

Well History Report

Chevron SOBC Gulf Ridge YT F-48

April 18, 1973

R. C. Richardson, P. Eng.
Project Manager

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SECTION I

Summary of Well Data

- (a) Well Name and Number

 Chevron SOBC Gulf Ridge YT F-48
- (b) Permittee, Licensee or Lessee
 Gulf Oil Canada Limited
- (c) Name of Operator

 Chevron Standard Limited 400 Fifth Avenue S.W.
 Calgary, Alberta
 T2P 0L7
- (d) <u>Location</u>
 Unit F, Section 43, Grid 67° 20' N, 137° 45' W
- (e) Coordinates
 Latitude 67° 17' 23" N, Longitude 137° 53' 35" W
- (f) Permit or Lease Number
 Permit No. 6462
- (g) Drilling Contracto.
 Nabors Drilling Limited, Rotary Rig #1 (Oilwell 76)
- (h) <u>Drilling Authority</u>

 Drilling Authority No. 628 issued November 6, 1972
- (i) <u>Classification</u>
 Wildcat
- (j) <u>Elevations</u>

 GD. Elev: 1034' Fill: 5.0' KB GL: 14.60' KB Elevation: 1054'
- (k) Spudded

 Spudded in at 1°C0 hrs. January 3, 1973

(1) Completed Dellling

Completed Main Autor at 1907 See, Starth 18, 1871

(m) T.D. and P.B. L. ..

T.D. - All Fell P.B.F.D Garlane

(n) Well Status

Ory and permanently abandoned

(o) Rig Release Date

RIE released at 2400 hrs. April 2, [97]

(r) Hole Sizes to Total Depth

36" hole from surface to 44 ft, G.L. 30" hole from 44 ft, to 47 ft, GL $17^{4}y''$ hole from 66 ft, KB to 886 ft, GB 8*3/4" hole from 886 ft, KB to 6131 ft. KB

(q) Casing

 $19^{\prime\prime\prime}$ OC conductor pipe set at $66.30^{\prime\prime}$ KB $13\text{--}3/8^{\prime\prime\prime}$ K-55, 54.50 casing set at 8°, 31' KB

(r) Engineers

L. F. Grumbly, R. K. Connon, G. G. Hoench

Geologists

O. Gietz, P. Collier

SECTION II

Geological Summary

(a) Formation Tops

Depth		Elevation
Formation	Logs	K.B. 1054
Spuds in Lower/Middle Albian Shale Barremian Siltstone Unit Hauterivian Siltstone/Sandstone Unit Johnson Creek (Upper Jurassic) Husky Member Bug Creek Member Jl Snale Member Upper Devonian Imperial Formation	2870 * 3920 * 4625 * 4735 * ? 4892 * ? 5247 * 5370 * ?	-1816' -2866' -3571' -3681' -3838' -4193' -4316'

Total Depth 6131'

(b) Cored Intervals

Core No.	<u>Interval</u>	Formation	Recovery
1	4647-4674	Johnson Creek	26.5
2	4679-4699	Johnson Creek	20.0

(c) Core Description

Core #1 4647'-4674' cut 27' Rec. 26.5'

Coring Times

46471	-	4	5	5	6	6	6	8	6	8	8	
		8	8	6	9	7	7	7	8	8	7	
		7	8	8	9	8	2.3	25	Jar	mmed	- 4674	+ 1

4647'-4674' (Description Core #1)

Core #1

Sandstone - white to light grey, mainly fine-grained, grading to very fine; quartzose (95% quartz), glauconitic (3%). Massive: no bedding, except for lamination in basal 6". Occasional solution surfaces lined with pyrobitumen.

Hard, silica cemented, locally quartzitic. Well sorted; grains subrounded to well rounded. Poor intergranular porosity throughout; (5%-10%). Poor to zero permeability. Trace of spotty oil bleeding from pin-point vugs. Numerous vertical fractures throughout, lined with calcute crystals.

Horizontal worm tracks common; occasional small pelecypods (Buchia sp.) seen on solution surfaces.

Core #2 4679'-4699' Cut 20' Rec. 20'

Coring Times

4679' - 21 13 14 12 9 10 11 11 13 12 11 12 12 13 15 15 14 17 16 45 Jammed - 4699'

4679'-4699' (Description Core #2)

Core #2

Sandstone - white to light grey, very fine-grained, grading to fine-grained; quartzose (95% quartz), glauconitic (3%). Massive: no bedding throughout. Occasional solution surfaces lined with pyroblitumen. Minor pyrite.

Very hard to quartzitic throughout (30% silica cement); well sorted, grains subrounded to well rounded. Trace of intergranular porosity throughout - not effective. Patchy oil stains in rock matrix; does not fluoresce: trace of gas bleeding from matrix and minor subvertical fractures.

Occasional clusters of pelecypods (Buchia sp.), rare horizontal worm tracks.

(d) Sample Description

- 150-230 Shale, grey, silty, blocky, noncalcareous. Few sandy streaks. Trace of chert pebbles, few floating chert grains. Trace of pyrite.
- 230-250 Shale, grey, silty and sandy, noncalcareous. Trace of pyrite. Trace of chert fragments.
- 250-260 Shale, as above. Trace of brown sandy shale, ironstone. Trace of chert pebbles, pyrite.
- 260-420 Shale, grey, blocky to sub-fissile, noncalcareous, silty streaks. Minor brown-grey shale.

 Trace of brown, silty ironstone.
- 420-470 Shale, grey, blocky, noncalcareous. Few grey silty and sandy streaks.
- 470-500 Shale, as above. Trace of sandy streaks. Trace of pyri e, chert pebbles. Trace of calcareous silty streaks.
- 500-540 Shale, grey, blocky, noncalcareous. Trace of sub-fissibe to splintery shale.
- 540-560 Shale as above. Trace of rusty brown ironstone.
- 560-600 Shale, grey silty and sandy streaks, noncalcareous. Few slightly calcareous sandy streaks.
- 600-610 N.S.
- 610-670 Shale, grey, blocky, noncalcareous. Few slightly calcareous sandy streaks.
- 670-630 Shale, grey, blocky, silty, noncalcareous. Trace of brown-grey shale.
- 680-710 Shale, grev, blocky, noncalcareous.
- 710-720 N.S.
- 720-780 Shale, grey, blocky to sub-fissile, noncalcareous. Few silty streaks.
- 780-790 Shale, grey, sandy and silty, blocky noucalcareous.
- 790-800 Shale, silty, sandy as above. Trace of brown shale, smooth dark red shale.

800-840 Shale, grey, blocky, noncalcareous. Minor silty shale, sandy streaks.

340-880 Shale, grey, blocky, silty. Minor grey sandy calcareous streaks.

880-910 N.S.

910-980 Shale, grey, silty, blocky, noncalcareous. Minor very fine-grained sandy streaks, trace of glauconite.

Trace of chert fragments, pyrite. Trace of argillaceous brown limestone.

980-1000 Shale, as above. Trace of grey, fine sandy and silty streaks with rare glauconite, faintly calcareous.

Trace of ironstone. Traces of dark grey-green smooth blocky, noncalcareous shale.

1000-1060 Shale, grey, blocky, noncalcareous. Minor silty shale, traces to minor grey, very fine-grained slightly calcareous sandstone. Trace of dark grey-green blocky, noncalcareous shale; traces of ironstone; grey limestone, chert.

1060-1090 Shale, as above, grey, blocky, silty, noncalcareous to faintly calcareous. Minor dark brown-grey iron-stained shale.

Trace of chert, trace of limestone.

1090-1100 Shale, grey, blocky, noncalcareous. Traces of silty shale minor pale brown ironstone.

1100-1110 N.S.

1110-1120 Shale, grey, blocky noncalcareous. Trace of silty shale. Trace of chert. Abundant pale brown ironstone.

1120-1150 Shale, grey, silty, faintly calcareous to noncalcareous.

Minor pale brown ironstone. Trace of pyrite.

Shale, grey, silty, noncalcareous, blocky. Trace of splintery and blocky dark grey-green shale. Traces of ironstone, chert. Minor fine sandy streaks, silty streaks.

1160-1170 Sandstone, grev, argillaceous, very fine to fine-grained, noncalcareous, grading to very sandy shale, rare glauconite.

Trace of white bentonite.

1170-1190 Shale, grey, silty, noncalcareous. Minor sandy shale.

Trace of dark brown-grey argillaceous linestone, traces of chert pebbles.

- 1190-1210 Shale, grey, silty, noncalcareous. Minor grey, fine-grained sandy streaks, shaly sandstone. Minor pale grey and white bentonite. Trace of brown, argillaceous limestone. Trace of chert.
- 1210-1230 Shale, grey and dark grey, silty, noncalcareous. Trace of bentonite.
- 1230-1250 Shale, grey, silty, noncalcareous. Trace of bentonite, ironstone, chert, calcite fragments.
- 1250-1260 Shale, dark grey and grey, silty, noncalcareous. Traces of calcite fragments, trace of bentonite, chert.
- 1260-1290 Shale, grey, silty, noncalcareous. Trace of fossil fragments. Trace of bentonite, calcite fragments, ironstone. Few streaks of grey fine-grained calcareous sandstone.
- 1290-1320 Shale, grey, silty textured, noncalcareous. Traces of bentonite, pyritised plant remains, trace of chert, calcite fragments. Trace of sandy streaks, sparse glauconite, calcareous in part.
- 1320-1330 N.S. Shaker bypassed.
- 1330-1340 Shale, grey, silty, noncalcareous. Much pale grey bentonite.

 Calcite, limestone fragments. Trace of calcareous sands streaks.
- 1340-1350 Shale, grey, silty, noncalcareous. Much pale grey bentonite. Traces of ironstone, limestone and clacite fragments. Trace of fossil fragments (Inoceramus?). Trace of bitumen.
- 1350-1380 Shale, grey, silty, noncalcareous. Trace of black chert pebbles, trace of bentonite. Trace of dark brown dense limestone. Trace of grey, calcareous sandy streaks.
- 1380-1420 Shale, as above. Trace of finely laminated silty streaks.

 Increase in bentonite, calcite fragments. Trace of chert.

 Trace of calcareous fine sandy streaks.
- 1420-1430 Shale, grey, silty, noncalcareous. Trace of sandy streaks, slightly calcareous. Minor bentonite, calcite fragments. Trace of rusty ironstone.
- 1430-1450 Shale, grey, silty, noncalcareous. Trace of calcareous andy streaks with rare glauconite. Minor bentonite, trace of chert.
- 1450-1460 Shale, grey and dark grey noncalcareous, micromicaceous, silty in part. Trace of bentonite, calcite fragments.

