

AMOCO

S. POINTED MOUNTAIN (D-1) L-68

9211-A4-1-1



NORTHERN NON-RENEWABLE RESOURCES BRANCH

DIRECTION D/S RESSOURCES NON-RENOUVELABLES
DU NORDAPPLICATION TO AMEND
A DRILLING AUTHORITYDEMANDE DE MODIFICATION
D'UNE AUTORISATION DE FORAGE

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.

Cette demande doit être présentée en trois exemplaires et approuvée avant le début des travaux. Si l'emplacement du puits est modifié, la demande doit être accompagnée au besoin, d'un plan d'arpentage approuvé par l'arpenteur général du Canada.

In compliance with the "Canada Oil and Gas Regulations" application is hereby made to amend

Conformément au Règlement sur les terres pétrolières et gazéifères du Canada, nous demandons l'autorisation de modifier

Drilling Authority No. - L'autorisation de forage n°

2978

Name and number of well - Nom et n° du puits

AMOCO S. POINTED MOUNTAIN (D-1) L-68

PROPOSED AMENDMENT(S):

MODIFICATION(S) PROPOSÉE(S):

To drill a total depth of 4225 m (4164 m TVD) which is in discord with the original total depth of 4010 m.

REASONS FOR THE AMENDMENTS:
MOTIFS DES MODIFICATIONS:

The original estimated depth of the top of the Nahanni Formation was not accurate. It has therefore been decided to drill to a new T.D. in anticipation of encountering the Nahanni Formation. Further amendments may be required depending on logging results.

Signed by - Signé par

Title - Titre

District Superintendent

Company - Société

Amoco Canada Petroleum Company Ltd.

Date

82-09-21

FOR BRANCH USE ONLY - À L'USAGE DE LA DIRECTION

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

Demande étudiée et approuvée, sous réserve des conditions suivantes

Date

30 Sep 82

District Conservation Engineer - Ingénieur en conservation du district

K. S. Thomas

Forms to be submitted to the District Conservation Engineer,
Department of Indian Affairs and Northern Development.Adresser vos demandes à l'ingénieur en conservation du district
Ministère des Affaires indiennes et du Nord canadien.



Indian and Northern
Affairs Canada

Affaires indiennes
et du Nord Canada

Drilling Authority No 995

NORTHERN NON-RENEWABLE
RESOURCES BRANCH

DIRECTION DES RESSOURCES
NON-RENOUVELABLES DU NORD

Date Issued 1982-03-19

APPLICATION FOR A
DRILLING AUTHORITY

DEMANDE D'AUTORISATION
DE FORAGE

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 Amoco Pointed Mountain D-1 L-68

Location: Unit L Section 68 Grid 60-20-123-45

Latitude 60°17'42.802"N Longitude 123°57'55.934"W

Unique Well Identifier 300L686020123450

Universal Well Location Reference 60.10200°N 123.96554°W

Proposed Target Location (if different) _____

Elevation: Ground 726.86 m K.B. _____ metres above sea-level.

Water Depth (for man-made islands, ice islands and offshore wells) _____

Well is expected to produce from Middle Devonian Carbonate formation at a depth of about 3700 metres Expected total final depth 4010 metres

Area assigned to well _____

(for District Conservation Engineer's use only)

Exploration Agreement No _____ Production Licence No _____

Permit No _____ Lease No 838-70 Containing 5,138.64 Hectares

Permittee, licensee, or lessee _____

Exploratory Licence No 2978

Surface Owned by Crown or Crown

(if alienated submit name and address of owner and occupant)

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

Casing Size O.D. (mm)	Mass (kg/m)	Wall thickness (mm)	Grade	New or Used	Estimated Depth	Mass of Cement
1						
2						
3						
4						
5						

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

Gas Zone: Mississippian, Nahanni

Control Equipment: 5000 psi BOP

Well will be drilled with Rotary Rig No. 4 by Hi Tower Drilling

(Drilling Contractor or company)

Responsible agent of applicant: —

At well Fred Miller

Contractor has Contractor's Business Licence No. Applied for one

At registered office J.W. Savage

Address 420-6130 (Intercom to Ptd Mtn) Address 6th Flr, 10109 - 106 St. Edmonton

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

Dated at Edmonton, this 4 day of February 19 82

Signed by J.W. Savage Company Amoco Canada Petroleum Company Ltd.

Title District Superintendent Operator's Licence No. 2978

(FOR BRANCH USE ONLY)

APPROVED

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

Refer to attached letter file: 9251-A4-1-1

Dated March 19 19 82

District Conservation Engineer

Form to be submitted to District Conservation Engineer,
Department of Indian Affairs and Northern Development.



DIRECTION DES RESSOURCES NON-RENOUVELABLES DU NORD DEMANDE D'AUTORISATION DE FORAGE

Avant de commencer les travaux, soumettre (en triple exemplaire) et faire approuver le présent avis (indiquant l'intention d'entreprendre des travaux de forage) et, au besoin, un plan d'arpentage reconnu par l'arpenteur général, montrant l'aire de sondage ou l'emplacement du puits.

Conformément au « Règlement sur les terres pétrolifères et gazifères du Canada », nous demandons l'autorisation d'effectuer des travaux de forage.

Nom et n° du puits _____

Emplacement: Unité _____ Section _____ Étendue quadrillée _____
Latitude _____ Longitude _____
Code d'ordinateur _____
Références universelles d'emplacement du puits _____

Emplacement proposé (s'il est différent) _____
Élévation: du sol _____ du carré d'entraînement _____ mètres au-dessus du niveau de la mer.
Profondeur d'eau (pour les îles artificielles, les îles de glace et les puits en mer) _____
Production prévue quand les tiges atteindront la formation _____ à une profondeur approximative de _____ mètres Profondeur totale prévue _____

Superficie assignée au puits _____
(à l'usage de l'ingénieur en conservation du district)

N° d'Accord d'exploration _____ N° de permis de production _____
N° de permis _____ N° de concession _____ Renfermant _____ hectares
Détenant de permis ou de licence, ou concessionnaire _____
N° de permis de prospection _____
Terres appartenant à la Couronne ou à _____
(Dans le cas de terres aliénées, donner le nom et l'adresse du propriétaire et de l'occupant)

Nous prévoyons utiliser les colonnes de tubage suivantes et de les cimenter ou de les sceller, tel qu'il est indiqué ci-dessous: —

Diamètre extérieur (en mm) de tubages	Masse (kg/m)	Épaisseur (mm)	Qualité	Tubages neufs ou usagés	Profondeur estimative	Masse de ciment
1						
2						
3						
4						
5						

Nappes d'eau, de gaz et de pétrole prévues et genre de matériel anti-éruption _____

Le puits sera foré à l'aide de la tour rotary n° _____ par _____
(Entrepreneur ou société de forage)

Agent responsable pour le requérant: — N° de permis de l'entrepreneur _____
Sur le chantier _____ Au siège _____
Adresse _____ Adresse _____
Il est entendu que, dans le cas de modifications indispensables, un avis sera soumis.
Datée — _____ le _____
Signé par _____ Société _____
Titre _____ N° de licence de sondage de l'exécutant _____

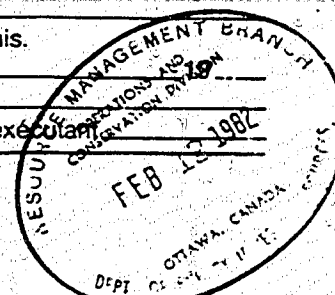
(DIRECTION)

APPROBATION

Demande étudiée et approuvée sous réserve des conditions suivantes:

Date _____ 19 _____

Ingenieur en conservation du district



APPLICATION TO ABANDON A WELL OR
SUSPEND DRILLINGIn compliance with the "Canada Oil & Gas Land Regulations", application
is hereby made for approval to abandon, to suspend drilling:-DEMANDE D'ABANDON D'UN Puits OU
DE SUSPENSION DU FORAGEConformément au Règlement sur les terres pétrolières et gazières du
Canada, nous demandons l'autorisation d'abandonner le puits ci-après
ou de suspendre les travaux de forage.

NAME & N° OF WELL

Amoco S. Pointed Mountain (D-1) L-68 ✓

LOCATION UNIT
EMPLACEMENT UNITE

L

SECTION

68

GRID - ETENDUE QUADRILLÉE

60-20-123-45

LATITUDE

60° 17' 42.802" N

LONGITUDE

123° 57' 55.934" ✓

UNIVERSAL WELL LOCATION REFERENCE - REFERENCE UNIVERSELLE D'EMPLACEMENT DU Puits

UNIQUE WELL IDENTIFIER N° - CODE D'ORDINATEUR

60.29522° N 123.96554° W ✓

300L686020123450 ✓

PERMIT N° - N° DE PERMIS

N 81A628 ✓

LEASE N° - N° DE CONCESSION

838-70 ✓

EXPLORATION AGREEMENT N° - N° D'ACCORD D'EXPLORATION

DATE OF COMMENCEMENT

OF PROPOSED PROGRAM
DATE - DÉBUT D'EXECUTION
DU PROGRAMME PROJETÉ

HOLDER - TITULAIRE

Nov 1/82 ✓

OIL, GAS & WATER ENCOUNTERED (DEPTH) - PÉTROLE, GAZ ET EAU (PROFONDEUR)

OIL AT - PÉTROLE A

Nil

GAS AT - GAZ A

2679 m ✓

WATER AT - EAU A

579 m KB to 587 m KB ✓

TOTAL DEPTH - PROFONDEUR GLOBALE

4200 m

DATE OF LAST OPERATIONS - DATE DES DERNIERS TRAVAUX

R.R. 82-11-04

PRESENT CONDITION OF WELL - ETAT ACTUEL DU Puits

Plugged and Abandoned

CASING RECORD - TUBAGE

CASING SIZE OD (mm) DIAMÈTRE EXTÉRIEUR (mm)	MASS - MASSE	AMOUNT - LONGUEUR	SET AT - FIXATION A	MASS OF CEMENT & ADDITIVES MASSE DE CIMENT ET D'ADDITIFS	AMOUNT PULLED LONGUEUR RECUPERÉE
1					
2					
(SEE ATTACHED BOTTOM HOLE DIAGRAM)					
3					
4					
5					

ADEQUATE !

REVIEWED BY *h/fn*DATE *8-3-83*

PROPOSED ABANDONMENT PROGRAM - PROGRAMME D'ABANDON PROJETÉ

PLUG - BOUCHON		GEOLOGICAL FORMATION FORMATION GÉOLOGIQUE	MASS OF CEMENT MASSE DE CIMENT	REMARKS - REMARQUES
N°	POSITION - PROFONDEUR			
1	4065 m to 4005 m	Nahanni ✓	1.5 m ³	✓
2	3206 m to 3267 m	Besa River Shale ✓	1.6 m ³	✓
3	Surface		.4 m ³	✓

(SEE ATTACHED BOTTOM HOLE DIAGRAM)

THE FOLLOWING LOGS HAVE BEEN RUN - LES DIAGRAMMES SUIVANTS ONT ÉTÉ TRACÉS

BHC SONIC - GR, DISFL - SP, CNL - FDC - NGT, DIPLOG, VARIABLE DENSITY ACOUSTIC AMPLITUDE,

OTHER OPERATIONS PROPOSED - AUTRES TRAVAUX PROJETÉS

VELOCITY SURVEY ✓

NONE

OPERATIONS TO BE CARRIED OUT BY - LES TRAVAUX SERONT EXÉCUTÉS PAR

N/A

ADDRESS - ADRESSE

RESPONSIBLE AGENT IN FIELD - AGENT EXTÉRIEUR RESPONSABLE

ADDRESS - ADRESSE

DATED AT - FAIT A

DATE

Fred Androschuk

6th Flr., 10109 - 106 St.

Edmonton

83-05-13

SIGNATURE

TITLE - TITRE

COMPANY - SOCIÉTÉ

Dist. Superintendent

Amoco Canada Petroleum Company Ltd.

NOTE: The District Conservation Engineer's office must be notified before work is commenced

NOTA: Aviser le bureau de l'ingénieur en conservation du district avant de commencer les travaux

APPROVAL (FOR BRANCH USE ONLY)

This application has been examined & proposed program approved,
subject to the following conditions:

APPROBATION (À L'USAGE DE LA DIRECTION)

Demande étudiée et programme approuvé, sous réserve des conditions
suivantes:DISTRICT CONSERVATION ENGINEER
INGÉNIEUR EN CONSERVATION DU DISTRICT

DATE

20 June 83

SUBMIT IN TRIPPLICATE TO DISTRICT CONSERVATION ENGINEER, DEPARTMENT OF INDIAN
AFFAIRS AND NORTHERN DEVELOPMENTPRÉSENTER EN TRIPLE EXEMPLAIRE À L'INGÉNIEUR EN CONSERVATION DU DISTRICT,
MINISTÈRE DES AFFAIRES INDIGÈNES ET DU NORD CANADIEN

ADMINISTRATION DU PETROLE ET
DU GAZ DES TERRES DU CANADADRILLING AUTHORITY N°
N° DE L'AUTORISATION
DE FORAGE

993

DATE ISSUED - DATE DE DELIVRANCE

WELL COMPLETION DATA

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

RENSEIGNEMENTS SUR LES FORAGES

A presenter en double dans les trente jours suivant l'achèvement, la reprise,
l'abandon, la remise en production et le reconditionnement de chaque puits ou
après la suspension

WELL NAME & N° - NOM ET N° DU PUITS

Amoco S. Pointed Mountain (D-1) L-68

PERMIT N° - N° DE PERMIS

N81A628

LEASE N° - N° DE CONCESSION

838-70

HOLDER - TITULAIRE

Amoco Canada Petroleum Co. Ltd.

EXPLORATION AGREEMENT N° - N° D'ACCORD D'EXPLORATION

N/A

OPERATOR - EXECUTANT

Amoco Canada Petroleum Co. Ltd.

PRODUCTION LICENCE N° - N° DE LICENCE DU PRODUCTEUR

N/A

LOCATION/SURFACE - EMPLACEMENT/SURFACE

UNIT - UNITE	SECTION	GRID - ETENDUE QUADRILLEE	LATITUDE	LONGITUDE
L	68	60-20-123-45	60° 17' 42.802" N	123° 57' 55.934" W

UNIQUE WELL IDENTIFIER - CODE D'ORDINATEUR

300L686020123450

UNIVERSAL WELL LOCATION - REFERENCES UNIVERSELLES D'EMPLACEMENT DU PUITS

60.29522°N 123.96554°W

LOCATION/BOTTOM HOLE OR PRODUCING HORIZON - EMPLACEMENT/FONDU DU SONDAGE OU HORIZON PRODUCTIF

UNIT - UNITE	SECTION	GRID - ETENDUE QUADRILLEE	LATITUDE	LONGITUDE
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UNIQUE WELL IDENTIFIER - CODE D'ORDINATEUR

See attached bottom hole survey

UNIVERSAL WELL LOCATION - REFERENCES UNIVERSELLES D'EMPLACEMENT DU PUITS

	DATE	DEPTH - PROFONDEUR	TRUE VERTICAL DEPTH VERITABLE PROFONDEUR VERTICALE	POOL(S) - GISEMENT(S)
SPOOLED DEBUT DES TRAVAUX	82-03-25			N/A
SUSPENDED SUSPENSION DES TRAVAUX				INTERVAL(S) OPEN TO PRODUCTION - INTERVALLE(S) DE PRODUCTION N/A
RESUMED OPERATIONS REPRISE DES TRAVAUX				ADEQUATE! REVIEWED BY <u>GL-11</u> DATE <u>5.3.00.14</u>
FINISHED DRILLING FORAGE TERMINE	82-09-06	4200 m		
DEEPEMED (side APPROFONDISSEMENT L'ackked)	82-10-12	4200 m		
COMPLETED (GAS/OIL) ACHEVEMENT (GAZ/PETROLE)				ELEVATION - GR - ALTITUDE DE SOL K.B. DIJ CARRE D'ENTRAINEMENT 725.3 m 737
ABANDONED ABANDON	82-11-04			WATER DEPTH - PROFONDEUR D'EAU RIG N° - N° DE LA TOUR DE FORAGE 4 E
RIG RELEASED FIN DES TRAVAUX	82-11-04			DRILLING CONTRACTOR - ENTREPRENEUR EN FORAGE Hi-Tower Drilling

CASING RECORD - TUBAGE

CASING SIZE (mm) - DIAMETRE (mm)	WALL THICKNESS (mm) EPAISSEUR (mm)	GRADE - QUALITE	MASS - MASSE	AMOUNT - LONGUEUR	SET AT - FIXATION A	MASS OF CEMENT & ADDITIVES MASSE DE CIMENT ET D'ADDITIFS
508	11.62	S00-95	139.89	13 joints	165 m	55 tonnes neat "G"
340	13.2	S-95	107.15	111 joints	1424 m	42.7 tonnes 0:1:2 64 tonnes 0:1:8
245	12	S00-95	69.9	21 joints		
245	11	S00-95	64.7	74 joints	3297	33.3 tonnes 0:1:0 103.3 tonnes 9:1:8
245	10	S00-95	59.5	121 joints		12.6
178	9.3	S00-95	30.69	76 joints	4130	24 m ³ Neat G & 30% Silica

GEOLOGICAL TOPS SOMMET DES FORMATIONS	ELEVATION - PROFONDEUR		CORE RECORD - CAROTTES					
	DEPTHS SOUS LE NIVEAU DU SOL	SUB SEA SOUS LE NIVEAU DE LA MER	FROM - DE	TO - A	REC REC	FROM - DE	TO - A	REC REC
Mattson	235		H/A					
Mississippian	1453							
Banff	2496							
Besa River Shale	3150							
Horn River Shale	3780							

GEOLOGICAL TOPS SOMMET DES FORMATIONS	ELEVATION - PROFONDEUR	LOG RECORD - DIAGRAMMES			
		RUN SERIE	TYPE OF LOG - GENRE DE DIAGRAMME	FROM - DE	TO - A
T.D.	4200	1	Compensated Neutron Log	3285	165
		2	DLL-GR, FDC-CNL-GR, AMPL-VDL, HOT, CIS, FIL, BHC-GR, NGT	4200	3291

CEMENTING RECORD (Piling, Squeeze, etc.)
CIMENTATION (Bouchon, sous pression, etc.)

