAND
			3						

SIZE HOLE 12 1/4 PUMP PRESSURE MIDNIGHT 200 DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

[illegible][illegible]

CASING RECORD

[illegible]

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

12 ⁰⁰ 12 ¹⁵	SAR RLS	8 ⁰⁰ 8 ¹⁵	SAR RLS	4 ⁰⁰ 4 ¹⁵	SAR RLS
Remarks:	PUMP 7 ³⁸ " TO 12 ¹⁴ "	8 ¹⁵ 9 ¹⁵	DRILL 7 ³⁸ "	4 ¹⁵ 8 ³⁵	PUMP 7 ³⁸ " TO 12 ¹⁴ "
1 ¹⁵ 2 ⁰⁰	PUMP TO CHANGE BIT	9 ⁴⁵ 10 ¹⁵	LOOSING MUD	8 ³⁵ 12 ⁰⁰	DRILL 12 ¹⁴ " HOLES
2 ⁰⁰ 2 ¹⁵	SURVEY		TO FORMATION		
2 ¹⁵ 8 ⁰⁰	DRILL 7 ³⁸ " HOLES		BLOW UP LOG		
		10 ¹⁵ 1 ¹⁵	DRILL 7 ³⁸ "		
		1 ¹⁵ 1 ³⁰	SURVEY		
		1 ³⁰ 3 ⁰⁰	PUMP TO CHANGE BIT		
		3 ⁰⁰ 4 ⁰⁰	PUMP		
			SIGNATURE		W. Greenblatt

SIGNATURE

CANADA CITIES SERVICE PETROLEUM CORPORATION
DAILY DRILLING REPORT

Lease & Well No	CS. REDHURST T-24	Location	I-24 NAT	Province	NAT
Contractor	LANDER CRIFT BAS TALK ENTERPRISE RIS# 1			Date	2-9-69
Depth at	8 AM 77	4 PM	105	Midnight	RRAM 100
Driller's	12-8A F. L. PHANTIE	8A-4P	P. MOSER	4 P-12 W. O. BARK	

FORMATION RECORD

FROM	TO	FORMATION
77	125	LIMESTONE
		BIT # 1A 7 3/4 YM RED #95242 40' 7 1/4 HRS
		BIT # 2A 12 1/4 SIR RED #463095 BERM 40' 12 1/4 HRS

SLOPE TESTS

MUD RECORD

SLOPE TESTS			CHARACTERISTICS				CONDITIONERS		
DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	WEIGHT	VIS-SEC	CC WL	AMOUNT	KIND
96	54	TOTED	1			40			
			1			70		25"	LIME
			1			70			
DRILL PIPE TRIPS			2		8.8	52		10 SKS	GRL
DEPTH	REASON		2		8.9	48		20"	LIME
			2		8.8	50		20 SKS	SAWDUST
			3		8.8	53		25 SKS	FIBERGLASS
			3		8.8	52		75 SKS	GRL
			3		8.8	52		25"	LIME

SIZE HOLE 12 1/4

PUMP PRESSURE MIDNIGHT 202

DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

[illegible]

D.S.T. NO.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS

CASING RECORD

[illegible]

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

NOTE: (When using the following)

12° 12' SRR RIS	8° 8' SRR RIS	41° 12' BRAM 7 1/2" TO 12 1/2"
12° 12' BRAM 7 1/2" TO 12 1/2"	8° 11' 30" DRILL 7 1/2" HOLE	
5° 5' 30" SURVEY	11° 5' 12" SURVEY	
5° 5' 40" TRIP TO CHANGE	12° 2' DRILL 7 1/2" HOLE	
BIT TO 7 1/2"	2° 2' 30" BRAM 7 1/2" TO 12 1/2"	
5° 4' 8" DRILL 7 1/2" HOLE	2° CHANGE TO 12 1/2" BIT	
	2° 40' BRAM 7 1/2" TO 12 1/2"	

SIGNATURE

CANADA CITIES SERVICE PETROLEUM CORPORATION

DAILY DRILLING REPORT

Lease & Well No. E.S. REDKNIFE I-24 Location I-24 NWT Province NWT
 Contractor CANDACORIT SASTOIL ENTERPRISE RIG #1 Date 2-8-69
 Depth at 8 AM 36 4 PM 65 Midnight 8 AM 7 1/2" HOLE
 Driller's 12-8A W. ORBECK SA-4 P F. LAPLANTE 4 P-12 P. MOSER

FORMATION RECORD

FROM	TO	FORMATION
0	77	LIMESTONE
		BIT #1-7 1/2 Y.M. RIG #E95242 65' 10 3/4 HRS
		BIT #2-12 1/4 S.I.R. RIG #463095 8 AM 65' 7 HRS

SLOPE TESTS

DEPTH	DEGREES	INSTRUMENT	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
					WEIGHT	VIB. SEC.	CC WL	AMOUNT	KIND
60	1	TOTCO	1		8.8	65			
			1		8.7	55			
			1						

MUD RECORD

DEPTH	REASON	TOUR	TIME	CHARACTERISTICS			CONDITIONERS	
				WEIGHT	VIB. SEC.	CC WL	AMOUNT	KIND
		2						
		2						
		2						
		3		8.8	65		16 SFS	GAL
		3		8.7	55		40"	LIME
		3						

DRILL PIPE TRIPS

DEPTH	REASON	TOUR	TIME	WEIGHT	VIB. SEC.	CC WL	AMOUNT	KIND
		2						
		2						
		2						
		3		8.8	65		16 SFS	GAL
		3		8.7	55		40"	LIME
		3						

SIZE HOLE

12 1/4

PUMP PRESSURE MIDNIGHT

DRILL PIPE WT. MIDNIGHT

CORE AND D.S.T. RECORD

CORE NO.	FROM	TO	RECOVERY	DRILLING TIME-MIN.	SIZE BIT		FORMATION	SHOWING
					SIZE	KIND		
D.S.T. No.	FROM	TO	TIME MIN.	FORMATION	RECOVERY AND REMARKS			
					SPUDDER AT 3.00 AM 2-8-69			

CASING RECORD

SIZE	WEIGHT	MAKE	MAKE		TALLY	CEMENTED AT	SACKS	KIND CEMENT
			F. COLLAR	SHOE				

NOTE: (Attach Casing and Drill Stem Test Reports When Applicable)

Remarks: 40' 10" WORK TIGHT HOLE MIX MUD
8' 8" SRR. RIG
8' 9" DRILL 7 1/2" HOLE
12' 3" RIG TO SPUD
3' 8" DRILL 7 1/2" HOLE
9' 10" CLEAN OUT RAT
HOLE Y CUT OFF
KELLY SOCK
10' 3" DRILL 7 1/2" HOLE
3' 4" WORK TIGHT HOLE
MIX MUD

SIGNATURE

W. Orbeck