- 1460-1470 Shale, grey, noncalcareous, silty in part. Traces of silty calcareous shale, trace of brown argillaceous limestone.

 Minor bentonite, calcite fragments.
- 1470-1490 Siltstone, grey, very argillaceous, grading to silty shale, noncalcareous. Rare glauconite.
- 1490-1500 Siltstone, grey, argillaceous, as above. Shale, grey and dark grey, noncalcareous.
- 1500-1510 Shale, grey, silty and noncalcareous. Much grey, blocky calcareous shale.
- 1510-1520 Shale as above. Trace Inoceramus?
- 1520-1530 Shale, grey, noncalcareous, silty in part. Trace of bentonity calcite fragments.
- 1530-1540 Shale, as above, silty, grading in part to argillaceous siltstone, micromicaceous. Siltstone, grey calcareous.
- 1540-1580 Siltstone, grey, slightly calcareous to calcareous, finely glauconitic. Minor shale, grey, silty in part, noncalcareous. Trace of grey and black chert.
- 1580-1620 Shale, grey micromicaceous, silty in part, blocky, noncal careous.
- 1620-1630 Shale, as above. Trace grey, calcareous siltstone.
- 1630-1640 Shale, dark grey, blocky, silty, micromicaceous, noncalcareous.
- 1640-1650 Siltstone, grev argillaceous, calcareous.
- 1650-1670 Shale, dark grey, silty, micromicaceous noncalcareous. 'inor grey silt streaks, noncalcareous.
- 1670-1690 Shale, silty, grey, noncalcareous to trace calcareous. Trace calcite fragments, silty streaks.
- 1690-1710 Shale, dark grey, silty, micromicaceous, noncalcareous.

 Interbedded grey silty, noncalcareous to partly calcareous shale.
- 1710-1720 Shale, grey, silty, noncalcareous. Minor grey, calcareous silty streaks.
- 1720-1730 Shale, dark grey, micromicaceous, silty, sub-fissile to blocky. Trace of calcareous silt streaks.
- 1730-1750 Shale, grey, dark medium grey, silty in part, noncalcareous.

 Traces of glauconite. Trace of gastropods.

- 1750-1760 Siltstone, grey, argillaceous, noncalcareous to faintly calcareous, trace glauconitic.
- 1760-1770 N.S.
- 1770-1790 Siltstone, grey, argillaceous, slightly calcareous.

 Much medium dark grey very silty shale, trace of glauconite.
- 1790-1800 Siltstone, grey, slightly calcareous, faintly glauconitic, argillaceous.
- 1800-1810 Shale, dark medium grey, blocky to sub-fissile, noncalcareous. Trace of soft, grey bentonite.
- 1810-1820 Siltstone, light medium grey, noncalcareous, argillaceous, faintly glauconitic, grading in part to very fine sandstone.
- 1820-1830 Siltstone, light medium grey, grading in part to very fine sandstone; slightly calcareous to noncalcareous.
- 1830-1840 Shale, grey, silty, blocky, noncalcareous. Trace of light brown resinous limestone. Much grey, argillaceous siltstone.
- 1840-1850 Siltstone, grey argillaceous, calcareous in part, grading to very fine-grained grey sandstone. Much dark medium grey silty shale.
- 1850-1860 Shale, dark medium grey, silty, grading to argillaceous siltstone, noncalcareous. Minor dark grey, sub-fissile, micromicaceous, noncalcareous shale, trace brown silty shale.
- 1860-1870 Shale, dark grey brown and grey, silty, micromicaceous, blocky, noncalcareous.
- 1870-1880 Siltstone, grey, argillaceous, noncalcareous, grading to silty shale. Much dark medium grey silty shale and micromicaceous shale, sub-fissile to blocky.
- 1880-1900 As above, grey argillaceous siltstone, slightly calcareous to calcareous. Trace of resinous limestone.
- 1900-1960 Siltstone, grey, argillaceous, calcareous in part, faintly glauconitic, grading in part to very fine sandstone. Traces of fine lamination. Shale, dark medium grey, silty to smooth, blocky noncalcareous, micromicaceous. Trace of brown, resinous limestone with intercrystalline anhydrite as pockets and worm boring infilling.

- 1960-1970 Shale, dark medium grev, dark grey, micromicaceous, silty in part, noncalcareous. Minor dark grey, sub-bituminous shale. Much grey argillaceous siltstone, as above.
- 1970-1980 Siltstone, grey, argillaceous, calcareous, interbedded dark grey shale, shaly partings and laminae, and black, partly bituminous, micromicaceous.
- 1980-1990 Shale, dark grey, sub-fissile, micromicaceous, noncalcareous, sub-bituminous. Minor grey siltstone, as above.
- 1990-2060 Siltstone, grey, argillaceous, noncalcareous to slightly calcareous, interbedded grey and dark grey noncalcareous silty shale and black, micromicaceous shale. Trace of pyrite. Trace of calcite veining.
- 2060-2070 Shale, dark grey, silty in part, micromicaceous, noncalc reous, partly bituminous. Trace of pyrite. Minor interbedded grey, partly calcareous siltstone.
- 2070-2080 Shale, minor interbedded grey siltstone, as above. Trace of pale brown and brown limestone.
- 2080-2090 Shale, grey, silty, grading in part to very argillaceous siltstone, noncalcareous, micaceous. Trace of calcite-lined fractures.
- 2090-2110 Shale and silty shale, as above. Much dark grey, noncalcareous sub-fissile to silty, micromicaceous shale. Trace of calcite.
- 2110-2120 Shale, dark grey, sub-fissile, noncalcareous, micromicaceous. Trace of glauconite, pyrite. Trace of grey siltstone sireaks and laminae.
- 2120-2130 Siltstone, grey, faintly calcareous to noncalcareous; argillaceous, micaceous in part. Much shale, as above.
- 2130-2140 Shale, grey, silty, finely laminated in part with silty streaks, sub-fissile.
- 2140-2160 Shale, grey, dark medium grey, noncalcareous, micromicaceous, sub-fissile to blocky. Traces of silty laminae. Minor grey, noncalcareous siltstone.
- 2160-2180 Shale, dark grey, grey, sub-fissile, noncalcareous micromicaceous. Trace silty streaks.
- 2180-2200 Shale, grey, micromicaceous, silty in part, blocky, non-calcareous.
- 2200-2220 Shale, dark medium grey, dark grey, sub-fissile, micro-micaceous, noncalcareous. Few silty laminue.

- 2220-2250 As above. Minor black, micaceous bituminous shale. Few silty streaks. Trace of pyrite.
- 2250-2270 Shale dark medium grey, blocky to sub-fissile, trace calcareous to noncalcareous, micromicaceous.
- 2270-2290 Shale, grey, noncalcareous, blocky to sub-fissile, micromicaceous. Few silty streaks, calcareous in part. Traces of fracturing. Trace of brown limestone.
- 2290-2350 Shale, dark grey, fissile, noncalcareous, micromicaceous. Interbedded grey, silty shale and grey siltstone streaks, calcareous in part. Trace of brown limestone, traces of fracturing.
- 2350-2370 Shale, grey, blocky to sub-fissile, noncalcareous, micromicaceous. Much silty shale, streaks of grey calcareous siltstone. Trace of open fractures.
- 2370-2380 Shale, grey and dark medium grey, micromicaceous, non-calcareous. Few silty streaks. Trace of calcite-lined drusy fractures.
- 2380-2490 Shale, grey, noncalcarcous, blocky, silty in part, micromicaceous. Trace of pyrite. Few grey, slightly calcareous silty streaks, finely laminated.
- 2490-2610 Shale, grey and dark grey, micromicaceous, noncalcareous, blocky to sub-fissile. Interlaminated grey, slightly calcareous silty streaks.
- 2610-2620 Shale, dark medium grev, sub-fissile to blocky, noncalcateous, micromicaceous. Interlaminated grey, partly calcareous silty streaks. Trace of brown, argillaceous limestone.
- 2620-2650 Shale, interlaminated silty streaks, as above. Trace of pyrite. Trace of ironstone.
- 2650-2740 Shale, dark medium grey, sub-fissile, micromicaceous, noncalcareous. Much grey, calcareous siltstone and silty laminae.
- 2740-2760 Shale, dark medium grey, sub-fissile to fissile, noncalcareous, micromicaceous.
- 2760-2790 Shale, dark grey, noncalcareous, sub-fissile to fissile; micromicaceous. Much light brown-grey ironstone. Trace to minor grey silt, silty shale. Fractures, slickensides.

- 2790-2800 Shale, dark grey, noncalcareous, sub-fissile to fissile, micromicaceous. Trace of fractures, slickensides. Trace of ironstone.
- 2800-2820 Shale, dark grey, sub-fissile to fissile, noncalcareous, micromicaceous trace of silt laminae, trace of pyrite.
- 2820-2890 Shale, dark grey, sub-fissile to fissile, micromicaceous, slightly anhydritic. Siltstone (20% 40%), dark grey, shaly, in millimetre laminae.
- 2890-3130 Shale, dark grey, sub-fissile, micromicaceous, slightly silty and anhydritic. Siltstone (30% 50%), medium grey, shaly in millimetre laminae. Numerous calcite veins infilling microfractures.
- 3130-3190 Siltstone, light to medium grey, sandy in part, iron specks, in centimetre to millimetre interbeds. Shale (30% 50%) dark grey, micromicaceous, slightly silty and anhydritic
- 3190-3230 Shale, dark grey, fissile, micromicaceous, slightly silty and anhydritic. Siltstone (30% 50%) medium grey, shaly, in part, in centimetre to millimetre interbeds.
- 3230-3290 Siltstone, medium grey, shaly, occasionally sandy and subquartzose, in centimetre to millimetre interbeds. Shale (30% 50%) dark grey, silty and micromicaceous, slightly anhydritic. Calcite veins infilling microfractures.
- 3290-3310 Shale, as above (70%). Siltstone, (30%) medium grey, shaly.
- 3310-3330 Siltstone, medium grey, sandy in part, iron specks and siderite nodules; silicified. Shale (30% 50%) dark grey, silty and micromicaceous.
- Shale, dark grey, fissile and micromicaceous, slightly silty and anhydritic. Siltstone (10% 30%) mdium to dark grey, shaly, in occasional millimetre to centimetre interbeds. Calcite veins infilling microfractures.
- 3500-3520 Shale, dark grey, sub-fissile to fissile, micromicaceous, slightly anhydritic.
- 3520-2600 Shale, dark grey, sub-fissile to fissile, micromicaceous, slightly anhydritic; siderite nodules locally abundant, calcite veins infilling microfractures. Trace of millimetre siltstone laminae.