Date	From - de	To - à	Remarks - Remarques
1.	4005	4065	1.5 m ³ Neat G
2.	3206 (Tagged)	3267 m	1.6 m ³ Neat G
3.	Surface		.4 m ³ Neat G

PERFORATING RECORD (Bullet, Jet)
PERFORATION (à bulles, à jet)

Date	From - de	To - à	Remarks - Remarques
N/A			

SERVICING RECORD (Acidizing, Fracing, etc.)
ENTRETIEN (acidification, fracturation, etc.)

Date	From - de	To - à	Remarks - Remarques
82-10-29	4079	4137	1 m ³ 28% HCL

DRILL STEM TEST - ESSAIS AUX TIGES

No. - N°	Date	Formation	From - de	To - à	VO Minis Vanne ouverte (minutes)	ISI Minis Première obturation (minutes)	FSI Minis Obturation définitive (minutes)	ISIBHP Pression de fond à la 1 ^{re} obturation	FSIBHP Pression de fond à l'obturation définitive	IFBHP Pression de fond au jaillissement	FFBHP Pression de fond à l'écoulement défini	LHP Pression hydrostatique de début	FHP Pression hydrostatique défini	Remarks - Remarques
1.	82-10-25	Nahanni	4200	4047	--	10	60	11.322 MPA	13.32 MPA	6.8 MPA	8.9 MPA	41.29 MPA	41.57 MPA	Recovery: 9 m clogged drilling fluid, no-formation fluid

ANALYSIS - ANALYSE

L&D No N° de laboratoire	Sample Echantillon	From - de	To - à	Source	Remarks - Remarques
N/A					

PRESENT STATUS OF WELL
ETAT ACTUEL DU PUITS

Oil Pétrole	(Interval) (intervalle)
Gas Gaz	(Interval) (intervalle)
Dry Sec	Nahanni 4137-4200 m
Susp Traverse sus.	

Company / Société Amoco Canada Petroleum Co. Ltd.

Signed by / Signé par [Signature]

Title / Titre District Superintendent

Date 3/6/82

Forms to be prepared in duplicate and forwarded to the District Conservation Engineer.

Présenter les formulaires remplis à l'ingénieur en conservation du district



CANADA

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
RESOURCE MANAGEMENT DIVISION**Application to Change a Well Name**

Application is made hereby to change the name of the well, recorded in the Well-names Register as—

AMOCO POINTED MOUNTAIN D-1

(Old name)

to AMOCO S POINTED MOUNTAIN (D-1) L-68

(Proposed new name)

Well Location

Location: Unit L Section 68 Grid 60-20-123-45

Latitude 60° 17' 42.802" N Longitude 123° 57' 55.934" W

From Established Reference Marker

Universal Well Location Reference 60.29522° N 123.96554° W

Reason for Changing Well Name

This well is not in the same grid as the other Pointed Mountain wells. This name change was requested by M. D. Thomas - Manager, Northern Region

Engineering and Control Branch

COGLA

Yellowknife, N.W.T.

Dated at Edmonton this 12 day of May 19 82

Signed by

Title District Superintendent

Company Amoco Canada Petroleum Co. Ltd.

(For Resource Management Division use only)

APPROVED

This application has been examined and approved:

25 June 1982

M. D. Thomas

CANADA LANDS SURVEYS REPORT
6 8 1 6 9
DATE 19 MAY 1982

EXPLANATORY PLAN OF
WELLSITE, ACCESS RIGHT-OF-WAY & CAMPSITE
FOR PROPOSED DEVELOPMENT WELL
AMOCO POINTED MOUNTAIN D-1
IN UNIT L, SECTION 68
GRID AREA 60° 20' , 123° 45'
POINTED MOUNTAIN AREA
NORTHWEST TERRITORIES

SCALE - 1:10,000 METRES 100 50 0 100 200 300 400 500 1000 METRES

LEGEND:

Bearings are astronomic, derived from the bearing 27° 52' 45" of the line between monuments C.L.S. (26) and C.L.S. (25) as shown on C.L.S.R. plan 57907 and, according to that plan are referred to the meridian through 60° N. Lat. and 123° W. Long. and derived from Polaris observation at TH opposite C.L.S. (22) ~ TH opposite C.L.S. (21).

C.L.S. 72 standard post found are shown

Traverse stations shown

Traverse lines are shown

Lands dealt with by this plan are bounded thus

All distances shown are in metres and decimals thereof.

Access Right-of-Way is 30 metres in width throughout, 15 metres each side of the traversed centre line. A 10 metre buffer exists where this Right-of-Way parallels the existing transmission line.

Grid areas and sections have been projected, but have not been check as to accuracy.

Prepared by AL N. Zaver C.L.S.

Certified correct this 1st day of February, 1982.

Canada Lands Surveyor

Department of Energy, Mines and Resources
Ottawa May 11 1982
Re Section 18 Canada Oil and Gas Land Regulations

AREAS REQUIRED

WELLSITE = 4.41 ha.

CAMPSITE = 0.36 ha.

ACCESS R/W = 27.82 ha.

TOTAL REQ'D = 32.59 ha.

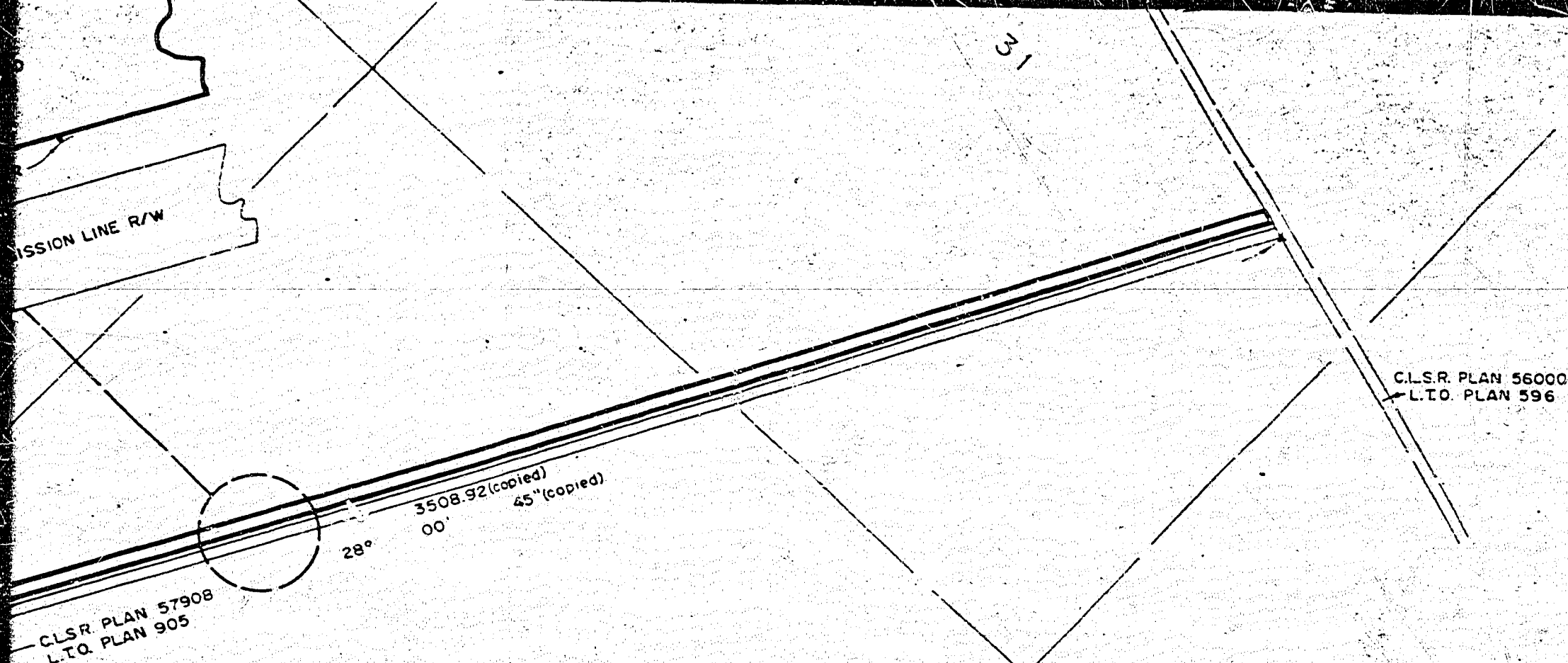
GRID AREA 60° 30' 123° 45'
GRID AREA 60° 20' 123° 45'

C.L.S.R. PLAN 56000
L.T.O. PLAN 596

C.L.S.R. PLAN 57908
L.T.O. PLAN 905

3508 92 (copied)
00' 45" (copied)

ROAD
TRANSMISSION LINE R/W



GRID AREA 60° 30' 123° 45'
GRID AREA 60° 20' 123° 45'

AREAS REQUIRED

WELLSITE = 4.41 ha.
CAMPSITE = 0.36 ha.
ACCESS R/W = 27.82 ha.
TOTAL REQ'D = 32.59 ha.

GRID AREA 60° 20' 123° 45'

POINTED MOUNTAIN AREA

NORTHWEST TERRITORIES

SCALE - 1:10,000 METRES 100 50 0 100 200 300 400 500 1000 METRES

LEGEND

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Prepared by AL N. Zaver C.L.S.

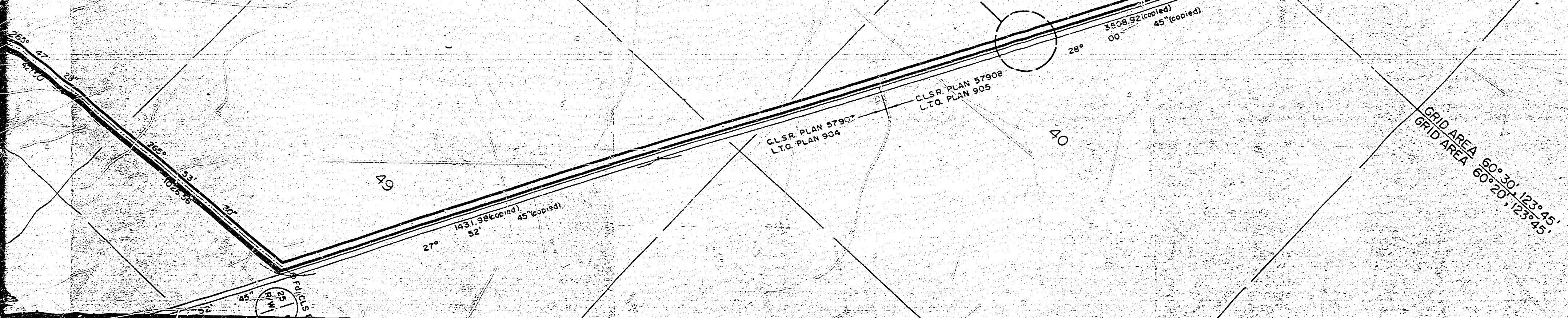
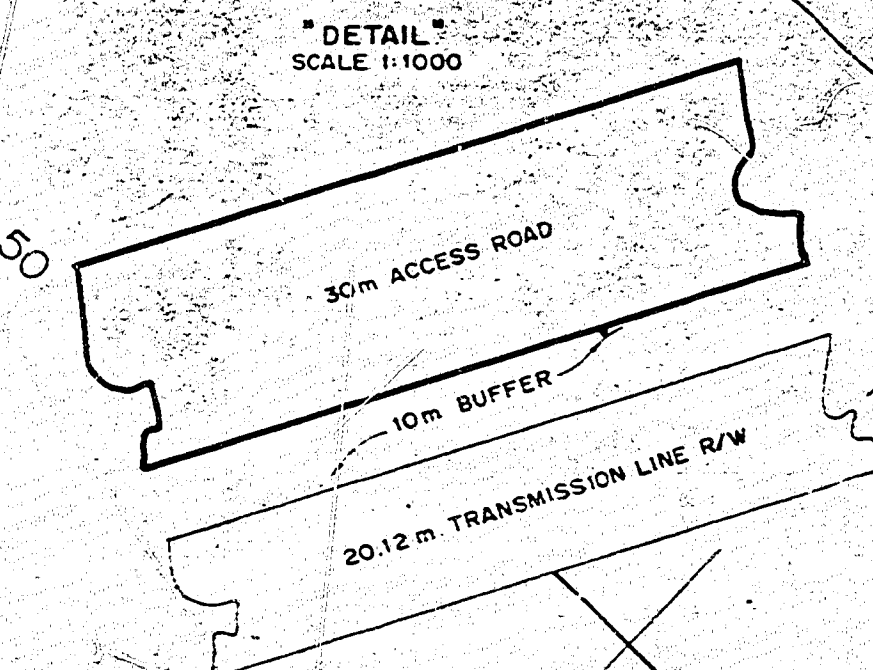
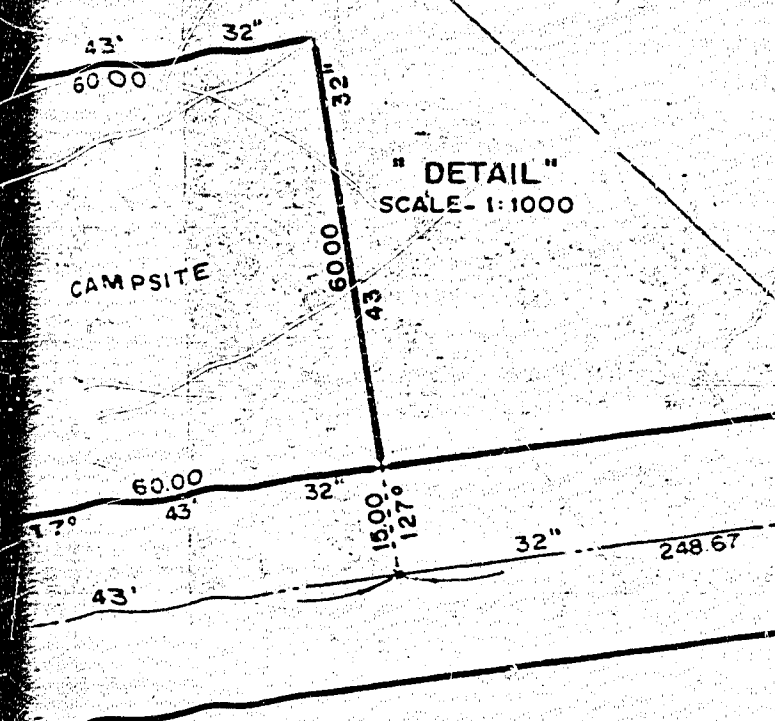
Certified correct this 1st day of February, 1982.

Canada Lands Surveyor

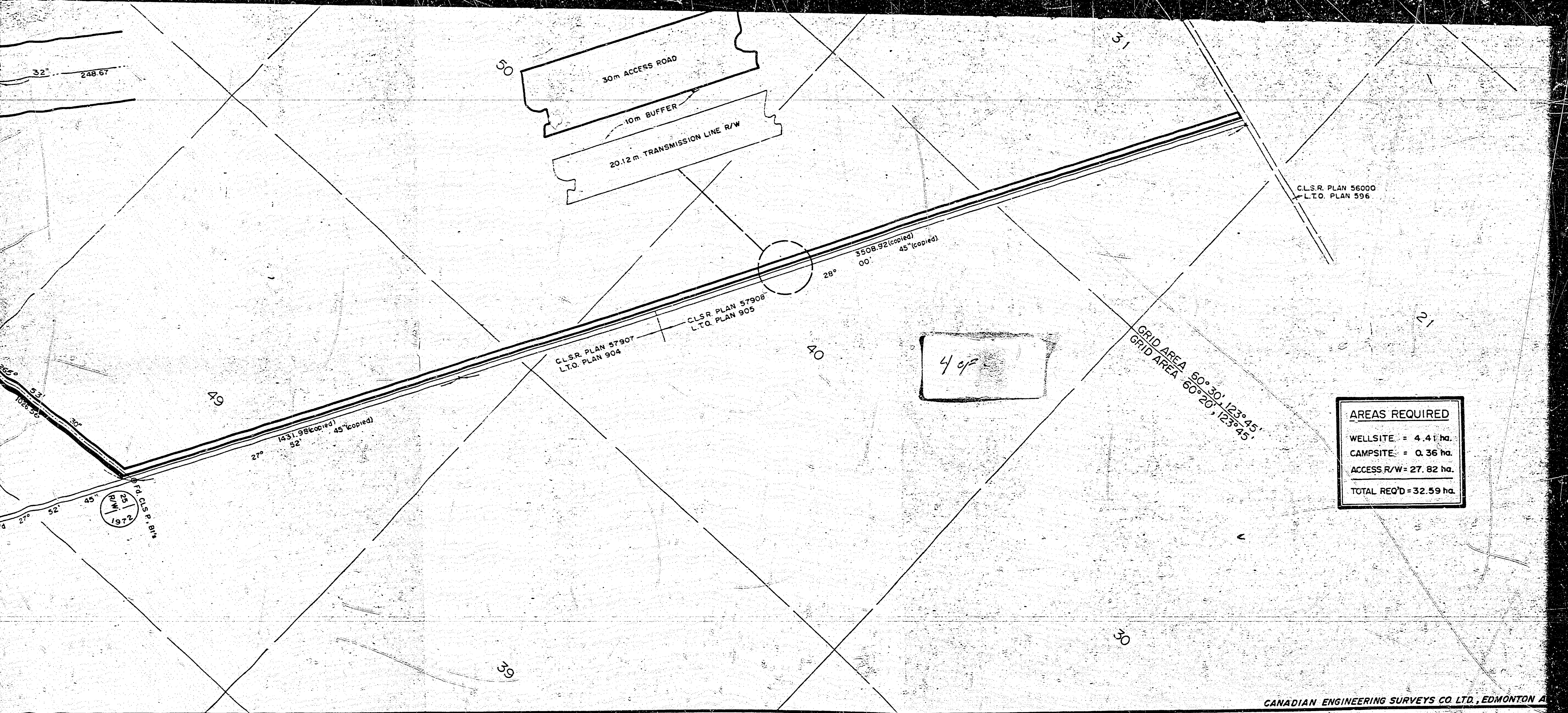
Department of Energy, Mines and Resources
Ottawa, May 11 1982
Re Section 16 Canada Oil and Gas Land Regulations
S. Raymond
Surveyor General

2 of

3 of



AREAS REQUIRED	
WELLSITE	= 4.4
CAMP SITE	= 0.3
ACCESS R/W	= 27.8
TOTAL REQ'D	= 32.5



50%

60

60

WELL SITE

CAMP SITE

CAMP SITE

"DETAIL"
SCALE - 1:1000

NOTE: WELL CENTRE
LOCATED AT SP 124
ON SEISMIC LINE
Nº CVV-009

SEC. 68

"DETAIL"
SCALE - 1:2000

D-1 TIE-IN
O.D. = 168.3 MM
W.T. = 7.11 MM
PIPE = CSA 245.3
CATEGORY 1-293
MOP = 9928 kPa

WESTCOAST TRANSMISSION LINE
O.D. = 508 MM
W.T. = 9.27 MM
PIPE = ASA TYPE A
SLX-32

21
1972

1431.98 (copied)
52' 45" (copied)

NOTE: WELL CENTRE
LOCATED AT SP 124
ON SEISMIC LINE
Nº CVV-009

SEC. 68

CAMP SITE

"DETAIL"
SCALE: 1:2000

D-1 TIE-IN
O.D. = 168.3 MM
W.T. = 7.11 MM
PIPE = CSA 243.3
CATEGORY 1-290
MOP = 9928 kPa

WESTCOAST TRANSMISSION LINE
O.D. = 508 MM
W.T. = 9.27 MM
PIPE = ASA TYPE A
5LX-52
MOP = 9308 kPa

6 of 6

25
1972

25
1972

1431.98 (copied)
52'
45' (copied)

AMOCO POINTED MOUNTAIN D-1

SURVEY COORDINATES
(RADIUS OF CURVATURE METHOD)

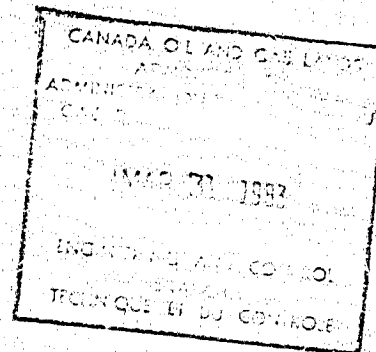
(meters)

MEAS. DEPTH	DEPTH (TVD)	NORTH -SOUTH	EAST -WEST	VERT. SECTION	DEPARTURE DIST	INCLINATION ANGLE DIR	DOG FILE LEG LINE
30	30.00	0.10	-0.03	0.05	0 N15W	0.39 N15W	0.0
60	60.00	0.39	-0.20	0.13	0 N28W	0.91 N48W	0.6
90	89.99	0.66	-0.56	0.07	1 N40W	0.83 N57W	0.2
120	119.99	0.86	-0.92	0.04	1 N47W	0.73 N65W	0.1
150	149.99	1.09	-0.94	0.11	1 N41W	0.32 N51E	0.9
180	179.99	1.41	-0.96	0.32	2 N34W	1.07 N55W	1.2
210	209.98	1.74	-1.50	0.17	2 N41W	1.39 N63W	0.4
240	239.98	2.09	-1.91	0.13	3 N42W	0.66 N36W	0.9
270	269.97	2.50	-2.14	0.36	3 N40W	1.15 N23W	0.5
300	299.97	3.01	-2.23	0.89	4 N37W	0.84 N 1E	0.5
330	329.96	3.48	-2.23	0.89	4 N33W	0.93 N 3E	0.5
360	359.95	4.05	-2.23	1.35	5 N27W	1.29 N15W	0.5
390	389.95	4.78	-2.66	1.50	5 N29W	1.89 N40W	0.9
420	419.93	5.52	-2.94	1.83	6 N28W	1.20 N 2W	1.2
450	449.93	6.19	-3.04	2.23	7 N26W	1.38 N16W	0.4
480	479.92	6.84	-3.13	2.62	8 N25W	1.13 N 0W	0.4
510	509.91	7.56	-3.36	2.97	9 N24W	1.80 N35W	1.1
540	539.89	8.34	-3.83	3.16	9 N25W	1.79 N33W	0.0
570	569.88	9.09	-4.05	3.56	10 N24W	1.19 N 7E	1.1
600	599.88	9.61	-3.90	4.04	10 N23W	0.90 N26E	0.4
630	629.87	10.04	-3.67	4.50	11 N20W	0.93 N30E	0.0
660	659.87	10.59	-3.70	4.88	11 N19W	1.33 N37W	1.3
690	689.86	11.09	-3.95	5.05	12 N20W	0.79 N16W	0.6
720	719.86	11.45	-3.84	5.38	12 N19W	0.72 N49E	0.8
750	749.86	11.71	-3.52	5.79	12 N17W	0.86 N54E	0.1
780	779.85	12.02	-3.28	6.18	12 N15W	0.68 N21E	0.5
810	809.85	12.46	-3.30	6.47	13 N15W	1.04 N28W	0.8
840	839.85	12.92	-3.53	6.62	13 N15W	1.05 N32W	0.0
870	869.84	13.41	-3.87	6.74	14 N16W	1.09 N31W	0.0
900	899.84	13.85	-4.04	6.94	14 N16W	0.74 N11W	0.5
930	929.83	14.33	-4.26	7.12	15 N17W	1.29 N37W	0.7
960	959.82	14.90	-4.61	7.27	16 N17W	1.26 N27W	0.3
990	989.82	15.53	-4.87	7.57	16 N17W	1.54 N15W	0.5
1020	1019.80	16.43	-5.25	7.90	17 N18W	2.02 N35W	0.8
1050	1049.78	17.31	-5.88	8.09	18 N19W	2.11 N35W	0.0
1080	1079.75	18.39	-6.69	8.27	20 N20W	3.02 N40W	0.9
1110	1109.71	19.66	-7.70	8.46	21 N21W	3.18 N37W	0.2
1140	1139.67	20.84	-8.40	8.80	22 N22W	2.09 N24W	1.2
1170	1169.65	21.86	-8.91	9.23	22 N22W	2.12 N20W	0.2
1200	1199.64	22.80	-9.98	9.77	23 N21W	1.55 N 0W	0.8
1230	1229.62	23.77	-9.13	10.35	23 N21W	2.21 N18W	0.9
1260	1259.60	24.92	-9.61	10.82	27 N21W	2.34 N28W	0.6
1290	1289.57	26.04	-9.99	11.35	28 N21W	2.02 N10W	0.9
1320	1319.55	27.15	-10.25	11.95	29 N21W	3.31 N16W	0.4
1350	1349.52	28.37	-10.65	12.53	30 N21W	2.63 N20W	0.4
1380	1379.49	29.77	-11.05	13.24	32 N20W	2.92 N12W	0.5
1410	1409.44	31.33	-11.51	14.02	33 N20W	3.32 N21W	0.6
1440	1439.33	33.10	-12.30	14.71	35 N20W	4.08 N27W	0.9
1470	1469.21	34.99	-13.03	15.53	37 N20W	3.67 N15W	0.9
1500	1499.24	36.95	-13.47	16.60	39 N20W	4.02 N11W	0.4
1530	1529.17	39.00	-14.03	17.65	41 N20W	4.10 N20W	0.7
1560	1559.10	40.86	-14.70	18.50	42 N20W	3.46 N19W	0.6
1590	1589.06	42.49	-15.02	19.42	45 N19W	2.90 N 4W	1.0
1620	1619.02	44.02	-15.04	20.59	47 N19W	2.94 N 2E	0.3
1650	1648.97	45.58	-15.03	21.60	48 N18W	3.05 N 2W	0.2
1680	1678.92	47.40	-15.19	22.78	50 N18W	3.93 N 8W	1.0
1710	1708.85	49.35	-15.24	24.12	52 N17W	3.54 N 5E	1.0
1740	1738.80	51.18	-14.99	25.59	53 N16W	3.54 N10E	0.3
1770	1768.74	53.05	-14.86	27.01	55 N16W	3.63 N 2W	0.8
1800	1798.68	54.96	-14.89	28.34	57 N15W	3.67 N 1E	0.2
1830	1828.61	56.96	-14.80	29.81	59 N15W	3.98 N 4E	0.4
1860	1858.51	59.34	-14.68	31.72	61 N14W	3.19 N11E	1.3
1890	1888.39	62.15	-13.66	34.07	64 N13W	3.74 N10E	0.6
1920	1918.23	65.32	-13.22	36.59	66 N12W	3.41 N12E	0.4
1950	1948.11	67.72	-12.97	39.28	69 N11W	3.65 N12E	0.4

1978.00	67.72	-12.97	38.71	69	N11W	5.03	N 7E	0.6	0
2007.91	70.27	-12.76	40.67	71	N10W	4.79	N 3E	0.4	0
2037.83	72.51	-12.26	42.60	74	N10W	4.00	N22E	1.7	0
2070.20	74.44	-11.37	44.60	75	N 9W	4.13	N27E	0.4	0
2100.66	76.41	-10.37	46.70	77	N 8W	4.34	N26E	0.2	0
2130.58	78.61	-9.69	48.74	79	N 7W	4.50	N 8E	1.4	0
2160.50	80.79	-9.20	50.62	81	N 6W	4.04	N17E	0.8	0
2190.42	82.85	-8.59	52.51	83	N 6W	4.16	N16E	0.1	0
2220.34	85.01	-8.13	54.36	85	N 5W	4.28	N 6E	0.6	0
2250.27	87.02	-7.48	56.24	87	N 5W	3.85	N28E	1.5	0
2280.20	88.86	-6.58	58.19	89	N 4W	4.00	N24E	0.3	0
2310.12	90.82	-5.76	60.15	91	N 4W	4.10	N22E	0.1	0
2340.05	92.89	-5.31	61.93	93	N 3W	4.04	N 2E	1.4	0
2370.97	95.03	-5.38	63.39	95	N 3W	4.17	N 6W	0.6	0
2400.89	97.15	-5.43	64.86	97	N 3W	3.96	N 3E	0.7	0
2430.78	99.41	-5.41	66.47	100	N 3W	4.68	N 2W	0.3	0
2460.68	101.93	-5.50	68.19	102	N 3W	4.96	N 2W	0.0	0
2490.60	104.33	-5.50	69.88	104	N 3W	4.21	N 2E	0.8	0
2520.52	106.55	-5.48	71.47	107	N 3W	4.29	N 1W	0.2	0
2550.44	109.76	-5.61	72.94	109	N 3W	4.18	N 6W	0.4	0
2580.39	110.87	-5.73	74.34	111	N 3W	3.90	N 1W	0.4	0
2610.33	112.73	-5.64	75.72	113	N 3W	3.21	N 7E	0.9	0
2640.26	114.54	-5.59	77.04	115	N 3W	3.74	N 4W	0.9	0
2670.19	116.52	-5.52	78.63	117	N 3W	3.95	N20E	1.6	0
2700.13	118.34	-4.46	80.52	118	N 2W	3.74	N31E	0.7	0
2730.06	119.96	-3.36	82.44	120	N 2W	3.74	N37E	0.4	0
2760.98	121.43	-1.98	84.48	121	N 1W	4.05	N49E	0.8	0
2790.90	122.81	-0.22	86.68	123	N 0W	4.42	N55E	0.6	0
2820.83	124.32	-0.32	88.84	124	N 1E	3.89	N37E	1.4	0
2850.75	126.12	0.40	90.90	126	N 1E	4.21	N27E	0.8	0
2880.67	128.30	0.32	93.07	128	N 1E	4.60	N18E	0.9	0
2910.50	130.85	0.35	95.04	131	N 2E	5.07	N 8W	2.2	0
2940.36	133.42	2.76	96.29	133	N 1E	5.27	N27W	1.7	0
2970.17	135.82	1.19	96.87	136	N 1E	5.72	N40W	1.3	0
3000.94	138.39	-0.93	97.20	138	N 0W	7.01	N39W	1.3	0
3030.67	141.25	-3.33	97.52	141	N 1W	7.31	N41W	0.4	0
3060.34	144.35	-5.89	97.91	144	N 2W	8.10	N38W	0.9	0
3090.03	147.85	-8.55	98.50	148	N 3W	8.76	N37W	0.7	0
3120.74	151.29	-11.19	99.06	152	N 4W	7.87	N39W	0.9	0
3150.44	154.49	-13.91	99.36	155	N 5W	8.02	N43W	0.7	0
3180.16	157.43	-16.92	99.36	158	N 6W	8.30	N47W	0.6	0
3210.91	160.20	-19.89	99.21	161	N 7W	7.25	N47W	1.0	0
3240.64	162.72	-22.84	98.91	164	N 8W	7.62	N52W	0.7	0
3270.31	165.22	-25.95	98.47	167	N 9W	7.70	N51W	0.2	0
3300.60	167.91	-29.51	97.87	170	N10W	9.37	N55W	1.8	0
3330.40	173.28	-35.35	97.53	177	N12W	11.00	N40W	3.3	0
3360.25	174.77	-36.67	97.63	179	N12W	12.00	N43W	3.5	0
3390.84	175.86	-37.62	97.75	180	N12W	11.75	N39W	3.7	0
3420.72	176.80	-39.83	98.26	183	N13W	13.25	N35W	3.1	0
3450.41	179.72	-40.48	98.46	184	N13W	12.75	N35W	2.9	0
3480.97	182.02	-42.09	98.95	187	N13W	12.25	N35W	1.1	0
3510.60	185.47	-44.43	99.74	191	N13W	11.75	N33W	1.0	0
3540.19	188.51	-46.64	100.49	194	N14W	11.50	N33W	0.4	0
3570.58	191.99	-49.55	101.35	198	N14W	11.25	N33W	0.3	0
3600.73	196.96	-53.20	102.16	204	N15W	11.50	N38W	1.0	0
3630.07	203.07	-57.33	103.06	211	N16W	12.75	N42W	1.2	0
3660.59	208.59	-62.75	103.13	218	N17W	15.25	N47W	2.6	0
3690.04	212.13	-66.51	102.90	222	N17W	16.75	N48W	2.4	0
3720.30	215.32	-70.51	102.60	226	N18W	18.25	N49W	2.9	0
3750.12	220.13	-75.46	102.25	233	N19W	19.50	N45W	2.2	0
3780.51	226.03	-82.55	101.47	241	N20W	21.00	N52W	3.0	0
3810.38	233.79	-86.62	100.49	258	N22W	27.25	N45W	4.4	0
3840.47	248.78	-103.50	99.03	271	N24W	30.00	N56W	5.6	0
3870.98	253.81	-118.89	96.50	282	N25W	31.25	N56W	1.5	0
3900.44	265.40	-133.10	94.51	297	N26W	30.50	N50W	3.0	0
3930.68	274.46	-143.15	92.51	310	N28W	28.50	N52W	2.3	0
3960.50	280.15	-149.97	92.51	318	N28W	27.00	N48W	2.8	0
3990.66	288.60	-153.97	91.71	329	N29W	25.00	N45W	2.6	0
4020.01	303.78	-164.77	91.03	333	N30W	26.00	N48W	0.8	0
4050.09	317.35	-174.77	90.64	369	N31W	26.50	N45W	1.1	0
4080.80	329.27	-200.10	90.64	384	N31W	21.50	N45W	3.9	0
4110.41	333.99	-205.71	90.71	392	N32W	17.50	N44W	5.0	0
4140.25	340.17	-211.24	91.14	400	N32W	14.50	N40W	3.2	0
4170.60	344.91	-214.59	92.15	406	N32W	10.50	N30W	5.0	0
4200.21	349.41	-216.54	93.95	411	N32W	7.75	N17W	3.3	0
4230.94	353.24	-217.61	95.91	415	N32W	7.50	N14W	0.5	0
4260.57	358.37	-219.13	98.46	420	N31W	8.25	N19W	0.8	0
4290.86	366.76	-223.40	101.37	429	N31W	9.00	N35W	1.2	0

FINAL WELL REPORT

AMOCO S. POINTED MOUNTAIN (D-1) L-68



ACTION SLIP

WELL HISTORY REPORTS

Mountain (D-1) L-68

Project No. 9211-A4-1-1

The following action has been taken:

Receipt acknowledged ✓

Well Card made (Branch) ✓

File Card made ✓

Reports for review list edited

Reports labelled

Date rec'd entered in project ledger

Confidential sections removed:

(micro) Palaeontological

Palynological

OR

Source Rock Analyses

Geochemical Analyses

Other

Land Management Memo

REVIEW and APPROVAL made by:

Engineering Branch *L. L. L. Apr. 22*

Resource Evaluation Branch *J. Davidson Apr. 27*

Environmental Protection Branch

PLEASE NOTE COMMENTS ON ATTACHED SHEET

IN FINAL REPORT

ed back

ged back total with

dry

PROJECT NUMBER: 9211-A4-1-1

COMPANY: Amoco Canada

REPORT TITLE: Well history: Amoco S. Pointed Mountain (D-1) L-68

MISSING IN FINAL REPORT

- Drilling contractor
- Drilling authority number and date issued
- Classification of the well
- True vertical depth and plugged back total depth
- Completed drilling date
- Bit record
- Mud reports
- Logs (List)

R. Landray

PROJECT NUMBER: 9211-A4-1-1

COMPANY: Amoco Canada

REPORT TITLE: Well history: Amoco S. Pointed Mountain (D-1) L-68

COMMENTS:

ENGINEERING BRANCH

ENVIRONMENTAL PROTECTION BRANCH

RESOURCE EVALUATION BRANCH

83/04/27

- inadequate sample descriptions, approval will be given upon update of R
- no list of logs seen
- explanation of abbreviations would be helpful



J.W. Savage
District Superintendent

1984-01-12

Paul S. Simard
Supervising Engineer
Exploration Division
Engineering Branch
Canada Oil & Gas Lands Administration
355 - River Road
Ottawa, Ontario
K1A 0E4

AMOCO S. POINTED MOUNTAIN (D1)
L-68 - FINAL WELL REPORT
FILE: DEF-044-420.6

Please find attached the information as requested in your letter of 1983-12-13 regarding the Amoco S. Pointed Mountain D-1 L-68 well which was drilled during 1982.