- 3600-3830 Shale, dark grey, soft, sub-fissile to fissile, micromicaceous, slightly anhydritic; siderite nodules locally abundant; calcite veins infilling microfractures. Trace of millimetre siltstone laminae.
- 3830-3900 Shale, dark grey, silty and micromicaceous; abundant disseminated and nodular pyrite. Siltstone, (20% 40%), dark grey-brown, shalv, minor glauconite.
- 3900-3910 Siltstone, medium grey-green, very glauconitic, shaly.
- 3910-3920 Shale, dark grey, sub-fissile, micromicaceous, occasional siderite nodules.
- 3920-3960 Siltstone, medium grey to grey-brown, very glauconitic in part, subquartzose in part, shaly. Shale (30%) dark grey, silty and micromicaceous; abundant disseminated and nodular pyrite.
- 3960-3975 Sandstone, very fine-grained S & P, silty, glauconitic a.d silicified; dark chert grains. Tight.
- 3975-4010 Siltstone, medium grey, subquartzose in part, shaly and glauconitic; silicified.
- 4010-4065 Siltstone, light to medium grey-brown, very sandy, glauc nite abundant; matrix silicified and tight. Mumerous fractures lined with dolomite crystals; possible fracture porosity.
- 4065-4190 Siltstone, medium to dark grey-brown, shaly and glauconitic; locally sandy and silicified. Shale (30%) dark grey, warr, pure.
- 4190-4240 Sandstone, light to medium grey-brown, very fine-grained, glauconitic and silicified. Tight except for streaks with poor intergranular porosity. Siltstone (10% 50%) medium to dark grey-brown, sandy, interbedded with sandstone.
- 4240-4265 Siltstone, dark grey-brown, sandy, with interbedded shale, dark grey, silty. Minor sandstone as above.
- 4265-4300 Sandstone, light grey-white, very fine-grained, silty, glauconitic; generally silicified and tight. Streaks of poor intergranular porosity.
- 4300-4320 Siltstone, dark grey-brown, interbedded with shale, dark grey.
- 4320-4350 Sandstone, light grey-brown, very fine-grained, silty, glauconitic generally silicified and tight except for occasional streaks of poor intergranular porosity.

- 4350-4400 Shale (50%), dark grey to black, fissile, micromicaceous slightly silty. Siltstone (50%), dark grey-brown, shaly micaceous.
- 4400-4440 Siltstone (80%), medium to dark brown and grey-brown, shaly, slightly sandy in part. Shale (20%) as above.
- 4440-4485 Shale, medium to dark grey, silty, micromicaceous; fairly soft; sub-fissile to fissile.
- 4485-4510 Siltstone, light grey-brown, coarse, sandy to very sandy, glauconitic, silicified; subquartzose grains. Abundant calcite crystals infilling fractures.
- 4510-4530 Shale, dark grey-brown, silty to very silty, poorly fissile, micromicaceous.
- 4530-4600 Shale (70%), as above, grading to: Siltstone (30%), dark grey-brown, shaly. Minor interbeds of light grey-brown, sandy, siliceous coarse siltstone towards base of interval.
- 4600-4615 Shale, dark grey-brown, very silty in part; abundant ironstone nodules. Minor sandstone, light grey, very fine-grained, glauconitic.
- 4615-4630 Sandstone, light brown, very glauconitic, silty, shaly, silicified and tight. Abundant ironstone nodules.
- 4630-4647 Sandstone, cream to white, fine to medium grained, quartzose grains, glauconitic; sorting fair, grains subrounded to well rounded. Partly silica cemented, but stringers of fair intergranular porosity. No shows.
- 4647-4699 See descriptions Cores #1 and #2.
- 4699-4710 Sandstone, fine-grained (0.10 mm), pale grey siliceous. Well sorted, subround to subangular quartz grains, rare glauconite, in siliceous matrix. Trace of spotty porosity, in part bitumen lined. No fluorescence or cut. Much shale cavings.
- 4710-4740 Sandstone, as above. Traces of porosity, trace of bitumen, as above. No cut or fluorescence. Decrease in shale cavings.
- 4740-4780 Sandstone, fine-grained, grey and brown, fairly well sorted quartz grains subround to subangular, trace of glauconite.

 Argillaceous in part. Much (30%) interbedded dark brown-grey noncalcareous, blocky shale. Pockets of poor to fair intergranular porosity, much dead oil stain, no cut or fluoresence.

- 4780-4790 Sandstone, fine-grained, pale grey, quartzose, siliceous, trace of glauconite. 30% sandstone, brown, slightly argit-laceous, fine-grained, dead oil staining in pockets of pre-osity. No cut or fluoresence.
- 4790-4810 Sandstone, medium grained, few coarser grains, pale grey, siliceous cement, traces kaolinitic, trace of calcareous cement. Subround to subangular, poor to fair sorted quartz grains, trace of glauconite. Few argillaceous pockets and brown-grey shale beds. Spotty porosity, dead oil no cur or fluoresence.
- 4810-4820 Sandstone, medium to coarse grained, to fine grit, well rounded to subrounded, poorly sorted quartz grains, siliceous cement, trace of calcareous cement, some anhedral quartz, few sideritic grit streaks. Trace of fossil fragments. Trace of porosity, no stain, cut or fluorescence.
- 4820-4830 Sandstone, fine to medium grained, brown-grey, vitreous, quartzose, siliceous, slightly calcareous glauconitic.

 Fairly well sorted, subangular to subrounded quartz graine, siliceous, part sideritic matrix. Trace of fossils, trace of pyrite, fractures. Trace of intergranular porosity, no out or fluorescence.
- 4830-4850 Sandstone, fine-grained, brown-grey, vitreous, quartzite, trace of glauconite. Well sorted subround to subangular grains, siliceous cement. Trace of fossil fragments, trace of fractures. Tight.
- 4850-4870 Sandstone, fine-grained, brown and grey, vitreous, silicerus, tight. Fair to well sorted, subround to subangular quartz grains, siliceous matrix, traces of glauconite. Traces of argillaceous, bituminous partings.
- 4870-4900 Sandstone, fine-grained, brown, vitreous, siliceous, much argillaceous-bituminous sandstone. Trace of fractures. Trace of bituminous partings. Traces of pyrite lining fractures. Minor dark brown sandy, siliceous shale.
- 4900-4910 Sandstone, fine-grained, pale brown-grey, vitreous, noncal-careous. Well sorted, subangular quartz grains, traces of glauconite, traces of iron staining, siliceous matrix; intergranular pyrite. Evidence of fracturing, in part pyritelined.
- 4910-4920 Sandstone, as above. More friable in appearance, trace of intergranular porosity, no cut or fluorescence.
- 4020-4930 As above. Much dark grey and black shale cavings.

- 4930-4940 Sandstone, light brown-grey, fine-grained, siliceous, vitreous. Well sorted, subangular quartz grains, siliceous matrix, glauconitic. Trace of pyrite, trace of iron staining. Trace of interbedded dark brown sandy, glauconitic shale.
- 4940-4980 Sandstone, light brown-grey, fine-grained, few streaks of medium to coarse grained sand, vitreous, well sorted, subangular quartz in a siliceous matrix, traces of glauconite.

 Trace of pyrice, iron staining. Trace of fracture surfaces.
- 4980-5013 Sandstone, pale grey-brown and pale grey, fine-grained well sorted quartz grains, subangular, in a siliceous matrix, minor glauconite. More friable in appearance, trace of intergranular porosity no cut or fluorescence. Trace of pyrite partly infilling fractures.
- 5013-5020 N.S.
- 5020-5030 Sandstone, fine-grained, streaks of medium grained sandstone, pale grey and pale brown-grey vitreous, trace glauconitic. Subangular, fairly well sorted quartz grains, scattered by anconite, in a siliceous matrix. Trace of kaolin. Trace of pyrite as pore filler and fracture lining. Trace of fracture porosity, dead oil staining, no cut or fluorescence.
- 5030-5060 Sandstone, fine-grained, grey-brown, vitreous, trace of glauconite, siliceous. Subangular, fairly well sorted quartz grains in a siliceous matrix. Trace of fracture and intergranular porosity, dead brown-grey oil stain, no cut or fluorescence. Trace of pyrite. Minor interbedded dark brown sandy shale.
- 5060-5070 Sandstone, fine-grained, pale grey, vitreous, and grey-brown, siliceous, hard. Trace of glauconite and pyrite. Subangular quartz grains, fairly well sorted, in a siliceous matrix, trace of kaolin. Friable in part abundant free medium to coarse quartz grains and granular clusters. Trace of intergranular porosity, fractures. No cut or fluorescence. Minor dark grey shale and sandy shale cavings in part.
- 5070-5080 (Circulated Sample) Sandstone, brown, fine-grained, subangular, well sorted quartz grains, siliceous matrix, vitreous.

 Traces of fractures, intergranular porosity, dead oil staining, no cut or fluorescence.
- 5080-5090 Sandstone, light brown-grey and pale grey, vitreous, siliceous; as above, trace of glauconite. Much fracturing, traces of dead oil staining, trace of intergranular porosity, no cut or fluorescence.