If there are any further questions regarding the above, please contact Paul Gouin at 420-5648 or the undersigned at 420-5602.

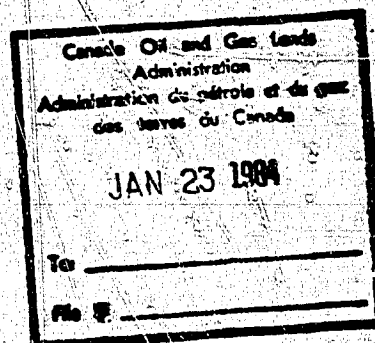
PNG/bmw

Attach.

Amoco Canada
Petroleum Company Ltd.

10109 - 106 Street
Edmonton, Alberta
T5J 3L7

JAN 21 1984



ATTACHMENT

- ✓ 1. Sample description - attached.
- ✓ 2. Abbreviations - included in the above.
- ✓ 3. Logs From (TD - 3291 ALL)

Run	#1	DLL SP GR	
	2	BHC SONIC	
	3	VARIABLE DENSITY ACOUSTIC	
	4	CNL FDC (MISRUN)	
	5	NGT	
	6	DIPLOG	
	7	VELOCITY SURVEY MISRUN	TD - 150 m
	8	VELOCITY SURVEY MISRUN	
	9	VELOCITY SURVEY	
	10	CNL FDC - TD - 3291	

- ✓ 4. Drilling Contractor - Hi-Tower.
- ✓ 5. Drilling Authority - #993 issued 82-02-04.
- ✓ 6. Classification of well - Exploration.
- ✓ 7. TVD: 4 200 m No casing was run in the 153 mm section.
- 8. Completed Drilling Date: 82-10-12
- ✓ 9. Bit Record - attached.
- ✓ 10. Mud Report - The mud recap is unavailable since the mud company went bankrupt prior to completing the report.

I. Introduction

Amoco Canada Petroleum Company Ltd. began its operations on Amoco S. Pointed Mountain (D-1) L-68 in January 1982. Upon completion of surveying, and access road and location construction, the well was spudded on March 3, 1982. Drilling and completion operations were concluded with the abandonment of the well and subsequent release of the rig Hi-Tower #4 on November 4, 1982.

This report was prepared with regard to the requirements laid out in Part X Final Well Reports, Section 228, Paragraphs 1 and 3 of the Canada Oil and Gas Drilling Regulations, P.C. 1980 - 2111.

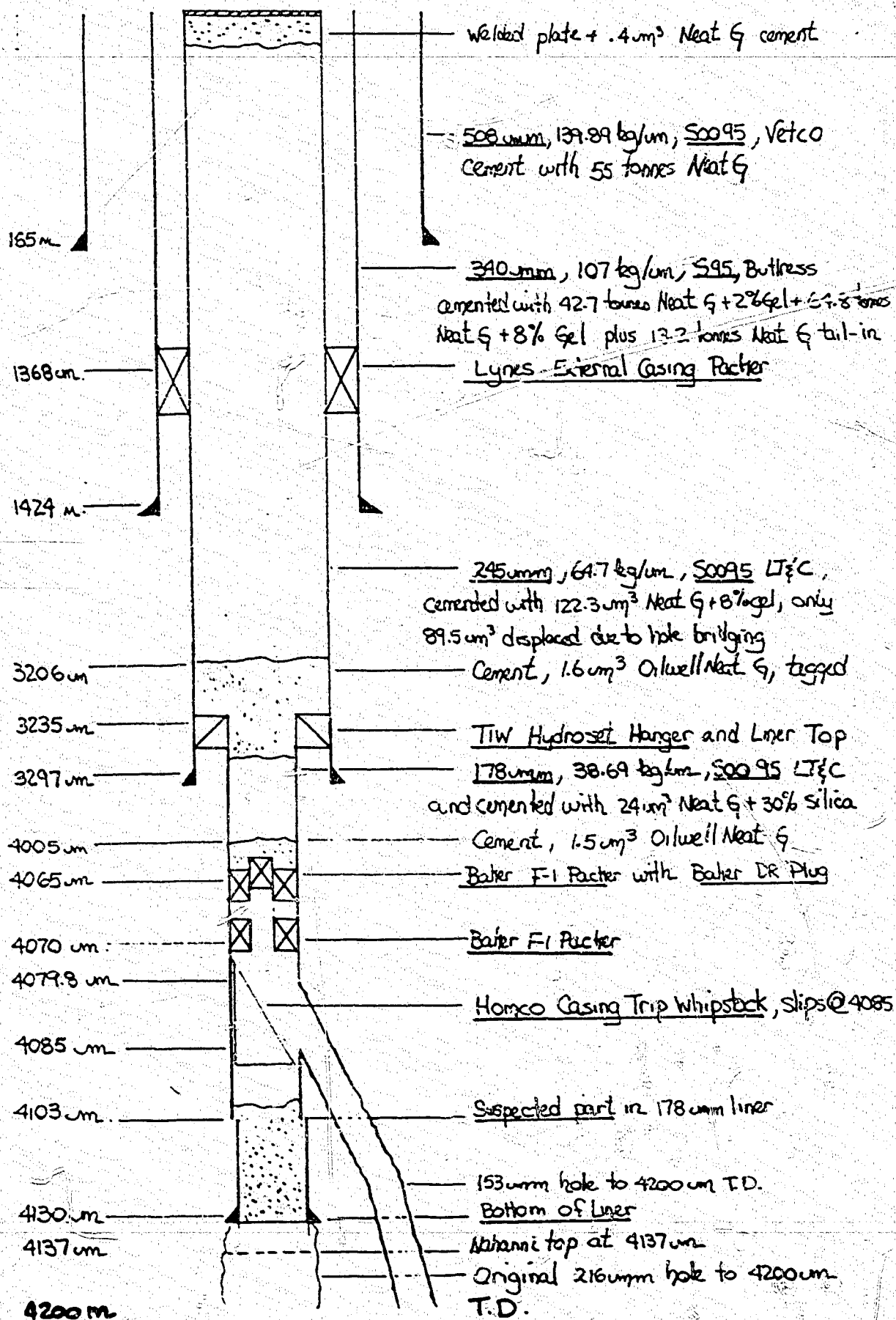
II. DISCUSSION

This final well report following this section for Amoco S. Pointed Mountain (D-1) L-68 is composed of 9 parts. Part III the diagram labelled as General Well Data is a composite sketch of the status of the well after its abandonment in early November 1982. Part IV is the summary of the drilling operations over the period from February 1982 to October 1982. Part V is a summary of the completion operations performed on the well in October and November 1982.

The next section is composed of the Geological Summary of Pointed Mountain D-1. This summary includes information on formation top depths as well as descriptions of the rock samples, entrained fluids and drilling rates. Part VII is the collection of directional survey readings taken at Pointed Mountain D-1, a combination of multishot and single shot readings taken with or by Sperry-Sun equipment. This section is further enhanced by the addition of each shot point's coordinates as calculated by Amoco's Well Path computing program using the radius of curvature method.

The plots under Part VIII were compiled and printed by the computer using the same program utilized in Part VII. Part IX is the summary by Halliburton of a 1 m³ 15% HCL acid washover performed on the same formation. In addition the logs for the well are attached to this report.

III General Well Data : Ramco Pointed Mountain D-1 Status as of 82/04/11



IV Amoco Pointed D-1; Drilling Operation Summary and Highlights, 1982

- 82-02-06: Construction of lease and road begins.
- 82-03-09: Rig move to lease.
- 82-03-25: Spud well at 0930 hours. Drilling 445 mm pilot hole.
- 82-03-31: Finish drilling 445 mm pilot hole to 189 m. Open hole to 660 mm.
- 82-04-09: 660 mm hole opened to 165 m. Run 508 mm casing to 165 m. Cement with 55 tonnes Oilwell Neat G cement. 100% returns.
- 82-04-12: Rig up diverter, test to 3 500 kPa x 15 minutes. Drill out cement and begin drilling 445 mm hole.
- 82-04-21: Encountered drilling break at 577 m. Fresh water kick from formation. Controlled with 1 184 kg/m³ mud, drilling resumes with 1 200 kg/m³ mud.
- 82-05-14: Convert mud system to fresh formation water. Depth 1 065 m.
- 82-05-20: Sour gas bubbling to surface, convert mud system back to gel-benex mud, density 1 200 kg/m³. Depth 1 227 m.
- 82-06-07: Depth 1 424 m. Run 340 mm casing, 107 kg/m. Cement with 42.7 tonnes Class "G" + 2% gel, 64.8 tonnes Class "G" +8% gel and 13.2 tonnes Class "G" tail in. Full returns.
- 82-06-13: Nipple up BOP's. Test to 31 000 kPa for 15 minutes. Drill out cement for 311 mm hole. Perform leakoff test, surface pressure 12 400 kPa with 1 150 kg/m³ mud at 1 434 m. Frac Gradient of 19.9 kPa/m. Resume drilling 311 mm hole.

- 82-06-15: Encountering slight deviation problems at 1 519 m. Inclination of $5\frac{1}{4}^{\circ}$. Add stabilizers to BHA and reduce WOB to combat angle building.
- 82-07-05: Depth 2 373 m. Encountering severe gas cutting in mud. Combat by increasing mud weight to 1 150 kg/m³ diverting mud through poorboy degasser and drilling with a 1.5 m flare.
- 82-07-11: Gas kick at 2 679 m with 1 125 kg/m³ mud, 7.5 m³/45min pit gain. SICP 3 800 kPa, SIDP 1 000 kPa. Circulate out kick with 1 140 kg/m³ mud.
- 82-07-24: Deviation off scale on recording device, greater than 8° inclination. RIH with strong dropping BHA.
- 82-07-29: Reach casing point of 3 297 mKB. Hole suffering from severely sloughing shales. Try and condition hole for logging.
- 82-08-08: Logging program waived by government due to hole problems. Run 245 mm, 64.7 kg/m, S0095 casing to 3 297 m, with a Lynes External Casing Packer at 1 367.82 m. Cement with 122.3 m³ neat G +8% gel, hole bridged off after 89.5 m³ displaced. ECP is set and 32.8 m³ cement left in casing.
- 82-08-10: Cement top at 2 434 m, drill out cement to 3 285 m. Run gyro-survey and cased hole logs.
- 82-08-14: Drill out shoe and drill 216 mm hole.
- 82-09-05: Drill to T.D. of 4 200 m, run multishot survey. Log.
- 82-09-13: Run 177.8 mm liner, hang at 3 234.88 m and land at 4 130 mKB. Cement with 24 m³ Class "G" cement plus 30% Silica flour. Received 2.3 m³ cement returns at surface.

82-09-16: While drilling out cement, could not get by 4 103 mKB.
Parted liner suspected. Attempt milling through.

82-10-01: Whipstocking tool set at 4 083.6 m. Window cut in liner at
4 078.89 m.

82-10-12: Reach T.D. of 4 200 m with 153 mm bit.

V. AMOCO POINTED MOUNTAIN D-1 COMPLETION OPERATIONS SUMMARY

- 82-10-15: Set packer at 4 070 m, RIH with 88.9 mm C.S. Hydril tubing. While pressure testing annulus to 34 000 kPa, tubing collapsed.
- 82-10-16: Fishing operations initiated.
- 82-10-29: Fish fully retrieved. Run Halliburton RTTS tool to perform DST. No fluid inflow recorded on DST.
- 82-10-30: Set new packer at 4 165 m. RIH with new 88.9 mm C.S. Hydril tubing string. Set 1 m³ 28% HCL across Nahanni attempt to initiate feed rate. Surface pressure of 49 630 kPa applied at surface, negligible feed rate.
- 82-11-01: Latch Baker DR plug into packer. Run cement plug #1, 4 005 to 4 065 m with 1.5 m³ Oilwell Neat G cement. Run cement plug #2, 3 207 to 3 267 m with 1.6 m³ Oilwell Neat "G" cement. Plug #2 tagged at 3 206 m.
- 82-11-04: Rig released at 82-11-04 at 0800 hrs. All equipment to be left on location until winter when ice bridge is built. Sump will be treated and cleaned up during the winter months as well.

PART VI

AMOCO POINTED MOUNTAIN D-1

60° 17' 43" N 123° 57' 56.4" W

GEOLOGICAL SUMMARY

AMOCO POINTED MOUNTAIN D-1

Geological Formations

<u>Formation</u>	<u>Depth of Top</u>
Mattson	235 m (?)
Mississippian	1453 m
Banff	2496 m
Besa River Shale	3150 m Based on GR-Neut. Log
Horn River Shale (2nd Black Shale)	3780 m
Nahanni	4139 m
T.D.	4200 m

AMOCO POINTED MOUNTAIN D-1

Geological and mud logging began at 195 m and continued to a total depth of 4200 m.

The hole was spudded on March 25, 1982. The surveyed ground elevation was 726.2 m, K.B. elevation 737 m.

A 660 mm surface hole was drilled to 166 m and 508 mm surface casing landed and set 166 m. A 445 mm hole was then drilled to 1424 m and 340 mm casing run and set at 1424 m. A 311 mm hole was drilled to 3297 m and 245 mm casing run and set at 3297 m. Total depth was reached on September 6, 1982 at 4200 m.

Samples were caught at 5 m intervals from 195 m to 4200 m, T.D., and spot samples taken when necessary.

FORMATION DESCRIPTIONS

Mattson: - 1453 m

The first formation to be logged was the Mattson sandstone. From 200 - 229 m chert was drilled at an average rate of 16 min/m.

The chert was:

Cht - wh - gy wh, mot, occ m gy, ang, brit, tr calc xls

Under this chert was interbedded siltstone and sandstone to 654 m. The sandstone appeared to be of two main types:

#1 Ss - lt gy gy-wh vf - fgr, ang - sb ang w srted, sl calc clr qtz,
no show

#2 Ss - clr, wh, lt gy - vr-fgr, dr qtz, calc & sil cmt, f consol, p por,
no show

Siltst - dk - m gy, m hd, sl sdy - shly i/p, bit i/p.

The drilling rate through this section was approximately 30 min/m.

At 654 m, dolomite was encountered and was interbedded and intermixed with sandstone to 740 m.

Dol-Ss - wh dol matrix/clr qtz grs, f gr, sb ang, p srted, framework 4-5
tt, no show

grdg to

Dol - wh. lt gy - lt brn, micxl - fxl, sdy i/p, sl calc cmt, tt, no
show

The drilling rate through this section was approximately 47 min/m.

From 740 - 1453 m the geology was interbedded sandstone and shale. The sandstone was predominantly:

Ss - wh - lt gy, vf - fgr, dol cmt, sm sil cmt, p-f consol, p por, arg
i/p, tt, qtz, sbrd, no show

Sh - m - dk gy, carb - bit, micmica i/p, slty - sdy i/p, sbfiss, slty,
tr pyr

FORMATION DESCRIPTIONS

Mattson: - 1453 m - continued

The drill rate through this section averaged approximately 52 min/m. Throughout this last section, dolomite stringers appeared randomly.

Average Mud Weight 1050-1230 kg/m³
Average Viscosity 48-55 sec/L

The background gas ran at a low 5-100 units through the Mattson. No oil staining was noted.

Mississippian - 1453 - 2496 m

The Mississippian limestone was encountered at 1453 m. From here to 1766 m it was predominantly limestone with the occasional stringers of shale. The limestone was:

Ls - wh - buff - lt gy, crpxl - micxl, frm, arg, crin i/p, dol i/p, tr intxl por

From 1530 - 1575 m, there was some oil staining, light green fluorescence with fair cut and intercrystalline porosity plus a trace of vuggy porosity. Visual porosity in the limestone was estimated at 3-6%. Background gas through this zone averaged 30-60 units. High gas readings were logged from 1688 - 1703 m. 2000-6000 units with heavy gases present, resulting from fair porosity, and from 1744 - 1751 m, averaging 8000 units with heavy gases present, and circulated out after checking for flow in both cases. Heavy oil, green fluorescence, fair cut, were noted in the shale from 1745 - 1755 m. Average drill rate was 29 min/m.

The limestone graded to a calcareous shale at 1766 to 1816 m. The shale was:

Sh - m - dk gy, calc, brit, hd, dol i/p, sil i/p, blk, blk fiss

At 1816 to 2169 m the Mississippian returned to a limestone lithology with occasional interbedded shale.

Ls - lt - m gy, gy - brn i/p, grdg to sh, crpxl - micxl, arg, dol i/p, sm wh calc xls

At 1965 - 1970 m and 1975 - 1980 m there was some fracture porosity producing a maximum 3800 units gas at 1961 m and 6000 units at 1972 m with an average 280-400 units background. No oil stain was noted. Average drill rate through this section was 27 min/m.

FORMATION DESCRIPTIONS

Mississippian - 1453 - 2496 m - continued

At 2163 m the Mississippian again graded back to a shale,

Sh - lt - m gy, calc cmt, calc - v calc, lmy i/p, micmica, hd, brit

which continued to 2469 m where the Banff Shale began. There were two beds of limestone in this section, 2251 - 2255 m and 2340 - 2346 m, which proved to be porous and produced gas.

The first limestone bed 2251 - 2255 m, described as:

Ls - gy - wh, arg, sil, crpxl - micxl, frac por, 3-6%, no stn and the second limestone bed 2340 - 2345 m, described as:

Ls - gy - wh, micxl - vfn gr xls, g por, intxl por, 3-12% visual por, poss sm frac por, foss, n flor, sil i/p, no stn

The first bed produced a background average of 2750 units with a peak of 5000 units at 2250 m. The second limestone bed produced an average of 3500 units with a peak of 9500 units at 2343 m.

The average drill rate of this section 2163 - 2469 m was 20 min/m.

Average Mud Weight 1230 - 1115 kg/m³
Average Viscosity 50 - 57 sec/L

Banff Shale - 2496 - 3150 m

This formation was completely shale with a few siltstone stringers.

Sh - m - dk gy, carb, fiss, mod frm, sl foss i/p, micmica, sl calc - calc, slty i/p, pyr i/p

Background gas remained high throughout the drilling operation averaging 1900 units, almost all C₁, with traces of C₂. The degasser was run and the well flared off from 2880 m onwards to control the gassified mud. No oil staining was noted throughout the formation. Average drill rate was 25 min/m.

Average Mud Weight 1115 - 1165 kg/m³
Average Viscosity 43 - 71 sec/L

FORMATION DESCRIPTIONS

Besa River Shale - 3150 - 3780 m

This formation was also shale:

Sh - m - dk gy blk, lt gy i/p, sl calc, sl slty & sil, dol i/p hd,
sb fiss - blk, brit

At 3325 m this shale underwent a colour change:

Sh - m gy, occ dk gy, blk - sb fiss, micmica, pyr i/p, hd, brit.

TR - sltst - lt gy, dol cmt, arg

In the 3375 m, 3390 m, 3415 - 3425 m samples, the siltstone increased to 10%:

Sltst - lt - m gv occ wh, lmy - sl dol i/p, arg, sil mod frm - hd

Background gas remained high throughout the drilling to the casing point at 3297 m, averaging 4500 units, all C₁. From casing point to the Horn River Shale (Second Black Shale at 3780 m) the background gas averaged 140 units, all C₁.

Average drill rate to casing point was 28 min/m, from casing point to Horn River Shale was 23 min/m.

Average Mud Weight	1165 - 1180 kg/m ³ to casing,
	1040 - 1060 kg/m ³ to Horn River
Average Viscosity	60 - 70 sec/L to casing
	50 - 85 sec/L after

There is a suspected thrust fault at 3610 m which increased the thickness of the Besa River Shale.

Horn River Shale (Second Black Shale) 3680 - 4139 m

The Horn River Shale remained fairly constant in its shale lithology. The upper part may be described as:

Sh - m - dk gy, sbfiss - blk, sl micmica, vsi calc, frm - hd brit i/p,
tr pyr, tr calc frac fl

FORMATION DESCRIPTIONS

Horn River Shale (Second Black Shale) 3680 - 4139 m - continued

There were occasional beds of black shale.

Sh - dk - gy, blk, sbfiss - blk, micmica, hd, sil

The Horn River Shale became more siliceous and harder the further into it was drilled. The middle part of the formation could be described as:

Sh - dk gy - blk, occ m gy, hd, sil, calc, micmica, sl dol, tr calc
vns, blk, blk - fiss

The bottom lithology of the Shale River became blacker and contained dolomite crystals. Parts of it also became calcareous.

Sh - dk gy, blk, hd - vhd, sbbky - blk, conch frac, sil, dol, micmica
i/p, dol xls,

gy - mot, hd, calc - v calc, sbbky - fiss

Background gas remained low through the drilling of this formation averaging 55 units, C¹.

Average Drill Rate was 30 min/m.

Average Mud Weight 1065 - 1075 kg/m³

Average Viscosity 65 - 85 sec/L

Nahanni - 4139 - 4200 m

The Nahanni dolomite entered with a drill break to 9 min/m from 17 min/m. From here to T.D. the Nahanni dolomite was the last formation.

Dol - mot, lt gy, vfx - fxl, p-fpor, tt, intxl por, rhmb xls, arg i/p,
sm arg mat, brit, occ mxl, n flor, n cut/sec dol, wh, abndt cxls

Background gas through the Nahanni ran to an average 60 units, C¹. There were no oil or gas show in this formation or oil stain or cut. Visual porosity was estimated at 3-6%. The Nahanni was believed to be below the water line at this depth.

Average Drill Rate was 15 min/m.

Average Mud Weight 1080 kg/m³

Average Viscosity 74 sec/L

T.D. was 4200 in the Nahanni, it was reached at 0600 hrs, September 6, 1982 and the bottom hole sample circulated out at 0800 hrs.

VII Survey Summaries and Calculations

TDGYRO DATA A AMOCO CANADA PETROLEUM COMPANY LTD.

AMOCO POINTED MOUNTAIN D-1

SURVEY DATA

DEPTH (M)	INCLINATION	DIRECTION
30	0.39	N15W
90	0.83	N57W
150	0.32	N51E
210	1.40	N63W
270	1.15	N23W
330	0.93	N31E
360	1.3	N15W
420	1.2	N2W
480	1.13	NOW
510	2.0	N35W
570	1.2	N7E
600	0.9	N26E
660	1.33	N37W
690	0.8	N16W
750	0.9	N54E
810	1.04	N28E
870	1.08	N31W
930	1.3	N37W
990	1.54	N15W
1050	2.11	N35W
1110	2.2	N37W
1170	2.12	N20W
1200	1.6	NOW
1230	2.21	N18W
1290	2.02	N10W
1320	2.31	N16W
1350	2.63	N20W
1380	2.92	N12W
1410	3.32	N21W
1440	4.08	N27W
1470	3.67	N15W
1500	4.02	N11W
1560	3.46	N19W
1590	3.20	N4W
1650	3.05	N2W
1680	3.40	N8W
1740	3.54	N10W
1770	3.63	N2W
1830	4.0	N4E
1860	5.2	N11E
1920	5.44	N12E
1950	5.0	N7E
2010	4.0	N22E
2070	4.34	N26E
2100	4.50	N8E

TDGYRO DATA A AMOCO CANADA PETROLEUM COMPANY LTD.

2130	4.04	N17E
2190	4.30	N8E
2220	3.85	N28E
2250	4.0	N24E
2280	4.1	N22E
2310	4.04	N2E
2340	4.17	N6W
2370	3.96	N3E
2400	4.68	N2W
2460	4.21	N2E
2490	4.30	N1W
2550	3.90	N1W
2580	3.21	N7E
2610	3.74	N4W
2640	3.95	N20E
2700	3.74	N37E
2730	4.05	N49E
2760	4.42	N55E
2790	3.89	N37E
2850	4.8	N18E
2880	5.07	N8W
2910	5.27	N27W
2970	7.01	N31W
3000	7.31	41W
3030	8.1	N38W
3060	8.76	N37W
3120	8.02	N43W
3150	8.3	N47W
3180	7.25	N47W
3210	7.62	N52W
3240	7.7	N51W
3270	9.37	N55W
3315	11.0	N40W
3325	12.0	N43W
3332	11.75	N39W
3349	12.25	N35W
3367	12.25	N35W
3387	11.75	N33W
3405	11.5	N33W
3426	11.25	N33W
3495	12.75	N42W
3527	15.25	N47W
3562	18.25	N49W
3584	19.5	N46W
3610	21.0	N52W
3657	27.25	N45W
3689	30.0	N56W
3746	30.5	N56W
3775	28.5	N52W
3794	27.0	N48W
3822	25.0	N45W
3880	26.0	N48W
3918	26.5	N45W
3956	21.5	N45W
3980	17.5	N44W

PTDGYRD DATA A AMOCO CANADA PETROLEUM COMPANY LTD.

4010	14.5	N40W
4037	10.5	N30W
4068	7.75	N17W
4098	7.50	N14W
4137	8.25	N19W
DEPTH: 4200	9.0	N35W

AMOCO POINTED MOUNTAIN D-1

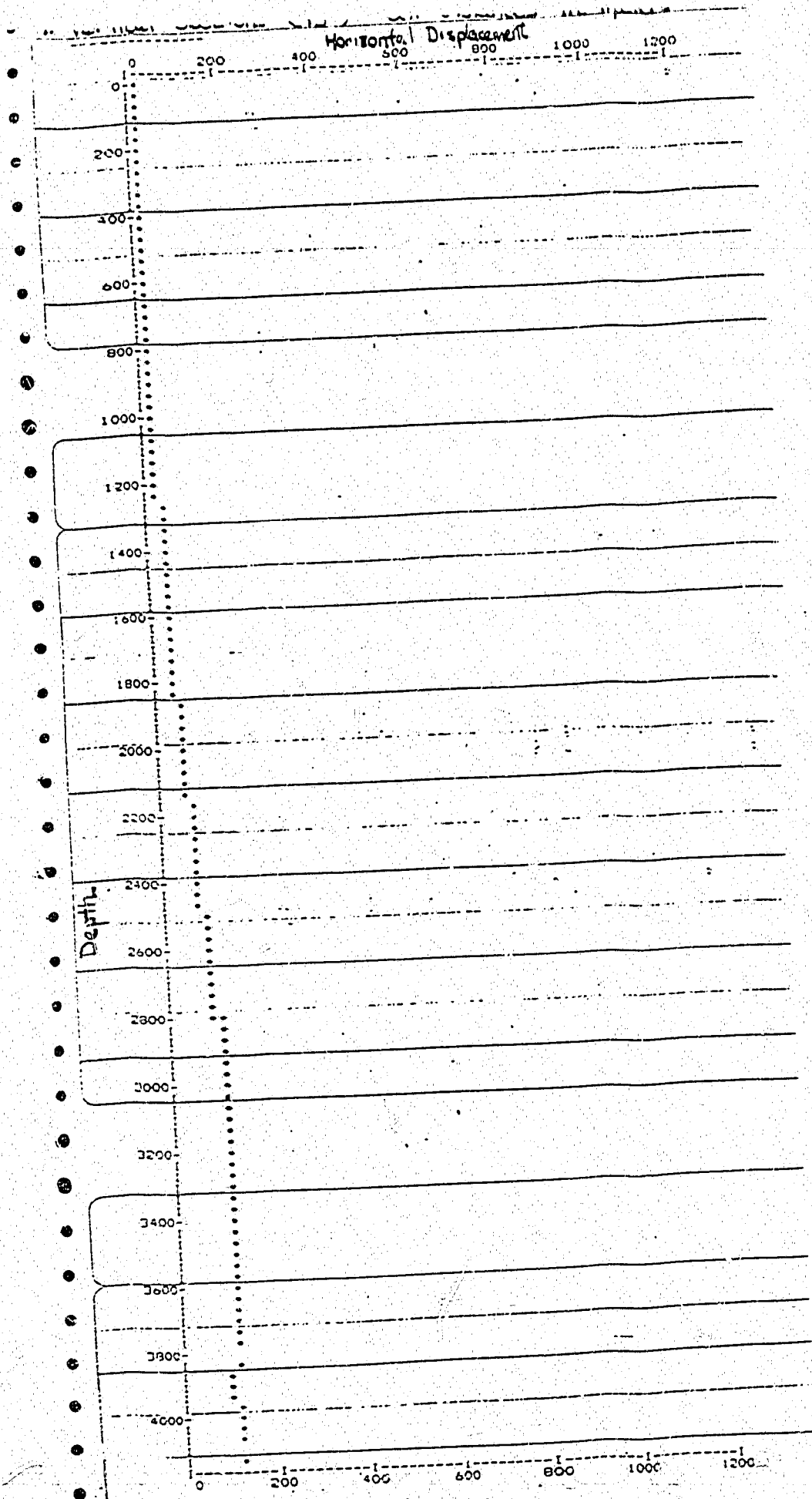
SURVEY COORDINATES
(RADIUS OF CURVATURE METHOD)

(meters)

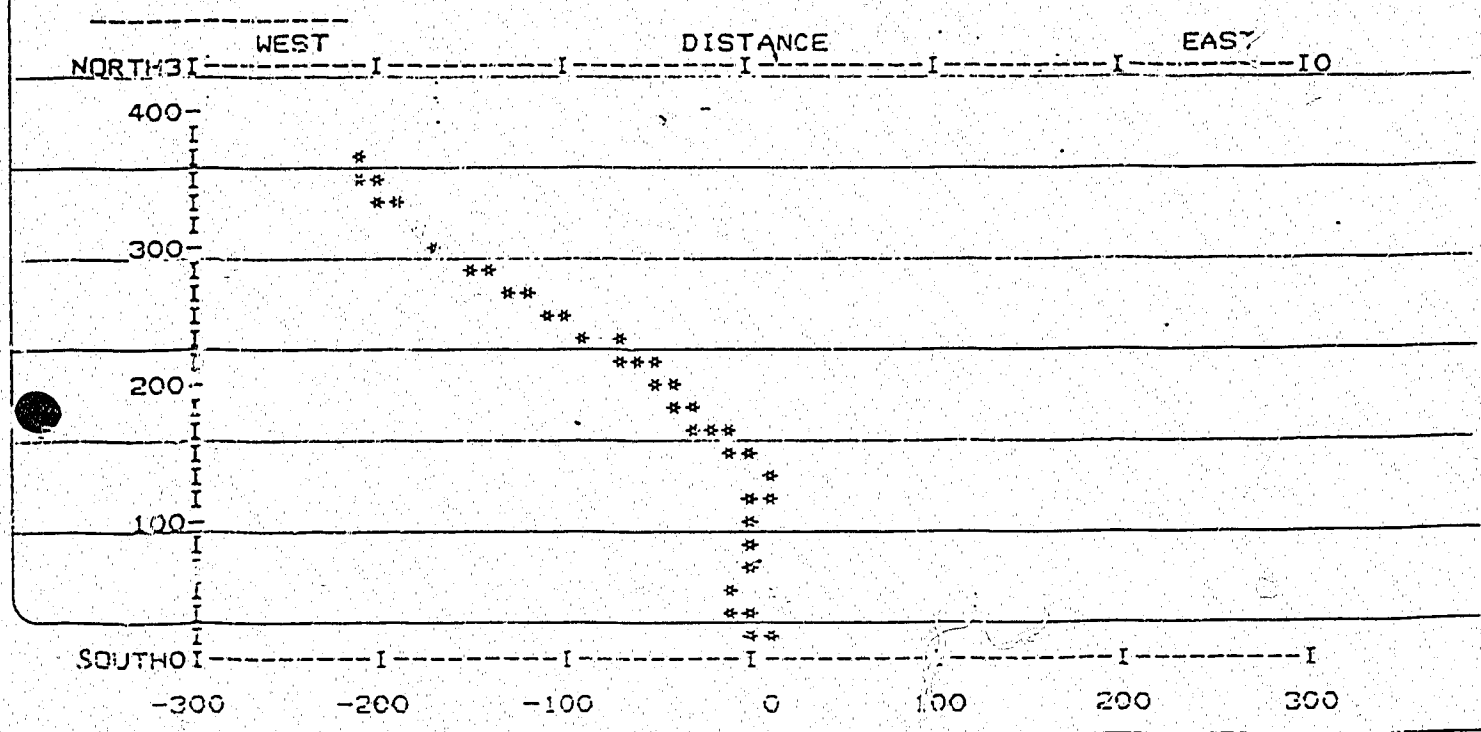
MEAS. DEPTH	DEPTH (TVD)	NORTH -SOUTH	EAST -WEST	VERT. SECTION	DEPARTURE DIST	INCLINATION DIR	DOG FILE LEG LINE
30	30.00	0.10	-0.03	0.05	0 N15W	0.39 N15W	0.0
60	60.00	0.39	-0.20	0.13	0 N28W	0.91 N46W	0.6
90	89.99	0.66	-0.56	0.07	1 N40W	0.83 N57W	0.2
120	119.99	0.86	-0.92	-0.04	1 N47W	0.73 N65W	0.1
150	149.99	1.09	-0.94	0.11	1 N41W	0.32 N51E	0.9
180	179.99	1.41	-0.96	0.32	2 N34W	1.07 N55W	1.2
210	209.98	1.74	-1.50	0.17	2 N41W	1.39 N63W	0.4
240	239.98	2.09	-1.91	0.13	3 N42W	0.66 N36W	0.9
270	269.97	2.50	-2.14	0.26	3 N40W	1.15 N23W	0.5
300	299.97	3.01	-2.23	0.55	4 N37W	0.84 N 1E	0.5
330	329.96	3.48	-2.22	0.89	4 N33W	0.93 N 3E	0.0
360	359.96	4.05	-2.28	1.25	5 N29W	1.28 N15W	0.5
390	389.95	4.78	-2.66	1.50	5 N29W	1.89 N40W	0.9
420	419.93	5.52	-2.94	1.83	6 N28W	1.20 N 2W	1.2
450	449.93	6.19	-3.04	2.23	7 N26W	1.38 N16W	0.4
480	479.92	6.84	-3.13	2.62	8 N25W	1.13 N 0W	0.4
510	509.91	7.56	-3.36	2.97	8 N24W	1.80 N35W	1.1
540	539.89	8.34	-3.88	3.16	9 N25W	1.79 N33W	0.0
570	569.88	9.09	-4.05	3.56	10 N24W	1.19 N 7E	1.1
600	599.88	9.61	-3.90	4.04	10 N22W	0.90 N26E	0.4
630	629.87	10.04	-3.67	4.50	11 N20W	0.93 N30E	0.0
660	659.87	10.59	-3.70	4.88	11 N19W	1.33 N37W	1.3
690	689.86	11.09	-3.95	5.05	12 N20W	0.79 N16W	0.6
720	719.86	11.45	-3.84	5.38	12 N19W	0.72 N49E	0.3
750	749.86	11.71	-3.52	5.79	12 N17W	0.86 N54E	0.1
780	779.85	12.02	-3.28	6.18	12 N15W	0.68 N21E	0.5
810	809.85	12.46	-3.30	6.47	13 N15W	1.04 N28W	0.8
840	839.85	12.94	-3.58	6.62	13 N15W	1.05 N32W	0.0
870	869.84	13.41	-3.87	6.74	14 N16W	1.08 N31W	0.0
900	899.84	13.85	-4.04	6.94	14 N16W	0.74 N11W	0.5
930	929.83	14.33	-4.26	7.12	15 N17W	1.29 N37W	0.7
960	959.82	14.90	-4.61	7.27	16 N17W	1.26 N27W	0.2
990	989.82	15.58	-4.87	7.57	16 N17W	1.54 N15W	0.4
1020	1019.80	16.43	-5.26	7.90	17 N18W	2.02 N35W	0.8
1050	1049.78	17.31	-5.88	8.09	18 N19W	2.11 N35W	0.0
1080	1079.75	18.38	-6.69	8.27	20 N20W	3.02 N40W	0.9
1110	1109.71	19.66	-7.70	8.46	21 N21W	3.18 N37W	0.2
1140	1139.67	20.84	-8.40	8.80	22 N22W	2.09 N24W	1.2
1170	1169.65	21.86	-8.81	9.23	24 N22W	2.12 N20W	0.2
1200	1159.64	22.80	-8.98	9.77	25 N21W	1.55 N 0W	0.8
1230	1229.62	23.77	-9.13	10.35	25 N21W	2.21 N18W	0.9
1260	1259.60	24.92	-9.61	10.82	27 N21W	2.54 N28W	0.5
1290	1289.57	26.04	-9.99	11.35	28 N21W	2.02 N10W	0.9
1320	1319.55	27.15	-10.25	11.95	29 N21W	2.31 N16W	0.4
1350	1349.52	28.37	-10.65	12.53	30 N21W	2.63 N20W	0.4
1380	1379.49	29.77	-11.05	13.24	32 N20W	2.92 N12W	0.5
1410	1409.44	31.33	-11.51	14.02	33 N20W	3.32 N21W	0.6
1440	1439.38	33.10	-12.30	14.71	35 N20W	4.08 N27W	0.9
1470	1469.31	34.99	-13.03	15.53	37 N20W	3.67 N15W	0.9
1500	1499.24	36.95	-13.47	16.60	39 N20W	4.02 N11W	0.4
1530	1529.17	39.00	-14.03	17.65	41 N20W	4.10 N20W	0.7
1560	1559.10	40.86	-14.70	18.50	43 N20W	3.46 N19W	0.6
1590	1589.06	42.49	-15.02	19.42	45 N19W	3.90 N 4W	1.0
1620	1619.02	44.02	-15.04	20.49	47 N19W	3.94 N 2E	0.3
1650	1648.97	45.58	-15.03	21.60	48 N18W	3.05 N 2W	0.2
1680	1678.92	47.40	-15.19	22.78	50 N18W	3.93 N 8W	1.0
1710	1708.85	49.35	-15.24	24.12	52 N17W	3.54 N 5E	1.0
1740	1738.80	51.18	-14.99	25.59	53 N16W	3.54 N10E	0.3
1770	1768.74	53.05	-14.86	27.01	55 N16W	3.63 N 2W	0.8
1800	1798.68	54.96	-14.83	28.34	57 N15W	3.67 N 1E	0.2
1830	1828.61	56.96	-14.80	29.81	59 N15W	3.98 N 4E	0.4
1860	1858.51	59.34	-14.48	31.72	61 N14W	5.19 N11E	1.3
1890	1888.38	62.15	-13.96	34.07	64 N13W	5.74 N10E	0.6
1920	1918.23	65.02	-13.42	36.49	66 N12W	5.44 N12E	0.4
1950	1948.11	67.72	-12.97	38.71	69 N11W	5.03 N 7E	0.7