- 5090-5130 Sandstone, fine-grained, pale grey, vitreous, and brown-grey. Subangular well sorted quartz grains, trace of glauconite and kaolin, in a dense, siliceous matrix. Trace of pyrite, trace of dark brown sandy shale. Fractures; in part bitumen-lined.
- 5130-5150 Sandstone, fine-grained, pale grey, vitreous, subangular, well sorted quartz grains, trace of kaolin and glauconite, in siliceous matrix. Trace of fractures, trace of bitumen in fractures, traces of spotty intergranular porosity. No cut or fluorescence.
- 5150-5160 Sandstone, fine grained, pale grey, vitreous, siliceous well sorted, subangular quartz grains trace of glauconite, in a siliceous matrix. Trace of spotty, leached porosity, few argillaceous partings. No cut or fluorescence.
- 5160-5170 Sandstone, as above. Minor grey and dark grey shale, salar shale, grading to dark brown argillaceous sandstone. Trace of brown chert fragments. Trace of pyrite.
- 5170-5250 Sandstone, pale grey, fine-grained, vitreous, noncalcare. Well sorted, subangular quartz grains, trace of glauconite in a siliceous matrix. Tight. Few argillaceous pockets and partings. Trace of fractures.
- 5250-5260 Shale, dark grey and dark brown, noncalcareous, blocky, silty and trace sandy in part. Traces of pyrite, slickensides, trace of lamination.
- 5260-5290 Sandstone, fine-grained, pale grey, vitreous. Fairly well sorted, subangular quartz grains in a siliceous matrix. Trace of coarse calcareous sandstone. Much dark grey, dark brown shale, as above. Trace of fractures.
- 5290-5300 Shale, dark brown, silty, sandy in part, blocky, noncalcareous, grading in part to very argillaceous dark brown, fine sandstone.
- 5300-5340 Sandstone, silty, very argillaceous, very fine-grained, dark brown, blocky, noncalcareous, trace of glauconite, grading to dark brown, silty shale. Minor dark grey, noncalcareous shale. Trace of pyrite. Minor interbedded pale grey, fine-grained sandstone with scattered, dark grey chert pebbles.
- 5340-5350 Sandstone, very fine-grained, silty, very argillaceous, dark brown, noncalcareous. Trace of scattered medium and coarse sized chert pebbles. Minor dark grey blocky, noncalcareous shale.

- 5350-5370 Sandstone, very argillaceous, silty, very fine-grained to fine-grained, dark brown as above. Minor pale grey, fine-grained, siliceous, vitreous sandstone quartz grains in a siliceous matrix. Minor dark grey, blocky, noncalcareous shale, to slightly calcareous shale.
- 5370-5400 Shale, dark grey, blocky, noncalcareous, trace pyritic worm borings. Much interbedded dark grey-brown silty and sandy shale, blocky, noncalcareous, grading to silty, argillaceous fine to medium sandstone.
- 5400-5480 Sandstone, very fine to fine-grained, dark brown, silty, argillaceous, slightly calcareous to noncalcareous, grading in part to dark brown silty shale. Minor interbedded dark grey, sub-fissile to blocky, noncalcareous shale.
- Sandstone, pale grey-brown, very fine to fine-grained, calcareous, siliceous, tight. Trace of glauconite. Subangular quartz, minor chert grains, poor to fair sorting. Pockets or streaks of coarse chert grains, scattered traces of glauconite. Much dark brown silty shale, ironstone.
- 5490-5510 Sandstone, fine to medium grained, grey, S & P, noncalcareous, to slightly calcareous. Poorly sorted, subangular to subround quartz and chert grains, scattered pockets and streaks of coarse grey chert grit in sandstone matrix. Much interbedded brown silty shale and argillaceous sandstone.
- 5510-5540 Sandstone, medium grained, grey, S & P, faintly calcareous, subangular quartz grains, fair sorting, siliceous, calcareous cement, as matrix to scattered coarse chert grit grey, green-grey chert grains. Fractures. Minor grey brown and brown argillaceous sandstone and dark brown silty shale and siltstone.
- 5540-5570 Sandstone, medium grained, grey S & P, as above. Chert grit, as above. Much dark brown siltstone and dark grey shale.
- 5570-5630 Sandstone, fine to medium grained, grey, S & P, faintly calcareous, fairly well sorted, subangular quartz and chert grains, siliceous, faintly calcareous matrix, very argillaceous in part, and darker in color. Scattered coarse chert grains. Minor interbedded dark grey shale, brown siltstone. Fractures.
- 5630-5640 Sandstone, as above. Increase in black, fissile shale.

 Trace of brown-grey fine-grained sandstone, trace of intergranular porosity. No cut or fluorescence.
- Sandstone, medium grained, grey, S & P, faintly calcareous. Dark grey and grey chert pebbles, grey quartz, subangular to subround, in siliceous, slightly calcareous matrix. Tight. Much (40%) dark grey to black fissile shale. Scattered coarse chert grains in sandstone. Trace of fractures and calcite veining.

- 5660-5670 Shale, dark grey, splintery to blocky, noncalcareous, strake of micaceous shale.
- 5670-5680 Sandstone, grey, S & P, dark grey and grev chert grains, grey quartz, in a siliceous, slightly calcareous matrix. Medium size grains, subrounded, poor to fair sorting. Trace of calcite veining.
- 5680-5690 Sandstone, as above. Much interbedded grey, S & P sire, addark grey shale.
- 5690-5710 Shale, grey and dark grey, blocky to sub-fissile, micro-micaceous, noncalcareous. Minor dark medium brown grey blocky, silty shake, calcareous in part. Much green and sandstone, as above.
- 5710-5750 Shale, grey and dark grey, blocky to sub-fissibe, none calcareous. Minor interbedded dark brown, a gralactors sile-stone and fine sandstone, oil stained appearance, no flue escence, questionable cut in chlorothene. Traces of fractures, calcite veining and slickensides.
- 5750-5800 Shale, dark grey, sub-fissile, micromicaceous, noncalcar aux.

 Trace of grey, silt streaks.
- 5800-5810 Shale, as above. Minor fine-grained, brown-grey, 5 & P. argillaceous sandstone, slightly calcareous, siliceous, agha.
- 5810-5840 Shale, grey and dark grey, fissile, noncalcareous, micromicaceous. Interbedded grey, very fine grained, argillacoous sandstone, faintly calcareous. Trace of slickensided shale, fractures. Trace of pyrite.
- 5840-5880 Shale, dark grey and black, fissile, noncalcareous, micromicaceous, few silty streaks. Minor interbedded grey, argillaceous sandstone, as above. Trace of pyrite. Trace of fractures.
- Sandstone, grey, S & P, fine to medium grained chert and quartz sandstone, siliceous cement, faintly calcardous.

 Grains are subangular to subround, poorly sorted. Scattered coarse chert grains. Calcite vaining, fracturing. Minor interbedded dark grey, sub-fissile micromicaceous, noncalcareous shale. Trace of pyrite.
- 5980-6020 Sandstone, medium grained, grey, S & P, much coarse chergrains in a medium grained siliceous sandstone matrix.

 Poorly sorted, subrounded to subangular, much interstitial silt. Minor dark grey, sub-fissile to fissile shale, non-calcazeous, micromicaceous, traces of silty and sandy shale.

- 6020-6050 Sandstone, medium grained, grey, S & P, much coarse grey chert grains, subrounded in a sandstone matrix. Siliceom cement, slightly limey. Trace of green chert. Minor incombedded dark grey micromicaceous, noncalcareous shale (30%).
- 6050-6070 Sandstone, fine to medium grained, scattered coarse chert grains, grey and light grey, trace of grey-green chert, salty, argillaceous matrix, siliceous cement, faintly calcareous. Shale, 20% grey and dark grey, sub-fissile to blocky, noncalcareous, micromicaceous. Calcite veining, fracturing.
- Sandstone, fine to medium grained, few coarse grey chert grains, grey and dark grey, argillaceous, silty, faintly calcareous, siliceous. Minor (26%) dark gray, seb-fissale to blocky shale, dark grey and grey siltsaone.
- Sandstone, very fine grained, grey, S & P, grading to gree argillaceous siltstone and grey, silty, coarse sandstone coarse fraction includes grey and rare green chart grains, faintly calcareous, siliceous, argillaceous. Shale 10% dark grey and black, blocky to sub-fissile, silty streak. Traces of silt laminae. Traces of calcite veining and fractures.
- 6090-6131 Siltstone 40%, grey, faintly calcareous, siliceous, grading to medium grained sandstone, and to silty shake. Hiner (20%) dark grey and grey, noncalcareous shake.

T.D. 6131

(e) Paleontological Determinations

0-3660 No determinations

3660-3880 Barremian

3960-4280 Hauterivian

4360-4520 Hauterivian or older Lower Cretaceous

4620-4890 Oxfordian to Portlandian

4960-5350 Probable Jurassic (undef.) age

5420-6063 Upper Devonian? (Frascian/Famennian)

SECTION III

Engineering Summary

(a) Report of Drillstem Tests

4609 to 4699 Dual Bottom Hole DST #1

Zone: Johnson Creek

Times: Pre-Flow 5 mins., initial shut-in 60 mins., valve open

60 mins., final shut-in 120 mins.

Recovery: 540 feet of water cut mud and 3709 Eest of water.

Pressures: IHP - 2352 FSIP - 2303

FHP - 2332 BHT - 108°F. ISIP - 2292 IFP - 339 FFP - 1911

Remarks: Test satisfactory.

DST #2 3950 to 4230 Dual Straddle

Zone: Basal Cretaceous

Times: Pre-Flow 5 mins., initial shut-in 30 mins., valve open

90 mins., final shut-in 150 mins.

Recovery: Gas to surface on pre-flow

Gas to surface on V.O. 44 Mcf/D in 30 mins, decreasing to 29 Mcf/D at the end of V.O. Recovered 940 feet slightly

gas cut mud.

Pressures: IHP - 2109 FSIP - 1959

FHP - 2109 BHT - 108°F. ISIP - 1936 IFP - 157

FFP - 423

Remarks: Test satisfactory.

DST #3 4230' to 4355' Dual Straddle

Zone: Johnson Creek

Pre-flow 5 mins., initial shut-in 30 mins., valve open Times:

90 mins., final shut-in 150 mins.

Recovery: Poor air blow on V.O. recovered 560' of mud, 180' of slightly gas cut mud and 270' of mud cut water.

Pressures: IHP - 2259 FSIP - 2109 ISIP - 2040 FHP - 2259 IFP - 263 BHT - 108°F. FFP - 527

Remarks: Test satisfactory.

(b) Casing Record

Conductor Pipe

25' of 23" 0.D., $18\frac{L}{2}$ " I.D. $\frac{L}{2}$ " wall, insulated concentric conduction pipe with 3/4" 0.D. cooling coils. 21' of 19" 0.D. $\frac{L}{2}$ " wall combittoe pipe set at 66' K.B.

Cemented conductor pipe with 200 sax of BJ cold set cement.

Surface Casing

Ran 27 joints (886.61°) of $13-3/8^{\circ}$, 54.5 % K-55, 8 Rd., Rge. 2, new, seamless, ST & C casing landed at 881.81° K.B.

Cemented casing with 950 sax Type I construction cement plus 3π CaCl $_2$. Cement in place at 1115 hours, January 16, 1973. Circulated approximately 100 sax of cement.

No intermediate or production casing strings were run.

(c) Bit Record

See attached bit record.