1950	1948.11	67.72	-12.97	38.71	69	N11W	5.03	N 7E	0.6	0
1980	1978.00	70.27	-12.76	40.67	71	N10W	4.79	N 3E	0.4	0
2010	2007.91	72.51	-12.26	42.60	74	N10W	4.00	N22E	1.7	0
2040	2037.83	74.44	-11.37	44.60	75	N 9W	4.13	N27E	0.0	0
2070	2067.75	76.41	-10.37	46.70	77	N 8W	4.34	N26E	0.2	0
2100	2097.66	78.61	-9.69	48.74	79	N 7W	4.50	N 8E	1.4	0
2130	2127.58	80.79	-9.20	50.62	81	N 6W	4.04	N17E	0.8	0
2160	2157.50	82.85	-8.59	52.51	83	N 6W	4.16	N16E	0.1	0
2190	2187.42	85.01	-8.13	54.36	85	N 5W	4.28	N 8E	0.6	0
2220	2217.34	87.02	-7.48	56.24	87	N 5W	3.85	N28E	1.5	0
2250	2247.27	88.86	-6.58	58.18	89	N 4W	4.00	N24E	0.3	0
2280	2277.20	90.82	-5.76	60.15	91	N 4W	4.10	N22E	0.1	0
2310	2307.12	92.89	-5.31	61.93	93	N 3W	4.04	N 2E	1.4	0
2340	2337.05	95.03	-5.28	63.39	95	N 3W	4.17	N 6W	0.6	0
2370	2366.97	97.15	-5.43	64.86	97	N 3W	3.96	N 3E	0.7	0
2400	2396.89	99.41	-5.41	66.47	100	N 3W	4.68	N 2W	0.8	0
2430	2426.78	101.93	-5.50	68.19	102	N 3W	4.96	N 2W	0.3	0
2460	2456.68	104.33	-5.50	69.88	104	N 3W	4.21	N 2E	0.0	0
2490	2486.60	106.55	-5.48	71.47	107	N 3W	4.29	N 1W	0.2	0
2520	2516.52	109.75	-5.61	72.94	109	N 3W	4.18	N 6W	0.4	0
2550	2546.44	110.87	-5.74	74.34	111	N 3W	3.90	N 1W	0.4	0
2580	2576.39	112.73	-5.64	75.72	113	N 3W	3.21	N 7E	0.9	0
2610	2606.33	114.54	-5.59	77.04	115	N 3W	3.74	N 4W	0.9	0
2640	2636.26	116.52	-5.32	78.63	117	N 3W	3.95	N20E	1.6	0
2670	2666.19	118.34	-4.46	80.52	118	N 2W	3.74	N31E	0.7	0
2700	2696.13	119.96	-3.36	82.44	120	N 2W	3.74	N37E	0.4	0
2730	2726.06	121.45	-1.98	84.48	121	N 1W	4.05	N49E	0.6	0
2760	2755.98	122.81	-0.23	86.68	123	N 0W	4.42	N55E	0.6	0
2790	2785.90	124.32	1.32	88.84	124	N 1E	3.89	N37E	1.4	0
2820	2815.83	126.12	2.43	90.90	126	N 1E	4.21	N27E	0.8	0
2850	2845.73	128.30	3.32	93.07	128	N 1E	4.60	N18E	0.9	0
2880	2875.62	130.85	3.55	95.04	131	N 2E	5.07	N 8W	2.2	0
2910	2905.50	133.42	2.76	96.29	133	N 1E	5.27	N27W	1.7	0
2940	2935.36	135.82	1.19	96.87	136	N 1E	5.72	N40W	1.3	0
2970	2965.17	138.39	-0.93	97.20	138	N 0W	7.01	N39W	1.3	0
3000	2994.94	141.25	-1.33	97.52	141	N 1W	7.31	N41W	0.4	0
3030	3024.67	144.35	-3.89	97.91	144	N 2W	8.10	N38W	0.9	0
3060	3054.34	147.85	-8.55	98.50	148	N 3W	8.76	N37W	0.7	0
3090	3084.03	151.29	-11.19	99.06	152	N 4W	7.87	N39W	0.9	0
3120	3113.74	154.42	-13.91	99.36	155	N 5W	8.02	N43W	0.7	0
3150	3143.44	157.43	-16.92	99.36	158	N 6W	8.30	N47W	0.6	0
3180	3173.16	160.20	-19.89	99.21	161	N 7W	7.25	N47W	1.0	0
3210	3202.91	162.72	-22.84	98.91	164	N 8W	7.62	N52W	1.7	0
3240	3232.64	165.22	-25.96	98.47	167	N 9W	7.70	N51W	0.2	0
3270	3262.31	167.91	-29.51	97.87	170	N10W	9.37	N55W	1.8	0
3300	3292.00	170.88	-33.35	97.53	177	N12W	11.00	N40W	2.1	0
3330	3321.69	173.28	-36.67	97.65	179	N12W	12.00	N43W	3.5	0
3360	3351.38	175.86	-39.62	97.75	180	N12W	11.75	N39W	3.7	0
3390	3381.07	178.80	-39.83	98.26	183	N13W	13.25	N35W	3.1	0
3420	3410.76	181.72	-40.48	98.46	184	N13W	12.75	N35W	2.9	0
3450	3440.45	184.72	-42.09	98.95	187	N13W	12.25	N35W	1.1	0
3480	3470.14	187.02	-44.42	99.74	191	N13W	11.75	N33W	1.0	0
3510	3500.00	189.51	-46.39	100.49	194	N14W	11.50	N33W	0.4	0
3540	3530.00	191.98	-48.55	101.35	198	N14W	11.25	N33W	0.2	0
3570	3560.00	194.96	-50.20	102.36	204	N15W	11.50	N38W	1.1	0
3600	3590.00	200.07	-57.33	103.06	211	N16W	12.75	N42W	2.0	0
3630	3620.00	203.07	-62.75	103.13	218	N17W	15.25	N47W	2.6	0
3660	3650.00	208.59	-66.61	103.90	222	N17W	16.75	N48W	2.4	0
3690	3680.00	212.13	-70.21	102.60	226	N18W	18.25	N49W	2.3	0
3720	3710.00	215.32	-75.46	102.29	233	N19W	19.50	N46W	2.2	0
3750	3740.00	220.13	-82.25	101.67	241	N20W	21.00	N52W	2.0	0
3780	3770.00	225.03	-86.62	100.49	248	N22W	27.25	N45W	4.4	0
3810	3800.00	230.74	-96.43	99.03	271	N24W	30.00	N56W	5.6	0
3840	3830.00	240.48	-108.99	96.60	282	N25W	31.25	N56W	1.1	0
3870	3860.00	250.60	-132.10	94.31	297	N26W	30.50	N50W	3.3	0
3900	3890.00	260.48	-143.19	92.82	310	N28W	28.50	N52W	2.3	0
3930	3920.00	274.46	-149.97	92.05	318	N28W	27.00	N48W	3.8	0
3960	3950.00	280.15	-159.87	91.73	329	N29W	25.00	N45W	2.6	0
3990	3980.00	289.60	-176.98	91.08	353	N30W	26.00	N48W	0.8	0
4020	4010.00	305.78	-189.17	90.64	369	N31W	26.50	N45W	1.1	0
4050	4040.00	317.35	-200.10	90.64	384	N31W	21.50	N45W	3.9	0
4080	4070.00	328.27	-205.71	90.71	392	N32W	17.50	N44W	5.0	0
4110	4100.00	333.99	-211.24	91.14	400	N32W	14.50	N40W	3.2	0
4140	4130.00	340.13	-214.59	92.15	406	N32W	10.50	N30W	5.0	0
4170	4160.00	344.91	-216.54	93.95	411	N32W	7.75	N17W	2.3	0
4200	4190.00	349.41	-217.61	95.91	415	N32W	7.50	N14W	0.5	0
4230	4220.00	353.24	-219.13	98.46	420	N31W	8.25	N15W	0.8	0
4260	4250.00	358.37	-223.40	101.37	429	N31W	9.00	N35W	1.2	0

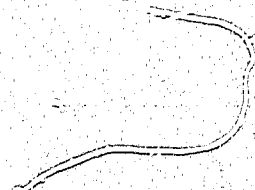
Bore-hole Location Plots



2. PLAN (TOP) VIEW (all distances in meters)



IX HALLIBURTON REPORT ON ACID STIMULATION OF AMOCO POINTED MOUNTAIN D-1



HALLIBURTONFRACTURING AND CHEMICAL SERVICES
SERVICE REPORTATTACH TO
INVOICE No.

24 389

HALLIBURTON DISTRICT

Grande Prairie

JOB 1982 10 29
DATE YEAR MONTH DAY

OWNER, OPERATOR OR HIS AGENT STATES THE WELL IS IN CONDITION FOR THE SERVICE JOB TO BE PERFORMED AND SUBMITS THE FOLLOWING DATA.

CUSTOMER Amoco Canada Petroleum Company Ltd.		FIELD OR AREA Pointed Mountain D-1		WELL NO. AND LEASE D-1	
CALL OUT 82-10-28	ON LOCATION 82-10-28	JOB STARTED 82-10-29	JOB COMPLETED 82-10-29	PROVINCE N.W.T.	LSD. Pointed Mountain D-1
DATE 16:00	DATE 15:00	DATE 10:00	DATE	RANGE	MERIDIAN

WELL OR HOLE DATA

FORMATION Nahanni	DATE CASING SET
TUBING OD 88 mm	DEPTH 3297 m
CASING OD 244.5 mm	DEPTH 3297 m
LINER OD 178 mm	FROM 3297 m TO 4130 m
PACKER TYPE Baker	SET AT
TREAT THRU: TSG ☒ ANNULUS ☐ CGS ☐ TSG AND ANNULUS ☐	

MAX. ALLOWABLE PRESSURE: TSG 62 MPa	CSG 27 MPa
CAPACITY: TSG 18.6	ANNULUS 117
PERFORATION: FROM	TO
FROM	TO
FROM	TO
FROM	TO
FROM	TO
FROM	TO
FROM	TO
OPEN HOLE: SIZE 153 mm	FROM 4079 m TO 4083.5 m

MATERIALS USED

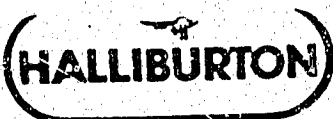
FLUID TYPE (1) 28% HCl	FLUID TYPE (2) H ₂ O
m ³ 1.0	m ³ 18.6
ADDITIVES: TYPE	ADDITIVES: TYPE
kg/m ³	L/m ³
HC-2	6
HAI-75	11
HAI-1248	1.4
PROP AGENT	MESH
(1)	
(2)	
(3)	
PROP. CONC. kg/m ³	MIN
(1) MAX	AVE
(2) MAX	MIN
(3) MAX	AVE
OVERTING AGENT: TYPE	AMOUNT

TREATMENT SUMMARY

KW AVAILABLE	USED
INJECTION RATES m ³ /min	
TREAT 0.59	DISPLACE AVERAGE
PRESSURES MPa	
BREAKDOWN FROM	TO
MAX. TREAT 62	MIN TREAT 48
INSTANTANEOUS SHUTIN	15 MIN
FLUID VOLUMES m ³	
TOTAL ON LEASE BEFORE JOB	
FILL HOLE	
BREAKDOWN AND PAD	
TREATING FLUID (1)	
TREATING FLUID (2)	
FLUSH FLUID	
TOTAL FLUID INJECTED	
TOTAL ON LEASE AFTER JOB	

HALLIBURTON OPERATOR A. Kirschner CUSTOMER REP.

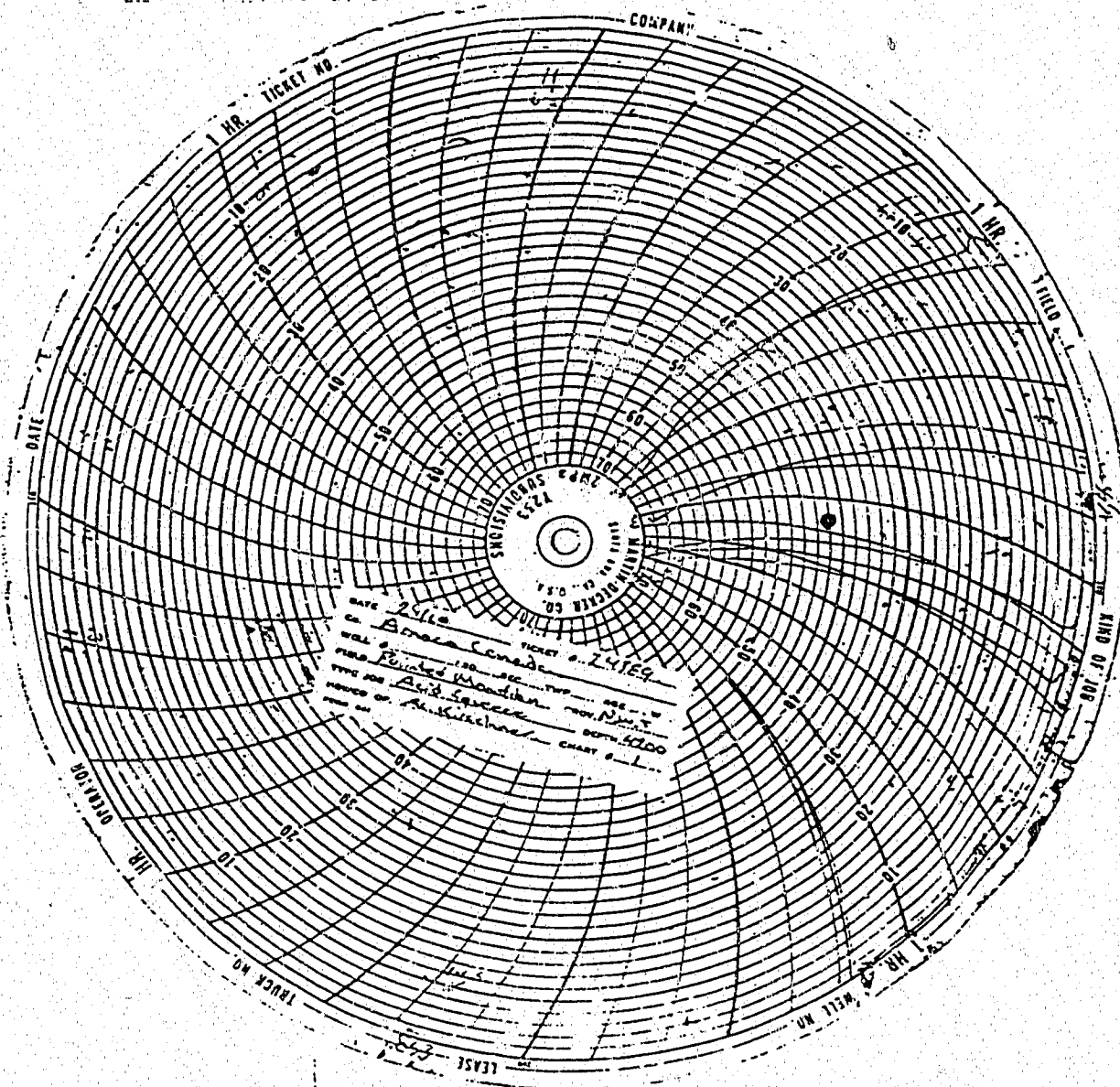
SUMMARY OF PLANNED TREATMENT Rig up pumper to tubing. Pressure test 69 MPa. Pressure test annulus pumper.
Set pop valve 30 MPa. REFER TO TREATING LOG.

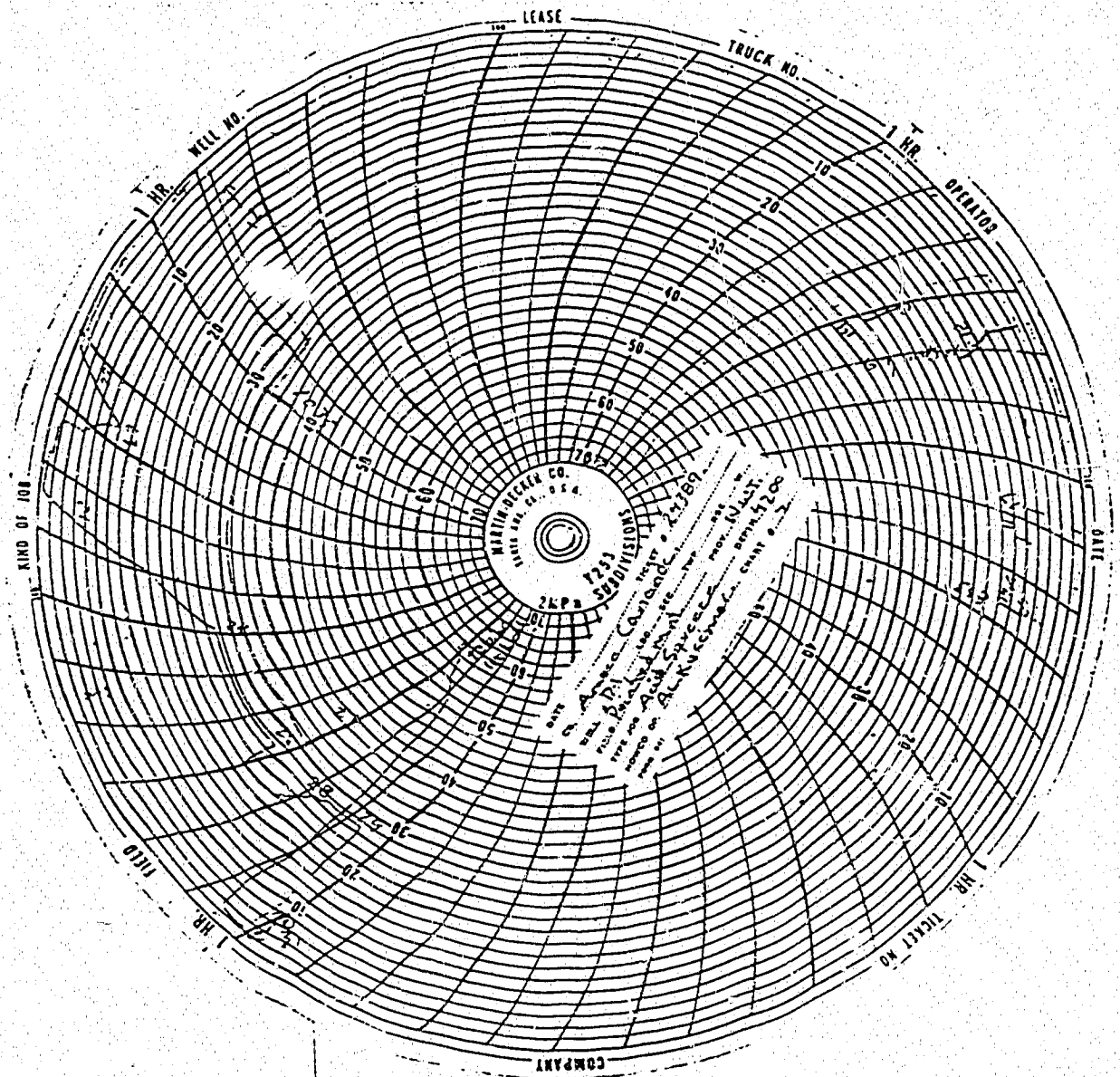


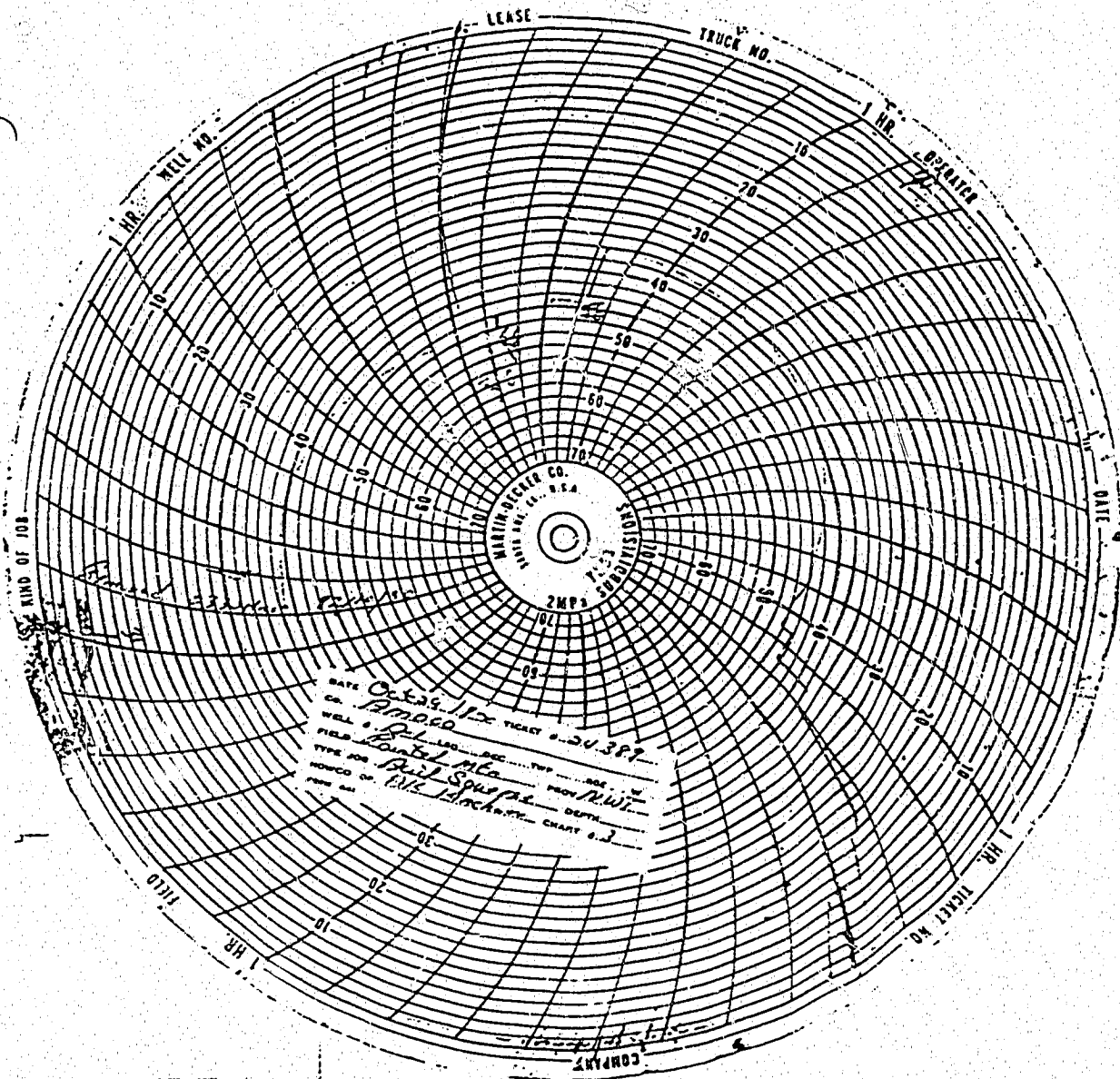
TREATING LOG

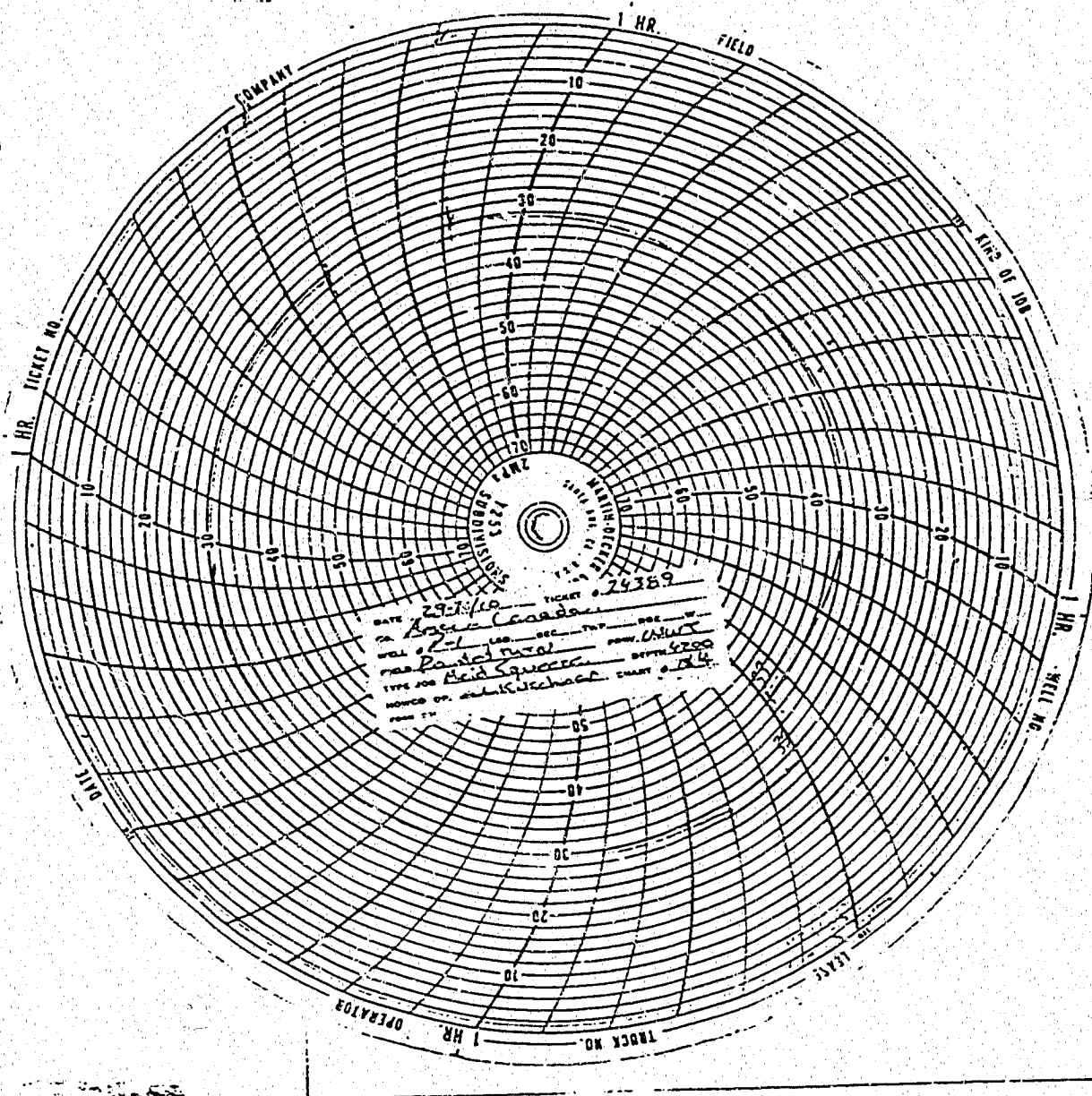
INVOICE No. 24 389

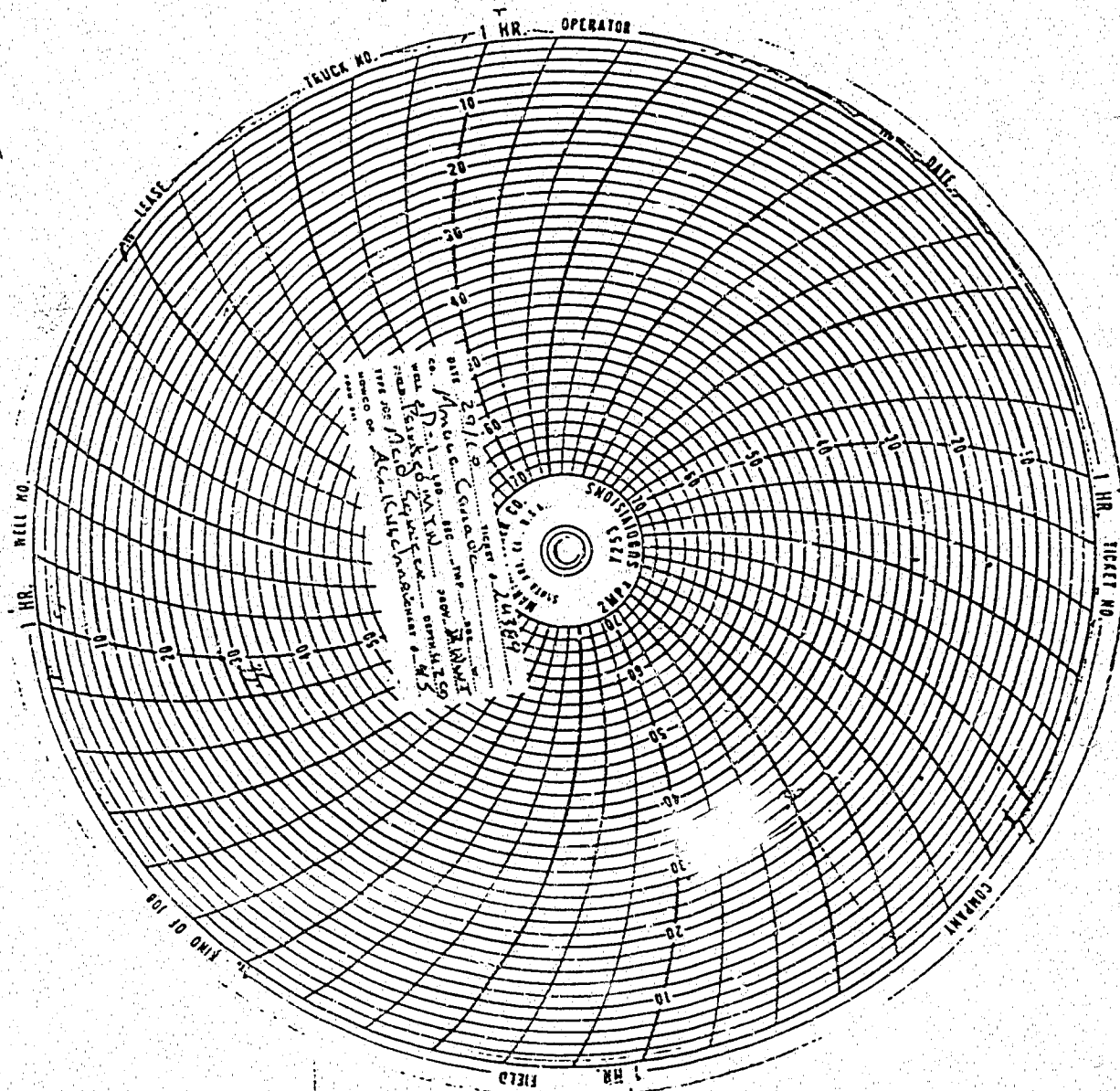
CHART POSITION	TIME	RATE m ³ /min	VOLUME m ³		PRESSURE MPa		REMARKS
			PUMPED	IN FORMATION	TUBING	CASING	
1	05:15						Pressure test surface lines.
2	05:45						Bleed off repair leaks.
3	05:58						Pressure test to 69 MPa.
4	06:18						Bleed off.
5	06:18				2	0	Start 1 m ³ 28% HCl
6	06:21	0.33	1		4	0	Acid gone.
7	06:22				5	0	Start 18.6 m ³ H ₂ O.
8	06:52	0.59	17.6		5	0	17.6 m ³ H ₂ O gone close
9	06:53				3	0	B.O.P and return 1 m ³ of annular fluid to annulus pump truck.
10	07:18	0.04	1.0		3	0	1 m ³ gone reverse acid.
11	07:43	0.04	1.0		2	0	1 m ³ gone pump down tubing.
12	07:51	0.12	1.0		2	0	1 m ³ gone reverse acid back in tubing.
13	07:59	0.12	1.0		2	0	Stop set packer.
14	08:53				8	0	Charge change.
15	08:53				8	0	Pressure up tubing to 34 MPa.
16	09:00				11	0	Stop packer not set.
17	09:02				4	0	Fill annulus.
18	09:18	0.24	3.84		3	0	Stop.
19	09:22				0	0	Pressure test tubing surface line 68 MPa.
20	09:45				2	0	Bleed off.
21	10:21				34	0	Pressure up tubing to 34 MPa.
22	10:46				34	27	Pressure up annulus to 27 MPa.
23	10:46				34	0	BOP leak bleed off.
24	10:57				34	27	Pressure up annulus to 27 MPa.