(d) Mud Report

The $17\frac{1}{2}$ " surface hole was drilled to 886' using stable foam. The hole was then displaced to a gel-water m.d. The following materials were used on surface:

Sulfotex Sal 11 Bbls.
Van Foam 1 Bbl.
Gel 145 Sax
Caustic 3 Sax
Sawdust 65 Sax

The 8-3/4" main hole was drilled to 6131 using a Gel-water-Rapidril system. The following materials were used on the main hole:

Ge1	967 Sax
Wt. Material	1296 Sax
Bicarb, of Soda	4 Sax
Caustic	53 Sax
Soda Ash	4 Sax
Rapidril	380 Lbs.
CMC	7 Sax
Sawdust	780 Sax
Fiber Tex	105 Sax

(e) Deviation Record

60 - 1/2	1335 - 3-3/4	2574 - 8	4177 - 1-1/2
105 - 1/4	1368 - 3-1/2	2605 - 7-1/4	4235 - 2-1.4
170 - 1-1/4	1398 - 3-1/2	2635 - 7-1/3	
195 - 3/4	1460 - 3-7/8	2670 - 7	4299 - 2 - 1.33
223 - 1	1495 - 4-1/4	2702 - 7-1/4	4390 - 1-1/2
251 - 1-1/8	1523 - 3 - 3/4	2737 - 7-1/4	4445 - 1-1
290 - 1	1555 - 4	2770 - 6 - 1/2	4547 - 1 - 1/2
317 - 1	1595 - 4	2800 - 6-1/4	4612 - 1-3/4
348 - 1	1620 - 4-1/4	2830 - 5-1/2	4647 - 7/
370 - 1-1/4	1647 - 4-1/4	2860 - 5-1/4	4678 - 7/5
410 - 1-1/2	1692 - 4-1/4		4720 - 7/8
440 - 1	1092 - 4-1/4 $1723 - 4-1/4$	2892 - 4-7/8	4777 - 7/3
470 - 1-3/4	1753 - 4-1/4	2925 - 4-1/2	4868 - 1
500 - 1-1/2	1785 - 4-1/8	2955 - 4-3/4	4954 - 1
533 - 1-1/2		2985 - 4-1/2	5011 - 1
563 - 1-3/4	1805 - 4-1/8	3015 - 5	5045 - 1/1
	1840 - 4-1/2	3050 - 5	5170 - 2
600 - 1-1/4	1870 - 4-1/2	3080 - 4-1/2	5220 - 3
626 - 1-3/4	1943 - 4-3/4	3111 - 4-1/4	5255 - 3
658 - 1-1/2	2005 - 4-1/2	3143 - 4 - 1/8	5287 - 2-374
690 - 1-1/2	2060 - 5	3205 - 3-3/4	5345 - 2-174
720 - 1 - 1/2	2090 - 5 - 1/2	3270 - 3 - 1/4	5470 - 2
752 - 1-1/2	2146 - 6	3300 - 3	5610 - 3-3/4
783 - 1-3/4	2165 - 6	3338 - 2-3/4	5689 - 6-1/4
810 - 1 - 1/2	2195 - 6-1/8	3375 - 3	5703 - 6
841 - 1-3/4	2225 - 6 - 1/4	3437 - 2-3/4	5764 - 6-1/2
876 - 2	2265 - 6-1/2	3491 - 2	5814 - 6-1/4
935 - 2 - 1/4	2297 - 7	3554 - 1 - 1/2	5849 - 6-1/4
965 - 2-1/4	2325 - 6 - 1/4	3627 - 1-3/4	5882 - 6-1/2
1025 - 2-3/4	2355 - 6-3/4	3658 - 1-1/8	5922 - 7
1064 - 2-3/4	2387 - 6-5/8	3716 - 1/2	5952 - 6-1/4
1126 - 3	2418 - 7	3767 - 1	5984 - 6-1/2
1150 - 3-1/8	2449 - 6-7/8	3828 - 1-1/4	6019 - 6-1/4
1179 - 3	2480 - 7-1/8	3934 - 2-1/4	6070 - 7 - 1/4
1220 - 3	2510 - 7-3/4	3987 - 1-5/8	6131 - 9-1/2 T.D
1283 - 3	2543 - 7-3/4	4085 - 2	

(f) Abandonment Plugs

Plug #1 (6131' - 5850') 160 Sax Type I cement + 2% CaCl₂
Plug #2 (4700' - 4500') 145 Sax Type I cement + 2% CaCl₂
Plug #3 (4100' - 3900') 130 Sax Type I cement + 2° GaCl₂
Plug #4 (950' - 850') 120 Sax Type I cement + 3% CaCl₂
Sufrace Plug 5 Sax Type I cement

(g) Lost Circulation Zones

Lost circulation at 5013 while drilling main hole. Lost approximately 645 bbls. of mud over a period of eight days. Obtained geturns by mixing Gel, Rapidril Sawdust and Fiber Tex.

(h) Report of Blowouts

No blowouts on this well.

SECTION IV

Logs

The following Dresser Atlas Logs were run on March 29 - 31, 1973:

BHC Acoustilog/Gamma Ray/Caliper (6123'-882')(6123'-50')
Dual Induction Focused Log (6120'-882')
Compensated Densilog/GR/Caliper (6122'-882')(6120'-882')

SECTION V

Analysis

- (a) Core Analysis

 Core analysis enclosed in back folder.
- (b) $\underline{\text{Water Analysis}}$ Water analysis enclosed in back folder.
- (c) Gas Analysis

 Gas analysis enclosed in back folder.
- (d) <u>Oil Analysis</u>

 No oil analysis.

SECTION VI

Completion Summary

(a) Tubing Record

No tubing run.

(b) Perforations

No perforations.

(c) Cementation Record

Abandonment Plug #1 (6131'-5850')

Cemented with 160 sax Type I Portland Cement. Cement in place 1345 hours April 1, 1973. No feel on plug #1.

Abandonment Plug #2 (4700'-4500')

Cemented with 145 sax Type I Portland Coment + 2% CaCl $_2$. Cement in place 1555 hours April 1, 1973. Felt plus #2 at 2530 hours at 4465 feet.

Abandonment Plug #3 (4100'-3900')

Cemented with 130 sax Type I Portland Cement + 2% CaCl $_2$. Cement in place 0230 hours April 2, 1973. Felt plug #3 at 10^{-9} hours at 3855 feet.

Abandonment Plug #4 (950'-850')

Cemented with 110 sax Type I Portland Cement + 3% CaCl $_2$. Gement in place 1215 hours April 2, 1973. Felt plug #4 at 1945 hours at 835 feet.

(1) Acidization and Fracturing Record

No acidizing or fracturing operations.

(e) Back Pressure and Production Tests

No back pressure or production tests.

CHEVRON STANDARD LIMITED BIT RECORD

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CHEVRON STANDARD LIMITED BIT RECORD

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CORE ANALYSIS REPORT

FOR

CHEVRON STANDARD LIMITED

CHEVRON SOBC GULF RIDGE YT F-48
WILDCAT, RIDGE AREA
YUKCN TERRITORY

CORE LABORATORIES - CANADA LTD.

Petroleum Reservoir Engineering
CALGARY - EDMONTON - REGINA



CORE LABORATORIES - CANADA, LTD CALGARY, ALBERTA

WELL COMPANY FIELD LOCATION 137 53' 35.00 WEST LONG. 67 17' 23.00 NORTH LAT. WILDCAT, RIDGE AREA, YUKON TERKITORY CHEVRON SOBC GULF RIDGE YT F-48 CHEVRON STANDARD LIMITED ANALYSIS ELEVATION DRILLING FLUID REMARKS FORMATION FULL DIAMETER ORGINARY PRIOR TO DETAINING HE VALUES. WATER BASE MUL PAGE FILE DATE REPORT MAK. 1/73 911-369 F. CH.

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Petroleum Reservoir Engineering

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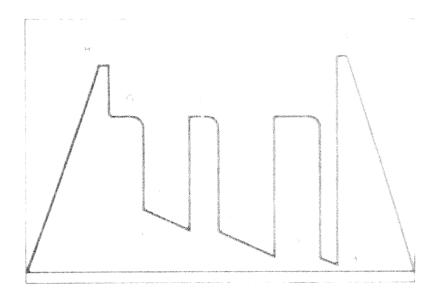
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GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS

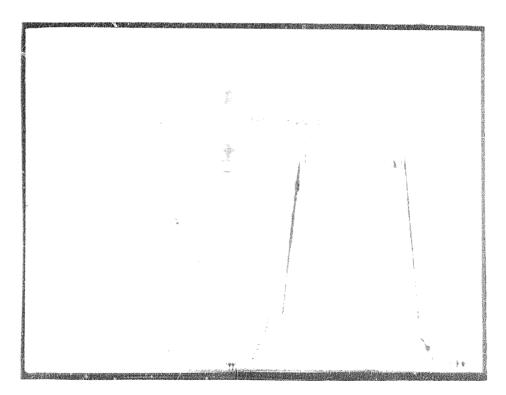
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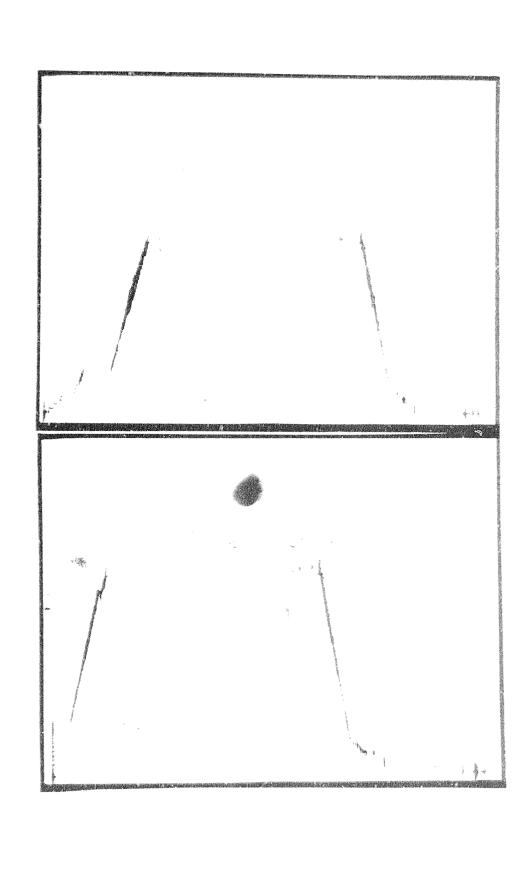
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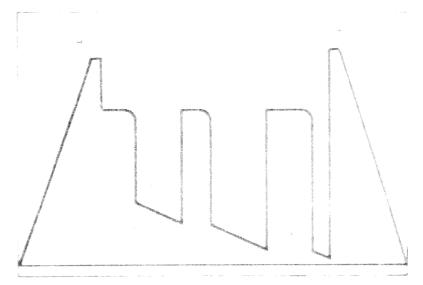
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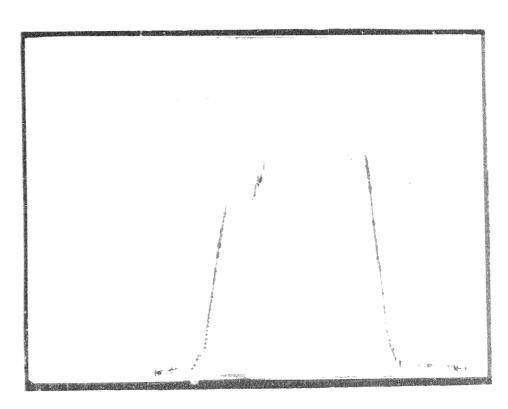
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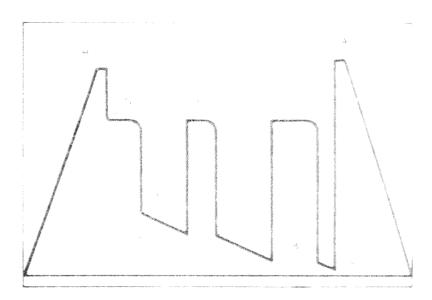
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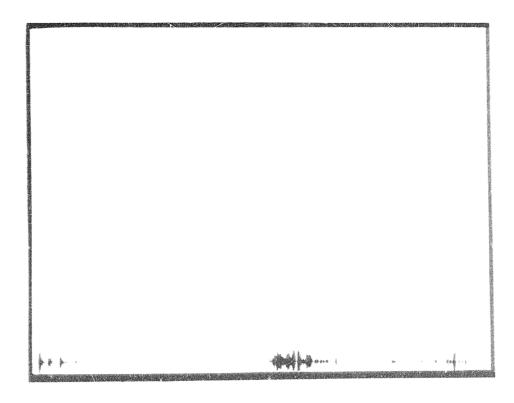
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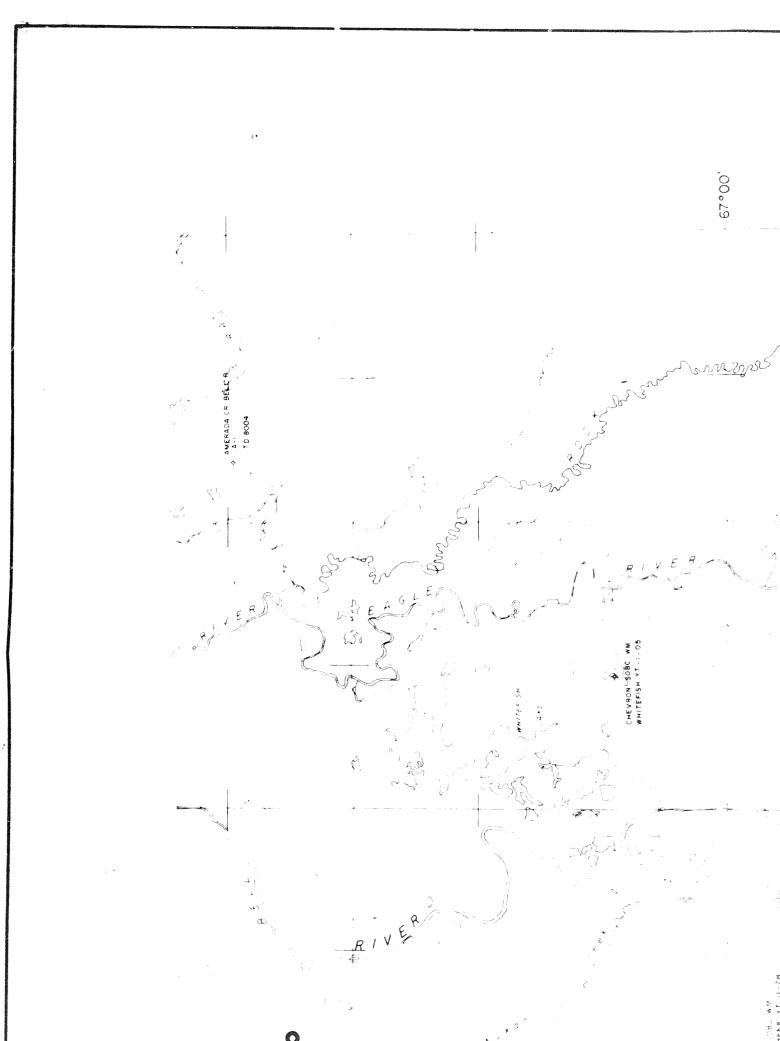


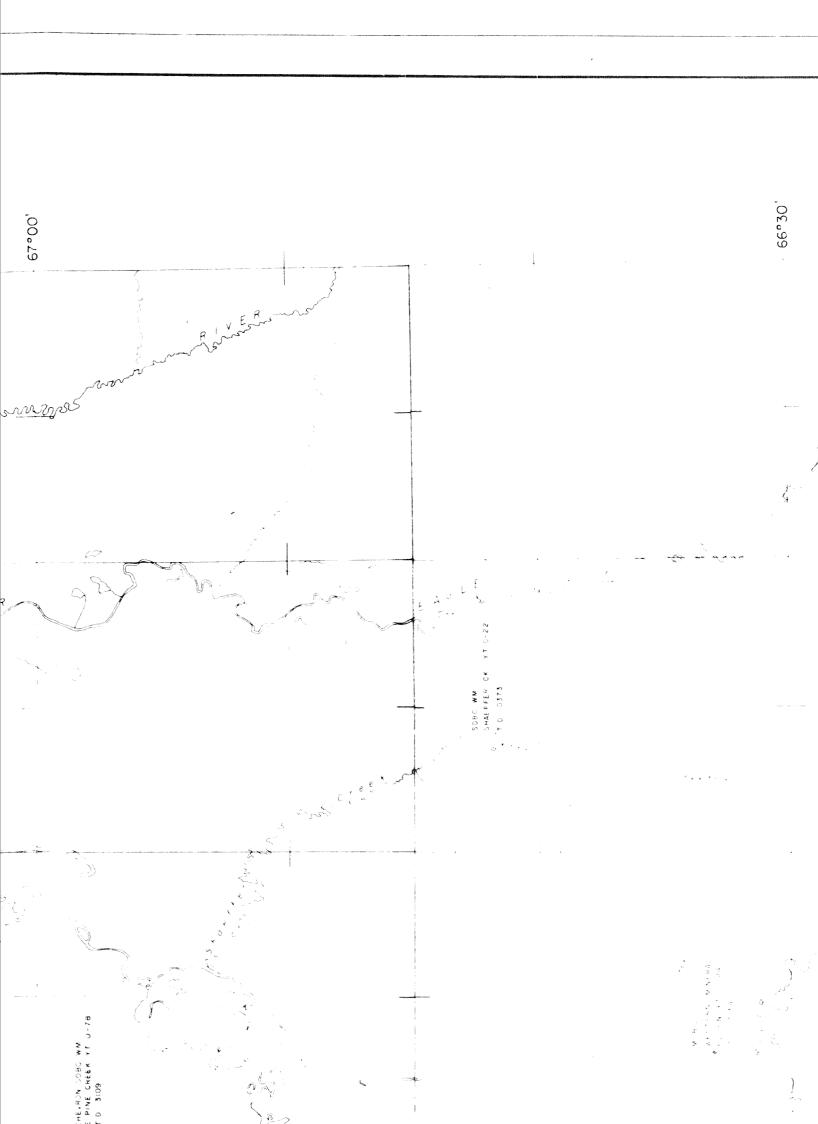
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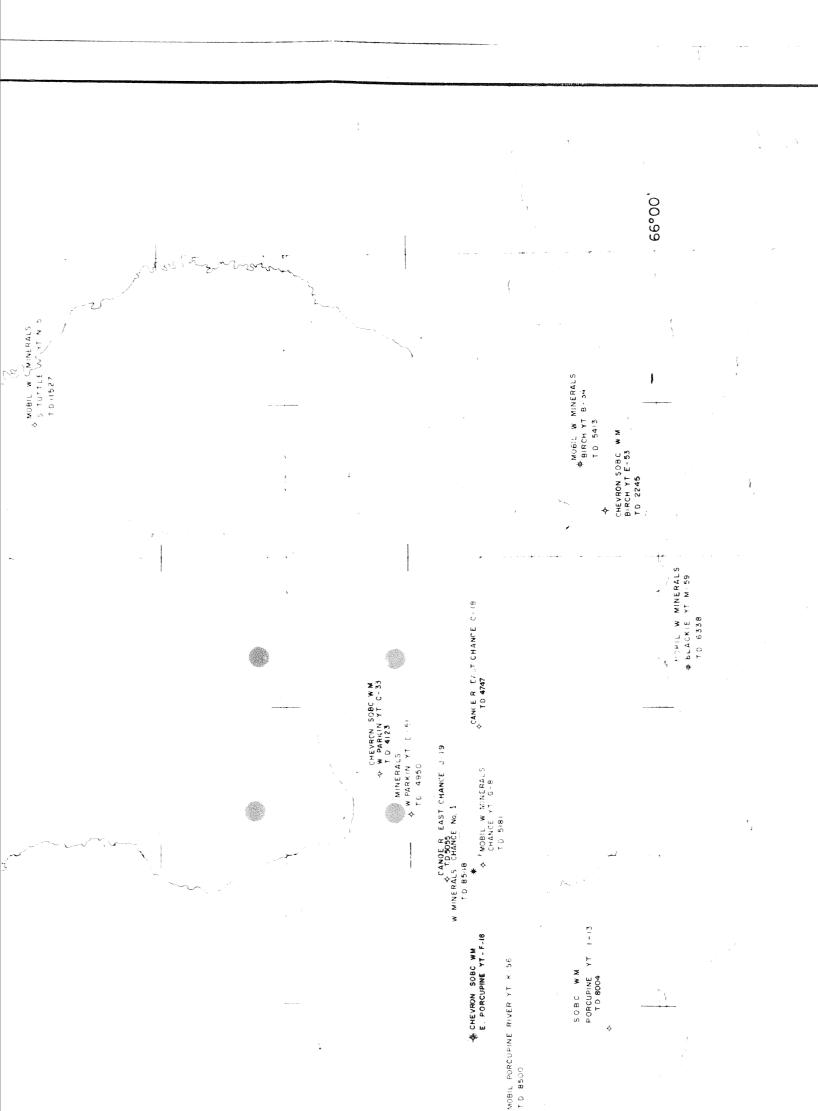
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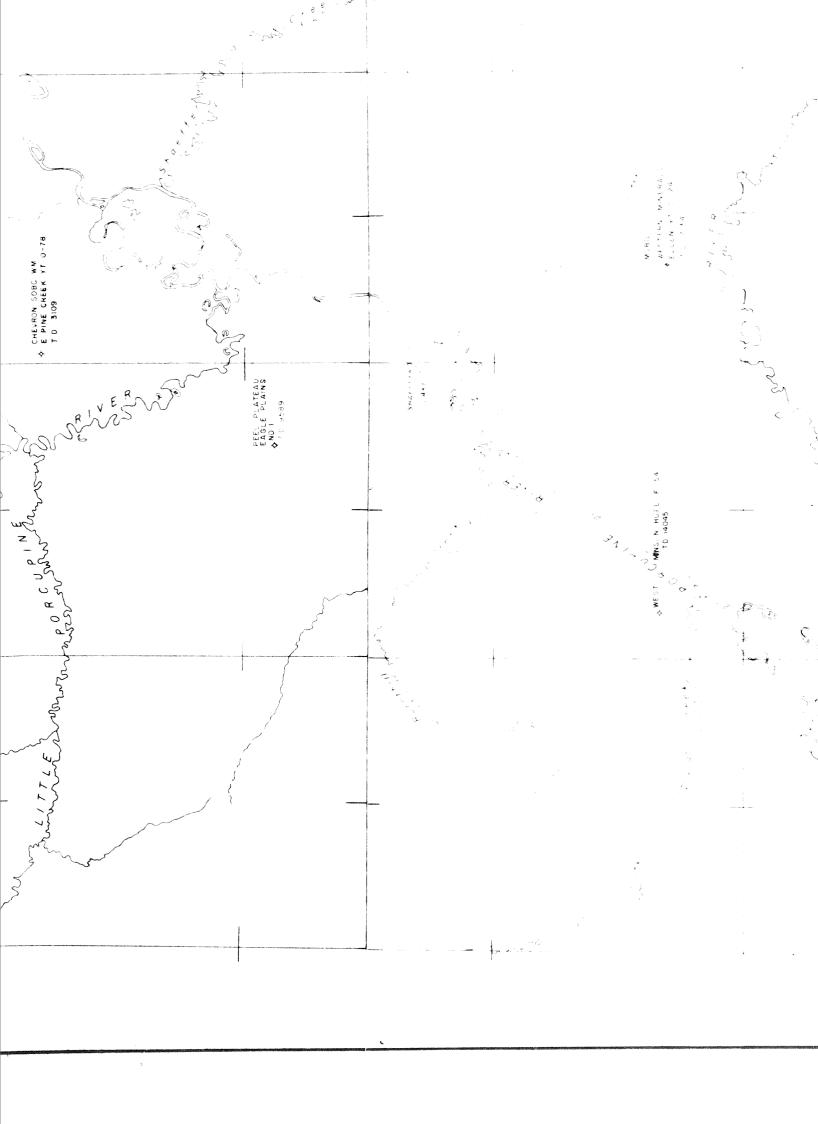