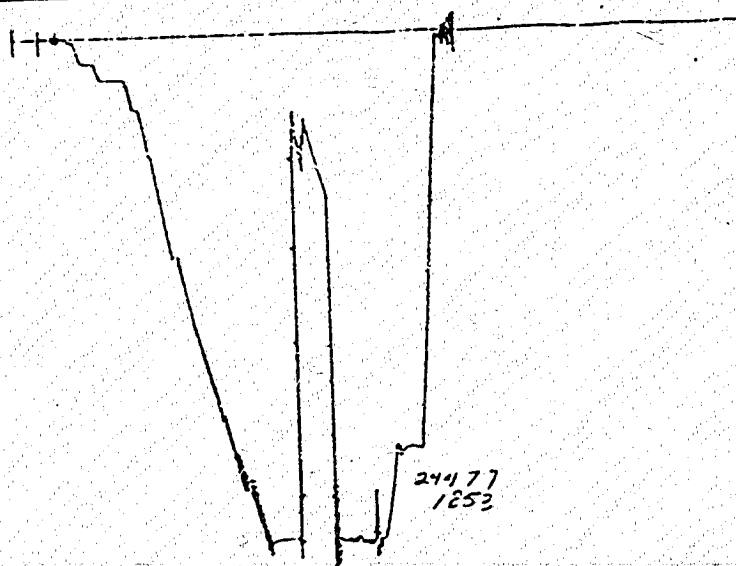




X FORMATION EVALUATION RECORDS

PRESSURE

Reversing Sub and XQ	1.24
Water Cushion Valve	
DEPTH	0.82
Drill Pipe & Adapters	
Drill Collars & Adapters	
Handling Sub & Choke	1.85
Dual CIP Valve	
Dual CIP Sampler	3.12
HydroSpring Tester	
DEPTH	
Multiple CIP Sampler	
Extension Joint	1.68
BT Running Case	
DEPTH	
BT Recorder	1.68
	1.77
Hydraulic Jar	1.04
VR Safety Joint	
Equalizing Crossover	
RTTS Assembly	0.81
DEPTH	4046.88
RTTS in Interval	0.36
Packer Assembly	
DEPTH	
Flush Joint Anchor & Equalizing Tube	4.5
Crossover Adapter	
Bull Nose	1.26
BT Case	
DEPTH	
Temperature Recorder	
Drill Collars & Adapters	
Flush Joint Anchor & Equalizing Tube	
Packer Assembly	
DEPTH	
Distributor	
Packer Assembly	
DEPTH	
Equalizing Seal	
Anchor Pipe	
Safety Joint	
Side Wall Anchor	
DEPTH	
Drill Collars & Adapters	
Flush Joint Anchor	
Blanked Off BT Case	4200
DEPTH	



17-11-1971

PREFLOW: Set RTTS. Opened tool, no bubbles in bucket. Shut tool in for 60 minutes. 30 minutes into shut-in got 1/2 dozen bubbles.

Final Flow: No surface reading. Shut tool in.

No gas to surface. Pull packers loose, drop bar and circulate for 30 minutes. Shut down blow lines, try to pull out of hole but string stuck. Work

pipe for a few hours, phone in and wait on orders.

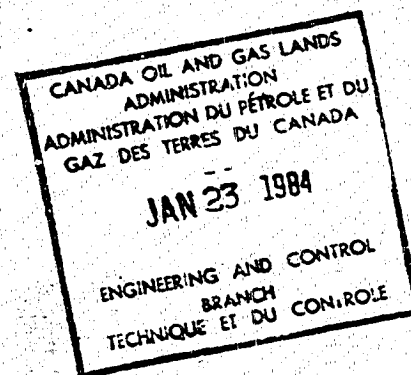
Try to circulate and work pipe. Tool came loose circulate for 20 minutes and pull pipe.

FALL 1971

AMOCO POINTED MOUNTAIN D-1
BIT RECORD

BIT	SIZE	TYPE	IADC	DEPTH OUT	METERS	HOURS	CUM. HOURS	RATE	COND.	JETS	PUMP PRESS.	PUMP VOL.	ANN. VEL.	MUD DENS.	WT.	RPM
1	445	M4N	2-1-1	85	85	43.5	43.5	1.95	5-4-0	19.1-22.2-22.2	4 800	3 400	29.8	1 025	8/12	40/70
2	445	S62	6-2-5	174	89			2.17		17.5-22.2-22.2	8 000	3 632	31.7	1 030	10/25	50/70
3RR	445	S62	6-2-5	189	104	50.5	94	2.05	4-8-1	17.5-22.2-22.2	7 300	3 622	29	1 030	7	/20
4	660	QWC	2-1-1	62	62	15.75	109.75	3.9	4-4-20	3 x 22.2	6 400	4 767	14.5	1 030	5/8	40/70
5	660	OSC/1GJ	1-3-1	71	9	13.25	123	.68	6-8-1	3 x 22.1	6 500	5 481	16.6	1 030	2/6	40/90
6	660	OSC/1GJ	1-3-1	111	42	32.75	155.75	1.28	8-8-1	3 x 22.2	8 000	5 481	16.6	1 050	4/7	80/10
7	660	OSC3A	1-1-1	128	17	15.75	171	1.11	8-8-20	3 x 22.2	6 800	4 698	14.2	1 050	3/5	80/10
8	660	OSC3A	1-1-1	140	12	14	185	.86	8-8-15	3 x 22.2	7 000	4 176	12.7	1 050	3/5	70/10
9	660	OSC3A	1-1-1	146	6	7	192	.86	8-8-1	3 x 22.2	7 000	4 176	12.7	1 050	3/5	70/10
10	660	OSC3A	1-1-1	154	8	7.25	199.25	1.1	8-8-0	3 x 22.2	7 000	4 176	12.7	1 045	3/5	70/10
11	660	OSC3	1-2-1	161	7	4.5	203.75	1.5	8-8-31.75	3 x 22.2	6 000	4 437	13.3	1 045	3/5	50/80
12	660	DSJ	1-1-1	164	3	3.25	207	.92		22.2-22.2-15.9	6 000	4 437	13.3	1 045	3/5	50/80
13R	660	QWC	2-1-1	165	2	5.75	212.75	.35	8-8-28	OPEN	6 000	4 437	13.3	1 045	3	60
14	660	OSC1G	1-3-1	166	1	5.5	218.25	.18	8-6-25	3 x 22.2	6 000	4 437	13.3	1 045	3	60

Run 508 mm, 139.89 + 158.49 kg/m, K55 Vetco Casing



AMOCO POINTED MOUNTAIN D-1
BIT RECORD

BIT	SIZE	TYPE	IADC	DEPTH OUT	METERS	HOURS	CUM. HOURS	RATE	COND.	JETS	PUMP PRESS.	PUMP VOL.	ANN. VEL.	MUD DENS.	WT.	RPM
15	445	4JS	6-1-5	255	66	20.75	20.75	3.18	3-2-1	X-15-19	12 500	3 720	26	1 050	18	50
16	445	3JS	5-3-5	397	142	54	74.75	2.6	4-7-4	X-15-19	13 000	3 724	26	1 060	15/17	75
17	445	3JS	5-3-5	444	47	20	94.75	2.4	2-2-1	X-15-19	13 500	3 528	25	1 050	8/20	70/75
18RR	445	3JS	5-3-5	498	54	28.5	123.25	1.89	6-2-5	X-15-19	13 500	3 528	25	1 060	15/20	50/65
19	445	X33	5-3-5	587	89	36.25	159.5	2.45	8-6-2	X-15-19	13 500	3 528	25	1 180	16/20	50/60
20	445	S88	5-4-5	658	71	43.25	202.75	1.64	8-6-2	15.9-15.9-12.7	13 500	2 800	19.7	1 200	16/22	50/60
21	445	4JS	6-1-5	734	76	62.5	265.25	1.22	8-6-2	12.7-12.7-14.3	14 000	2 800	19.7	1 195	22	53
22	445	M4NJ	2-1-1	747	13	7.5	272.75	1.73	8-8-25	X-15.9-17.5	13 000	2 790	20	1 190	22	60
23	445	H7J	3-1-1	748	1	.75	273.5	1.33	2-4-1	X-15.9-17.5	13 000	2 790	20	1 190	5/18	/70
24	445	S53	5-3-5	826	78	34.5	308	2.26	8-8-2	X-15.9-17.5	15 000	2 979	21	1 155	15/22	45
25	445	S62	6-2-5	887	61	40.55	348.5	1.51	6-8-9	X-15.9-17.5	15 000	2 979	21	1 160	20	50
26	445	X44	6-1-5	923	63	22.5	371	1.6	8-6-2	X-15.9-17.5	16 000	2 979	21	1 165	23	60
27	445	S62	6-2-5	942	23	17.25	388.25	1.3	8-2-3	3 X 14.3	15 000	3 136	22	1 160	29	40/80
28	445	Y72J	7-2-3	960	18	25.25	413.75	.7	8-6-1	3 X 14.3	15 000	2 976	21	1 165	23	40

AMOCO POINTED MOUNTAIN D-1
BIT RECORD

BIT	SIZE	TYPE	IADC	DEPTH		HOURS	CUM. HOURS	RATE	COND.	JETS	PUMP PRESS.	PUMP VOL.	ANN. VEL.	MUD DENS.	WT.	RPM
				OUT	METERS											
29	445	H7J	3-1-1	972	12	11.5	425.25	1.04	4-6-1	15.9-17.5-X	7 000	1 897	13.3	1 170	27	50
30	445	S62J	6-2-5	1 007	35	41.75	467	0.84	4-4-1	15.9-17.5-X	14 000	2 976	21	1 155	20	40
31	445	S88	5-4-5	1 042	35	45.75	512.75	0.76	8-6-3	3 X 14.3	7 500	2 232	16	1 160	12/14	40/50
32	445	S62	6-2-5	1 065	23	24	536.75	0.96	6-4-6	3 X 14.3	15 000	3 534	23	1 160	10/20	40/50
33	445	4JS	6-1-5	1 103	38	14.5	551.25	2.52	5-4-12.7	3 X 14.3	15 000	3 720	26	1 010	22/23	55/60
34R	445	H7	3-1-1	1 103	Ream	9	560.25			3 X 14.3	15 000	3 348	23.5	1 010	2/3	60/90
35	445	4JS	6-1-5	1 169	66	25.75	586	2.56	6-4-3	3 X 14.3	14 000	3 627	25	1 005	24/27	60/70
36	445	4JS	6-1-5	1 227	58	18	604	3.2	8-4-11	3 X 14.3	5 800	2 046	14.3	1 005	24	70
37	445	4JS	5-1-5	1 227	Ream				8-2-2	3 X 14.3	5 800	2 046	14.3	1 005		
38	445	S62	6-2-5	1 227	Ream					17.5-17.5-X	5 000	2 976	20.8	1 220		
39	445	W7R2J	3-2-1	1 227	Ream				1-1-11	17.5-17.5-X	7 800	2 046	14.3	1 205		
40	445	W7R2J	3-2-1	1 228	1	1.5	605.5	0.66	8-6-7	17.5-17.5-X	7 800	2 046	14.3	1 205	27	40/60
41R	445	S52	6-2-5	1 247	19	12.25	617.75	1.55	8-4-0	17.5-17.5-X	15 000	2 976	20.9	1 220	22	50/70
42	445	X44	6-1-5	1 261	14	9.75	627.5	1.4	8-3-13	17.5-17.5-X	16 000	2 976	20.9	1 210	22	60

AMOCO POINTED MOUNTAIN D-1
BIT RECORD

BIT	SIZE	TYPE	IADC	DEPTH		HOURS	CUM.		COND.	JETS	PUMP PRESS.	PUMP VOL.	ANN. VEL.	MUD DENS.	WT.	RPM
				OUT	METERS		HOURS	RATE								
43	445	Y72	7-2-3	1 276	15	14.5	642	1.03	8-8-1	3 X 14.3	16 000	2 976	20.9	1 220	15/27	50/60
44	445	Y73	7-3-3	1 292	16	22.5	664.5	0.72	3-4-1	3 X 14.3	15 000	2 976	20.9	1 210	20/27	50
45	445	4JS	6-1-5	1 337	45	46.75	711.25	0.96	4-2-1	3 X 14.3	15 000	2 976	20.9	1 210	18/22	60
46	445	X44	6-1-5	1 397	60	50	761.25	1.2	8-5-5	3 X 14.3	15 000	2 976	20.8	1 220	17	50
47	445	4JS	6-1-5	1 424	27	26	787.25	1.03	3-2-1	3 X 14.3	15 000	2 976	20.8	1 225	22	50

Run 340 mm casing, 107.15 kg/m S95 Buttress

48	311	F4	6-1-7	1 509	85	31.25	31.25	2.72	2-2-1	X-14.3-12.7	13 500	2 046	32	1 115	13/18	65
49	311	F3	5-2-7	1 629	120	70.5	101.75	1.7	4-4-2	X-14.3-12.7	13 800	2 046	32	1 080	16	55
50	311	FP62	6-2-7	1 900	271	91.5	193.25	2.96	8-4-1	X-14.3-12.7	12 000	1 860	29	1 065	23	60
51	311	FP62	6-2-7	1 930	30	13.75	207	2.18	8-6-1	X-14.3-12.7	12 000	1 860	29	1 060	20	60
52	311	FP62	6-2-7	2 108	178	87.25	294.25	2.04	8-8-1	X-14.3-12.7	12 000	1 860	29	1 060	20	40
53	311	J33	5-3-7	2 373	265	95	389.25	2.79	2-8-2	X-14.3-12.7	12 400	1 860	29	1 135	21	60
54	311	F3	5-3-7	2 616	243	74	463.25	3.28	2-8-1	X-14.3-12.7	12 600	1 860	29	1 090	21	50/60
55	311	S84F	5-1-7	2 821	205	88.75	552	2.31	1-4-1	3 X 11.1	13 800	1 860	29	1 180	23	60

AMOCO POINTED MOUNTAIN D-1
BIT RECORD

BIT	SIZE	TYPE	IADC	DEPTH OUT	METERS	HOURS	CUM. HOURS	RATE	COND.	JETS	PUMP PRESS.	PUMP VOL.	ANN. VEL.	MUD DENS.	WT.	RPM
56	311	F2	5-1-7	2 862	41	20.5	572.5	2	1-1-1	3 X 11.1	14 400	1 860	29	1 180	19	60
57RR	311	F2	5-1-7	3 105	243	111.75	684.25	2.18	1-3-1	3 X 11.1	14 800	1 860	29	1 155	20	75
58	311	HS51	5-1-7	3 297	192	86.25	770.5	2.23	2-4-1	X-14.3-14.3	13 500	1 860	29	1 170	21	70
59	311	M44N	2-1-4	3 297	Ream	115	885.5*			11.1-11.1-12.7	14 000	1 660	29	1 190	1/5	60
60RR	311	HS51	Ream													

Run 245 mm casing, 17 Jts 69.9, 74 Jts 64.7, 121 Jts 59.5, 4 Jts 69.9, ECP @ 3 297.5; S0095; LT&C

61	215	J3	1-3-6	Dr1 Out	839	36	36		2-2-1		10 000	1 449	60	1 000	0/5	70
62	216	J22	5-1-7	3 335	38	9.25	45.25	4.1	8-4-2	3 X 8.7	10 000	1 064	42	1 050	8/12	70
63	216	F2	5-1-7	3 510	175	73	118.25	2.8	6-4-5	10.3-11.1-X	10 500	1 064	44	1 030	16	70
64	216	S86F	5-1-7	3 796	286	106.5	224.75	2.69	8-8-5	10.3-11.1-X	10 200	1 064	44	1 060	17	55
64	216	FP62	6-2-7	3 837	41	26.5	251.25	1.54	8-8-5	X-10.3-11.1	10 200	1 064	42	1 055	17	60
66	216	FP62	6-2-7	3 888	51	24.25	275.5	2.4	8-6-2	X-10.3-11.1	10 200	1 064	42	1 070	17	45
67	216	FP62	6-3-7	3 984	96	53.5	329	1.79	2-2-1	X-10.3-11.1	10 200	1 064	42	1 075	20	45
68	216	FP62	6-2-7	4 069	85	28.5	357.5	2.98	8-2-1	X-10.3-11.1	10 000	1 064	44	1 075	18	50

AMOCO POINTED MOUNTAIN D-1
BIT RECORD

BIT	SIZE	TYPE	IADC	DEPTH		HOURS	CUM.	RATE	COND.	JETS	PUMP	PUMP	ANN.	MUD	WT.	RPM
				OUT	METERS		HOURS				PRESS.	VOL.	VEL.	DENS.		
69	216	FP63	6-3-7	4 120	51	20.25	377.75	2.5	8-8-2	X-10.3-11.1	11 500	1 064	44	1 075	17	45
70	216	J77	7-3-7	4 200	80	22	399.75	3.64	6-4-1	X-11.1-11.1	10 800	1 064	44	1 085	18	45
71	216	JD4	2-1-7	Ream	112	8.5	408.25		1-1-1	3 X 11.1	11 000	1 064	42	1 075	0/5	70
72R	216	JD4	2-1-7	Clean to Btm.						3 X 11.1	7 000	1 064	44	1 070		

Run 178 mm casing, hang at 3 234.88, btm at 4 130 m, 38.69 kg/m, S0095 LT&C