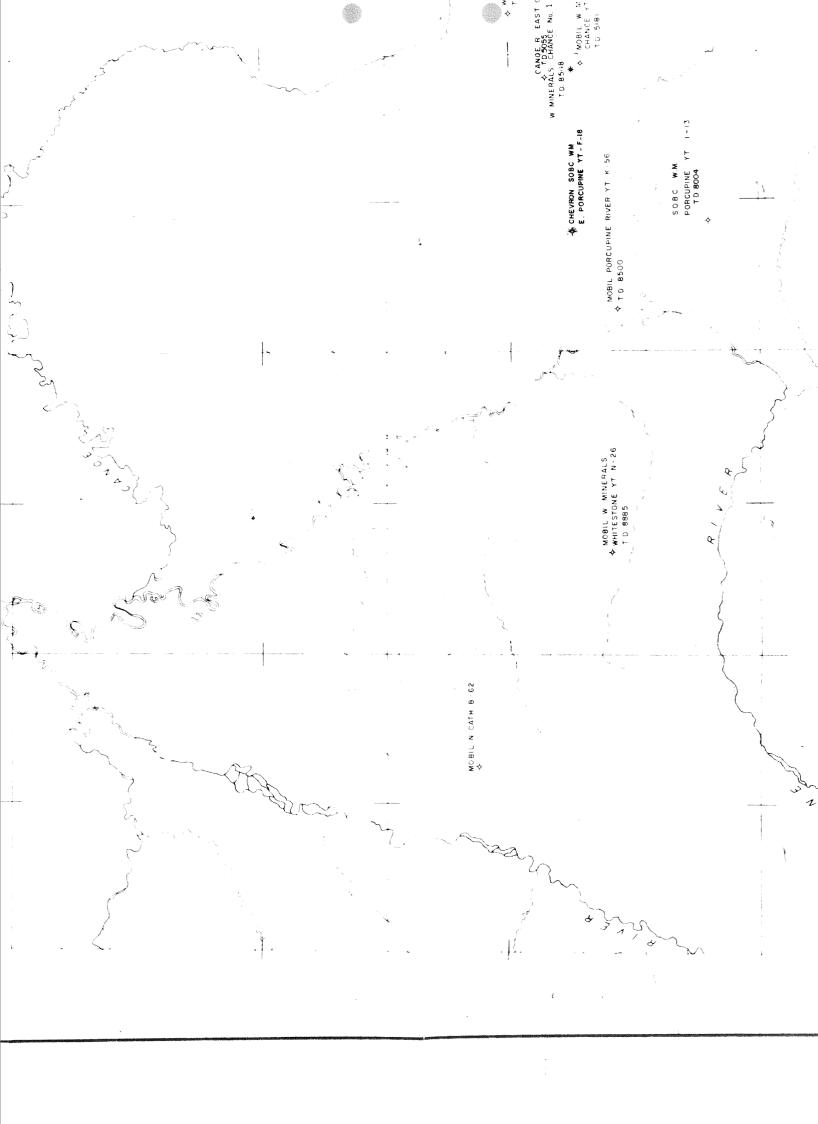
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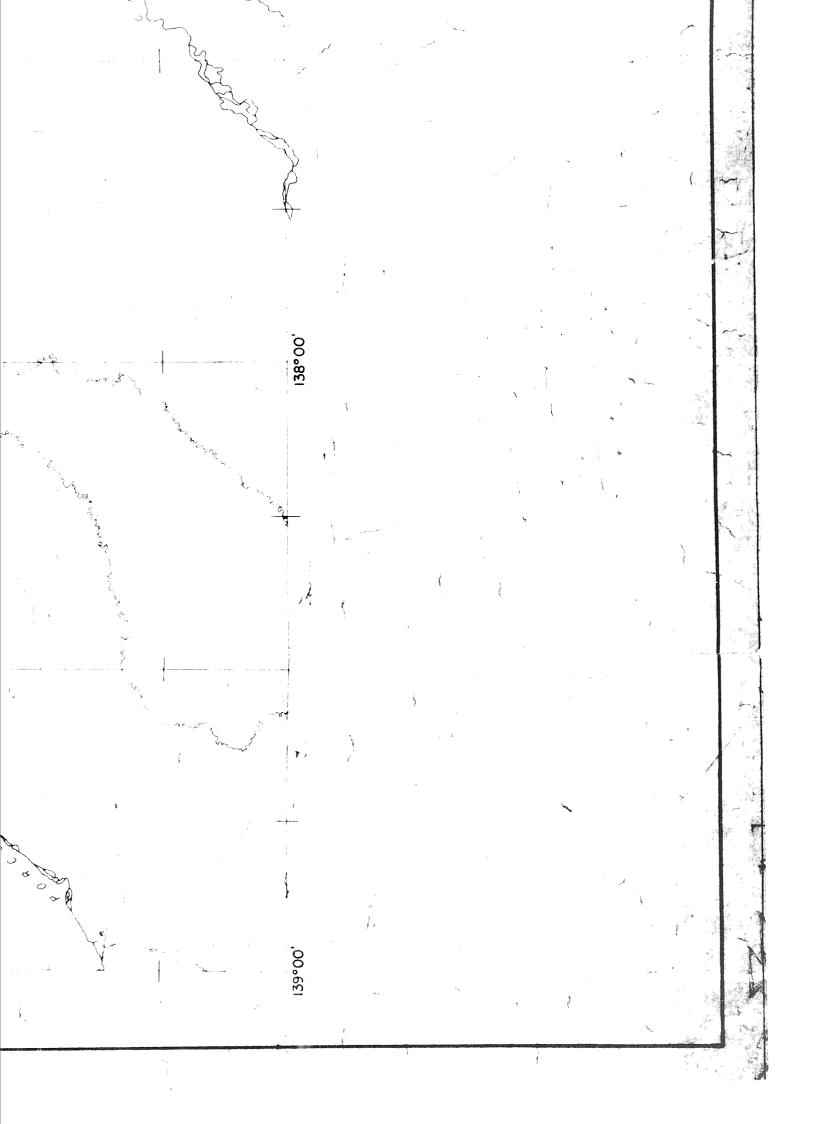
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CONDITIONS OF APPROVAL FOR DRILLING AUTHORITY NO. 628

FOR Chevron SOBC Gulf Ridge YT F-48

- Copies of this Drilling Authority shall be exhibited at the Drilling rig in both the Doghouse and the Drilling Forerans Office between and and rig release dates.
- 2. The Company will submit to this Office, on Liesdays of each week dails, the latest reports received by radio on the progress of the well.
- 3. During well drilling and testing operations, every eitert shall be made to ensure that drilling thirds, chemicals and waste snall be disposed of or contained in a manner that will prevent the contamination of all acent vegetation and surface or sub-surface waters.
- 4. We draw your attention to Sections 95 and 96 of the Canada Oil and Gas Land Regulations.
- 5. Anv additional strings of casi, must be approved by the District Conservation Engineer prior to running.
- 5. All significant shows of oil and/or was are to be reported to the District Conservation Engineer immediately.
- 7. Should a fatal accident occur, drilling operations are to be suspended and the District Conservation Engineer notified immediately. Permission to resume drilling must be granted by the District Conservation Engineer after a ratality
- 8. Forward to this Office two field print copies of all well logs with formation tops marked thereon and three copies of core analysis and fluid analysis as soon as they are available.
- 9. Formation tops (samples or logs) of the section penetrated each week are to be reported with the weekly drilling reports.

Marchen.

MEMORANDUM

Calgary, Alberta October 13, 1972

Prognosis for Chevron SOBC Gulf Ridge YT F-48 N 67 17' 30" W 137 53' 30"

CONFIDENTIAL - NOT TO BE SHOWN TO UMAUTHOWIED PERSONNEL

The status of this well will be "Tight", therefore all information regarding the well will be restricted to Chevron Standard personnel and authorized representatives of Gulf. Pertinent information must be transmitted in code, including that sent by Xerox facsimile transmission.

Elevations

Ground Elevation (surveyed)

K.B. Elevation (estimated) - 1,056'

K.B. Elevation (surveyed)

PROPOSED GECLOGICAL PROGRAM

A. Estimated Depth and Elevation of Significant Markers

	<u>Marker</u>	Est. Elevation	Est. Corrected Depth Depth	Thickness
	Spud in KL4-m Silt			490+
1.	M. Albian Unconformity (VL3-m Ss)	+ 566	490 est.	200 est.
2.	KL2-m Shale	+ 366	690	2140
3.	"JC" Silt	-1774	2830	1625
4.	Johnson Creek Fm (KL1-m Ss)	-3399	4455	200
5.	Husky Member (Silt & Shale)	-3599	4655	320
6.	Bug Creek Member (Sand)	-3019	4975	980
7.	J1-m Nember (Shale & Sand)	-4899	5955 ^st.	250 est.
3.	Permian Clastics	-5149	6205 est.	500 est.
9.	Imperial Fm (Upper Devonian)	-5649	6705	29 5+
10.	Total Depth	-5944	7000	

B. Objective Horizons

Primary - Johnson Creek Formation

- (a) Upper Sand (KL1-m Member)
- (b) Lower Sand (Bug Creek Hember)

Secondary - Permian Clastics - K 3-m Sand

C. Drill Cuttings

Three sets of bagged samples are required; two for Chevron and one for the Geological Survey. One set of washed bottled samples and one set of washed enveloped (double volume) samples are required for Chevron. One set of washed bottled samples is required for Gulf. These cuts may be taken from one of Chevron's bagged sets.

Sample interval is as follows:

Surface to T.D. - 10' samples.

Five foot samples should be caught at the wellsite geologist's discretion.

. Penetration Rate Records

A mechanical drilling time recorder will be used on this well.

E. Sample Description

An up-to-date written sample description and a plotted rock log chart must be maintained by the wellsite geologist. A copy of the written description is required by the government. Through cored and/or oil stained intervals, a detailed written description of the reservoir characteristics and hydrocarbon shows must be made.

F. Gas Analyzer

A gas detector will be used on this well.

G. Formation Evaluation

General

Well control is sparse in this region and it is possible that reservoir conditions could develop almost anywhere in the section. The wellsite geologist must, therefore, be prepared to evaluate potential reservoirs other than those listed under objective horizons.

1. Coring and Testing Program

Beds above the Johnson Creek Formation will be evaluated after logging unless substantial (20 feet +) porosity and hydrocarbon indications are encountered while drilling, in which case coring or testing should be considered.

Coring of the Johnson Creek interval is anticipated for reservoir and stratigraphic control. Commence diamond coring as soon as porous quart-zose sandstone is recognized below the 'Johnson' silt. Report the results to Calgary. In general, it is intended that each porous sand interval will be cored, with one additional sixty foot core to be cut in the shaliest part of the Musky Member for palaeontological control.

The Permian will be cored only if a sandstone or conglomerate facies, with indications of porosity, is encountered.

2. Logging Program

Use Dresser Atlas.

One logging run will be made at T.D.

Primary Logs -

a) Dual Induction Laterolog/SP.

Try a 10 m.v. SP scale. Run logarithmic resistivity on both 2° = 100° and 5° = 100°. Both induction scales and SP will be run from T.D. to surface casing with a 200° repeat being made at T.D.

b) BHC Acoustilog/Gamma/Caliper (Integrated).

Transit time scale: 40-70-100Run 2' = 100' and 5" = 100' from T.D. to surface casing. Run gamma to surface and check caliper 50' inside casing. Run a 200' repeat at T.D.

c) Compensated Densilog/Camma/Caliper

This log will be run from T.D. to above the Johnson Creek Formation and over any other sands that may occur in the well.

Run $2^{\circ\prime}$ = 100 and $5^{\circ\prime}$ = 100 from T.D. to selected depth. Run a 200 repeat at T.D. or in a suitable sand of interest.

Secondary Logs -

These logs will be run under specific circumstances only.

a) Epithermal Sidewall Neutron/Gamma/Caliper

This log will be run if any sands of interest appear shaly on other logs.

It may also be run if any calcareous cement should occur in the sandstones.

H. Fluid Samples

- 1. Representative fluid samples from all LST recoveries are required for lab analysis. Samples are required from the top, middle and bottom of the fluid column. One sample is sufficient for recoveries under 60°. A set of water samples is required by the logging company for Rv determinations.
- 2. An extra quart sample of any clean oil, or oil-cut liquids obtained on DST is to be taken and forwarded to the Northern Task Force office. The wellsite personnel should have on hand a supply of special containers for these samples.
- 3. Three one-quart mud samples should be collected at 15-minute intervals from the flowline prior to each logging run for Rm and Rmf measurements at the wellsite.
- 4. Stainless steel containers are to be available to collect a sample of any gases obtained on test.

Approved

Calgary, Alberta October 1972

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CHE /RON STANDARD LIMITED

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Third Flow Min and for a 150 M	Bypass Tool	3.40	
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INITIAL SHUT IN		1916#	1914#		
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6	1436	1.83	30	1805	4.17		
9	1556	1.56	45	1868	3.11		
12	1655	1,42	60	1890	2.58		
15	1730	1.33	75	1909	2.27		
18	1802	1,28	90	1927	2.06		
21	1847	1.24	105	1937	1.90		
24	1883	1,21	120	1945	1.79	-	
27	1914	1,19	135	1948	1.70		
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Actual Initial Shut-in time = 27 minutes



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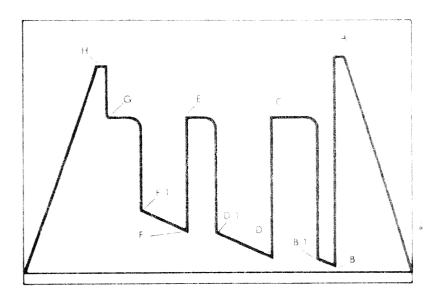
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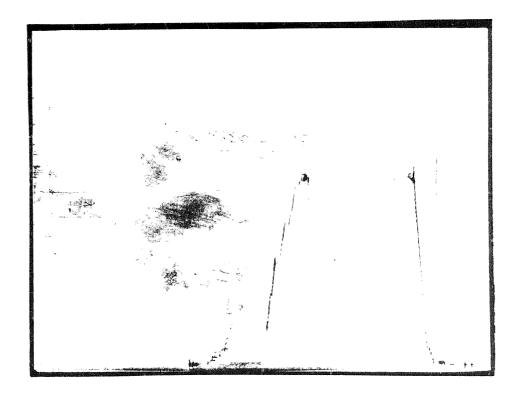
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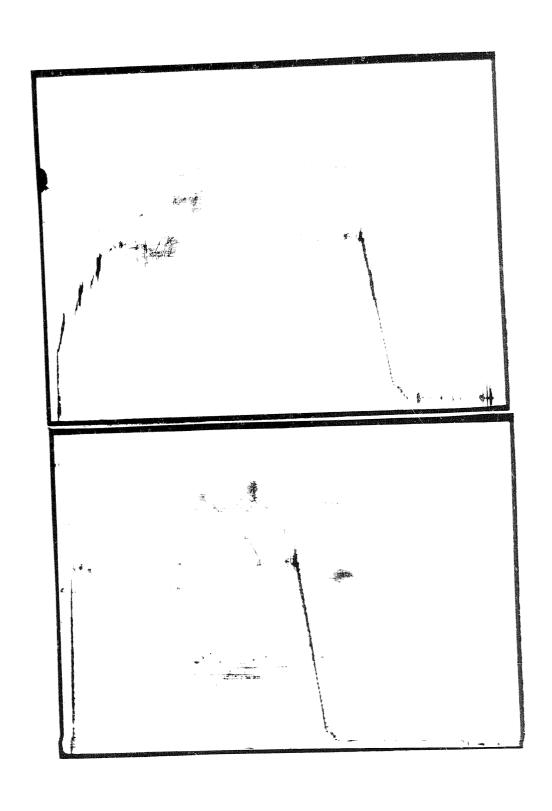


- A in fal Hyd Mud
- B First Flow
- C. Initial Shut In
- D. Second Flow
- £ Second Shut in
- F Third Flow
- G. Final Shut-In
- H Final Hyd Mud

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

- A 1 A-2 A-3, etc. Initial Hyd. Pressures
- Z Special pressure points such as pumping pressures recorded for formation breakdown.





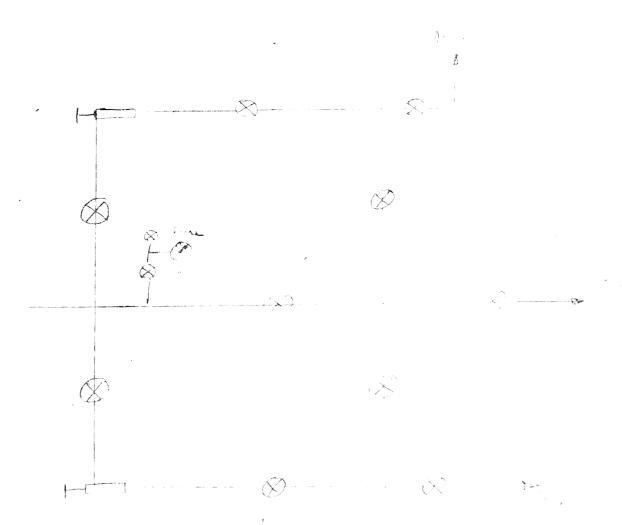
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